

Edited by Albrecht Schnabel and Ilona Kickbusch



The Security Sector and Health Crises

With an Epilogue on: *Lessons from Ebola in the Time of COVID-19:
An Urgent Wake-up Call for the Security Sector*

DCAF Geneva Centre
for Security Sector
Governance



The front cover depicts a Sierra Leonean doctor during training by British troops on 7 November 2014, at the height of the Ebola crisis in the region. The picture is taken in the Wilberforce Barracks in the area around Freetown, by British photographer Carl Osmond.

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DCAF Geneva Centre for Security Sector Governance

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The Security Sector and Health Crises, edited by Albrecht Schnabel and Ilona Kickbusch

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Albrecht Schnabel and Ilona Kickbusch
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Abbreviations

ACDCP	African Centre for Disease Control and Prevention
AFL	Armed Forces of Liberia
AMR	antimicrobial resistance
ASEAN	Association of Southeast Asian Nations
ASEOWA	African Union Support to Ebola Outbreak in West Africa
AU	African Union
AUC	AU Commission
BICHAT	Biological and Chemical Agents Threats (European Union)
CBRN	chemical, biological, radiological and nuclear
CDC	US Centers for Disease Control and Prevention
CJIATF	Combined Joint Interagency Task Force
CMS	Coordinated Medical Services
CONOPS	concept of operations
COVID-19	coronavirus disease 2019
CSDP	Common Security and Defence Policy (European Union)
CSO	civil society organization
DCAF	Geneva Centre for Security Sector Governance
DDR	disarmament, demobilization and reintegration
DERC	District Ebola Response Centre
DEWS	WHO Disease Early Warning System
DFID	Department for International Development (UK)
DG SANCO	Directorate-General for Health and Consumers (European Union)
DRC	Democratic Republic of the Congo
ECDC	European Centre for Disease Prevention and Control
ECPF	ECOWAS Conflict Prevention Framework
ECHO	European Civil Protection and Humanitarian Aid Operations
ECOWAS	Economic Community of West African States
EEAS	European External Action Service
EEOC	Ebola Emergency Operations Centre
EID	emerging infectious disease
EMLab	European Mobile Laboratory Project
EPRUS	Établissement de Préparation et de Réponse aux Urgences Sanitaires
ESF	ECOWAS Standby Force

ETU	Ebola treatment unit
EU	European Union
EVD	Ebola virus disease
EWARS	Early Warning, Alert and Response System (World Health Organization)
EWRS	early-warning and response system
EWS	early-warning system
FCO	Foreign and Commonwealth Office (UK)
FMA	foreign military assistance
FMP	flow monitoring point
GDP	gross domestic product
GHSA	Global Health Security Agenda
GloHSA	Global Health Security Alliance
GOARN	Global Outbreak Alert and Response Network
GPHIN	Global Public Health Intelligence Network
HBMM	health border mobility management
HSC	Health Security Committee (European Union)
HWCC	health-worker-contributing country
IBM	integrated border management
ICRC	International Committee of the Red Cross
IDP	internally displaced person
IGO	international governmental organization
IHRs	International Health Regulations
IHRL	international human rights law
IM	information management
INGO	international non-governmental organization
InVS	French Institute for Public Health Surveillance
IOM	International Organization for Migration
IPC	infection prevention and control
JBSCBU	joint border security and confidence-building unit
MERS-CoV	Middle East respiratory syndrome coronavirus
MDG	Millennium Development Goal
MONUSCO	UN Organization Stabilization Mission in the DRC
MRU	Mano River Union
MSF	Médecins Sans Frontières - Doctors without Borders
NCD	non-communicable disease
NERC	National Ebola Response Centre
NGO	non-governmental organization
NHS	National Health Service (UK)
NSC	National Security Council
ONS	Office of National Security (Sierra Leone)
PAHO	Pan American Health Organization

PHEIC	public health emergency of international concern
PEF	Pandemic Emergency Financing Facility
PMSC	private military and security company
POE	point of entry
PPE	personal protective equipment
PSC	AU Peace and Security Council
PTS	Police Training School
RSLAF	Republic of Sierra Leone Armed Forces
SARS	severe acute respiratory syndrome
SDG	Sustainable Development Goal
SLP	Sierra Leone Police
SMS	Short Message Service
SOFA	status of forces agreement
SOP	standard operating procedure
SSG	security sector governance
SSR	security sector reform
UAE	United Arab Emirates
UK	United Kingdom
UN	United Nations
UNAMSIL	UN Mission in Sierra Leone
UNICEF	UN International Children's Emergency Fund
UNOCHA	UN Office for the Coordination of Humanitarian Affairs
UNMEER	UN Mission for Ebola Emergency Response
UNSGM	UN Secretary-General's Mechanism for Investigation of Alleged Use of Chemical and Biological Weapons
USA	United States of America
WAHO	West African Health Organization
WHO	World Health Organization

PART I

Introduction

The Security Sector and Global Health Crises: Lessons from the Ebola Epidemic

Albrecht Schnabel and Ilona Kickbusch

Introduction

The outbreak of Ebola virus disease (EVD) in 2014–2015 in West Africa, particularly in Guinea, Liberia and Sierra Leone, resulted in more than 28,000 cases and over 11,000 deaths.¹ In addition to the tragic loss of many lives, the outbreak had serious implications for human security and economic development in the affected countries.² It heightened concern about political stability in countries that had been severely affected by civil war. Initial attempts to contain the quickly emerging epidemic were delayed and disorganized. Fears of further spillover across and beyond the countries concerned, and indeed beyond the African continent, made it clear that more effective approaches are needed both to prevent and to manage future global health crises.

The economic, security and humanitarian dimensions of such health crises call for action in different sectors and at several levels. This includes financial investment and support to provide emergency healthcare, public health measures to contain the spread of the disease, and diplomatic and political efforts to prevent potential political instability and build trust. It should also include efforts to help affected populations to cope with the crisis and its aftermath, and to recover from the suffering and social and economic impact it has caused. It is critical to put in place structures and institutions to prevent future crises of similar magnitude in the countries concerned. It is also crucial to learn from the initially “disastrously inadequate response”³ how to build preparedness and response mechanisms at the

global level which stand ready to support countries in the event of a major disease outbreak.

The organizations, instruments and mechanisms that the international community draws on to deal with such crises must be reviewed. Experts now agree that the resources available to the World Health Organization (WHO) are insufficient to enable a speedy and flexible response. Further questions have arisen in relation to the delays in the response, particularly around the suitability of the organization's three-tier structure. Critical reviews of the 2005 International Health Regulations (IHRs) – the key mechanism for global disease preparedness and response – will show whether and how these need to be revised. However, the contributions in this volume already make it clear that the severity of the outbreak required:

- a political response beyond the health sector, which was provided by taking the issue of Ebola to the United Nations (UN) Security Council
- a logistical response that drew on resources throughout the UN system, which was provided by the establishment of the UN Mission for Ebola Emergency Response (UNMEER)
- an emergency response that had support beyond health ministries and non-governmental organizations (NGOs), which was provided through the involvement of military personnel from a range of countries within and beyond the African continent.

Other types of support were needed in this situation that health and humanitarian organizations were unable to provide. Médecins Sans Frontières (MSF), based on its operational experiences on the ground as the agency of first response in the Ebola outbreak, and Oxfam called for support by trained military personnel to build field hospitals with isolation wards, mobile laboratories and air bridges to transport people and equipment. Several countries responded – for example, the United States of America (USA) decided to deploy up to 4,000 troops to Liberia. However, these responses were hindered by a lack of coordination between contributing countries and the high costs of such military support. Since then there have been calls to establish new institutions and mechanisms,

for example a health crisis emergency fund, a global pandemic emergency facility and a “white helmet” UN response force.

In many countries security institutions – often the nation’s armed forces – have traditionally played key roles in providing assistance and relief during natural and man-made disasters. At the same time, multilateral security missions at regional and global levels have provided military and civilian support to assist conflict- and disaster-stricken societies with their recovery efforts. The challenges that emerged through assisting affected nations in managing and containing the Ebola outbreak beg the following question: what contributions can, and should, local and international security institutions make to manage global health crises? More specifically, what could be the contours of an effective relationship between national and international health authorities, medical professionals and security institutions when confronted with a major disease outbreak of international humanitarian, political and security concern? What risks emerge in drawing on the support of security institutions when there is a historical lack of trust in government?

The ability to prevent future crises with similar or worse consequences than the Ebola epidemic is critical in avoiding human suffering, maintaining security and stability, and enabling societies to stay on a positive path towards development and good governance. A country’s security sector, along with regional and global security providers, can play an invaluable role in the prevention and management of health crises if properly prepared, mandated and integrated into multiagency mitigation strategies. This volume recommends a series of measures that should be taken by decision-makers at local, national, regional and international levels, as well as within a nation’s security sector, to optimize security institutions’ contributions to preventing and managing health crises.

Background

Ebola virus disease (EVD) was discovered and recorded for the first time in 1976, in two simultaneously occurring outbreaks: one in Yambuku, in what

is now the Democratic Republic of the Congo (DRC),⁴ and one in Nzara, in today's South Sudan. The village of Yambuku is located half-an-hour's drive south of the River Ebola, from which the disease takes its name.⁵ EVD is estimated to have claimed approximately 1,600 lives between its discovery in 1976 and 2012.⁶ On 23 March 2014 the WHO's African Regional Office reported an outbreak of EVD in the Forest region of Guinea. Six days later Liberia's Ministry of Health confirmed the first cases in the country.⁷ On 8 April 2014 the WHO's assistant director-general, Dr Keiji Fukuda, briefed the press on "one of the most challenging Ebola outbreaks that we have ever faced".⁸ Two months after the first outbreak in Guinea, on 25 May 2014, Sierra Leone's Ministry of Health confirmed its first cases of EVD. Subsequently, in a note to the media, the WHO said "the outbreak is causing concern among health authorities because of its occurrence in communities and health-care settings, as well as in cities, rural and border areas".⁹ Exactly three months after the first reported cases in Guinea, the WHO supplied personal protective equipment (PPE) to health workers, in response to a request from Liberia's Ministry of Health and Social Welfare.¹⁰ In addition to the three most affected countries, the virus started to spread to other African countries - on 23 July 2014 Nigeria announced its first case.¹¹

On 6 August 2014 an emergency committee convened by the WHO's director-general, Dr Margaret Chan, under the IHRs discussed the EVD outbreak for the first time by teleconference.¹² Two days later, Chan declared the outbreak a public health emergency of international concern (PHEIC). On 12 August 2014 UN Secretary-General Ban Ki-moon spoke to the press and urged avoiding panic and fear; moreover, he appointed Dr David Nabarro, special representative of the UN Secretary-General for food security and nutrition, as senior UN system coordinator on EVD.¹³ In the DRC the first outbreaks were announced on 24 August 2014. On 30 August 2014 the WHO was informed by Senegal's Ministry of Public Health and Social Affairs about a case of EVD. One month later, on 30 September 2014, the first case outside the African continent was registered: the Pan American Health Organization (PAHO) and WHO were informed of the first imported case of EVD in the USA.¹⁴ During the whole crisis the USA recorded four

cases of EVD infection, with a case fatality rate of 25 per cent. On 6 October 2014 the first “confirmed autochthonous case” of EVD was announced in Spain. According to the WHO, this case represented the first human-to-human transmission of Ebola outside Africa.¹⁵ On 23 October 2014 Mali’s Ministry of Health notified the WHO of the country’s first laboratory-confirmed case of EVD infection. In November the DRC was the second African country (after Mali) where the WHO declared the end of the outbreak. In December a healthcare worker who returned to Glasgow after volunteering in Sierra Leone imported EVD to the United Kingdom (UK) (see Table 1).

The outbreak in West Africa (2014–2015) and the other aforementioned countries was the “largest and most complex ... outbreak” since EVD was first discovered.¹⁶ In total, 28,616 cases have been reported in Guinea, Liberia and Sierra Leone, and 11,310 people have died. “There were more cases and deaths in this outbreak than all others combined”, according to the WHO.¹⁷ After several flare-ups, Sierra Leone was declared free of Ebola on 17 March 2016. Two weeks later the WHO’s Emergency Committee declared that the situation in West Africa no longer constituted a PHEIC. However, it took almost three more months to eradicate EVD in Guinea (1 June 2016) and Liberia (9 June 2016).¹⁸ Some countries did not register any cases during the 2014–2015 Ebola outbreak, but still took specific preventive measures: Burkina Faso, Côte d’Ivoire,¹⁹ Ethiopia, Ghana, Kenya and Rwanda. On 11 May 2017 the DRC notified the WHO about an EVD outbreak in the north of the country where four of the eight infected people died (case fatality rate of 50 per cent).²⁰ On 2 July 2017 the WHO declared the end of this outbreak.²¹ During another EVD outbreak less than a year later, declared by the DRC Ministry of Health on 8 May 2018, 55 cases were registered, including 28 deaths.²²

Table 1.1: Ebola virus disease outbreaks, 2014–2018

Country	Year(s)	Case(s)	Death(s)	Case fatality rate (%)
DRC	2014/2017/2018	66/8/55	49/4/28	74/50/51
Guinea	2014–2016	3,811*	2,543*	67
Italy	2015	1	0	0
Liberia	2014–2016	10,675*	4,809*	45
Mali	2014	8	6	75
Nigeria	2014	20	8	40
Senegal	2014	1	0	0
Sierra Leone	2014–2016	14,124*	3,956*	28
Spain	2014	1	0	0
UK	2014	1	0	0
USA	2014	4	1	25

* The numbers include suspected, probable and confirmed EVD cases.

Source: This table draws on figures included in World Health Organization (2017) “Ebola virus disease: Fact sheet”, updated June 2017, www.who.int/mediacentre/factsheets/fs103/en/; World Health Organization (2017) “External situation report 1”, 15 May, www.afro.who.int/en/ebola/ebola-situation-reports.html; World Health Organization (2018), “Ebola virus disease – Democratic Republic of the Congo – External Situation Report 10”, with data as of 10 June 2018, apps.who.int/iris/bitstream/handle/10665/272825/SITREP_EVD_DRC_20180612-eng.pdf?ua=1.

The Ebola epidemic and the security sector: Main research questions

The Ebola epidemic raised a variety of questions concerning the security sector.

- How should security services prepare for involvement in situations of this kind?
- Once an outbreak has occurred, what are the specific comparative advantages of different elements of the security sector, such as

- police, border guards, military units, etc.?
- How can collaboration between national and international security and health services be institutionalized, and lessons learned and translated into better practices?
- How can security institutions be used most effectively in supporting and aiding the health interests of individuals, combating health threats and strengthening public and civilian institutions' capacities to provide better health services in the future?

Based on these more general questions, some more precise research questions guided this study.

- What are the main challenges created by Ebola and similar (or worse) health threats?
- What are potential global health threats in the future? What impact could they have on security and stability?
- What are the roles and capacities of the national and international health sectors?
- What are the premises for, and roles of, the national and international security sectors?
- What are the main human security and traditional security implications of health crises? Is there a need for security sector involvement?

In the remainder of this chapter we focus our research on lessons learned and suggested roles for various security sector actors: the armed forces, intelligence services, police forces, border control and local security actors. Further lessons are drawn from the involvement of other international actors and instruments. Subsequently we look at the implications of cross-sectoral activities for institutional and legal frameworks, and analyse what new demands might be placed on these frameworks. We also examine opportunities for constructive cooperation between health and security sectors concerning training, simulations and early warning, and derive implications and requirements for ongoing or anticipated security sector reform (SSR) activities. Moreover, we suggest a number of priorities for evolving thinking and preparations for health security crises beyond Ebola. We elaborate on how the above-listed security sector actors can prepare for future health crises and potential epidemics. Finally, we offer

preliminary conclusions based on the contributions in this volume, followed by recommendations for improved future responses to health crises.

The nature of global health threats - observations

In this section we look at the main challenges created by Ebola. It is very likely that potential future health threats will exceed the impact of the Ebola crisis. These include threats from zoonoses,²³ antimicrobial-resistant organisms and influenza; re-emerging and new infectious diseases; and threats originating from chemical events, man-made events and non-communicable diseases (NCDs). Risk factors that could exacerbate the threat of health crises include armed conflict, state fragility, structural poverty, weak public health infrastructures, proliferation of illegal substances, the absence of reliable information, poor understanding of the interlinkages between health and security, and the fallacy of contained security risks. An analysis of the roles and capacities of the national and international health sectors in addressing such crises points to the need for improving these capacities, including preparedness and coordination, as well as the need to strengthen the WHO and the IHRs. In this section we look at current issues in the global and national health sectors that influenced the response to the EVD outbreak. Moreover, we consider the role of the security sector in health crises, including the need to invest in building trust, address reputational issues, carry out context-specific training and achieve compliance with international human rights law (IHRL). The section concludes with an evaluation of the necessity for security sector involvement in health crises, citing positive examples of the sector's roles in non-traditional security provision.

Challenges created by Ebola and similar (or worse) health threats

Challenges created by Ebola

The impact of the Ebola crisis was not anticipated. Planning and coordination of national and regional responses were slow. The epidemic affected all aspects of life and strata of society. It had negative impacts on social

stability, development, security and political stability both within affected countries and across borders and beyond the continent. As the US National Academy of Medicine put it, "The Ebola epidemic was both a tragedy and a wake-up call. The outbreak revealed deficiencies in almost every aspect of global defences against potential pandemics."²⁴ The epidemic posed a significant challenge to the international response due to various factors, including fear; deficiencies in information and communication; distrust of authorities; cultural, spiritual and anthropological dimensions; lack of financial resources; absence of material and human resources; slow speed of the response; and a lack of infrastructure. Moreover, the outbreak had consequences that further challenged the response, including knock-on effects for other health issues and implications for socio-economic development.

Recognizing, managing and responding to fear form one of the biggest challenges in a health crisis. Fear motivates the actions of the affected community and also the nature and extent of assistance provided by responders in all sectors and at all levels.²⁵ Aid workers, front-line health staff, laboratory health workers, transport staff and humanitarian workers feared for their safety and were understandably reluctant to engage with infected patients. In some cases health centres refused to accept patients with fever, or else treated all fever cases as Ebola. Moreover, fear of infection deterred people from accessing health services. Health teams from the African Union (AU) reported that when they collected and analysed samples from morgues, they found that only about a fifth of the deceased had died as a result of EVD. Many others with potentially curable conditions were left to die as suspected Ebola cases. In addition, the sight of mask-wearing foreign health workers and security forces intimidated residents in remote areas and gave a poor first impression. Indeed, the arrival of foreign medical teams sparked violent clashes near MSF installations in Macenta, Guinea.²⁶ The media contributed to this "demonization" of the disease. The fear factor must be addressed by ensuring that the response includes explaining the issues, the nature of the threats and the essential measures required to prevent the spread of infection to the general population.

Linked to this, a *lack of information*, incomplete information, misinformation and shortcomings in the transmission of information were highlighted as major challenges in the fight against Ebola.²⁷ Domestically owned and controlled communication channels were weak.²⁸ From the outset there was limited information about the continuing infectiousness of individuals who recovered from EVD. However, the provision of relevant information and the choice of communication media are crucial before, during and after an outbreak. Local awareness is essential to determine which communication media should be used for information and sensitization campaigns. For example, in rural parts of the affected countries with little access to electricity, radio is much more effective than television. Language poses an additional obstacle that must be overcome to disseminate information. In the case of Guinea, the demand for francophone personnel was a complicating factor.²⁹

A deep historical *distrust of officials and civilian and military authorities* was reported in Guinea, Liberia and Sierra Leone. Healthcare workers were also considered untrustworthy. Distrust is one consequence of the aforementioned informational vacuum, but there are other causes, too. In Sierra Leone the pervasive lack of trust in the state's executive and health workers was fuelled by the manner in which the outbreak was initially approached. Inaction, finger pointing and continuous calls for funds raised fears that the pandemic was used as a means to promote different protagonists' political agendas.³⁰ Consequently, even disinterested proposals aimed at keeping Ebola at bay were interpreted as political ploys or part of a government conspiracy.³¹ A study conducted by Kamradt-Scott et al. confirmed that "mistrust extended to the highest levels of government in Liberia and Sierra Leone". Interestingly, however, the authors highlighted that the armed forces were perceived as the "only trustworthy part of government"³² (more so than the Sierra Leone Police³³).

Cultural, spiritual and anthropological considerations further hindered the response. These included a lack of knowledge about health sciences and the staunch retention of rites, rituals, cultural beliefs and traditional practices. Poor understanding of these community beliefs had severe consequences for health personnel, security personnel and the communities themselves.³⁴

For instance, traditional washings and burial rites caused infection rates to skyrocket.³⁵ Despite the risk of infection, the ban on performing these rites caused public anger and misunderstanding.³⁶ The role of traditional healers also posed a problem, as they were the first port of call for many patients in rural areas. Patients only admitted themselves to a hospital as a last resort. Surviving family members, and those who were infected but recovered, were widely stigmatized and often socially ostracized. In general, community involvement was neither solicited nor considered at the start of the epidemic.³⁷ As community involvement is an essential ingredient of local ownership, its absence made it more difficult to elicit buy-in from local communities.

A lack of immediately available financial resources for prevention and response needs was highly problematic. At the beginning of the outbreak, funds for immediate countermeasures were limited. Despite the reality that a pandemic can kill as many people as a devastating war, “the resources committed to pandemic prevention and response are a fraction of the resources we commit to security”.³⁸ According to the US National Academy of Medicine, global military spending amounted to more than US\$2 trillion in 2015, whereas health systems in all the affected countries were systematically weak and underfunded.³⁹ Initially, without governmental or international subsidies, the majority of local communities in the affected countries could not afford the medical treatment provided by private hospitals. Infected patients turned to traditional healers or small chemists, thereby exposing other people to the risk of transmission.⁴⁰ As the outbreak unfolded, the amounts of resources provided increased rapidly, but their utility would have been greater had they been offered at an earlier stage.

This patently requires better financing arrangements to cover the up-front costs of crisis preparedness. Regional bodies and development banks need to play a role in this, as the costs of preparedness do not fall into the regular financing channels of emergencies, humanitarian assistance and development. Notably, provision of financial resources without proper guidelines might fuel corruption and misappropriation of resources.⁴¹ According to Sovula, financial aid sent directly to Sierra Leone’s Health Ministry by international agencies and donors could not be accounted

for and had presumably been misused.⁴² This negatively affected the population in at least two ways: first, they received a smaller amount of financial support due to the unjust enrichment of officials; and second, once international donors and foreign taxpayers were aware of the corruption, they were less inclined to donate additional funds. As the Harvard-LSHTM Independent Panel on the Global Response to Ebola highlighted, “transparency of financial flows is crucial to minimise duplication, to ensure aid goes to areas of most need rather than those easiest to assist, and to ward against mismanagement”.⁴³

The systematic *failure to stockpile material and human resources* posed a further challenge in the response.⁴⁴ States were reluctant to provide stocks of medical and laboratory supplies and the equipment needed to move and protect health workers. Consequently, healthcare facilities in the affected countries often did not have access to adequate equipment and protective gear, and health workers exposed themselves to a high risk of infection by treating patients. The lack or absence of trained human resources was most evident in the health sector. In Sierra Leone neither specialists nor assistants had first-hand experience with EVD: for instance, the technical know-how for the set-up and maintenance of quarantine rooms had to be imported.

The *slow speed of the response* undermined its initial effectiveness. The first 90 days of the response to a health crisis are crucial.⁴⁵ Response preparedness requires having networks in place before the outbreak of a crisis, including a pool of multidisciplinary experts and an emergency fund.⁴⁶ According to Moon et al., the delayed reaction of the WHO was part of an inherent risk “in vesting such consequential decision making power in a single individual”.⁴⁷ Furthermore, according to the WHO Ebola Interim Assessment Panel, which outlined several reasons for the delayed international response,⁴⁸ the WHO was hesitant to react due to the relatively rash decision taken in June 2009 to declare the H1N1 (“swine flu”) pandemic a PHEIC.⁴⁹ The declaration set a precedent, because the severity of the disease was no longer the key criterion; rather, the fact that it involved “the swift and worldwide spread of a new virus against which the population is not immune” was the decisive factor. Subsequently, expensive measures

such as the production of vaccines and mass vaccination campaigns were initiated worldwide. A range of countries hastily acquired large stockpiles of medicines that were not used. As a consequence, people's trust in state and WHO responses to disease outbreaks declined.⁵⁰

The *lack of infrastructure* in the most affected states further affected the speed, and therefore the efficacy, of the international response. Access to remote villages and communities was often insufficient. This was reflected in a relatively delayed response to reported transmissions, which gave the virus the necessary time to spread. Severe deficiencies in healthcare facilities were highlighted by the Ebola outbreaks in Côte d'Ivoire, Guinea, Liberia and Sierra Leone. Countries emerging from years of civil war, such as Sierra Leone and Liberia, were still in the process of rebuilding nationwide healthcare systems,⁵¹ hence the few healthcare facilities that did exist, including laboratories and isolation centres, were poorly equipped and far removed from attaining WHO standards.⁵² Private facilities maintained better infection and prevention control, and provided higher-quality services, than government facilities.⁵³ Poor housing infrastructure, especially in the townships of larger cities, further complicated the containment of the outbreak. Maintaining hygiene in overcrowded dwellings without proper sanitary or water facilities, coupled with the absence of a waste disposal system, facilitated the spread of the virus.

The *porous nature of the borders* between Guinea, Liberia and Sierra Leone posed another key challenge to the response. A high frequency of daily border crossings and weak border control infrastructure made it impossible to keep track of people's movements. Cross-border infection accounted for a large share of the total casualties. Given the porous borders, even if one country succeeded in limiting the number of newly infected, its efforts were useless if neighbouring countries experienced an increase in the number of infections.⁵⁴

With such complexity surrounding the multiple sources and infection control requirements of the EVD outbreak, the *confused organization and coordination of the response* were an ongoing and significant challenge.⁵⁵ The absence of local response structures on the ground and the presence

of myriad national and international actors with different mandates hampered meaningful cooperation, coordination and harmonization.

The epidemic also had *knock-on effects* for other health issues and *implications for socio-economic development*. Health crises affect many other health issues, as human and financial resources are drawn into addressing the emergency and away from other continuing health needs. Ongoing implications beyond the cases of Ebola were observed in the affected countries, with evidence of higher mortality and morbidity from non-Ebola causes, including malaria and NCDs, as people sought treatment for fever at local pharmacies.⁵⁶ An increase in maternal mortality was also registered, with women preferring to give birth at home. Some medical centres were overwhelmed and had to turn away patients with serious illnesses. The influx of NGOs and other responder organizations had an unintended “eviction” or “crowding-out” effect, in that it drew nurses and doctors away from regular services. In addition, a range of post-recovery health problems has begun to emerge, including a widely reported side effect of damaged eyesight. Ebola affected socio-economic development, demonstrating how an epidemic can reverse hard-won development gains.⁵⁷ The World Bank (International Bank for Reconstruction and Development) estimated in April 2015 that Côte d’Ivoire, Guinea and Sierra Leone would lose at least a combined US\$2.2 billion in forgone economic growth in 2015 as a result of the epidemic.⁵⁸ In one longer-term effect it was reported that the EVD outbreak disrupted the entire educational system in various regions: classes were cancelled, teachers left and schools were closed.⁵⁹ In less affected areas, students of affected families were barred from attending lessons or in some cases dropped out of school.

Potential future global health threats

As devastating as the Ebola epidemic was in West Africa, worse scenarios could (and therefore should) be envisaged. Worst-case scenarios include circumstances in which Ebola occurs in combination with another threat to international peace and security – for instance, it could gain a foothold in countries or provinces with ongoing military conflict. This would make

a response exceptionally difficult and exacerbate the mortality, degree of geographical spread and disruption caused to societies.⁶⁰ Potential future health threats are posed by zoonoses, antimicrobial resistance (AMR) and influenza; re-emerging and new infectious diseases and other factors, including chemical and man-made events; NCDs; and unknown health threats.

As a result of climate change and global warming, *threats from zoonoses, antimicrobial-resistant organisms and influenza* are expected to increase globally. Viral zoonoses include rabies, avian influenza, Crimean-Congo haemorrhagic fever, Rift Valley fever and Ebola.⁶¹ Beyond the negative consequences for public health, “many of the major zoonotic diseases prevent the efficient production of food of animal origin” and can have a severe impact on the security of food supply.⁶² In addition, as microbial species evolve faster than humans, AMR becomes an ever-growing challenge.⁶³ According to the WHO, AMR “is putting the gains of the Millennium Development Goals [MDGs] at risk and endangers achievement of the Sustainable Development Goals [SDGs]”,⁶⁴ hence the WHO urged all countries to adopt national action plans on AMR. Further, the leaders of the G20 noted in the declaration after their summit on 7–8 July 2017 in Hamburg that “AMR represents a growing threat to public health and economic growth”.⁶⁵ Based on the WHO “One Health” approach, implementation of these national action plans should be “well under way by the end of 2018”. Concurrently, the G20 leaders want to “further examine practical market incentive options” to promote “affordable and quality antimicrobials, vaccines and diagnostics”, in collaboration with relevant experts, including from the OECD (Organisation for Economic Co-operation and Development) and the WHO.⁶⁶

Influenza virus infections are also likely to pose significant health threats in the future. Three types of flu virus infections can occur: seasonal, pandemic and zoonotic or variant influenza.⁶⁷ Seasonal influenza is the most common type, and “tends to occur seasonally in the winter months”. It causes mild to severe illness, but rarely results in deaths of high-risk individuals, such as the very young, elderly or immune-compromised individuals.⁶⁸ Pandemic influenza occurs “when an influenza virus which was

not previously circulating among humans and to which most people do not have immunity emerges and transmits among humans”.⁶⁹ The best-known pandemic was the Spanish Flu in 1918–1919, which caused approximately 20–50 million deaths worldwide. The outbreak of H1N1 influenza in 2009 is seen by experts as the most recent example of a pandemic influenza – so far.⁷⁰ The WHO explains that “Humans can also be infected with influenza viruses that are routinely circulating in animals, such as avian influenza virus subtypes ... and swine influenza virus subtypes”.⁷¹

Re-emerging and new infectious diseases will pose significant future threats to global health, as highlighted by the presence of the Zika virus in Brazil, Middle East respiratory syndrome coronavirus (MERS-CoV) in a number of countries and the more recent outbreak of cholera in Yemen. The threat of re-emerging infectious diseases should not be ignored.⁷² Appropriate capabilities for surveillance and prevention of and response to diseases such as Marburg haemorrhagic fever, Lassa fever, etc. should be assured, given their danger to public health, peace and security. Food-borne and waterborne diseases (e.g. hepatitis A and E, typhoid fever) and vector-borne diseases (malaria, dengue fever, yellow fever, the plague, Zika virus, etc.) should also remain under close observation.⁷³ The re-emergence of the Zika virus highlights this point. Identified in Uganda in 1947, the first large outbreak occurred on the island of Yap (Federated States of Micronesia) in 2007. In 2015 Brazil reported to the WHO “an association between Zika virus infection and Guillain-Barré syndrome”, as well as between Zika and microcephaly.⁷⁴ On 1 February 2016 the WHO director-general designated the “cluster of microcephaly cases and other neurological disorders” a PHEIC.⁷⁵ So far, 84 countries, territories or subnational areas have provided evidence of Zika virus transmission.⁷⁶ The outbreak of new (airborne) infectious diseases with a high fatality rate, such as MERS-CoV, is a further threat that remains likely in future. First discovered in Saudi Arabia in September 2012, MERS-CoV has been reported in 27 countries since then. More than 2,000 laboratory-confirmed cases of infection and at least 712 deaths related to MERS-CoV have been notified to the WHO.⁷⁷ The largest share of human cases, approximately 80 per cent, has been recorded in the Kingdom of Saudi Arabia.⁷⁸ High-income countries were affected: the United

Arab Emirates and the Republic of Korea were confronted with large-scale outbreaks.⁷⁹ Moreover, the ongoing conflict in Yemen has led to the rapid spread of cholera: “an acute enteric infection caused by the ingestion of bacterium *Vibrio cholera* present in faecally-contaminated water or food”.⁸⁰ On 24 June 2017 the UN International Children’s Emergency Fund (UNICEF) and the WHO announced that the number of suspected cases exceeded 200,000. Only 16 days later the International Committee of the Red Cross (ICRC) reported that “over 313,000 people are suspected to be ill with cholera”.⁸¹

Other potential health threats include *chemical and man-made events*, as well as *NCDs* and other as-yet-unknown risks. This is highlighted by the fact that the IHRs cover not only infectious diseases but also chemical and radiological events, which may require even more security sector involvement. As opposed to natural or accidental events, most of these threats can be man-made, intentional events. The potential consequences of people deploying biological or chemical weapons, be they state or non-state actors, are particularly worrying.⁸² In addition, NCDs pose a significant challenge to global health and account for 70 per cent of all deaths worldwide.⁸³ The main types of NCDs are cardiovascular diseases (e.g. heart attacks), cancers, respiratory diseases and diabetes. With an ageing population, especially in developed economies, the focus of public health discussions often shifts towards NCDs. However, while they are a major challenge, the potential of NCDs for destabilizing societies is comparatively small.⁸⁴

Furthermore, currently unknown factors may threaten global health security. This requires the intelligence competence of security services and the health sector’s competence in prevention and treatment of illnesses to be brought together. Despite the unknown specific nature of future health threats, it is possible to categorize them into a limited number of groups. Defining these typologies should make it possible to “limit the unknown” and plan for response scenarios that can quickly adjust to unfolding events. Such response scenarios must recognize that context is a critical factor, and experiences in one place cannot become an automatic template for response in another. Countries or regions with increased potential for

health crises can be identified, in the same way that terrorism threats have been analysed. Drawing on this parallel, it is clear that not every threat can be identified in advance. Still, risk assessment and response can provide for a substantial level of containment.

Potential risk factors and their impact on security and stability

In addition to direct threats, an entire range of “accelerators” facilitate or catalyse the emergence and spread of health risks. For instance, air pollution is a problem and an accelerator of ill health, particularly in large cities. With increasing portions of the population living in urban areas, the impact on health is growing quickly. According to the UN Secretary-General’s report on the progress towards the SDGs, “Indoor and ambient air pollution is the greatest environmental health risk” and led to an estimated 7.3 million deaths in 2012.⁸⁵ Climate change is often misidentified as non-threatening to health: the connection between climate change and resulting environmental disasters, as well as negative health implications, is not widely accepted as problematic. Nevertheless, there are acute environmental dangers for health emanating from natural disasters. Many national health systems are not prepared for and cannot react to these threats.⁸⁶ Moreover, globalization and its increasing volumes of trade and growing mobility are additional risk factors that can contribute to the spread of communicable diseases, especially airborne ones.⁸⁷ Similarly, urbanization and the growing densely populated urban areas increase the likelihood of communicable disease transmission.⁸⁸ Large urban centres “can be incubators for new epidemics, and zoonotic diseases can spread in a more rapid manner and become worldwide threats”.⁸⁹ The outbreak of severe acute respiratory syndrome (SARS), which lasted from 2002 until 2003, exposed the vulnerabilities of large cities to this type of threat.

Armed conflict constitutes a further risk factor, and notably one to which the health community does not devote enough attention. The most advanced health security strategies cannot be implemented in conflict situations, highlighting that health security is threatened during armed conflict. Moreover, armed conflicts can cause displacement and long-

lasting psychosocial wounds, internal and cross-border migration, and cross-border spillover. They can further contribute to regional and global instability, and destroy already inadequate health infrastructure. The recent cholera outbreak in Yemen, with more than 1 million suspected cases by the end of January 2018, demonstrates the destructive effects of civil war on public health.⁹⁰ According to UN agencies, the cholera outbreak “is the direct consequence of the civil war, with 14.5 million people cut off from regular access to clean water and sanitation”.⁹¹ Similarly, the *fragility of a state* tends to be a risk factor in health crises: if a crisis occurs in a fragile state, health security can rapidly become a matter of national security. For instance, Kargbo highlights that sociological and cultural divisions along ethnic lines are reflected in the composition of the military forces, which has a direct impact on their behaviour towards different tribal and ethnic groups. Given these circumstances, the construction of Ebola treatment centres was accomplished in a shorter period in some communities but took longer in others.⁹²

Armed conflicts and fragile states result in high numbers of internally displaced persons (IDPs), migrants and refugees. In several host countries these vulnerable populations do not have access to healthcare. This is problematic, as it may allow previously managed illnesses to break out again.⁹³ G20 leaders affirmed that the “mass movement of people can pose significant health challenges”. Moreover, they “encourage countries and International Organisations to strengthen cooperation on the topic”.⁹⁴ In addition, *structural poverty* is both a cause and a consequence of health threats such as lack of access to clean water and sanitation, which in turn increase the likelihood and spread of infectious diseases. Endemic poverty means that health security is both a security and a development challenge. During the Ebola crisis in West Africa, endemic poverty was one of the main accelerators of the pandemic.⁹⁵ In line with this, *weak public health infrastructures* are characterized by inadequate access to medicines, insufficient resources for healthcare provision and lack of flexibility to adapt to emerging health challenges. This greatly increases the likelihood and intensifies the impact of emerging health crises.⁹⁶ Moreover, weak public health infrastructures impede universal health coverage. Lack

of access to medicines and increasing costs of high-precision drugs contribute to a growing gap in public health capacities within societies.⁹⁷ The collapse of routine health services in Guinea, Liberia and Sierra Leone was a result of the EVD outbreak, and is a crucial and immediate concern for all three countries in improving their health systems.⁹⁸ Countries must work towards universal health coverage by focusing on improvements in service delivery; the health workforce; information; medical products, vaccines and technologies; financing; and governance.⁹⁹ Short-, medium- and long-term strategies are crucial to develop the competencies required for this, including a focus on high-impact health workers who are able to work in rural areas.¹⁰⁰

Proliferation of illegal substances, the absence of reliable information and poor understanding of the interlinkages between health and security represent further risk factors. The illicit trade in and use of counterfeit drugs, ineffective drugs and public health hazard goods can be a threat to individual health. They may also pose a security threat to society and the stability of a country overall, given the link to organized crime. They weaken national health systems and reduce a nation's ability to respond to potential epidemics.¹⁰¹ Meanwhile, the absence of reliable information and (big) data on mega-trends of health and related (human) security threats makes it difficult to prepare properly for future health crises. Producing solid mega-trends would help to devise realistic scenarios, which in turn would assist in developing useful prevention strategies. Moreover, the relatively poor understanding of the interlinkages between security and health often leads to undue politicization, securitization and militarization of health issues. This occurred during the Ebola crisis. The MDGs positioned health development and health security as juxtaposed goals, and a consequent deflection of funds from the development domain to the security domain was feared. This linking of global health with national security sends out destructive and counterproductive messages, which might prevent constructive collaboration of health and security sector actors in managing existing and escalating health crises.¹⁰²

A further risk factor is the so-called *fallacy of contained security risks*. This assumption that security risks – including health threats – can be

contained and overcome has often been proven wrong. Once a security risk has been minimized, constant investments in mitigation and prevention are required to reduce the risk of renewed escalation. Furthermore, an “all hazards” approach, which includes the spectrum of natural, accidental and intentional events that can cause health crises and create different kinds of roles for security services, should be factored into the discussions. The SDGs are to be implemented and achieved over a period of 15 years from 2015 to 2030. Both threats and responses will change during this time, as will the factors conditioning the evolution of threats and responses. Without constant close attention to both the nature of threats and the quality of responses, the latter will be inadequate in addressing the former.

Roles and capacities of the health sector in health crises

Disease outbreaks are the foundation of public health.¹⁰³ In public health epidemiology, an “outbreak” is an occurrence of disease greater than expected, at a particular time and place, affecting a small and localized group. Outbreaks can lead to “epidemics” across a region in a country or a group of countries, or they can lead to “pandemics”, which is the term used to describe global disease outbreaks. Public health has developed a systematic way of investigating and responding to disease outbreaks. Firstly, the diagnosis related to the outbreak must be verified, the spread and pattern of the outbreak mapped, and the source and modes of transmission verified. In many countries there are legislative acts (public health law), public health institutions (such as centres for disease control or national institutes of public health) and a clear set of procedures on how to respond in the face of an outbreak. However, in many developing countries such expertise and infrastructure are not in place.

Lacking capacities: Preparedness, coordination and national health sectors

Preparedness of the health sector to allow rapid identification and control of an outbreak is crucial. In line with this, many countries have established national disease surveillance systems; increasingly, modern

communication technology plays a critical role in identifying and monitoring outbreaks. Using such mechanisms, public health actors aim to predict the spread of diseases, observe their progress throughout society and minimize the harm caused by response mechanisms. Some reporting is mandatory; for instance, the US Centers for Disease Control and Prevention (CDC) National Notifiable Disease Surveillance System is a nationwide collaboration that enables all levels of public health (local, state, territorial, federal and international) to share health information. This allows them to monitor, control and prevent the occurrence and spread of state-reportable and nationally notifiable infectious diseases and some non-infectious conditions. Public health law prescribes which diseases and conditions are defined as nationally notifiable. In the USA, for instance, about 80 infectious diseases are currently included in this list. Many countries have also developed strategic plans for preparedness for and response to biological and chemical terrorism as well as infectious diseases.

Most states follow the WHO guidelines for epidemic preparedness and response that have been developed for different disease outbreaks. The model actions to be taken are the same: enforce preparedness and implementation plans, have the capacity for rapid public health assessments, move to rapid interventions in high-risk areas and (depending on the disease) take measures to reduce the spread. Here, information on the disease and its incubation, period of communicability and other characteristics is crucial. Community engagement, continued monitoring and data collection throughout (including tracing the source of infection), ensuring coordination of the many stakeholders and detailing an exit strategy are paramount.

Notably, this ideal description of steps may not be implemented smoothly in highly volatile environments. The countries most affected by the recent Ebola outbreak had severe deficiencies in all these capacities. For instance, societal distrust in Guinea led to misleading data on the scale of the outbreak, as many patients did not seek medical treatment. Furthermore, the Guinean government refused to collect data on suspected Ebola cases and only announced confirmed cases, in an effort to assure expatriate workers in the mining industry that the crisis was under control.¹⁰⁴

It seems evident that inaccurate data collection would hinder the response. Guinea, Liberia and Sierra Leone did not have sufficient numbers of public health professionals willing and able to take on the immense challenge at hand, and also lacked well-established health systems able to care for the high number of patients. Hospitals were overwhelmed by the number of Ebola patients, and consequently people affected by other diseases, such as malaria, were neglected. In Guinea, for example, HIV testing decreased by 40 per cent.¹⁰⁵ Thus both a functioning healthcare system and a viable public health system must exist to allow rapid and effective response to disease outbreaks.

Moreover, international coordination of emergency preparedness and response is increasingly important. Many countries have developed a clear set of procedures on how to respond nationally in the face of an emergency - be it a natural or man-made disaster or an outbreak of disease. Increasingly, such preparedness and response planning activities take place in the context of cross-border threats to health and will include, for example, rules for shipping and airports. This is where the IHRs, supported by a range of other mechanisms such as the WHO Global Outbreak Alert and Response Network (GOARN), become critical.

The Ebola outbreak overwhelmed national health systems and exceeded the ability of health workers to curb its spread. Deficiencies in medical products, equipment, personnel and beds in Ebola treatment units (ETUs), combined with complex identification of active cases and the slow response to the problem, exacerbated the spread. Consequently, national governments deployed security forces to support the respective health ministries in curbing the epidemic. It was evident that "too many [countries] have failed to build the necessary capabilities and infrastructure".¹⁰⁶ A lack of sufficient ambulances and treatment centres had a negative impact on the speed of the response at the beginning of the outbreak. Ambulances had to be procured and/or refitted to accommodate Ebola victims.¹⁰⁷ The general public protested vigorously about the fact that regular patients and Ebola patients had to visit the same facilities for non-Ebola-related medical assistance.¹⁰⁸ This put the uninfected population at higher risk.

To improve preparedness and capacities of national health systems to tackle future disease outbreaks, better mechanisms to accelerate the provision of critical materials, such as drugs and vaccines, are required. Advance stockpiling might be another solution. In addition, procedures should be agreed upon to accelerate the development of candidate drugs and vaccines and move them into clinical trials when new treatments are needed. Routine mapping of services available on the ground (personnel, facilities and capacities) would facilitate the logistics of adequate health crisis response. This is especially the case if it is linked to procedures put in place for crisis preparedness, including the mapping and assessment of risks.

Much attention is currently being devoted to universal health coverage and the need to build health system capacities, especially in fragile states that are particularly vulnerable to health crises. Beyond this, public health systems must be strengthened to increase preparedness. This requires attention to funding at the international level, where global governance and priorities need to include public health, and at the national level, where budget allocations for military technologies and hardware significantly exceed those for disease prevention technologies and processes. For instance, concern about a potential bioterrorism attack in the USA increased after 9/11, so the US CDC established a biowarfare unit and billions of dollars were made available for preparedness against bioterrorism attacks. In the meantime, essential public health infrastructures continued to be neglected.¹⁰⁹ Arguably, primary responsibility for strengthening health systems in post-conflict and fragile states lies with national governments. Adequate resources must be invested in health systems and progress demonstrated over time to ensure accountability for national and donor resources.

Roles and capacities of organizations and instruments: The WHO and the IHRs

In recent years the WHO has been under increasing pressure to devote more resources to combating NCDs. However, the Ebola outbreak emphasized that the organization must rethink its efforts and allocation

of resources for infectious diseases. Arguably, the WHO director-general played an important role in speaking with heads of state to help motivate strong national responses.¹¹⁰ Existing limitations of available experts and resources in cases of emergency had already led the WHO to establish GOARN in 2000.¹¹¹ As an independent body, GOARN consists of a pool of professionals and experts from more than 150 institutions in different parts of the world. The WHO can draw on it for human resources and expertise in the case of a PHEIC.¹¹² GOARN focuses on technical and operational resources from scientific institutions in member states, medical and surveillance initiatives, regional technical networks, networks of laboratories, UN organizations (e.g. UNICEF and the UN High Commissioner for Refugees), the Red Cross (the ICRC, International Federation of Red Cross and Red Crescent Societies and national societies) and international humanitarian NGOs (e.g. MSF, International Rescue Committee, Merlin and Epicentre). The WHO established its “Guiding Principles for International Outbreak Alert and Response” and operational protocols to standardize epidemiological, laboratory, clinical management, research, logistics support, security, evacuation and communications systems.¹¹³ Aspects of global health security were also considered in the establishment of GOARN.¹¹⁴ According to Kamradt-Scott et al., the WHO responded appropriately to the outbreak in March 2014 by immediately deploying GOARN teams.¹¹⁵ Despite this, its later response was subject to widespread criticism and damaged the organization’s reputation.¹¹⁶ The WHO’s former executive director for communicable diseases, David Heymann, argued that the WHO did not take sufficient action: “For some reason, after the initial response was made, GOARN and the partners, including the Centers for Disease Control and Prevention in the USA, thought there was no longer a concern and so they left. Normally, what GOARN does is wait until they’ve been able to verify for two full incubation periods, a time period of in this case 42 days.”¹¹⁷ This did not occur in Guinea, where the WHO and GOARN failed to realize the severity of the Ebola threat. According to Kamradt-Scott et al., the WHO’s failure to respond swiftly “was often cited as a reason why a stronger UN response was needed” – in the form of UNMEER.¹¹⁸ The establishment of a separate body to oversee the response

instead of the WHO is a damning indictment of its capacities.

In addition to GOARN, the WHO revised its key mechanism for global disease preparedness and response, the IHRs, in 2005.¹¹⁹ To date, 196 countries have agreed to implement this binding instrument of international law, which entered into force on 15 June 2007. However, full implementation has been regularly postponed – most recently at the World Health Assembly in 2014. The IHRs are not limited specifically to disease outbreaks but rather focus on all threats to health. The main aim is “to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade”. Crucially, the IHRs require states to take greater responsibility for managing disease threats within their borders, as well as to strengthen core surveillance and response capacities at points of entry and exit.¹²⁰ The regulations further introduce a series of health documents, including ship sanitation certificates and an international certificate of vaccination or prophylaxis for travellers. Notably, the IHRs are framed in terms of “health security”.¹²¹ This concept has been defined as “The activities required, both proactive and reactive, to minimise vulnerability to acute public health events that endanger the collective health of populations living across geographical regions and international boundaries.”¹²² Activities that are “proactive and reactive”, such as disease surveillance (the monitoring of new and spreading diseases through information sharing at local, national, regional and global levels of public health) and preparedness (planning for health emergencies to react quickly and effectively), were thus (re-) emphasized in the IHRs.

The procedure for consideration and declaration of a PHEIC by the WHO director-general is embedded in the IHRs themselves;¹²³ in the case of the Ebola epidemic this occurred in August 2014. The declaration does little in practice to trigger immediate positive responses, as the WHO itself has very limited resources and other agents must react. What was most problematic about the IHRs with reference to EVD is that it was handled differently than outbreaks of smallpox, polio or new influenza subviruses. Such outbreaks require automatic notification to the WHO, while EVD was

subject to a triage mechanism that enabled officials to judge at which point the outbreak in question would require a higher-grade alert and thus warrant the declaration of a PHEIC.¹²⁴ As a result, the declaration was massively delayed. It further became evident that this declaration may have unintended negative consequences contrary to the aims of the IHRs. During the Ebola crisis this manifested itself when countries closed borders and airlines suspended routes, making it increasingly difficult to transport personnel and materials to the affected countries.

The WHO's lack of resources meant it was unable to respond to the crisis with the necessary speed and flexibility. It has been argued that the declaration of a PHEIC should trigger actions such as uptake by the UN Security Council and the release of World Bank funds, in addition to national-level responses.

Despite the widespread ratification of the IHRs, their implementation was limited. According to the US National Academy of Medicine, 67 per cent of WHO member states recognized in self-assessments that they failed to meet the requirements of the 2005 IHRs.¹²⁵ For instance, as calls mounted to close borders, restrict travel and quarantine individuals in the USA, recommendations were no longer followed.¹²⁶ In Canada a visa ban was imposed on all travellers from countries affected by EVD. This was seen by many as a violation of the IHRs, which stipulate that in a global public health emergency countries should not take actions that impede international trade or travel beyond those recommended by the WHO. Countries that do not honour the regulations can be named and asked to explain themselves, but beyond a political reprimand there are no sanctions that the WHO can levy.¹²⁷

Tellingly, no African country has reached full compliance with the WHO IHRs. In the countries affected by EVD, investments in health infrastructure were inadequate despite governments' commitment to allocate funding.¹²⁸ This is symptomatic of the broader contextual realities of West Africa, where many states fall within the category of "heavily indebted poor countries", and contributed to underfunded response capacities, including poor health infrastructure and humanitarian coping capacities and weak harmonization of national security doctrines with pandemic preparedness.

As a result, many countries remain highly vulnerable to public health risks, and this re-emphasizes the need to review, refocus and support the full implementation of the IHRs. This necessarily includes considering which other sectors and areas of expertise could be useful in trying to achieve the goals outlined in the regulations.

Current issues in the health sector

The Ebola epidemic highlighted that the health sector is in flux and facing a raft of challenges. One salient issue is the presence of *two classes of health workers*. At the beginning of the outbreak most health workers were hesitant about carrying out their duties because they had no knowledge about the virus. As a result, international staff were more likely to take the lead. After receiving training, however, local health workers (ambulance drivers, surveillance officers, port health officers, laboratory technicians) took control of treatment of the disease on the front line. Still, notable wage differences between international and local health personnel performing the same tasks side by side caused discontent. While international staff “sometimes received experimental therapies ... and were evacuated” if they were in a life-threatening condition, national staff did not by and large benefit from the same treatment.¹²⁹ The WHO contributed to this by making clear distinctions between Western and local health workers, and blocking the medical evacuation of several front-line clinicians in Sierra Leone.¹³⁰ Apart from its demoralizing effect, the distinction often became a matter of life and death. This was certainly the case for Dr Olivet Buck, a national physician who died from EVD in September 2014, whereas a British nurse, William Pooley, was evacuated for post-infection treatment and survived.¹³¹ Western health workers also benefited from treatment with the unlicensed drug ZMapp, which was not readily available for local patients in Guinea, Liberia and Sierra Leone. These vastly different outcomes for local and international health workers further exacerbated distrust of foreign medical teams.¹³² Local volunteers also supported the multinational response, putting their lives at risk without any financial reward.

In addition, the *status of health as an area of global concern is in flux*. On the one hand, the transition from the MDGs to the SDGs in 2015 could be perceived as a loss of momentum. Three out of eight MDGs focused on health,¹³³ compared to only one out of 17 SDGs.¹³⁴ Despite this, health (including disease, foreign policy and security aspects) now features regularly in the deliberations of UN General Assembly and Security Council meetings.¹³⁵

Yet since the report of the UN Secretary-General's High-level Panel on Threats, Challenges and Change was published in 2004, health has increasingly been securitized. The report linked diseases to instability, and thus framed health as part of the security nexus.¹³⁶ A recent study published by the World Bank examined the health systems in Guinea, Liberia and Sierra Leone, and put forward recommendations to strengthen these systems in a post-Ebola context. With regard to the healthcare workforce, the study highlighted that rural areas experience the most capacity constraints and, at the same time, are home to the vast majority of the total population. The distribution of healthcare workers is therefore skewed, with a significantly higher proportion of health workers present in urban areas.¹³⁷ This must change, given that the biggest threat of infectious diseases is in rural areas.

The case for security sector involvement in health crises

This section evaluates whether the involvement of the security sector is necessary in health crises. It first outlines the means and processes that must be in place to allow the security sector to be involved in crisis response, and then draws on positive examples of the security sector assisting with non-traditional tasks.

Necessary involvement of the security sector

Ebola, Chikungunya and Marburg virus diseases, AMR and airborne superbugs may pose serious threats that can only be prevented and contained if their arrival or resurgence is anticipated. Means and processes

must be in place to react quickly and effectively. It is now widely accepted that the involvement of the security sector in complex health crises and emergency responses is becoming more relevant, frequent and necessary. Indeed, there is no option regarding the involvement of some sections of the security services from an early stage, because the police and border guards are already in position as a crisis evolves.

The nature and timing of security sector involvement in crisis response, geopolitical sensitivities and the dimensions of an intervention require clear guidelines. At present there is a lack of instruments to define the rules and the conditions under which they should apply,¹³⁸ although some argue that the necessary legal framework is already in place: the guidelines on the use of military and civil defence assets to support UN humanitarian activities in complex emergencies¹³⁹ and the Oslo Guidelines on the Use of Foreign Military and Civil Defence Assets in Disaster Relief.¹⁴⁰ The 1994 Oslo Guidelines regulate the use of military assets in support of humanitarian assistance, and list humanity, impartiality and neutrality as the core principles by which such assistance should be provided.¹⁴¹ The guidelines were updated and relaunched in 2007, but are non-binding. Further, they were not tailored for global health crises, but are limited to disaster relief and response. Thus a global health crisis, even if declared a PHEIC, does not fall within their scope of application. Moreover, engagement by humanitarian and health sector actors in major crises involving biological, chemical or radioactive elements is not sufficiently defined;¹⁴² and other components of the security sector (police, border guards, local militia, etc.) are disregarded. Thus relevant instruments are lacking.

Despite this, some authors admit that if national armed forces are overwhelmed by a given situation, the deployment of foreign armed forces can be envisaged as a last resort.¹⁴³ Military engagement in some contexts of humanitarian crises is vital, given the military's superior logistical capacity. In fragile countries with poor infrastructure, the armed forces are often the only state actor able to react effectively within a short timeframe.¹⁴⁴ Regarding security sector actors in general, these authors assert the sector's key role in health emergencies; and when it comes to PHEICs involving chemical and biological agents, security sector involvement becomes even

more critical. Within the framework of the International Organization for Migration (IOM) Health, Border and Mobility Management programme, the engagement of security stakeholders and border officials is inevitable.¹⁴⁵

Positive examples of security sector involvement in non-traditional tasks

Some examples highlight successful security sector involvement in carrying out non-traditional tasks in health crisis responses. In Liberia, the rapid construction of ETUs outside the capital, Monrovia, was only made possible by the engineering capability of the armed forces.¹⁴⁶ In Nigeria the national armed forces contributed specific health-related expertise during the Ebola crisis in addition to security capacities. They were further helpful given their potential access to valuable technologies such as laser equipment for measuring body temperature at airports. In their assistance with logistics, Nigeria's armed forces could draw on the experience they gained during the roll-out of the polio programme.¹⁴⁷ A further positive example of the involvement of armed forces in non-traditional tasks is the support of Pakistan's army for an anti-polio campaign in 2015¹⁴⁸ along the border with Afghanistan. For this purpose, monthly meetings between border security forces and officials of the emergency operation centre were held. The use of Swiss armed forces in laboratory work is another example of non-traditional security tasks: during peak times of the H1N1 pandemic in 2009, the Swiss Federal Institute for Nuclear, Biological and Chemical Protection used the armed forces to test large numbers of samples within the stipulated maximum timeframe of 24 hours. This proved to be vital for getting through a heavy workload within a tight deadline.¹⁴⁹

In Sierra Leone the Republic of Sierra Leone Armed Forces (RSLAF) worked alongside public health personnel during the 2012 cholera outbreak, two years before the EVD crisis. The RSLAF's assistance in the fight against Ebola was thus not its first involvement in a health crisis.¹⁵⁰ Despite this, the RSLAF was only engaged in mid-2014 after the declaration of a state of emergency.¹⁵¹ Nevertheless, Mondeh argues that the military were instrumental in winning the war on Ebola,¹⁵² notably without the use of excessive force. Charley, reporting his observations of the Ebola response

in Sierra Leone, states that performance of the Sierra Leone Police (SLP) and the RSLAF in non-traditional roles during the crisis exceeded people's expectations. Notably, the SLP succeeded in upholding the rule of law in a sympathetic manner.¹⁵³

Sovula contrasts this appreciation with her own observations: she considers the Sierra Leonean security sector ill equipped and unprepared to deal with the outbreak.¹⁵⁴ Due to a lack of equipment and poor preparation, several security providers experienced casualties within their own ranks. Only the engagement of foreign armed forces (the British Army) succeeded in reducing the number of deaths.¹⁵⁵ Indeed, the importance of the UK's logistic contribution in Sierra Leone was highlighted.¹⁵⁶ Moreover, the logistical effort of the foreign armed forces was in accordance with the Oslo Guidelines, given its subsidiarity to the national armed forces and the international non-military response.¹⁵⁷ According to Addo, the multinational African Union Support to Ebola Outbreak in West Africa (ASEOWA) mission proved useful in combining civilian and military components, with each actor taking the lead in its respective area of expertise.¹⁵⁸

Thus the security sector's engagement in the Ebola crisis was crucial in facilitating a well-coordinated response.¹⁵⁹ During the outbreak, the presence of national armed forces in critical areas created a sense of safety and allowed both national and international health workers to concentrate fully on their patients without worrying about possible riots. It was reported that the deployment of troops also worked in several instances to prevent the exodus of international NGOs (INGOs).¹⁶⁰

Premises for and roles of the security sector in health crises

In the concept of human security, health threats are perceived as security threats and vice versa. Thus if the security sector is to play a role in health crises, its involvement must be premised on trust building, addressing reputational issues, context-specific training and compliance with IHRL. Based on these prerequisites, the security sector and its individual components could contribute crucial capabilities to responses to health crises.

Human security and a holistic approach to complex crises

In contrast to traditional notions of security focused on the primacy of the state, human security is focused on the individual, family and community as the objects of security. The Ebola outbreak demonstrated that it is not sufficient to deal with similar situations as a “health crisis” only. The US National Academy of Medicine affirms that “It is instructive to take pandemics out of the medical context and think about the threat as a national security issue.”¹⁶¹ The lines between a public health emergency and a humanitarian crisis have become blurred.¹⁶² To take account of challenges that transcend the health sector, the approach should be broadened to deal with a “crisis” in general. Instead of putting strategic and operational coordination into the hands of health sector professionals, national security systems and the cross-border coordination architecture should be activated.¹⁶³ Clearer processes are needed to determine thresholds and how they should operate as health and humanitarian crises escalate. Decisions have real-life implications for health, security and other sectors – for example, whether medical treatment should be enforced in the circumstances of a disease outbreak.

Furthermore, the West African EVD outbreak shows that the virus posed a serious threat to economic and political stability in the subregion.¹⁶⁴ This highlights the need for a holistic approach, drawing on capacities from different sectors, including the security sector. Health threats, political, economic or social threats, and actions that mitigate and respond to such threats require multifaceted responses by as many of a large number of diverse security providers as possible. Health threats are security threats and vice versa; thus they must be approached jointly.¹⁶⁵

The security sector, governance and reform

According to international practice:

It is generally accepted that the security sector includes defence, law enforcement, corrections, intelligence services and institutions responsible for border management,

customs and civil emergencies. Elements of the judicial sector responsible for the adjudication of cases of alleged criminal conduct and misuse of force are, in many instances, also included. Furthermore, the security sector includes actors that play a role in managing and overseeing the design and implementation of security, such as ministries, legislative bodies and civil society groups. Other non-state actors, which could be considered part of the security sector, include customary or informal authorities and private security services.¹⁶⁶

Good, democratic security sector governance (SSG) is lacking in many contexts, resulting in weak efficiency, effectiveness and accountability of security institutions. Achieving efficiency, effectiveness and accountability are key objectives of efforts to reform the security sector.¹⁶⁷ SSR “describes a process of assessment, review and implementation as well as monitoring and evaluation led by national authorities that has as its goal the enhancement of effective and accountable security for the State and its peoples without discrimination and with full respect for human rights and the rule of law”.¹⁶⁸

Declaring a threat to international peace and security requires a state to cede some of its responsibility for protecting its own citizens, and is thus a difficult political challenge. It is therefore important to define indicators that help determine the moment a health crisis becomes a general crisis affecting society as a whole. Attempting to separate health from security threats, and thus separating discourses and action on mitigation measures by health providers from those of security providers, potentially exacerbates the risk of national and global health crises.¹⁶⁹ There are no clear-cut boundaries between public health and chemical, biological, radiological and nuclear defence issues, either.¹⁷⁰ For instance, the response to and consequences of a biological event are very similar whether the event is caused naturally (e.g. infectious disease) or by deliberate release (e.g. biological weapons). Thus teams involved in the response to a crisis should include representatives from the security sector. A holistic approach bringing together public health and security actors is required.¹⁷¹

The Ebola outbreak has “blurred the line between civilian ... and security sector actors”.¹⁷² The process of revisiting “the global health security paradigm” has led scholars and practitioners to the conclusion that “global [health] security was too important to be left to the health sector alone”.¹⁷³ Kamradt-Scott et al. confirm that “civil military cooperation can prove decisive in responding to health-related humanitarian crises”.¹⁷⁴ Therefore, just as the prevention and management of health crises require the involvement and joint action of a multitude of governmental and non-governmental actors, all segments of the security sector are required to be prepared and get involved. How this can be accomplished depends on each individual context and case.

Premises for security sector involvement in health crises

It is clear that each security sector actor must be prepared to perform activities that are not part of its core activities to prevent or resolve challenges that appear on today’s human security agenda. This must be done as part, and often under the leadership, of a command structure that includes actors outside of the security sector as it is traditionally conceived. It is important to distinguish between the security sector’s different components and the different roles and responsibilities of each component, and classify the various non-traditional functions they perform.¹⁷⁵

Crucial premises for successful involvement include building trust between the security and health sectors, addressing reputational issues, providing context-specific training, compliance with IHRL and managing predictability and uniformity.

The *building of trust* between the security and health sectors in jointly addressing an infectious disease outbreak is crucial to success. This is because the holistic approach to health crises, which includes security sector involvement, can be viewed with suspicion by many in the public health field. Similarly, the debate on “securitization of health” has resurfaced,¹⁷⁶ calling into question the health sector’s dominance in responses to health crises.¹⁷⁷ Nonetheless, the complementary nature of the health and security sectors is helpful in approaching health crises. The

“new twenty-first century global health security paradigm” takes account of the two paradigms’ mutually beneficial contribution to an effective and efficient response.¹⁷⁸ Thus building trust between the health and security sectors is vital, and requires developing an ongoing basis for collaboration and the sensitization of each sector to the purpose and potential roles of the other. Down to the individual level, each actor should understand that “other sectors matter”.¹⁷⁹ Fears regarding security sector involvement, such as the usurpation of non-traditional security responses by the security sector and the danger of loss of competence in the security field, are prominent. Some critics fear that by widening the armed forces’ remit, its traditional mandate of protecting a country’s interest by (lethal) force might be diluted. These fears originate largely from an old-fashioned view of the role of the armed forces, and must be addressed to build trust. A modern conception of the armed forces must take into account their evolution into a role of performing military operations other than war.¹⁸⁰ During the Ebola outbreak the need for such operations was evident in the setting up and supervision of quarantined homes and treatment centres, in the enforcement of bylaws and health regulations, and in the surveillance of critical health infrastructure.

Addressing reputational issues of the security sector is crucial in ensuring effective involvement in health crises. While the security sector has important and constructive roles to play in the fight against epidemics, these can only be fully realized if the sector is trusted and respected. Its added value in countering health crises must be recognized by the population and other actors responding to such crises. Further, the security sector should ideally operate under full democratic control. A security sector that is feared or distrusted will not contribute successfully to the public health mission and its values, and might be counterproductive to epidemic control. For instance, one country strongly affected by the Ebola outbreak had a history of military involvement in enforced vaccination programmes. This left a mark on the local community and hindered the involvement of the security sector in the Ebola response. As this example shows, people’s expectations of the involvement of a given security actor are strongly linked to prior experiences with this actor. Furthermore, the

use of force in military or police responses to quarantines and curfews can exacerbate the health crisis in situations of distrust and “can create fear and unrest, rather than stem the spread of the virus”.¹⁸¹ Thus a direct link exists between SSG, SSR and the ability of the security sector to contribute effectively to combating an epidemic. While being highly context-specific, lessons can be drawn from Ebola and other health crises, such as polio.

Similarly, *context-specific training* is crucial. Security sector actors only add value in countering health crises if they are well prepared, trained and instructed for engagement in such a non-traditional context.¹⁸² Preparation should ideally be linked with SSR programmes. It requires involvement of high-ranking officers and should include the development of standard operating procedures (SOPs) and command structures. Conducting simulation exercises is a vital part of this. These exercises should go beyond mere strategic and managerial aspects to include practice with different actors working together on the ground to design realistic simulations. Furthermore, inclusive training should involve engagement with communities to help sensitize them, raise awareness about the security sector’s specific roles in emergencies and build the aforementioned relationship of trust. Training in handling health matters, for example quarantines, must ensure that the security actors understand the dynamics in local communities and know their role is to assist public health measures in a sensitive way by refraining from using disproportionate force.¹⁸³ Enforcement of rules in outbreak areas requires careful calibration according to context. If people refuse to leave an area at risk, they are endangering themselves; if they refuse to be quarantined, they are endangering others. Providing more information might offer a solution. For instance, there is a high probability that infected individuals and those suspected of being infected will voluntarily agree to security measures once the reasons for these actions have been transparently communicated to them. In contrast, coercive measures without further communication might lead to strong opposition.¹⁸⁴

Compliance with IHRL is a further premise of security sector involvement. The lives and safety of civilian actors must be guaranteed during civilian-non-civilian collaboration, through either adequate security provision or

the creation of humanitarian corridors, especially for health workers.¹⁸⁵ Existing gaps between the military and human rights paradigms should be bridged by adequate training and preparation. Respect for human rights should be strengthened through sensitization to reduce the occurrence of incidents in which security providers overstep their boundaries by blindly operating according to orders and commands.¹⁸⁶ During the SARS outbreak in 2002–2003 the international community witnessed a highly effective response, but this came at the cost of individual liberties. Quarantining was compulsory for anyone exhibiting a raised temperature. In extreme cases, those who did not adhere to these measures, and those accused of spreading false information about the disease, were imprisoned.¹⁸⁷ The traditional contact-isolating methods of disease control were effectively used, but in highly problematic ways from a public health perspective based on human rights. Much of the literature on health and security raises problems related to human rights, and the age-old questions of communal health versus civil liberties. Given the predominance of the inflexible chain-of-command approach in the armed forces, behavioural changes cannot be immediate but should rather be seen as a long-term objective.¹⁸⁸ Early collaboration between the humanitarian community and the armed forces could result in palpable improvements, such as the optimal design of ETUs conforming to the highest medical and security standards.¹⁸⁹

Lastly, *managing the security sector's predictability and uniformity* is crucial in successful coordination. An inherent asset of security sector actors, and the armed forces in particular, is the fact that their regimented life and discipline result in a more uniform and predictable response to new situations. This allows them to be highly effective in accomplishing tasks. On the other hand, their limited flexibility regarding unexpected events, for which they have not been trained, can be a major drawback. However, in partnership with other actors and within a framework of civilian guidance, these shortcomings can be balanced out.

Potential roles for the security sector in health crises

Under the aforementioned premises, security sector actors and institutions can assume diverse roles, such as supporting health responders to contain the crisis; providing means of transport, including lorries, cargo planes and helicopters; ensuring the availability of water purification equipment; providing military medical assistance in the form of infrastructure (e.g. field hospitals) or personnel (e.g. doctors, nurses); protecting health workers, goods and supplies; offering logistical support; and making available infrastructure, facilities (e.g. laboratories) and personnel (e.g. to staff border crossing points) in times of heightened security.¹⁹⁰

In the context of health crises, the security sector's added value is most effective when it can build on a well-organized public health system and the capacities for preparedness and response required by the IHRs. When such capacities do not exist, which tends to be the case as health crises spiral beyond the control and capacity of the national health system, the security sector – along with relevant external actors – needs to be well prepared to fill functional gaps. Better know-how within the health community would help smooth this process by identifying a crisis as early as possible and determining how, where and when additional support might be needed. To achieve this, it has been suggested that the health sector should make more use of scenario training and simulation activities in capacity building and preparedness.¹⁹¹ This is an area where security sector experience can be used to improve health sector capacities, build confidence and overcome resistance from health and humanitarian actors to collaborate with the security sector actors.

Different components of the security sector can contribute to different phases of a response to an epidemic. Exact decisions must be based on cooperation among health and security actors at the national level and cooperation between the security sectors of neighbouring countries, and be made with the help of regional and international bodies. Different security actors to consider might include:

- the *military forces* of a country or of other states when requested, especially their medical corps (who help maintain political and community stability, and provide transportation and other logistical assistance and emergency medical care)
- *intelligence services* (who might provide early warning of the outbreak and spread of diseases and accompanying disorder, alongside other actors)
- the *police* (who can assess local needs, help in isolating cases and cells of outbreak and assure the maintenance of law and order in times of crises and instability, and might provide other targeted assistance through community policing)
- *border guards* (who might assist in monitoring and controlling cross-border movements of infected individuals with the aim of preventing the epidemic from crossing national boundaries)¹⁹²
- *local justice and security providers* (who assure compliance with, and provide information on, measures to prevent and contain at the local level)
- *private security actors* (whose collaboration might be essential, especially in remote areas or where they have replaced state security actors as the primary security providers)
- *non-state armed groups* (who can facilitate healthcare and medical support for populations living in territories under their control) – the need for their cooperation in times of crisis might be essential and temporarily outweigh larger strategic considerations.

Preliminary conclusion

This subsection outlines the challenges experienced during the international response to the EVD outbreak. These included the fear factor, misinformation and miscommunication, distrust in civilian and military authorities, a failure to stockpile resources, a lack of financial resources and infrastructure, the slow speed of the response and the failure to take cultural considerations into account. The Ebola outbreak also had negative ramifications for socio-economic development in the most-affected countries. Future health threats are likely to originate from zoonoses, antimicrobial-resistant organisms and influenza; re-emerging and new infectious diseases, such as Zika and MERS-CoV; and chemical and human-

made events. These threats are further exacerbated by risk factors such as armed conflict and state fragility, proliferation of illegal substances, misinformation and misunderstanding the interlinkages between health and security, and the belief that security risks can be easily contained. This highlights the need to re-evaluate the roles and capacities of the health and security sectors in designing collaborative responses that draw on the comparative advantages of each sector. In the health sector, capacities such as preparedness, coordination and quality of national health systems must be strengthened. In addition, the WHO IHRs must be fully implemented by all states to mitigate the threat of infectious disease outbreaks. The security sector may play important roles related specifically to supporting logistics and control-and-command structures, but these must be premised on building trust between the sectors, addressing reputational issues within the sector, integrating context-specific training into SSR and ensuring compliance with IHRL. The security sector's involvement is crucial, and past examples of successful completion of non-traditional tasks reinforce the need for cross-sectoral cooperation.

Evaluation and implications of security sector involvement during the Ebola crisis

This section firstly evaluates the need for a number of crucial aspects of civil-military cooperation during health crises, including preparedness and capacity building, subsidiarity, coordination mechanisms, information sharing, exit strategies and compliance with official mandates. It highlights the blurring of lines between military and civilian activities as potentially problematic, and concludes that civil-military cooperation was largely successful during the EVD outbreak. Secondly, it evaluates foreign military assistance (FMA) provided by the UK, the USA and France. Subsequently, it evaluates the role of other security sector components, including intelligence services, police, border management and local security actors, as well as the roles of international and regional organizations, mechanisms and capacities, national governments and societal actors. It then analyses

implications of cross-sectoral cooperation and for security sector activities.

Evaluation of aspects of civil-military cooperation

This subsection outlines the aspects of civil-military cooperation that posed problems during the EVD outbreak. Regarding *preparedness and capacity building*, health and security actors lacked capacities and opportunities for training. Building core competencies must be an ongoing effort for both health and security sectors.¹⁹³ Many security actors, including regular and border police, may play critical roles in future crises, so it is crucial to build the competencies required to recognize changes in patterns of behaviour and mobility flows that can signal risk issues. This will further assist in fostering collaboration with the health sector. Preparedness should include engagement of different components of the security sector in periodically organized simulation exercises to improve coordination and cooperation between and within them. Reform efforts should continue to strengthen these actors and build a security sector that reaches the highest standards of public service regarding efficiency, impartiality, accountability and transparency.¹⁹⁴ As part of a continuous effort to build the necessary capacities, efforts in preparedness will strengthen the ability of different security sector components to anticipate, warn against and prepare for possible disease outbreaks.¹⁹⁵

The national armed forces in all countries – those affected by health crises and those offering assistance – must be trained for their potential involvement in pandemic outbreak and control. They must be ready to assist as soon as an outbreak occurs, be mobile and well equipped, and have the ability to concentrate means where they are most needed.¹⁹⁶ The national armed forces must be represented in the national health security council, should such an institution exist, and contribute to the development of the council's overall strategy.¹⁹⁷ Alongside epidemiologists, military officials should take part in regular forecasting briefings.¹⁹⁸ Coordination and synchronization of early preparedness ensure adequate readiness and response capacity. Moreover, in situations where an outbreak seriously threatens the stability of communities or the country overall, the armed

forces need to be on standby to respond to, deter and de-escalate potential violence. The particular logistical requirements to overcome an epidemic, including any special equipment, must be integrated into the procurement, stockpiling, maintenance, budget and other logistic policies of the armed forces. Such missions must be inscribed into their tasks, be planned and be the subject of regular training to avoid casualties within the armed forces.¹⁹⁹ The necessary guidelines, including SOPs, must be regularly updated and disseminated to recipients, which may be achieved through training.²⁰⁰ The armed forces must be prepared for such a contingency, engage in the necessary staff planning, designate the units to be potentially deployed, and vaccinate and train their personnel (especially on crisis management and health-related cross-sectoral matters).²⁰¹ With a better understanding of basic medical and public health concepts, the military would be in a better position to protect personnel and provide technical information for awareness-raising programmes on Ebola.²⁰² Staff planning should anticipate possible bottlenecks to avoid situations where all military training is suspended and national defence becomes non-existent due to the deployment of all personnel for a health crisis.²⁰³ All equipment must be fully field-capable and suited to the challenges created by a specific disease. Medical equipment that is to be used by local staff must take into account their technical skills, and the necessary training must be provided beforehand.

Similarly, the police must be trained for such crises, including interoperable collaboration with health actors, the national armed forces, other national security providers and international actors involved in the management of a health crisis. The training of police officers in treating infected colleagues, provided by the ICRC during the EVD outbreak in Guinea, could serve as an example of successful interoperable collaboration.²⁰⁴ Police officers should receive further training on how to handle riot situations, which are likely to occur during health crises (as was the case in Sierra Leone).²⁰⁵ Police preparation for future health crises must include stockpiling sufficient amounts of PPE and training on its use in case of emergencies.²⁰⁶ Further, police must be trained on the limits of the use of force. Instances of disproportionate use of force,

such as the so-called West Point incident in October 2014 in Liberia, which saw two civilians shot by the Armed Forces of Liberia (AFL), confirm the worst expectations of security sector involvement in health crises. Such incidents further aggravate tensions between the community and the police.²⁰⁷ The mandate of domestic armed forces for a coordinating or supporting role must be decided on a case-by-case basis. At times it may be beneficial for armed forces to submit to the command and control of civilian authorities, as is highlighted by the experiences of Liberia and Sierra Leone.²⁰⁸ Interoperability and compatibility of armed forces with other security sector components in the coordination mechanism must be ensured. Once this mechanism has been decided upon, it is essential to inform local communities of the different actors in the command-and-control structures, and those in charge of support functions.²⁰⁹

Subsidiarity is crucial when local and national health and security sectors become overburdened by a health crisis and require external assistance, including from bilateral and intergovernmental civilian and military actors. Clear mandates must be set for external security forces of civil protection units and clarified by the national health crisis response coordination body (such as a national health security council). This allows the affected country to remain in the lead. A national coordination centre could support the national health security council in its function as a lead agency.²¹⁰ Such coordination centres might allow affected nations to engage with potential external donors (as intermediaries) without using international or regional organizations that may be tempted to enforce their own standards and preferences. In some instances it may be preferable for affected countries to maintain bilateral contacts, thus speeding up decision-making and deployment of support capacities. If neither national nor bilateral assistance proves sufficient, support from subregional, regional, continental or international bodies should be considered in this sequence, and in accordance with the principle of subsidiarity.²¹¹ These international actors should therefore develop capacities to supplement potential gaps at the national level.²¹² For instance, as Moon et al. suggested in 2015, alongside national governments, the African Development Bank should invest in infrastructure projects, particularly in the establishment of an

African version of the US CDC. Myriad forms of cooperation would then be possible between the WHO Regional Office for Africa and the African Centres for Disease Control and Prevention.²¹³

Where security sector components are involved in challenges beyond traditional security tasks (those related to war, crime and public order), non-civilian security institutions must be subsidiary to the civilian actors directly responsible. Involvement should only be triggered in the context of whole-of-government and multistakeholder approaches under civilian control and leadership. This also applies at regional (e.g. African Union²¹⁴) and global levels. The overall management of a health crisis should remain under civilian leadership, whether of health or humanitarian actors, despite the involvement of the police²¹⁵ and indeed the armed forces. However, subsidiarity should not result in the delayed involvement of the armed forces. This occurred in the EVD crisis in Sierra Leone and Liberia, where armed forces only became engaged in mid-2014.²¹⁶ In fact, early involvement of the armed forces complies with subsidiarity if forecasts show that the civilian actors involved will be overwhelmed and unable to manage the situation effectively.²¹⁷ Given that police services play an important role in the political landscape of some countries, the reorganization of the hierarchy in such a way may create challenges²¹⁸ that must be addressed to ensure successful cooperation.

With regard to *coordination mechanisms*, important lessons emerged from the Ebola epidemic. For instance, the Office of National Security (ONS) in Sierra Leone failed to forge a strong role for itself to guide the executive in making the right decisions at the right time. In Liberia the establishment of an incident management system was important in coordinating the outbreak.

Prior to the 2014 epidemic, the largest EVD outbreak occurred in 2000 in Uganda. Despite the relatively high number of 425 reported cases, the outcome was more positive in Uganda than in West Africa in 2014. The US National Academy of Medicine argues that this was largely due to Uganda's operational national health policy and strategic plan, which were already in place before the outbreak. The government was committed to strengthen core capacities despite limited resources,²¹⁹ which evidently allowed it to

contain the outbreak.

After the Ebola outbreak, a discourse emerged in Mali on human risk. The health infrastructure and financial means to manage the outbreak did not exist prior to the crisis. Often governments do not consider risk prevention and preparedness for a possible future health crisis as a priority, and do not invest in it. However, once a crisis breaks out, funds are made available to counter the escalating situation.²²⁰ This was the case in Mali. Lessons can be drawn from Nigeria's success in quickly containing Ebola, with only 20 cases. This was due to a very rapid response with acceptance of a clear diagnosis of the arrival of Ebola; awareness of the dangers in failing to act promptly; recognition that the very successful polio eradication programme could be used as a basis for the response; knowledge of how to engage effectively with key actors, including communities, their leaders and NGOs; agreement on a unified plan and strategy that recognized what was required for containment and held everyone concerned accountable; and vigorous and persistent tracking of contacts to ensure comprehensive follow-up. In Guinea the collaboration of national governments with NGOs was crucial for the interim staffing of *ad hoc* treatment units.²²¹ The time constraints did not allow waiting for the arrival of FMA. Experiences with national responses in several countries of the global North (France, the UK and the USA) overall showed similarities in organizational terms. For instance, attributing political priority at the highest level to the response and creating a "dedicated interagency task force"²²² could be crucial in facilitating rapid coordination.

With regard to *information sharing*, the free flow of information is vital to many security sector actors, such as the intelligence services. During the health crisis in West Africa the flow of information between domestic stakeholders and international intelligence services was marginal.²²³ In some instances bureaucratic bottlenecks prevented timely information sharing, and in other cases information reached recipients but language barriers impeded its use.²²⁴ An early-warning system (EWS), which includes indicators specific for health crises, may be used to collate shared data and could contribute to the early identification of public health emergencies.²²⁵ It could thus prevent spillover across borders. In the context of EVD, a

regional warning system at the level of the Mano River Union (MRU) may have helped to mitigate the spread of the disease,²²⁶ and could further raise awareness among policy-makers and thus potentially guarantee more funds for the health security budget.²²⁷ The free flow of information is crucial for the success of integrated border management (IBM) under the principles of data and privacy protection. Ideally, a country's intelligence service is embedded in the multiagent IBM structure. At the base of such an IBM structure is a database characterized by its rigidity, which ensures accurate data retrieval and comprehensive data entries.²²⁸ The European Commission's Schengen Information System could serve as an example of a successfully implemented regional database.²²⁹ The stakeholders involved in IBM should regularly update their IBM partners on the data collected, such as border exit and entry records.²³⁰ Notably, the free flow of information across national borders can only work in practice if the language barrier between French-speaking and English-speaking communities can be overcome.²³¹

Regional information sharing was pointed out as a deficiency during the EVD outbreak. The MRU failed to hold regular meetings to discuss issues of border management. Due to the lack of coordination and the insufficient number of border patrols, the movement of persons between the MRU member states was not properly monitored. As a result, infected patients were more likely to spread EVD across borders.²³² There are still unanswered questions that must be addressed in the implementation phase of IBM: for instance, how far across borders can contacts be tracked? These questions of overlapping national sovereignty are important, as there were incidents where Ebola was spread by the movement of lost contacts. Legal frameworks are needed to manage this issue.

Information was also an issue for national governments. Rumours and a lack of trust in the government led many citizens to blame the government for using and abusing EVD - and exaggerating its impact - to attract donor funding.²³³ Rumours circulating about what occurred inside ETUs ranged from accusations of blood stealing to claims that local politicians had infected people with EVD to attract foreign aid. This, in combination with distrust of foreign health workers, led to a dip and subsequent resurgence

of cases in Sierra Leone and Liberia in mid-2014.²³⁴ Rumours developed into opposition and resistance dynamics that fed on and grew due to misinformation. Moreover, a lack of community engagement resulted in poor information gathering and impeded information exchange between these communities and the authorities.²³⁵ Hence information flows between national authorities and remote communities should be improved to guarantee these communities that their concerns and needs are being included in national policies. This, in turn, would have a positive effect on these communities.²³⁶ Lessons can be learned from the sensitization campaign carried out in Senegal: the government used a novel platform driven by the Short Message Service (SMS) to boost Ebola awareness. The country's Ministry of Health sent 4 million SMS text messages to the general public, including items such as "Wash your hands with soap and water regularly" and "Avoid all contact with people who are sick with or have died from Ebola".²³⁷

It is important that *exit strategies* are in place for those participating in the response. For instance, the armed forces (as well as other national security institutions) must design and prepare for exit strategies during the planning and response phase, and implement such plans once the crisis subsides.²³⁸ Phased hand-over procedures between the military other security sector components and civilian actors need to be put in place before the armed forces finally withdraw.²³⁹ Moreover, exiting the theatre of operations needs to be negotiated with local, national and other relevant stakeholders, to ensure a constructive hand-over of joint activities. Subsequently, an assessment of the engagement should be undertaken to identify lessons learned and feed them into training and doctrine for future missions.²⁴⁰ Only an organized and well-structured exit ensures that activities will be sustainable in the long run and post-crisis recovery is continued. Continuing assistance, including in the form of direct budgetary support, may be required.

A *blurring of lines* between military and civilian activities is not conducive to civil-military cooperation in response to health threats. The armed forces must be aware of the "longstanding ... questions about the neutrality and independence of humanitarian organizations".²⁴¹ According

to Kamradt-Scott et al., perceived independence from domestic and foreign armed forces is paramount for civilian actors and prevents the further blurring of lines between civilian and military work.²⁴² Civilian leaders must therefore understand the roles, operations and capabilities of the armed forces. In addition, the different reputations of civilian and military actors have to be taken into account. Kamradt-Scott et al. found that the military enjoyed a positive reputation in Liberia and Sierra Leone, whereas civilian officials were perceived as untrustworthy. Lillywhite agrees that the engagement of the RSLAF was well received by Sierra Leoneans.²⁴³ In these circumstances, blurring the lines between civilian and military actors might cause reputational damage to the latter and impede their efforts in a number of ways.²⁴⁴ At the same time, when the armed forces are involved in the prevention and management of national and global health crises, it is important that they are used effectively but without running the risk of securitizing and/or militarizing national and global health provision.²⁴⁵

Adoption of and compliance with official mandates proved to be crucial in the management of the Ebola crisis. This applied particularly to the armed forces. National parliaments need to provide the national armed forces with a proper mandate, even if it is just for stopgap measures.²⁴⁶ A memorandum of understanding between the armed forces and other government agencies should be adopted prior to any support by the armed forces.²⁴⁷ This document could address financial and liability issues regarding the provision of services, goods and personnel, despite its non-binding nature. Mechanisms must be in place to hold the armed forces accountable if they exceed the scope of their mandate.²⁴⁸ This was reinforced by the occurrence of “isolated incidents of alleged low-level violence” in Sierra Leone and Liberia after the intervention of the domestic armed forces.²⁴⁹ In Liberia, excessive use of force resulted in the West Point incident, which saw the death of a 15-year-old boy and the injury of another civilian at the hands of the AFL.²⁵⁰ Similarly, Guinean armed forces only managed to end armed attacks on health personnel at the expense of human rights.²⁵¹ The West Point incident and other examples of excessive use of force highlight the importance of prior preparation for security sector involvement in health crises. A solid and functional framework of democratic control over the

armed forces, embedded in and guided by principles of good security sector governance and thus built on the primacies of the rule of law, accountability and transparency, would be most helpful. It should further be noted that the MSF call for military support²⁵² was primarily aimed at securing international military assistance. National militaries in Guinea, Liberia and Sierra Leone were heavily involved in the response, but the health community was less open to aligning with them due to the lack of trust exhibited by large sections of the population in the region. The national militaries and police agencies, among other national security institutions, may have potential, but they represent governments that enjoy very little public legitimacy. Given the historical and political context in the area, this potential may only be realized with the support of specialists in building trust, spaces for dialogue and mediation.²⁵³

Civil-military cooperation during the epidemic was perceived as largely successful and civil-military relations as mutually beneficial. Kamradt-Scott et al. conducted interviews with various stakeholders to study the “effect of civil-military cooperation during the Ebola outbreak” in Liberia and Sierra Leone. They suggested that the outbreak should have been framed as a humanitarian emergency, not a health crisis.²⁵⁴ This resulted in the establishment of the *ad hoc* UNMEER, instead of relying on existing humanitarian coordination systems. Second, the authors found that the deployment of foreign troops was a *conditio sine qua non* for NGOs to maintain or establish operations. Several interviewees confirmed that the expat community would have left if foreign armed forces had not arrived. Third, the majority of the respondents described the involved members of the armed forces as “open”, “engaging” and “keen to learn”. Their assistance in the construction of ETUs and the training of health workers was positively received. On the downside, it was suggested that the armed forces were relatively slow (mostly with regard to the setting up of ETUs) and their behaviour was excessively risk averse. In fact, it was reported that militaries in several instances refused to transport infected patients or biological samples. Fourth, the lack of a common framework to coordinate the involvement of the different foreign armed forces was criticized.²⁵⁵

The Ebola outbreak should not be used as a simple blueprint for future civil-military (foreign) cooperation.²⁵⁶ In other contexts this cooperation might not easily be replicated due to fraught relationships between civilian and military institutions. Further, the civilian population seemed to be aware of the reform their military had undergone at the end of the civil wars,²⁵⁷ meaning the deployment of foreign military troops was met with goodwill rather than mistrust.²⁵⁸ Indeed Kamradt-Scott et al. argue that no general lesson can be drawn from the 2014 FMA to the Ebola outbreak: civil-military cooperation in a health crisis “needs to be considered on a case-by-case basis”.²⁵⁹

Evaluation of foreign military assistance

FMA made important contributions to the international response during the EVD outbreak. International roles of armed forces cover a wide range of more or less traditional military tasks, depending on the country, including assistance in post-conflict reconstruction; enforcement of economic sanctions and maritime intercept operations; enforcement of exclusion zones; ensuring freedom of navigation and overflight; counterinsurgency support; non-combatant evacuation operations; protection of shipping and anti-piracy missions; and recovery operations.²⁶⁰ Their overseas crisis management activities include traditional peacekeeping functions, such as monitoring ceasefires; complex peace operation tasks, including peace enforcement; protection and provision of humanitarian aid deliveries and close cooperation with and protection of civilian aid organizations; and disaster relief operations and assistance in cases of natural disasters or humanitarian catastrophes. Although the potential roles of military forces vary from country to country, crisis management activities feature very prominently on the international task list of most armed forces, partly as a result of the increasing engagement of the UN, regional organizations and military alliances in peace missions abroad. International peace operations are emerging as fairly regular activities of armed forces around the world, perhaps unintentionally creating a new global military *esprit de corps* and an initial semblance of global, supranational security provision.

This creates possibilities for drawing on countries' military capacities in response to national and international health crises. FMA in health crises, or humanitarian ones, must be characterized by the subsidiarity of the international armed forces to the civilian assets and domestic armed forces. During the Ebola epidemic, those countries that traditionally link health to national security were more willing to provide military support to the international response. This was most evident with the USA and the UK.²⁶¹ During the response, foreign armed forces (British, French, American, ASEOWA) were seen to collaborate with domestic forces (Guinean, Liberian and Sierra Leonean), and this was perceived positively.²⁶²

The *UK military contribution in Sierra Leone* had a positive impact on the response. The contribution began with the deployment of 750 personnel to Sierra Leone to assist the RSLAF by constructing ETUs and establishing an Ebola training academy.²⁶³ About 250 personnel assisted with logistics and transport, over 200 trained or assisted medical teams in the academy and about 300 assisted the government of Sierra Leone. The British military, the International Security Advisory Team and the UK Department for International Development (DFID) provided "train the trainer" courses in surveillance and contact tracing for RSLAF personnel.²⁶⁴ Together with RSLAF engineers, the UK's Royal Engineers constructed treatment and holding centres across the country.²⁶⁵ Military personnel trained health workers and EVD responders, supported the government's command-and-control capability, manned treatment centres and assisted in the planning and development of policies.²⁶⁶ They provided mobility support, such as helicopters and a Royal Navy frigate, for the RSLAF to access Sierra Leone's hinterland and collect swabs and blood samples that were later brought to laboratories in Freetown.²⁶⁷ The UK's Ministry of Defence also provided deployable infrastructure, such as field hospital units. For international health volunteers who contracted Ebola, the British military's medical services provided a high-tech treatment facility.²⁶⁸ To prepare military personnel optimally for deployment to the host country, British Army medical staff were trained in a hospital facility in the UK which was a replica of an ETU in Sierra Leone.²⁶⁹ This opportunity to practise procedures in circumstances close to the Sierra Leonean reality meant the military

medical personnel were more immediately effective upon their arrival at the operational location.²⁷⁰

However, it was evident that the overall capacity of the UK's deployable hospitals had declined in comparison to 1991 (the time of the First Gulf War), even if clinical capacity had increased in the areas of injury management and pre-deployment preparation. Military medics lacked special training in chemical and biological protection, and the deployable hospitals were often not optimized for the treatment of infectious diseases.²⁷¹ With regard to subsidiarity, the humanitarian community still perceived a military lead in this contribution, despite the fact that the intervention was under the formal civilian leadership of DFID.²⁷² It is crucial to define clear-cut roles for foreign and domestic armed forces in the response.

The *US military contribution in Liberia* was substantial, with the deployment of approximately 3,000 military engineers and medical staff²⁷³ under Operation United Assistance. The interagency operation constructed tents and 17 100-bed ETUs, provided mobile labs to improve diagnostics and test fluid samples, transported health personnel and supplies via "air bridges" and trained 500 local health workers per week in Ebola prevention, self-protection procedures, treatment and containment within local communities.²⁷⁴ Despite some calls for the US military "to provide some of its 100 infectious disease doctors", the US Public Health Service and not the US Army was responsible for the provision of direct patient care.²⁷⁵ This hesitation may be explained by the "rampant fears of the outbreak" in US territory. It is further notable that the Public Health Service was tasked with direct patient care for infected health workers in ETUs, rather than for the general population. Personnel from the AU, among others, filled this gap.²⁷⁶ Nonetheless, the development of part-uniformed medical teams by the US CDC was a successful model that might be used in other contexts.

Operation United Assistance was unquestionably "stymied by poor infrastructure, including poor roads, the absence of a functioning electricity grid and water supply, and communications".²⁷⁷ Hence US military engineers worked alongside the AFL Engineering Company to assist with major building projects and the repair of existing infrastructure, such as airport runways.²⁷⁸ Overall, US FMA was named as the determining factor in the

successful response²⁷⁹ and the US Army played a pivotal role in bringing the outbreak under control. Morrison affirms the strategic and symbolic importance of the presence of the US Army for the expat community as well as its capability in “opening logistical operations”.²⁸⁰ According to Davies, “The United States has been a keen participant in disease surveillance and response since the mid-1990s.”²⁸¹ For almost ten years the US Department of Defense had overseas infectious disease research laboratories located in over 20 countries. According to Davies, “The Global Emerging Infectious Surveillance and Response System [where] mobile laboratories were set up for the purpose of ‘responding to outbreaks of epidemic, endemic and emergent diseases’, and their location in the [Department of Defense], as opposed to [the US Agency for International Development] or CDC demonstrates how seriously the United States views the response to infectious disease as a key national security strategy.”²⁸² Beyond this, the ability to respond with military medical expertise at short notice is most likely a product of the experience gained in the wars the USA has fought in recent decades.²⁸³

The *French military contribution in Guinea* was the most substantial part of the country’s participation in the Ebola response. The funds allocated for the initial response in Guinea amounted to EUR110 million, with an additional fund of EUR150 million for reconstruction, reinforcement of health systems, education and training.²⁸⁴ Six hundred healthcare professionals were mobilized for the EVD response: 230 in West Africa (mostly Guinea) - made up of civil security and the military medical corps - and 370 in France, mostly for research purposes and health security measures.²⁸⁵ The deployed healthcare workers trained more than 17,000 local staff of emergency units. Further, the French medical corps deployed in Conakry set up a treatment centre dedicated to expat healthcare workers. According to Fages, this was necessary to give international healthcare professionals guarantees in case of infection. Alongside several European partners, France established a reliable evacuation and repatriation scheme for international health workers.²⁸⁶

Evaluation of other security sector components: Intelligence services, police, border management and local security actors

Other security sector actors made further important contributions to the EVD response, namely intelligence services, police, border management and local security actors. *Intelligence services*, which operate across different parts of the security sector, including the police and armed forces,²⁸⁷ played a crucial role during the EVD outbreak in Sierra Leone. They prevented further transmission of infection using surveillance and contact tracing. Given that a diagnosis of EVD resulted in stigmatization, newly infected patients were often hidden by their families²⁸⁸ and the Sierra Leonean intelligence services relied heavily on anonymous informants who reported Ebola cases in their neighbourhood.²⁸⁹ Hotlines for anonymous reporting were set up in Mali, Guinea and Liberia. Despite the guaranteed anonymity, incentives to report cases were missing. Often people refrained from reporting Ebola cases in their area because they feared they would be cut off from food supplies.²⁹⁰ While civilian health authorities are primarily responsible for disease surveillance, intelligence agencies should collaborate closely with them to add information on national security and threat estimate planning. In terms of data sharing, a system was set up during the crisis in Guinea that included actors from both health and security sectors on the same email list. This provided an opportunity to report and share relevant information, and highlighted the need to streamline data collection and formatting between neighbouring states.

Police services made further crucial contributions during the EVD crisis. Community policing created a liaison mechanism between citizens and the government, and allowed police forces to collect early signals of disease escalation and facilitate communication between state authorities and local populations. Police forces thus contributed to strategic planning for the prevention of major health crises.²⁹¹ In Sierra Leone the police were particularly effective. The SLP disarmed the entire country during a total ban on the movement of persons. It started a campaign to inform the population about the EVD outbreak using various forms of communication,

and thereby helped to stop the spread of rumours and false reports.²⁹² The outbreak highlighted that the needs of vulnerable people, such as children, pregnant women, the elderly and people with disabilities, must be taken into account, particularly during any intrusive search of premises.²⁹³ Thus a gender balance in deployed security personnel is crucial, especially where men are prohibited from entering private homes for religious reasons. During the Ebola outbreak it became evident that police forces should be represented in any coordinating body responsible for planning and implementing preventive and response measures. In Sierra Leone the SLP's internal coordination was weak and most police units acted as they thought best.²⁹⁴ In Guinea different police units were unwilling to share information with each other.²⁹⁵ To improve SLP-RSLAF collaboration at the strategic and operation levels, a single joint SLP-RSLAF unit responsible for future health crises in Sierra Leone would be useful to avoid duplications. Moreover, collaboration of police and the armed forces makes sense with regard to their specific comparative advantages in offering assistance in managing health crises. For instance, while the military might possess superior equipment and the ability to mobilize large numbers of personnel at short notice, the police might have more intimate knowledge of community needs, particularly in contexts where community-based policing is practised.²⁹⁶

Border management was found to be a critical instrument to prevent and fight the transmission of communicable diseases across national borders.²⁹⁷ Modern border guarding integrates border police, customs services, intelligence services and medical and veterinary components in an IBM system - but this is not yet a reality everywhere. IBM requires close cooperative and operational links among the border services of neighbouring states, subregions and regions. As borders become fluid and migrant populations increase, a detailed understanding of the multiple actors and different situations involved at air, land, river and sea borders is needed.²⁹⁸ Sea borders were poorly managed during the outbreak and fishery activities were uncontrolled, which created huge problems for contact tracing. More attention should focus on how to manage sea borders and when and where it might be appropriate to restrict movements.

Regarding land borders, unilateral efforts to close crossings were not only in violation of the Fifteenth Protocol to the MRU Declaration²⁹⁹ but were also unsuccessful. The closing of borders in Sierra Leone was ineffective, given that the porous nature of the borders allowed infected persons to travel between neighbouring countries. This contributed to increased infection rates on both sides of the border.³⁰⁰ Similar observations were made in Mali, where only around 25 per cent of the national border was actively controlled.³⁰¹ Artificial borders pose a particular challenge, especially those that cut straight across traditional communities, poorly guarded conflict lines or large areas with borders that are not actively controlled. Thus IBM-based responses should be tailored to the specific national or regional context. In addition, different organizations, agencies and stakeholders should be tasked with collecting and storing particular information, given that the creation of a common information management system which allows information to be shared among stakeholders is very difficult.³⁰²

For the purpose of managing health crises, activities at all points of entry should be divided into the categories of prevention, detection and adequate response.³⁰³ Activities for prevention aim at raising awareness of health security threats, improving knowledge and understanding of citizens and officials, and providing appropriate facilities and adequate equipment. Activities for prevention include introduction of flow monitoring points (FMPs), setting up of isolation facilities, development of a monitoring and evaluation system and a database, and improvement of infrastructure. Activities for adequate response aim to guarantee the cooperation of all stakeholders in the process of IBM and to design adequate operational procedures.³⁰⁴

Border guards of countries threatened by health crises can play an important role in helping to understand patterns of border movements, which can aid in identifying and isolating cases of infected individuals. The Ebola outbreak highlighted that border guards lacked the necessary equipment (e.g. PPE) and technology to screen the flow of people efficiently and effectively.³⁰⁵ Information and communication technology has become indispensable in creating “bio-mosaics” by tracing the densities and movements of electronic devices on a mass scale. Such mapping can help

assess risk patterns and inform the types of mobility control responses required to avert or manage a crisis. The installation of FMPs at strategic locations, for instance where roads intersect, is another convenient tool that can be used for vetting purposes.³⁰⁶ However, not all individuals will always welcome or cooperate with such efforts. Further, the sight of impromptu checkpoints might be reminiscent of *ad hoc* blockades set up by local militias to claim passage fees; and border management officials could risk reputational damage by being compared to local militias.³⁰⁷ Training and capacity building are necessary for IBM and multiagency risk analyses. Basic training for border guards must include modules on global health security threats, the use of state-of-the-art communications devices and following SOPs during screening procedures.³⁰⁸

Airport IBM is particularly important, considering that failures in this area could allow a local epidemic to escalate into a global pandemic. The spread of Ebola from Guinea to neighbouring Liberia and Sierra Leone, and subsequently to other West African countries, emphasizes the problem of insufficient screening at the different points of entry.³⁰⁹ Border policing structures were too weak to detect, prevent and respond to the virus in a timely manner.³¹⁰ As the next epidemic may manifest itself as an airborne disease, IBM structures must be prepared. This implies close collaboration between different ministries and industries, in particular the airline industry. Border security officials involved in health screening at airports play a crucial role in preventing cross-border transmission. During the EVD crisis, increasing numbers of border guards refused to continue screening operations, and in some reported instances the armed forces or police services had to enforce screening practices to guarantee compliance with processes and protocols.³¹¹

Border restrictions and closures can have major economic impacts, ranging from loss of local community access to markets through to major effects on national GDP (gross domestic product) when airports are closed or airlines suspend flights. This can create a chain of events leading from health to economic and even political crises. There are other known risks; for example, goods and services will still find their way across borders (even if nominally closed) and provide opportunities for new rents for organized

and informal criminal activities. Furthermore, closing airports and other important border points creates significant difficulties in transporting and distributing humanitarian aid and medical supplies to affected regions. Hence the negative effects must be seriously considered and border closures only implemented based on the WHO IHRs and in partnership with the International Air Transport Association, the International Maritime Organization, the World Trade Organization and other relevant stakeholders.³¹² Further, if restrictions have to be imposed, they must be based on scientific evidence to avoid arbitrary, disproportionate or discriminatory measures.³¹³ If travel restrictions are implemented without prior scientific justification and are thus indiscriminate, “protocols such as publicly disclosing those countries should be established”.³¹⁴ Stronger disincentives should be created “for implementing trade and travel restrictions without a scientific ... basis”.³¹⁵

It is worth remembering the example of Mali, whose flexible response showed that it was possible to avoid cross-border infections while keeping borders open.³¹⁶ Thus the effectiveness and the impact of restrictions and bans on the transmission of diseases remain controversial,³¹⁷ and it is highly recommended to carry out a cost-benefit analysis before border closures are imposed.³¹⁸ Should closures be deemed appropriate, the size of the operational challenge means that close collaboration with and logistical support of the armed forces would be beneficial so that humanitarian aid and medical supplies can be delivered quickly to affected areas.³¹⁹

During the EVD crisis, even borders that were formally closed remained open in practice due to their porosity.³²⁰ Scholars suggest employing adaptive policies that recognize contextual realities.³²¹ These should include clear communication between authorities and the public (for example giving updates on new restrictions or bans on the movement of persons and goods transparently and in good time to allow affected individuals to devise alternatives),³²² and striking regional agreements to harmonize the opening and closing of borders. Ideally, the MRU would coordinate the imposition of restrictions or bans,³²³ and aim for an inclusive process where chiefs, local authorities and other stakeholders can voice their interests and concerns.³²⁴

Local security actors, including village militias, chiefs, armed groups, traditional elders and private military and security companies (PMSCs) may play crucial roles. During the Ebola crisis, village militias under the civilian control of village leaders made significant contributions to the public health effort. Together with the police, local security actors like chiefs, armed groups, informants and vigilantes can help maintain law and order in affected regions and localities. In the past there was little understanding as to what constructive roles these militias can play in a health crisis context, but their function became clearer in the fight to stop the spread of EVD. Village militias guarded abandoned property, aided with deliveries and protected health providers and vulnerable groups. Only in exceptional cases should their contribution be taken over by the armed forces.³²⁵ Where the state is decentralized, local actors are crucial in building a bottom-up approach to health security that is grounded in local realities. This is likely to be more effective and sensitive, and may facilitate cooperation between health and security actors. To accommodate these local militias in the hierarchy of local governments, political space must be created. Village militias are often respected by their communities, and it might therefore be easier for local actors to establish relations across the borders to improve information flow. There are reports of chiefs from Côte d'Ivoire and Liberia crossing the border to discuss the effects of Ebola with chiefs from the adjacent community.³²⁶ Even if such meetings might lack expertise for dealing with health security crises, the engagement of traditional elders is vital given their status as role models and moral leaders. This was evident in Bo, Bombali and Tonkolili in Sierra Leone, where authorities engaged paramount chiefs and district heads and as a result had better access to affected communities under their local jurisdiction. In contrast, however, there were some cases of village chiefs concealing cases or failing to report burials in the Western district of Sierra Leone. This was likely due to the harsh control and quarantine measures implemented by the Sierra Leonean military – a lesson to be learned for any future responses.³²⁷

When defining spaces, responsibilities and entry points for health management, health security should consider the roles that are, or could be, played by the private sector. The Montreux Document on pertinent

international legal obligations and good practices for states related to operations of PMSCs during armed conflict could serve as a basis for guidelines to be followed by these companies in a health security crisis. The Montreux Document highlights the increasing demand for PMSCs since the end of the Cold War, “with some companies employing well beyond 10,000 staff”.³²⁸ It is not entirely clear if PMSCs belong to the category of local security actors. If a PMSC holds a legal personality in the country where it is mandated to offer its services and employs local agents, it might be considered a local security actor. But if a PMSC is a global player, such as G4S (620,000 employees, operational in 125 countries), Securitas (250,000 employees, operational in more than 30 countries) or Academi (formerly Blackwater and Xe), it is difficult to call it a local security actor even if it employs predominantly local staff.³²⁹ While there are no reliable sources on whether PMSCs were specifically mandated to provide their services during the 2014–2015 Ebola outbreak, their engagement in health security crises is entirely conceivable. Domestic security sector players were overwhelmed by the EVD crisis, several countries were hesitant to provide FMA and those that did took a long time to deploy. From this perspective, PMSCs were probably an enticing alternative for national and international healthcare professionals in desperate need of protection for life and property – but they come with significant risk and at great expense.

Evaluation of other actors and instruments: International arrangements, national governments and societal actors

International organizations, regional organizations, national governments and societal actors made further important contributions. The EVD outbreak highlighted that the global health governance architecture is weak and requires improvements in how it responds to health crises. While the deployment of international health workers and other humanitarian aid providers can take place very quickly and is usually not controversial, it was considered important that bodies such as the UN Security Council should be involved in any decision to deploy military forces. The development and use of such mechanisms to enable speedy but well-mandated

responses were considered vital, given the complexity of challenges and the sensitivity of issues that could arise on both donor and recipient sides. On the donor side, it is critical to establish specific and well-defined roles and divisions of labour among the different continental (AU), regional (Economic Community of West African States -ECOWAS) and subregional (MRU) institutions.³³⁰ A crisis management system compatible with health-related crises should be encouraged at the international level by the WHO, the UN and the European Union (EU).³³¹

International arrangements - International organizations

During the EVD outbreak the *UN Office for the Coordination of Humanitarian Affairs (UNOCHA)* was bypassed in favour of a new UN mechanism: UNMEER. Two legal frameworks have been developed by UNOCHA: the guidelines on the use of military and civil defence assets to support UN humanitarian activities in complex emergencies; and the Oslo Guidelines on the Use of Foreign Military and Civil Defence Assets in Disaster Relief. The latter guide military involvement in medical aspects of governance, reconstruction and development. Both frameworks must be revisited to provide guidance for countering complex health emergencies.³³² Following the example of UNOCHA, it would be worth considering the creation of continental, regional and subregional bodies to coordinate humanitarian affairs at the level of the AU, ECOWAS and the MRU.³³³ The creation of such permanent crisis committees, possibly integrating humanitarian committees that may already exist, would coordinate disaster and crisis response at the continental, regional and subregional levels. These would operate during the different phases of prevention, intervention and subsequently recovery.³³⁴

UNMEER was criticized during the EVD outbreak. Its creation “bypassed” UNOCHA, blurring the lines of responsibility for international coordination.³³⁵ In addition, UNMEER was judged by many as peripheral to the EVD response: “It arrived too late, left too soon, and did not locate its official headquarters in an affected country [but rather in Accra, Ghana].”³³⁶ As a consequence, UNMEER suffered from low visibility,

was accused of distrusting local institutions and processes,³³⁷ and was criticized for not using standard humanitarian management processes and lacking experience or expertise in coordination.³³⁸ Following the WHO's declaration of a PHEIC, UNMEER responded to the outbreak as a public health emergency rather than a humanitarian disaster. According to several partisans of the humanitarian paradigm, UNMEER's strategy focused too narrowly on health targets and contradicted UNOCHA's cluster framework.³³⁹ UNMEER ignored socio-economic consequences, such as the impact on food security and emergency shelter;³⁴⁰ furthermore, it should have negotiated an exit strategy with each of the affected governments and other stakeholders, instead of making a unilateral decision to leave.³⁴¹ Lastly, opportunities to learn lessons from UNMEER's mission were missed because no formal evaluation took place.³⁴²

UNICEF highlighted the importance of looking beyond just the immediate response, pledging US\$500 million to strengthen community-based health and social services in the future.³⁴³ The ICRC, like other humanitarian organizations, established its own approach to civil-military coordination. The ICRC ensures that it is not involved in conflict resolution and that humanitarian activities are not subordinated to military activities. It maintains its independence and insists that the tasks of the armed forces lie in the areas of security and conflict resolution. Nevertheless, the ICRC attaches considerable importance to coordination with the armed forces at all levels.³⁴⁴ In Guinea the ICRC was in charge of burial procedures; in other affected countries this was part of the armed forces' responsibilities. Special ICRC teams provided death certificates to the next of kin to confirm whether a body was safe for burial, and transportation of the deceased from one city to another was prohibited.³⁴⁵

The WHO response to the Ebola outbreak received mixed reviews. The organization is well set up to work on health disasters, including through its own structures, the IHRs and inputs to UNOCHA. While the WHO was criticized for a slow response to Ebola,³⁴⁶ this should be considered in the context that the organization deals very effectively with approximately 300 disease outbreaks per year. In addition, the seriousness of the West African outbreak was not initially evident.³⁴⁷ It was noted that the WHO was

reluctant to respond directly to the Sierra Leone Office of the President and National Security Committee in the Ebola crisis, rather than to the Ministry of Health. This suggested that clearer agreements and understandings of responsibilities were needed. The problem of the WHO's response was linked closely to its internal reform process and the capacity dedicated to this process by member states as a matter of urgency. The reforms aimed to ensure that the WHO director-general had broad authority when crises arose and was able to compel the regional levels to respond. However, the WHO's in-country technical capacity was found to be weak during the crisis. This was reinforced by the WHO's decision to withdraw its international team after a very short time.³⁴⁸ Moreover, reforms suggest that the organization should publish lists in which it categorizes countries according to whether they reported disease outbreaks quickly or not. These lists would motivate governments to report disease outbreaks early.³⁴⁹ The WHO could play a crucial role in the short-term financing of emergency health missions, and should strengthen its role as an international health regulation body. The inclusion of an evaluation and control mechanism should be a priority.³⁵⁰

The IHRs could further serve as an instrument to collect health-related data,³⁵¹ which would be useful for crisis prevention planning and management. The US National Academy of Medicine suggests strengthening the WHO's capacity for handling outbreaks by setting up a centre for health emergency preparedness and response.³⁵² As well as recommending this new centre, a panel commissioned by the WHO Executive Board endorsed a budget increase in addition to a new and ring-fenced US\$100 million pandemic response fund.³⁵³ The creation of a "transparent and politically protected WHO Standing Emergency Committee" was also suggested.³⁵⁴ Moreover, it was recommended that the WHO reduce its range of activities and focus on core functions.³⁵⁵ The WHO panel suggested that the WHO's centre for health emergency preparedness and response or a similar response team should recruit anthropological, social media and crisis communication experts to ensure accurate, evidence-based and transparent reporting, public relations management and media liaison.³⁵⁶ The communication strategy should be coordinated, proactive and suited to social realities. It

should also aim to mobilize local communities through more responsive regional offices.³⁵⁷

International arrangements - Regional organizations

Regional organizations, such as the AU, ECOWAS, the West African Health Organization (WAHO), the MRU and the EU played important roles in the international EVD response. The AU, motivated by the need for solidarity, did so despite limited resources, but was still criticized for the time it took to deploy.³⁵⁸ It is evident that improved preparedness would allow personnel to be deployed more quickly during the next health security crisis. The AU's eight subregional bodies, the so-called regional economic communities, of which ECOWAS is one, together with the 55 AU member states could facilitate coordination and cooperation.³⁵⁹ Once the funds were available and the challenges related to accommodation and transport resolved, operations proceeded relatively smoothly during the EVD outbreak.³⁶⁰ The AU deployed approximately 720 military and civilian health personnel as part of Operation ASEOVA.³⁶¹ Nigeria, Ethiopia, the DRC and Kenya contributed to that contingent. The large number of ASEOVA health workers deployed, despite the deadly nature of EVD, demonstrated "the desire and commitment towards shared values and norms for African unity and integration".³⁶² Deploying health workers with experience in treating Ebola patients at ETUs in Rwanda and the DRC had a positive impact. The AU's military personnel provided security for the teams, guarded PPE stocks, gave logistical support to the missions and performed a variety of other activities. The ASEOVA mission was required to coordinate and integrate its operations with the coordinating bodies of the affected countries, and was expected to establish coordination mechanisms with ECOWAS, international organizations, NGOs and INGOs, as well as the national emergency mechanisms.³⁶³

In the spirit of the African Solidarity Initiative, people came from countries including Mali, Ghana, Nigeria and South Africa to assist in the EVD response in the worst-affected countries. The AU's decision to establish the African Centres for Disease Control and Prevention in 2017 is commendable:³⁶⁴

the centres conduct research, facilitate early detection and prevention of existing and new diseases and contribute to the establishment of South-South partnerships between emerging countries.³⁶⁵ Likewise, consistent with UN Charter Chapter VIII, the AU's Peace and Security Unit can take UN Security Council decisions to the African continent and work with bodies such as ECOWAS and the African Standby Force to develop integrated and context-sensitive health and security strategies.

ECOWAS joined the international response to the EVD outbreak, but the pandemic revealed that its deployable branch, the ECOWAS Standby Force (ESF), was unprepared to fulfil its mandate.³⁶⁶ In 2014 the ESF could not be deployed because it was not yet operational due to differing SOPs, poor coordination and incomplete command-and-control structures.³⁶⁷ In the aftermath of the Ebola crisis, it was suggested that ECOWAS should establish a subregional centre for training and research to address disasters and emergencies. Within such an institution, health and security personnel should be proportionately represented.³⁶⁸ It was also suggested that ECOWAS member states should boost their capacities in the health, security and humanitarian sectors, and explore possibilities for each sector to liaise with the others: operations and policies could be mutually enforced and pave the way for more effective future responses.³⁶⁹ For the ECOWAS Commission, implementing the already outlined pre-positioning and standby arrangements is recommended in the short term. Such an arrangement for responses to pandemics should be composed of a planning cell and a management cell, and operated alongside the ECOWAS Emergency Response Team. In the medium term, the ECOWAS Commission should try to outline a civil-military coordination doctrine for the ESF.³⁷⁰

The *WAHO* was at the forefront of the international EVD response, alongside the ECOWAS Commission.³⁷¹ This involvement highlighted that managerial and operational mechanisms between these international governmental organizations (IGOs) must be strengthened.³⁷² Actions should be undertaken to improve effective collaboration, examine the general state of coordination between these IGOs and determine strategic pathways for future engagement.³⁷³

As a regional organization, the *MRU* plays an important role in assisting with health crisis responses. The Fifteenth Protocol to the *MRU* Declaration provides a framework for establishing joint border security and confidence-building units; but units on the ground did not function effectively during the EVD outbreak. Local cross-border needs were not addressed: further guidelines must be developed, and the same standards should apply on each side of the border.³⁷⁴ To achieve this, the dissemination of *MRU* policy documents at local and national levels is recommended.³⁷⁵ Moreover, the *MRU* Secretariat should commission more in-depth research in the field of health security.³⁷⁶ This could form the basis for policy advice and generate best practices across common borders.³⁷⁷ The *MRU*'s informed advice could assist Sierra Leone's Ministry of Health and Sanitation and its ONS in their decision-making procedures.³⁷⁸ In addition, the *MRU* Secretariat should conduct a mapping exercise to identify threats and opportunities that confront health and security actors, particularly along the borderlands of the *MRU*.³⁷⁹ The *MRU* Secretariat has been commended for its ability to enhance international cooperation and collaborative arrangements during the EVD crisis. It managed to bring different IGOs (UNMEER, the AU, the Asian Development Bank, ECOWAS) to the negotiating table and organized numerous high-level and interministerial meetings.³⁸⁰ Nevertheless, some authors argue that the *MRU* Secretariat could have reacted faster, and perhaps taken a more proactive role at the start of the outbreak.³⁸¹ Given the *MRU*'s strong convening powers, it could indeed more actively promote a platform for hands-on cooperation and coordination. External partners could then support *MRU*-initiated activities with the provision of in-kind services, such as logistics or transportation.³⁸² There is a need for closer cooperation with the national governments of the *MRU*, for instance in the form of policy dialogue consultations. Ideally, these dialogues would include all relevant ministries, agencies, donors and other concerned stakeholders.³⁸³

The *EU* contributed significantly to the international response,³⁸⁴ providing logistical support, material aid, expertise, both diplomatic and political support, and financing. The *EU* interacted with the affected West African states mostly through two bodies, the Health Security Committee

and European Civil Protection and Humanitarian Aid Operations. While focusing much of its support on relief in West Africa, the EU called for enhanced traveller screening at borders of affected countries. Early detection and awareness-building programmes in neighbouring countries were also supported. The EU's Health Security Committee was at the centre of coordinating these efforts.³⁸⁵ Furthermore, the European Council appointed an EU Ebola coordinator and set up the EU Ebola Task Force, while the EU funded the European Mobile Laboratory Project (EMLab) alongside the German Ministry of Health. This aims to build the "capacity to bring state-of-the-art technology, diagnostics and highly trained scientists from Europe and Sub-Saharan African countries to the field in case of infectious disease epidemics in Europe and Sub-Saharan African countries".³⁸⁶ During the Ebola crisis EMLab was used in several locations and proved to be reliable for various organizations active in the field, such as MSF and the WHO.³⁸⁷ It was used for diagnostics and identification of the Ebola virus under difficult and dangerous working conditions, providing capacity to treat patients and helping to train local health workers. More skilled and domestically recruited health workers will likely be invaluable for tackling future public health crises that might affect these countries.³⁸⁸ EU member states decided not to engage security sector actors, so the EU did not develop the Common Security and Defence Policy for tackling the EVD outbreak.³⁸⁹ However, some member states decided to use their (military) assets in the framework of their national response. Some scholars advocate a stronger, comprehensive EU approach, including more effective surveillance and management by making use of its full range of resources.³⁹⁰ The European Centre for Disease Prevention and Control could be instrumental in the rapid mobilization of human resources.³⁹¹

On the financial side, by October 2014 the EU had raised over €1.2 billion for the affected countries.³⁹² Efforts were initiated to help affected populations cope with the crisis and its difficult social and economic aftermath. The EU allocated €210 million to development and early recovery assistance, focusing on rebuilding and strengthening public services and infrastructure.

International arrangements - Mechanisms and capacities

Important lessons were uncovered for international mechanisms and capacities, such as the Global Health Security Agenda (GHSA), warning mechanisms and standardized status of forces agreements (SOFAs).³⁹³ It was further found that conducting scenario analyses, having stabilization plans in place, adhering to a “do no harm” approach and filling technology gaps are crucial.

The *GHSA* is a multinational initiative combining health and other security concerns; it has attracted increasing attention and participation by new countries, partly in response to the Ebola outbreak.³⁹⁴ It can assist in a number of ways, for instance through peer review to recognize gaps in capacities in health and other sectors; promotion of cooperation between the sectors; and identification of major global health threats and strategies to prepare for them.³⁹⁵

Improved *warning mechanisms and standardized SOFAs* are needed nationally, regionally and globally to ensure adequate prevention of health emergencies and guarantee that an emerging health crisis can be managed effectively.³⁹⁶ For instance, there should be a provision that recognizing a “health crisis in the making” would trigger a set of consequent actions.³⁹⁷ At a later stage, if appropriate, the crisis could be recategorized as a general emergency that attracts a broader response, including from humanitarian, strategic and security actors. In the worst case, the WHO would have to declare the crisis a PHEIC. Once national early-warning mechanisms indicate the onset of a potential health emergency, an affected country’s response coordination mechanism (such as the suggested national health security council) would be activated. As appeals for immediate outside help, including military assistance, rarely allow the time to resolve the many legal questions that sending and receiving such support might entail, SOFAs have to be prepared in advance. Agreeing more issues in advance will quicken responses by limiting the time required for negotiations. Entry agreements should cover general issues such as strategies, funding, human resources and the sharing of responsibilities or liabilities.³⁹⁸ They must also cover issues that are unique yet highly relevant to the provision

of assistance during epidemics, including the mutual recognition of medical certificates and procedures on who can be in contact with victims of the epidemic, where, how and for what purpose. These agreements must be fully pre-negotiated and concluded before an epidemic occurs, and should be broken down into specific, easily enforceable protocols.³⁹⁹

Conducting *scenario analysis* is important, as shown by the example of Switzerland. Sergei Bankoul argues that for every conceivable scenario the possible stakeholders have to be predetermined. He believes that what has proven to be successful in Switzerland will also be applicable for an international effort. In the end, the contributions of a diversity of partners must add up to a complete response.⁴⁰⁰ The use of *stabilization plans* that have been tested in advance and are implemented in a timely manner is also important. Such plans should be prepared at the regional level and give attention to public health measures and disease prevention in advance, rather than only being developed when a disease has already emerged. The issue of regional stabilization also raises the question of who is empowered to intervene and when.

In the spirit of the “*do no harm*” approach, it is crucial that the involvement of regional and global actors will constructively support and take pressure off local and national actors. It should not add further pressure or complicate or slow down effective health crisis mitigation and response. Unfair or unconstructive competition between different IGOs and hijacking of local efforts and activities must be avoided, as it hinders collaboration between different actors and might result in a loss of confidence in the overall response.⁴⁰¹ All actors involved should subscribe to the values of mutual respect and partnership as much as possible, and avoid claims of attribution and attempts to stand in the limelight of international (media) attention, which creates counterproductive competition among partners.⁴⁰² To ensure constructive collaboration between different IGOs, a multistakeholder approach should be adopted.⁴⁰³ Instead of competing with other IGOs for the provision of assistance, each IGO should see its input as a partial contribution to the greater goal, “since no single entity can do it all”.⁴⁰⁴

Donor agencies can find it difficult to create a comprehensive response that links humanitarian assistance required during a crisis with the subsequent development work needed in post-crisis rebuilding. This is not only because of the way funding is channelled into silos that create gaps between “emergencies” and “long-term development”, but also because donors are generally pressured to focus on a few client countries (e.g. “least developed” within a selected geographical or language grouping). Given that a health crisis can happen anywhere and spread rapidly across borders, donor agencies must adapt their response. Decisions about who leads the response at each level would depend on the nature and extent of the crisis. The requirement of partial and temporary ceding of sovereignty, due to the need for some responses to transcend borders, has been highlighted as a particular challenge to achieving this. This implies that an international mission must be planned in coordination with local and national actors to take local conditions into account, configured to produce a maximum positive effect. Regional and international actors must understand that their contribution should supplement and not substitute the local response;⁴⁰⁵ they must also consider that their deployment should in the first instance be in response to national requests. These bodies should avoid insisting unduly on their own expertise and refrain from using their own templates in disregard of local needs, preferences and experiences.⁴⁰⁶

Strategies that proved successful in the past in another context are not necessarily fit to be implemented in the given circumstances.⁴⁰⁷ No two communities, even within the same country, can be approached in the same way. Thus “one-size-fits-all” approaches are doomed to fail. An integrated, strategic response that can adapt to different scenarios and develop missions appropriate to each context is needed. The focus of the international community in post-conflict peacebuilding has been on municipal settings, while rural settings have been largely neglected. As a result, peace, security and confidence-building units often did not function well at local community levels. This was problematic for both health and security responses. Thus a stronger emphasis on small rural communities is highly recommended. Furthermore, the responses must avoid weakening local health and security actors, for example by imposing

overly complicated procedures or draining locally required expertise by hiring local people: a balance should be struck between relying entirely on expensive foreign experts and hiring local staff. In the long run, building local capacities is beneficial for both host and donor countries,⁴⁰⁸ and past experience has shown that parallel structures set up by foreign actors are often not sustainable and leave a capacity void once the international experts have left. It is therefore all the more important to use existing structures, as they will continue to operate after international partners have left.⁴⁰⁹ By considering local expertise, external actors can effectively secure and maintain local buy-in.

Technology gaps should be considered during all assistance efforts. There is little use in delivering high-tech solutions to problems that are embedded in, and sometimes arise from, modest technology environments. Upgraded emergency procedures must be feasible and effective, easy to implement and sustain, and suited for the context in which they are applied. New equipment must be sturdy; effective; easy to handle, repair and replace; and suited to the environment and purpose for which it is used. The mobilization of financial, material and human resources must be quick, so that deployments of experts and security personnel can be facilitated as soon as they are needed. The preparation of human resources for health crises must go beyond the health and security sectors to include people with many other kinds of skills. A pool of experts and trained professionals should be established to allow quick mobilization of human resources.⁴¹⁰ In addition, it is important to offer sensitization training on health-crisis-related challenges to members of international missions prior to their deployment.⁴¹¹ Further, experience gained through past disaster prevention and international relief operations could be used to derive lessons for future health security crises. Given that expertise and know-how in certain areas cannot be acquired overnight, preparation for a case of emergency must be institutionalized.

Funds and resources for health crisis emergency responses need to be set aside before new epidemics unfold.⁴¹² The EVD crisis has shown that the response was highly dependent on emergency contributions by bilateral donors once the outbreak was under way. Various multilateral actors, IGOs

and national governments committed to pay more than US\$5 billion for the Ebola response by the end of January 2015.⁴¹³ Given that these sums were granted more than one year after the first Ebola cases, it is important to have an international body with immediately available emergency funds that can quickly be released for the needs of health missions.⁴¹⁴ The WHO could play a key role on a global level. On continental, regional and subregional levels, the AU, ECOWAS and the MRU should be able to move ahead without having to raise or wait for emergency funding after a crisis has erupted.⁴¹⁵

National governments

National governments responded differently to the EVD outbreak in West Africa. Overall, the need for timely and proactive government responses was highlighted. Governments must also improve healthcare systems; invest in infrastructure, especially in rural areas; and address corruption to ensure that donor assistance reaches those in actual need. Systems for effective donor aid coordination need to be created, and mismanagement of funds and equipment must be prevented.⁴¹⁶ Regular auditing should reveal clean practices or, in other words, the efficient, effective and accountable management of donor aid.

The EVD outbreak highlighted the need for *timely, effective and proactive government response*. To be prepared for health crises, governments should rehearse emergency responses that are triggered by a functioning EWS and organized by a central coordination body. Pre-crisis planning and practice are essential for preparedness, which in turn is essential for effective and proactive responses.⁴¹⁷ Mali, Nigeria and Senegal were named as examples of governments adopting a proactive role in approaching Ebola: these governments treated the EVD outbreak as an issue of national security rather than a public health crisis.⁴¹⁸ Moreover, they could draw on comparatively more developed health infrastructure,⁴¹⁹ and NGOs were activated quickly to assist in the Nigerian and Senegalese responses.⁴²⁰ In contrast, Guinea's government failed to anticipate the EVD crisis: its role was reactive instead of proactive.⁴²¹ For improved preparedness of Sierra

Leone's government, which was also accused of lagging behind during the Ebola outbreak, a multiagency threat and risk assessment should be conducted.⁴²² Taking decisions in a timely fashion is critical:⁴²³ a major factor contributing to the devastating effect of Ebola in Sierra Leone was the failure to recognize the severity of the disease, which prevented sufficient action to isolate infected individuals before they could further spread the virus. Hence political leadership must have the capacity to make evidence-based decisions as quickly as possible. Prior consultations with the relevant experts are necessary to improve government officials' mediocre past performance in response to the EVD crisis.⁴²⁴ Management personnel should therefore undergo specific strategic and operational training, designed to deal with future health crises.⁴²⁵

In general, there was a need to have national and regional response strategies and mechanisms in place much earlier. At the national level it was important that the office of the head of government took control, giving leadership to the cabinet level and allocating responsibilities to relevant ministries. In the case of Sierra Leone, the Office of the President could have assigned the crisis a higher priority if it had been treated as a national security concern; afterwards, the Ministry of Health could have taken care of the design and implementation of policies and strategies in a decentralized fashion. Yet such a procedure is only feasible if the government refrains from politicizing issues of national security.⁴²⁶

A government's response must also recognize the socio-economic requirements of survivors and their families. In this regard, differing needs according to gender and the specific needs of vulnerable groups must be taken into account. Furthermore, many post-crisis problems need to be addressed at the family or tribe level. There are often a relatively large number of orphans among the survivors, and special provisions must be made in catering for their needs to avoid stigmatization.⁴²⁷

From a *long-term perspective*, national governments need to improve healthcare, set up rural development programmes, invest in infrastructure projects and ensure strategic government reserves.⁴²⁸ Governments should devise employment packages (salary rises, perks, career paths, etc.) to retain qualified personnel in the health sector and guarantee the attractiveness of

the profession for future recruits.⁴²⁹ International standards in the provision of healthcare must be met. New health workers should be recruited and trained to build up human capital after the sad loss of numerous personnel during the Ebola outbreak.⁴³⁰

Moreover, the AU countries should live up to their pledges made in the Abuja Declaration:⁴³¹ in April 2001 the AU member states met and agreed on setting a target of allocating “at least 15% of their annual budget to improve the health sector”⁴³². While 26 countries increased the proportion of total government expenditures allocated to the health sector between 2001 and 2011, only Tanzania achieved the 15 per cent target. Eleven countries even reduced the proportion of allocated funds, and nine countries’ expenditures remained at the same (low) level during the ten-year period.⁴³³ Increased funding would bring obvious improvements and establish structures that support the needed synergies between routine and emergency activities.⁴³⁴ For instance, a share of the increased funding could be allocated for the set-up of national centres of disease control,⁴³⁵ including in rural and remote areas.⁴³⁶

Regarding international obligations, countries should strive to reach SDG 3: ensuring healthy lives and promoting well-being for all at all ages.⁴³⁷ According to the UN Sustainable Development Knowledge Platform, “progress must be accelerated” to meet the SDGs’ health targets by 2030.⁴³⁸ The report of the UN Secretary-General on the progress of the SDGs states that a “major risk factor for infectious diseases and mortality is the lack of safe water, sanitation and hygiene ... services, which disproportionately affects sub-Saharan Africa”.⁴³⁹

National governments should become more active when it comes to *sensitization and awareness-raising campaigns* using traditional and new media. Feasible policies, such as mandatory hand hygiene, should be encouraged countrywide. One approach relating to the wider determinants of health and encouraging governments to mainstream health in other sectors is the Health in All Policies strategy. According to the WHO, it is “an approach on health-related rights and obligations” which “improves accountability of public policies on health systems, determinants of health, and well-being”.⁴⁴⁰ Health in All Policies forms an important basis

for intersectoral cooperation and could offer an avenue for collaboration between health and security sectors in preparing for health crises.

Concerning investment in infrastructure, the construction or improvement of road transport networks connecting remote areas and vulnerable communities with local hubs is crucial. The expansion and maintenance of sanitary infrastructure, most importantly the provision of clean water, must be guaranteed. The need for access to safe water and sanitation is underlined by SDG 6, ensuring “availability and sustainable management of water and sanitation for all”.⁴⁴¹

The US National Academy of Medicine underscores the importance of global initiatives for the adoption of country plans, suggesting that national plans could be aligned with the objectives of these initiatives (such as the SDGs). Apart from the “galvanizing and mobilizing” effect on national and global actors, common objectives like the SDGs could be used “for holding country leaders accountable” and act as an entry point for the health security agenda.⁴⁴² Furthermore, national governments should ensure that strategic reserves, including foodstuffs and fuel, are located in decentralized storerooms around the country.⁴⁴³ With a functioning healthcare system, inclusive socio-economic progress and improved infrastructure, particularly in rural areas, future crises can be tackled more swiftly.

Guaranteeing sustained recovery despite transitions of power in national governments is a further challenge. There is a tendency for post-crisis recovery agreements to be sidelined when subsequent regime changes occur. Mechanisms should be found to ensure that continued assistance and priority for recovery and health system strengthening can be sustained across political cycles. National governments should record the roles played by actors in their national security sector in a report, to identify lessons, gaps and challenges.⁴⁴⁴ Such a report would serve as a heuristic to address capacity gaps, overlaps and transgressions of the different components, and would give the government leverage and credibility in requesting more resources from international actors.⁴⁴⁵

Societal actors

The Ebola crisis highlighted that non-governmental actors in society, including the media, think-tanks, INGOs, NGOs, civil society organizations (CSOs) and educational or advocacy institutions, must have the capacity to engage in social mobilization and community engagement. Civil society actors should be supported, and activities by state actors should be coordinated with them. This is crucial, considering that civil society actors are in a better position than government authorities and foreign actors to educate the local population about responses that are sensitive to cultural habits, traditional customs and community perceptions.⁴⁴⁶ Prominent civil society actors can help communities demystify and destigmatize health protection practices, further helping them to recognize such practices as normal. This was evident during the EVD crisis,⁴⁴⁷ where even though isolation and treatment centres were being built and dead body disposal services expanded, communities continued to practise unsafe behaviour due to traditional and cultural beliefs.⁴⁴⁸ This fuelled the spread of the disease. Only by using a grassroots approach did communities begin to follow recommendations and rules.⁴⁴⁹ Subsequently, other components of the security sector, such as the police service, began to reach out to the population through civil society actors.⁴⁵⁰

Every entity of civil society can contribute to a health crisis response. For instance, university students can play an important role: they can bring the skills and training they are acquiring in health and other sectors to bear, deploy their subject-specific knowledge and understanding of terminology and communicate in everyday language with their communities, where they will already possess an element of social capital.

More generally, youth can make important contributions to security, community action and communications. The Ebola epidemic showed that local music and street artists can join awareness-raising programmes and become campaigners. For instance, in Liberia musicians played an active role: their concerts and shows attracted passers-by, who were then given flyers, information leaflets or, where services had been integrated, medicine.⁴⁵¹

In Sierra Leone the different transport and trade unions also got involved. The motorcycle taxi (*okada*) union, the taxi union and the share taxi (*poda-poda*) union underwent sensitization courses provided by the SLP.⁴⁵²

Notably, women and women's organizations were largely excluded from the Ebola crisis response. They need to be fully integrated in any future planning to voice their gender-specific concerns and needs, if possible supported by sex-disaggregated data.⁴⁵³ The same applies to racial, ethnic and minority groups. Religious groups could have profited from engaging more actively in the EVD response, too. Counselling, spiritual guidance and emotional support are crucial for infected persons and next of kin. Moreover, their assistance before, during and after burials is essential. Apart from information sharing and awareness raising, societal actors engaged in the provision of services such as food delivery. For example, when an infected person in quarantine needed food, societal actors were often the first to provide this service.⁴⁵⁴ For all these reasons, CSOs should be given a central stage in public health emergencies.

The *media* became a willing tool in communicating the importance of measures for individuals and communities to prevent the spread of EVD. Their role in countering rumours, fear and a lack of confidence in the public discourse should not be underestimated.⁴⁵⁵ Dialogue with the media about responding to a crisis and the roles of different actors should take place on an ongoing basis, to convince and enable the media to play a positive educational role rather than only an informational role, or sensationalizing events in ways that increase any panic that may arise.⁴⁵⁶ The media should refrain from spreading rumours and check facts before dissemination. Media outlets (including international outlets⁴⁵⁷) should encourage journalists and correspondents to adhere to the highest standards of their profession ("messages must be unified, accurate, evidence-based, well-framed, and timely"⁴⁵⁸), to take an objective, transparent approach and to contribute actively to responsible journalism.⁴⁵⁹ By relaying sensitization messages, media outlets can build legitimacy and public support for health workers and raise the population's risk awareness.⁴⁶⁰ An ongoing dialogue between the responders to the crisis and the local community through the

media helps in reassuring the public that necessary and proper measures are being taken.⁴⁶¹

Reporting and updating from crisis areas require proper preparation, training and equipment. Other components of the security sector could support journalists in performing their task by offering intelligence and protection. It is vital to use the right language, medium and messenger. The use of celebrities or “traditional communicators” as messengers, for example, guarantees that more of the population can be reached.⁴⁶² When speaking about the media’s role, both traditional and new media should be engaged. The spread of misinformation, fake news, spoof political articles and conspiracy theories complicated the Ebola fight,⁴⁶³ so the different components of the security and health sectors active in a response should ensure that their staff have the necessary anthropological, social media and crisis communications expertise to improve communication with media outlets.⁴⁶⁴ Finally, a crucial function of the media is that they can hold governments and security sector actors accountable by providing coverage and background analysis of their actions.

In practical terms, *INGOs and NGOs*, such as MSF, were most able to respond quickly to the Ebola outbreak; accordingly, they played a vital role in the first few months. However, they were limited by a lack of both financial and human resources. External stakeholders working with INGOs and NGOs, and the organizations themselves in their public reports, have addressed these issues and other criticisms.⁴⁶⁵ Kamradt-Scott et al. report that most NGOs and CSOs, apart from a few exceptions (MSF, the ICRC, etc.), “were unprepared or unwilling to respond” to the outbreak.⁴⁶⁶ The particularity of this crisis – a deadly disease caused by an infectious agent – caught many actors off guard. Just like components of the security sector, INGOs, NGOs and CSOs lacked capacity and expertise to train staff in infection control and had insufficient stocks of PPE. At the beginning of the outbreak, several INGOs decided either to cease operations altogether or to withdraw their staff to non-affected neighbouring countries. Others were pushed by their donors or government development agencies to stay and provide assistance.⁴⁶⁷

Research institutions and think-tanks need to share research results and policy-relevant information actively with the public and those involved in health disaster response. Centres of excellence should be encouraged and supported to carry out research, for instance in collaboration with national and regional centres for disease control to develop protocols and SOPs for prevention, management and recovery.⁴⁶⁸ An example of a successful research partnership is the Liberia-US clinical cooperation known as Partnership for Research on Ebola Virus in Liberia (PREVAIL).⁴⁶⁹ The study investigates the long-term consequences of EVD, and is sponsored by the Ministry of Health of Liberia and the US National Institute of Allergy and Infectious Diseases. Such North-South partnerships should be fostered to transfer knowledge and best practices in their mutual interest. A diverse think-tank landscape in terms of their location, experiences and expertise is also an asset.⁴⁷⁰ However, think-tanks and research institutions of the global North should pay far more attention to their Southern counterparts' priorities.⁴⁷¹ The latter can play a more prominent and effective role in strengthening their societies' capacities if they are empowered and backstopped by partners.⁴⁷² In West Africa, no think-tank or research institution focuses on health security – addressing this gap would appear to be a prudent option.⁴⁷³ To understand think-tanks' existing and potential capacities to advance the health security agenda, a mapping study should be carried out to determine the different components and stakeholders of the two sectors. Possible entry points for newly established think-tanks into the health security community could be created through the organization of satellite sessions before, during or after high-level meetings.⁴⁷⁴

Think-tanks add credibility and confidence to health security programme planning. In addition, they serve as translators of health security debates for decision-makers. This skill, drawing on experience in both practical-operational and theoretical-strategic worlds of health security, is a significant advantage over purely academic institutions. However, think-tanks entering policy debates and programme planning should be aware of some common obstacles facing the health security field. These include uncertain financing and the need to fit new approaches to health security with prevailing national interests and domestic and foreign policy agendas.

Think-tanks specializing in security issues might be in a better position to work on and address health security issues than those that focus primarily on health.⁴⁷⁵

Similar to the media, research institutions and think-tanks play an important oversight role. They can hold the different actors of the health and security sector accountable by collecting and reporting on disseminated information, promises made and the management of funds.⁴⁷⁶ As such, they contribute to overall transparency and foster evidence-based decision-making. By adopting a proactive, coordinated communication strategy as well as a standardized information process, response time could be reduced and the undetected spread of viruses could be limited.⁴⁷⁷ Moon et al. insist on the scientific research community's role to guarantee "[r]apid knowledge production and dissemination". Alongside the industry and NGOs, research institutions and think-tanks must not only accelerate research and govern its conduct but also "ensure access to the benefits of research".⁴⁷⁸ Think-tanks can build bridges between the health and the security communities. They can advance debates on the role of the two sectors and examine the health dividends of effective and accountable security provision. With regards to the SDGs, think-tanks can provide hands-on recommendations on how to implement different measures in order to reach the targets.

Implications of cross-sectoral cooperation: Inclusiveness and requirements for legal and institutional frameworks

The level of cross-sectoral cooperation seen during the EVD response has several implications, including the need for *inclusiveness* and *requirements for legal and institutional frameworks* to facilitate the cooperation.

The multiplicity of actors with different roles requires *inclusiveness* and has implications for training, to ensure smooth coordination and consistency and correctness of messages. Liaison requires skill, sensitivity and multitasking capacity. It is also important to engage with civil society actors who do not directly benefit, or who might even be counterproductive to the response. For instance, traditional healers or "wise people" should be included⁴⁷⁹ because they might be more trusted than physicians, especially

in rural communities. In addition, modern medicine should open its doors to traditional healers to raise awareness of the fact that by continuing doing “business as usual” they risk endangering their own lives, the lives of their patients and those of third parties.⁴⁸⁰ Traditional healers must further be included because a simple ban on the exercise of traditional practices would only perpetuate the activity in illegality. The inclusion of multiple societal actors helps to feed local knowledge into the decision-making process during a health security crisis.⁴⁸¹ If each interest group participates in the process, a peaceful, cooperative, sustainable response is much more likely. Such an inclusive strategy might correspond with the whole-of-society approach to effective social organization.⁴⁸² The whole-of-society approach inspired by the whole-of-government theory aims to rebuild resilient communities through community mobilization and engagement on a permanent basis.⁴⁸³

Legal and institutional frameworks must further be adapted to ensure smooth cooperation across sectors. It is important that overall responsibility for health crisis management and the chain of authority and accountability of the security institutions engaged in crisis response are thoroughly understood and agreed upon by all actors involved before a crisis erupts. Early and proper preparedness is crucial to facilitate rapid deployment in times of crisis. The creation of an office of a national public health security adviser and a national health security council, as mentioned previously, would offer the necessary vehicles to facilitate the coordination of such a systematic and joint approach. In terms of requirements, *accountability* of security institutions to oversight and management bodies while involved in a health crisis is crucial.⁴⁸⁴ Thus the involvement of security sector actors at the prevention and planning stage should be matched with the inclusion of state and non-state oversight and management bodies. Regarding non-state oversight, scholars suggest the creation of an “accountability commission”, under the aegis of the UN Secretary-General, comprising representatives from civil society, academia and independent experts in the relevant areas, to assess global responses to major public health emergencies.⁴⁸⁵ Apart from tracking and analysis of contributions and results achieved by governments, IGOs, INGOs and NGOs, UN agencies and

others, such a commission could also assess the results and effectiveness of the deployment of domestic and foreign armed forces as well as other components of the security sector.⁴⁸⁶

When a country declares a health crisis, it is paramount that *funding* becomes immediately available. While more economically developed countries can procure the necessary funding, least-developed countries and fragile states require international support. Multilateral funding bodies such as the World Bank, the Asian Infrastructure Investment Bank, the African Development Bank and the New Development Bank step in and assist countries when disease outbreaks occur.⁴⁸⁷ Similarly, the US National Academy of Medicine urges that greater resources are necessary to tackle future pandemics. An emergency fund would further enhance a rapid response. The largest share would be dedicated to “upgrade the public health infrastructure and capabilities of national health systems”.⁴⁸⁸ The second-largest component of a multi-billion-dollar amount should be spent on research and development to provide “stronger weapons with which to fight new or reemerging infectious diseases”.⁴⁸⁹ Indeed, the World Bank pledged US\$200 million in August 2014 to contain the Ebola virus and support communities in rebuilding the economy and strengthening their public health systems. By the end of 2014 the World Bank claimed to be mobilizing nearly US\$1 billion: US\$518 million for the emergency response, and US\$450 million to support economic recovery in the region.⁴⁹⁰

The World Bank’s Pandemic Emergency Financing Facility (PEF) and the AU’s African Risk Capacity agency are also considered promising, given that they “offer the possibility of insurance to mitigate the economic costs linked to outbreak reporting”.⁴⁹¹ The PEF was created “to channel surge funding to developing countries facing the risk of a pandemic”.⁴⁹² In the long run, spending a large amount of money up front would be more effective than spending the same amount of money in yearly instalments. To provide financial support to the PEF, the World Bank launched specialized “Pandemic Bonds” on 28 June 2017. This marked “the first time that World Bank bonds are being used to finance efforts against infectious diseases, and the first time that pandemic risk in low-income countries is being transferred to the financial markets”.⁴⁹³ Between 2017 and 2022 the PEF

should provide more than US\$500 million “to cover developing countries against the risk ... of six viruses that are most likely to cause a pandemic”, including SARS, MERS-CoV, Ebola, Marburg and Lassa fever.⁴⁹⁴

Legal frameworks must either be revised or new ones created to reflect new international, regional and domestic health-related roles for security institutions. Their mandates must be adjusted to cover preventive and responsive action to assist in the management of health crises. This includes several instruments that have international support and can contribute to the elaboration of strategies for responses to future health crises, such as the IHRs and the Sendai Framework for Disaster Risk Reduction 2015–2030⁴⁹⁵ (adopted at the Third UN World Conference in Sendai, Japan, on 18 March 2015). The IHRs provide insufficient guidance for countries that need to implement border closures and quarantines.⁴⁹⁶ To fill these gaps, Mosca and Wickramage suggest that the IHRs should incorporate the Siracusa Principles (1985),⁴⁹⁷ which allow temporary suspensions and derogations of the right of free movements subject to strict conditions. For instance, any such restrictions imposed must be limited in time, reviewed afterwards and offer a possibility to appeal. Furthermore, restrictions must be proportionate and based on scientific evidence.⁴⁹⁸ The legal frameworks further include the UNOCHA guidelines on the use of military and civil defence assets to support UN humanitarian activities in complex emergencies and, as indicated above, the UN Oslo Guidelines on the Use of Foreign Military and Civil Defence Assets in Disaster Relief. The Oslo Guidelines provide a valuable framework regarding military involvement in international crises. Published by UNOCHA as a non-binding document on civil-military cooperation, the main principles refer to the need for complementarity (the military takes action only if civil capacities are insufficient); the need for civil control (the military has to operate in a subsidiary role under civil control); and the military should provide its capacities free of charge.⁴⁹⁹ However, there is a need for guidelines that cover other components of the security sector and are appropriate for adaptation to different contexts and countries.

Nationally, legislation must be adapted to these international frameworks, unless a country adheres to a monistic legal system and the

international provisions are self-executing. In Sierra Leone the IHRs are formally in place, but have never been implemented on a domestic level⁵⁰⁰ – the funds for proper implementation have not been made available by the government.⁵⁰¹ Adapting the legislation is not sufficient, however: national parliaments should ensure that people and authorities effectively comply in their actions or inactions with the existing institutional and legal framework. Based on national legal acts and provisions, local by-laws and ordinances adjusted to the new external circumstances can be adopted. During the EVD crisis the Sierra Leonean ONS was undergoing a transition phase, which further hindered the implementation of institutional and legal frameworks. Legally binding by-laws were introduced in the country that proscribed several types of traditional burial due to the increased risk of infection, and fines were imposed on those who did not comply with these new proscriptions.⁵⁰² These by-laws also regulate the security sector actors' engagement in more detail. Similar by-laws prohibiting providing assistance to infected persons or actively concealing them from the authorities were introduced at a later stage.⁵⁰³ In Mali no such by-laws were introduced, because there were only a few recorded cases in the country and also several higher-level national laws were not yet in place. Only once the outbreak was brought under control was the legal basis voted on.⁵⁰⁴

Internal doctrines and manuals of security institutions should be adjusted according to these legal frameworks. Training, exercises, staff planning and procurement will need to reflect the new tasks of the security sector. In Sierra Leone, lack of training on new local by-laws and ordinances led to misinterpretations of the legal provisions: in several reported cases, houses where individuals died of EVD were burnt down due to the wrong application of the law.⁵⁰⁵ At the MRU level, training on different national and regional legal acts regarding immigration needs to be offered. The objective is to harmonize procedures carried out by border security, customs and immigration personnel.⁵⁰⁶ There might also be a need for sanctions (e.g. through the World Trade Organization) for countries that do not adhere to international rules. At present, for instance, airlines and countries can act with impunity in suspending flights and closing borders.

Opportunities for cross-sectoral cooperation in training, simulation and early warning

Significant opportunities exist for increased cooperation between the health and security sectors, particularly with regard to training, simulations and EWSs. All types of simulations involving actors, stakeholders and agencies from different sectors are extremely valuable in fostering improved cross-sectoral coordination during health crises. Simulations facilitate smoother, more coordinated and ultimately more effective collaboration: they allow emergency protocols and processes to be tested, the comparative strengths and weaknesses of different actors to be revealed, and roles and responsibilities to be clarified. This ensures improved preparedness for emergency responses. Notably, simulations foster constructive relationships between sectors, which ultimately improve health crisis responses. Previous examples, such as the drills carried out at Narita Airport and Narita Red Cross Hospital in Japan in 2007 and the full-scale simulation exercise involving Association of Southeast Asian Nations (ASEAN) member states in Phnom Penh in 2010, demonstrate the benefits of simulations.⁵⁰⁷

A World Bank study entitled *Strengthening Post-Ebola Health Systems* further highlighted that weaknesses in health systems were evident across countries in West Africa; as a result “there is heightened momentum to improve collaboration among countries in the sub-region for the prevention and control of potential cross-border disease outbreaks, including those of zoonotic origins”.⁵⁰⁸ Establishing a regional disease surveillance and response network is crucial to “make the necessary paradigm shift from the reactive approach usually adopted for the prevention, control, and response to infectious disease outbreaks in the region to a more pre-emptive and proactive risk reduction approach”.⁵⁰⁹ The study further emphasized the importance of improving preparedness and response capacities through cross-border and cross-sectoral collaboration in disease surveillance and response. As part of this, EWSs must be strengthened, and cross-sectoral emergency preparedness and response plans created and updated.⁵¹⁰ Notably, all these factors are interlinked: “Establishing a regional disease

surveillance network (improving health systems' capacity and service delivery platforms for effective surveillance and response) will require strengthening cross-sectoral capacity as well as regional cooperation to earlier detect, better prepare [for], and rapidly respond to infectious diseases threats at the animal-human-ecosystem interface."⁵¹¹ In addition, such a regional network should establish links with global notification and warning systems that are already in existence, such as GOARN and the Global Early Warning System.⁵¹² A cross-sectoral approach to disease surveillance and early warning is crucial. An improved understanding of the human-animal ecosystem interface is critical, due to the fact that more and more emerging or re-emerging infectious diseases have wildlife origins.⁵¹³

EWSs send out signals in the early stages of a health crisis, triggering a response. The presence of advanced EWSs, drawing on accurate and timely data, is therefore indispensable. Many technologies exist, such as several internet-based EWSs (including GPHIN, ProMED-mail, HealthMap, EpiSPIDER and BioCaster) and the EWSs operated by the WHO in Afghanistan, Yemen and elsewhere. All these draw on effective public health surveillance, which remains a challenge for the sector. In Chapter 20 of this book Zylberman et al. emphasize the new concept of "precision public health" and the use of data in early warning, pointing out its potential but also some known problems. For instance, the Google Flu Trends project launched in 2008, which monitors online resources to predict disease outbreaks, wrongly predicted an influenza outbreak in 2013 in New York City. The quality of the sources used is thus the most crucial aspect of informal outbreak-reporting systems. The authors further highlighted the importance of communication between different disciplines, as well as the sharing of information between sectors and countries, as this has the potential to minimize the effect of disease outbreaks. This was highlighted by the Spanish cucumber crisis in 2008.

Complex global health security issues require comprehensive multisectoral and multinational approaches, given that the impacts of a health crisis are felt in multiple sectors. An examination of past global responses to health crises demonstrates a lack of communication and understanding among health and security stakeholders. It must be

recognized that global health crises do in fact carry security implications. As a result, new interdisciplinary training modules should be developed for policy and political decision-makers. These should be based on lessons identified and provide the relevant decision-makers with the ability to develop new strategies in the face of highly dynamic environments. Several academic institutions and initiatives have already created training opportunities to facilitate cross-sectoral interaction in this regard, including the Global Health Security Alliance (GloHSA). In addition, the Führungsakademie der Bundeswehr (the German Command and Staff College) explored a programme with interdisciplinary stakeholders which intends to create a common understanding of cross-cutting challenges. It aims to facilitate the interaction of expertise within the silos of finance, governance, personnel, foreign policy, humanitarian, health emergency and disaster management frameworks. This programme would be suitable for civilian and military actors. In addition, a joint multinational (global) health security academic cluster should be created. This could prepare long-term academic educational programmes; support research that is based on lessons learned for UN agencies and other supranational institutions; adapt and promote new joint training modules for policy and political decision-makers, technical and clinical senior subject-matter experts, stakeholders from civil society and the private sector, and practitioners; and promote “train the trainers” initiatives. Such a programme should be supplemented by a system that collects the lessons learned and so informs national and international health and security organizations and stakeholders, including the WHO, the World Bank, the UN, the EU and others.

Implications for SSR activities

The involvement of security actors in health crises, as well as other actors outlined previously, has significant implications for ongoing SSR projects. In countries where SSR activities (both nationally and/or internationally sponsored) already take place, reforms should include measures to increase the security sector’s preparedness (including equipment and training) to contribute to managing health crises and engaging in interagency

cooperation inside and outside the security sector for a coordinated response. Such cooperation might then also “spill over” into improved cooperation in other areas where security-sector-wide approaches are called for. Hence preparation for potential health crises could be used as a catalyst for general SSR and SSG. SSR processes present opportunities for addressing structures and mechanisms, which need to be linked with assessments of threats and gaps that lead to appropriate policies and budgetary resources. These processes further help to build confidence and trust among civilian actors, who may otherwise be reluctant to collaborate. Throughout SSR, activities and operations need to be accompanied by a proper monitoring and evaluation procedure.⁵¹⁴

Dempsey argues that “Security sector reform, focused not just on traditional physical security (including police, justice, and military forces) but on human security for the most at-risk communities, will be a key enabler of more immediate local response efforts.”⁵¹⁵ Therefore national security policies and their implementation strategies, which are the starting points of any meaningful SSR effort, must reflect the risk and impact of potential health threats, as well as the contributions which the security sector can make (based on its comparative advantage) towards mitigating them. In terms of practical examples, the Alioune Blondin Beye School for Peacekeeping⁵¹⁶ in Bamako, Mali, provides several courses on SSR, disarmament, demobilization and reintegration (DDR), human rights, children’s rights and transitional justice.⁵¹⁷ In Guinea an outline for an SSR process was adopted, but there is no advance in implementing an SSR programme. Generally, change efforts regularly encounter resistance.⁵¹⁸ In Sierra Leone the SLP attended several SSR training and mentoring activities given by UK experts.⁵¹⁹ In Liberia SSR training and mentoring was conducted by officers from different countries under the UN umbrella, but different concepts and approaches posed initial difficulties for the participants.⁵²⁰ These national reform processes, including lessons learned, should be shared at a regional level.⁵²¹

It has already been highlighted that the different components of the security sector were often unprepared to deal with gender-specific needs. For instance, the security personnel deployed to quarantine homes rarely

included female agents. Depending on the situation, this resulted in low willingness to cooperate and sometimes outright opposition.⁵²² During a health crisis, gender issues must be taken seriously to facilitate cooperation between the health and security sectors. Given that the health sector is traditionally made up of a larger share of women than the security sector, a gender-insensitive security sector could jeopardize the entire response.⁵²³ The different composition of these two sectors is thus another reason to include a “gender component” in any SSR activity.

Moreover, the Ebola outbreak has added more momentum to the demand to mainstream health topics in SSR activities. The mandates of the different components of the security sector need to include a “health component”. An efficient response can only be guaranteed by broadening their missions to meet the requirements specific to major health security crises.⁵²⁴ The aforementioned Health in All Policies strategy, which relates to the wider determinants of health and encourages stakeholders to think about health to be mainstreamed in other sectors, could be a valuable approach for this endeavour. The WHO has developed a framework for country action that can be adapted for supranational-level decision-making.⁵²⁵ During the Eighth Global Conference on Health Promotion in 2013 in Helsinki, the participants stated that “equity in health is an expression of social justice” and “action aimed at promoting equity significantly contributes to health, poverty reduction, social inclusion and security”.⁵²⁶

As the preceding section argues, the necessary prerequisites to allow successful civil–military cooperation in health crises include preparedness and capacity building, the need for the security sector’s subsidiarity to civilian actors, coordination mechanisms, information sharing, exit strategies and compliance with official mandates. Collaboration between the health and security sectors was largely productive during the EVD outbreak, but the blurring of lines between military and civilian activities may potentially be problematic. As such, capacity-building activities between the two sectors and early negotiation and implementation of official mandates are crucial. Foreign military assistance provided by the UK, the USA and France, while perceived as positive, should remain a measure of last resort. Other security sector components, including intelligence services, police,

border management and local security actors, must engage with the health sector during health crises. International and regional organizations and international mechanisms such as the GHSA and warning systems play further crucial roles. National governments and societal actors must be consulted. Cross-sectoral cooperation has implications for legal and institutional frameworks, the accountability of security sector components to oversight bodies, and internal doctrines and manuals of security sector actors. Similarly, the involvement of the security sector has implications for ongoing SSR efforts to increase the sector's preparedness to manage health crises and cooperate with the health sector, which must include a gender component.

Concluding remarks

As the Ebola epidemic has shown, the prevention and management of health crises are necessary to maintain or (if an outbreak cannot be avoided) re-establish security, stability and an environment conducive for peace, development and good governance in affected countries and beyond. A nation's security sector can make significant contributions to the early detection, effective response to and rapid mitigation of health crises if properly mandated, trained and integrated into a well-coordinated multiagency response strategy. To facilitate this, strategic and operational decisions have to be taken to improve good governance at the level of the national government as well as the security sector; within and between a nation's security sector institutions (including in particular the armed forces, intelligence services, police, border management and local security actors); within international partners, including regional and global security institutions; and within non-governmental actors, including media, civil society, think-tanks and research institutions.

Legal provisions and institutional arrangements need to be provided or adjusted to facilitate more effective health crisis prevention and mitigation efforts. Ongoing or anticipated SSR activities (as well as other reform efforts in transitional and/or post-conflict contexts) need to take account of the

challenges created by incipient health crises. Furthermore, health-crisis-related institutional arrangements and mandates should be integrated into ongoing reform efforts. Ideally, health crises are either prevented or their spread is checked and halted as rapidly as possible, while keeping human suffering as well as political and societal instability to a minimum. Without appropriate and pragmatic processes and institutional frameworks, good intentions are unlikely to translate into meaningful results. As this chapter argues, it is therefore critical to put in place health crisis mitigation mechanisms, such as a national coordination mechanism in the form of a national health security council and a national public health security adviser. Such mechanisms cannot be sustainable without regional and international support, so regional and international response mechanisms must also be strengthened to ensure sustainability.

Effective preparedness requires early and continued practice. Joint multiagency training activities need to include simulations on how different sectors should work together to tackle a health crisis. Within the security sector, all components – both security-providing institutions and oversight institutions – need to work and train closely together to synchronize preparedness within the sector and in the interplay with other national and international actors employed to tackle a health crisis. Intersectoral training of officials at national, regional and global levels should include an understanding to guarantee flexible responses to lines of authority and responsibility; developing a shared understanding of terminology that may have a different meaning for different actors; and imparting skills in the effective use of communication tools to build trust among health and security providers, and between them and affected communities. In dealing with global challenges like EVD, new types of relationships are required between the health, development, humanitarian and security sectors. Their development should be informed by evidence from research; recent experiences with cooperation (or the lack thereof); the design of new modes of interaction; and requirements for implementation and training. These new relationships must be practised to ensure better preparedness for and capacities during crisis response. The Ebola crisis has been a wake-up call to take health crises more seriously and invest now in efforts to

prepare, collaborate - and get ready for possibly significantly worse crises to come.

Reflecting on developments since 2017

On 2 July 2017 WHO Director-General Dr Tedros Adhanom Ghebreyesus declared the end of the most recent EVD outbreak in the DRC: "With the end of this epidemic, DRC has once again proved to the world that we can control the very deadly Ebola virus if we respond early in a coordinated and efficient way."⁵²⁷ However, the outbreak would not be the last time that a country, a region or the world is faced with a deadly virus and it is vital to prepare properly - now.

After the major EVD epidemic in West Africa was brought under control in the period between late 2013 and mid-2016, there have been no outbreaks at the same scale and no new cases in the region. While the epidemic in West Africa was ongoing, there was an unrelated outbreak in the DRC in 2014: this was relatively limited, with 66 cases compared to over 28,000 cases in West Africa. Perhaps more importantly, the outbreak was contained relatively quickly, stemming in part from the DRC's previous experience with Ebola, as the 2014 outbreak was the country's seventh.

Since 2016/2017, however, there have been new outbreaks in the DRC (with limited exposure in Uganda as well). An initial outbreak in May 2018 in the DRC's north-western Équateur province was declared by the WHO as having ended in late July 2018, with 54 cases and 33 deaths reported. Just a few weeks later, in August 2018, the WHO reported an outbreak in the DRC's north-eastern North Kivu and Ituri provinces, which has since then grown to become the second-largest EVD outbreak on record. As of 23 June 2020 there have been 3,470 cases reported, with 2,280 fatalities, although during recent months the WHO reported a decline in the number of newly confirmed cases.⁵²⁸

Security sector actors' role in the response

The Kivu/Ituri outbreak presents a unique challenge, in that it erupted in a location of ongoing armed conflict, severely hampering efforts by both national and international health officials to respond effectively. At the centre are the Kivu and Ituri conflicts, both with deep ethno-religious roots and both traceable to the aftermath of the Second Congo War (1998–2003). A UN peacekeeping mission with 20,000 personnel, the UN Organization Stabilization Mission in the DRC (MONUSCO), is present in the country. Nevertheless, armed groups in opposition to the government continue to occupy parts of the region (so-called red zones) and actively fight the government while health officials are attempting to control the EVD outbreak. The most active groups are the Allied Democratic Forces, the Democratic Forces for the Liberation of Rwanda and several groups related to Islamic State, as well as many different independent local protection militias, called Mai Mai.

More so than during previous EVD outbreaks, armed violence played a critical role in the (in)ability of local, national and international officials to respond to the health crisis. WHO Director-General Tedros Adhanom Ghebreyesus explicitly highlighted frequent and intensive armed group attacks on the then epicentre of the outbreak, Beni, as a major hindrance in responding to the outbreak when speaking at the UN Security Council in October 2018. Within the space of only a few weeks, a nearby DRC military base was attacked (24 August), MONUSCO forces were ambushed (3 and 9 September) and the city itself was attacked by both rockets (11 September) and regular forces (22 September). Adhanom stressed the high security risks involved in sending WHO officials to the area. Both the WHO and MSF reported the necessity for limitations – and sometimes a complete lockdown – in their healthcare provision operations. As of late November 2019, a further upsurge in violence has caused staff evacuations and lockdowns, with the WHO withdrawing 49 personnel.

Security concerns do not only constrain the health community's response but were also a major factor in the outbreak. MSF reports the breakdown of the health surveillance system as a direct consequence of

the very problematic security context, which limits movement and access in the area. This has been the case for over two decades, and in North Kivu province alone MSF reports over 100 active armed groups. This made it easier for the first cases to spread, creating a relatively unchecked incubator environment for an EVD outbreak. Moreover, due to the continuation of violence, hundreds of thousands are in need of humanitarian assistance: Ituri province has over 225,000 IDPs, North Kivu 100,000 and South Kivu over 260,000. These circumstances heavily increase the danger posed by possible EVD outbreaks.

Direct security provision

The role of the security sector in responding to the DRC EVD crisis through direct security provision has two challenges: there is community-based violence and ongoing armed conflict involving non-state armed actors. Mistrust by the local population continues to create dangerous and sometimes fatal situations for responders. Examples include the killing of a supportive radio journalist, the burning down of houses and fire damage to a health centre in Lwemba. Similar events have occurred in Beni. This is in part the result of decades of violence, widespread mistrust of the government and spiralling conspiracy theories. The 2018 decision not to allow voting in EVD-affected areas further stimulated these fears, creating an even more hostile security environment for (inter)national response teams.

Another security concern is the armed confrontation between the Armed Forces of the DRC, supported by MONUSCO forces, and the many armed groups active in the area. Periods of low-intensity fighting have been interrupted by periods of heavy fighting, which have hindered or stopped responders from working. Since late October 2019, and intensifying in late November 2019, the government and MONUSCO have relaunched an offensive against opposition groups close to Beni, mostly linked to the Allied Democratic Forces. As a complicating factor, many armed local Mai Mai militias have been active since the Second Congo War and, beyond protecting local communities, often engage in illicit activities such as

trafficking in arms, humans, drugs and precious metals. State security actors, such as the Congolese National Police and the Armed Forces of the DRC, are highly prone to corruption and collusion with these groups, despite officially opposing and fighting them.

Cross-border challenges

Given the outbreak's location in the DRC's border region with Uganda, there are significant cross-border challenges. So far, there has been one confirmed case and fatality in Uganda, although there have been some cases of DRC-origin travellers with EVD in Uganda. However, there are large refugee flows from the DRC into Uganda, increasing the challenges for border management agencies to guard against the spread of EVD: in October 2019 alone, over 4,000 DRC refugees moved into Uganda, with now already close to 400,000 asylum seekers from the DRC living in Uganda. This is only a fraction of the hundreds of thousands who cross back and forth on a daily basis. The WHO has urged for borders to remain open, and together with the IOM and the Ugandan government the WHO monitors 64 points of entry (POEs) into western Uganda from the DRC. Travellers are officially screened for EVD symptoms, but a great number of informal border crossings and insufficient screenings at POEs complicate these efforts. This availability of informal border crossings would make closing formal border crossings a dangerous decision, as hundreds of thousands of people who depend economically on being able to cross would otherwise start using informal crossings instead of formal ones, thus making it more difficult to monitor population movements. This was exemplified by a panicky response to a brief border closing by the Rwandan authorities on 1 August 2019.

Given this context, border management support programmes are a key part of the response to the EVD crisis in the DRC and Uganda. For instance, in 2017 the IOM trained and equipped over 20 Congolese border health officials, and supported flow monitoring at some border crossings to control possible EVD spreading, in somewhat similar fashion to its response in 2014 in West Africa. Still, there is insufficient capacity to monitor the large

flows of daily transits properly, and there are many gaps for individuals to evade border controls and the accompanying health checks.

International responses

The post-2017 EVD outbreaks have never received the same international attention and focus as the West African crisis. This created a severe delay in the international response, and despite a relatively timely and serious approach by UN agencies (in particular the WHO), they appear severely limited in their capacity to address the security and political challenges faced by the response teams. The WHO faced major funding challenges, and serious funding commitments only materialized when it declared the outbreak a PHEIC, supported by a US\$300 million commitment by the World Bank. A major advancement since the West African crisis is the development of a vaccine (with a second one currently in clinical trials), which has been deployed relatively rapidly to over 250,000 individuals.

The DRC strategic response plans not only emphasize that security concerns are a major threat to the international EVD response, but also point to the fact that all actors recognize the importance of engaging security issues. Moreover, the plans note that coordination and communication remain difficult between relevant (security) actors, and emphasize in particular the absence of a conflict resolution strategy as well as the lack of an integrated response. Community resistance and high levels of insecurity present substantial risks to international responses. The need for facilitating and building on synergies between public health and security sector responses to health crises, as well as coordinated humanitarian response and financial planning, is explicitly recognized in the WHO's Strategic Response Plan for the Ebola Virus Disease Outbreak in the Provinces of North Kivu and Ituri, Democratic Republic of the Congo (July–December 2019) - in part due to what the WHO calls continued security incidents with "dramatic consequences".⁵²⁹ The lack of an integrated security strategy is in general recognized as a major obstacle to addressing the challenges posed by the EVD outbreak effectively. The difficulties of the situation in the DRC have caused MSF and WHO officials to consider it as one of the most

complex health emergencies so far. When MSF/WHO facilities continue to be attacked and medical teams require protection by armed escorts to do their work, intersecting political, security and cultural contexts must be well understood and inform both national and international responses.

Implications for the security sector

A major takeaway of the post-2017 experiences with EVD outbreaks from a security sector perspective sees security provision as a vital component of effective responses to such outbreaks. Compared to the EVD epidemic in West Africa, these concerns have become even more salient in the ongoing outbreaks in the DRC. Security issues are the most important factor undermining efforts to quell the outbreak – efforts that had repeatedly been halted completely. The growing recognition of the importance of security provision and integration as part of national and international EVD response strategies is reflected in various strategic response plans.

Recommendations made by security and health sector analysts in response to the 2014–2015 West African EVD crisis remain applicable to the current situation and will likely prove even more central to a successful EVD response in North Kivu. The outbreak's profoundly problematic security situation has been compounded with major challenges in border management, institutional capacity, (integrated) cooperation between different actors, warning and response mechanisms, and intelligence. These challenges add to the highly visible security challenges presented by violence-inducing community-based mistrust and prolonged conflict involving non-state armed groups. Lacking institutional capacity and corruption/loyalty problems of state actors (e.g. the Congolese National Police) in the region further promulgate these challenges.

Last, the highly porous international border of the DRC with its eastern neighbours (most prominently Uganda and Rwanda) is already a significant challenge for the security sector. Although capacities of official POEs are already severely stressed, the set-up of health checks and EVD-conscious procedures provides for at least a minimum level of monitoring and information building. The challenge remains with the many informal

border crossings, with little to no monitoring. This creates serious concerns about the ability to prevent EVD from spreading to other areas, and capacity building of border management institutions is a serious challenge.

Brief overview of the contributions to this volume

This chapter (Albrecht Schnabel and Ilona Kickbusch) discusses the findings produced by the project on which this book is based, summarizes the main experiences, lessons and findings of the various expert meetings that led up to the production of this volume, and offers a brief epilogue reflecting on experiences with international responses to continuing Ebola outbreaks since the West African outbreak on which this volume and its recommendations are focused.

The second part of the volume looks at the role of the security sector in the West African Ebola crisis, with Chapter 2 (Haja Safiyatu Sovula) focusing on Sierra Leone, Chapter 3 (Samuel Kargbo) on Guinea and Chapter 4 (Faisal Shuaib) on Nigeria.

The third part of the book examines in more detail the roles of specific security institutions in countries that were directly affected by the Ebola crisis. Chapter 5 (J. P. Chris Charley) assesses the role of the Sierra Leone Police; Chapter 6 (Jonathan Sandy) discusses border policing in Sierra Leone; Chapter 7 (Abdoulaye Diagana) evaluates the merits and results of border closures throughout the West Africa region in response to the evolving crisis; Chapter 8 (Andrus Öövel and Goran Krstetski) reflects on how European border management experiences could offer clues for a post-Ebola integrated border management approach; Chapter 9 (Cédric Invernizzi) assesses the utility of the research centres of the Swiss Federal Department of Defence, Civil Protection and Sports in preparing for similar crises; and Chapter 10 (Komba Mondeh) offers a comparative look at the security sector's role in managing the Ebola crisis in Guinea, Liberia and Sierra Leone.

The fourth part of the volume examines international military support missions, with Chapter 11 (Louis Lillywhite) focusing on the UK, Chapter 12 (Christine Fages) on France and Chapter 13 (Sergei Bankoul) on Switzerland.

The fifth part of the book shifts attention to responses by regional and global organizations, with Chapter 14 (Cristina Barrios) on the European Union, Chapter 15 (Prosper Nii Northey Addo) on the African Union, Chapter 16 (Olatunde Olayemi) on the Economic Community of West African States, Chapter 17 (Jonathan Sandy) on the Mano River Union and Chapter 18 (Davide Mosca and Kolitha Wickramage) on the International Organization for Migration.

The sixth part takes a closer look at opportunities that exist for constructive cooperation between health and security sectors in preventing and managing global health crises, with Chapter 19 (Lea Ellmanns and Albrecht Schnabel) examining options for training, simulation and early warning, Chapter 20 (Patrick Zylberman, Danny Sheath, Nefti-Eboni Bempong and Antoine Flahault) looking at the use of digital data streams to collect and share epidemiological data and Chapter 21 (Christian Haggemiller, Margaret Bourdeaux and Anja Opitz) exploring options for preparatory training for health and security agencies.

The concluding Chapter 22 (Albrecht Schnabel, Lea Ellmanns and Ilona Kickbusch) summarizes the main findings of the preceding contributions and offers recommendations for security sectors to prepare more meaningfully and effectively for future health crises, followed by an epilogue (Chapter 23, by Floris de Klerk Wolters, Albrecht Schnabel and Sabeena Bali) that offers an adaptation of the lessons learned from the EVD crisis to the emerging COVID-19 context.

Notes

- 1 The authors are grateful for the contributions to earlier drafts of this chapter by William Bennett, Lea Ellmanns, Werner Werder, and Theodor Winkler. Definitions of and the distinction between “outbreak”, “epidemic” and “pandemic” are given later in this chapter.
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- 118 Kamradt-Scott et al., note 110 above, p. 7.
- 119 This section draws on Schnabel and Kickbusch, note 2 above, pp. 20ff.
- 120 Honigsbaum, note 26 above, p. 280.
- 121 The term was first used after UN Security Council discussions about HIV/AIDS. The two concepts were further conflated during the SARS outbreak.
- 122 For another definition of "global health security" see Kickbusch, I. (2016) "Governing the global health security domain", IHEID Global Health Programme Working Paper No. 12, Geneva, https://repository.graduateinstitute.ch/record/293810/files/working%20paper%2012GHP_2015.pdf?version=1, p. 6. Global health security is a crisis-driven paradigm which sees disease as a destabilizing factor because it damages economic, social, political, military and educational infrastructures, and contributes to increased conflict within and between countries and societies.
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PART II

The Ebola Crisis and the Role of the Security Sector in West Africa

Sierra Leone's Experience during the Ebola Outbreak

Haja Safiyatu Savula

Introduction

In 2014 an unprecedentedly deadly outbreak of Ebola virus disease (EVD) struck Sierra Leone, causing fear and uncertainty among both the population and medical professionals. The country slowed and then stood still: schools, universities, businesses and centres of social gathering and entertainment were closed or deserted. As the economy faltered, unemployment grew and commodity prices rose. As relatives and loved ones died, strict rules about burial practices meant people were no longer able to render their traditional last rites, compounding the sense of grief. The experience of loss bore an unfortunate resemblance to the 1991-2002 civil war, and there were concerns EVD might become "Africa's Black Death". However, thanks to the strong efforts of both local and international partners, Sierra Leone overcame the epidemic. This chapter examines how this success was achieved.

Evolution of Ebola and the response

This particular Ebola crisis was the largest and most sustained EVD outbreak ever recorded. It began gradually and then swept through the entire country, infecting a total of 8,704 people (cumulative confirmed cases), of whom 3,589 lost their lives (cumulative confirmed deaths).¹

It remains unclear how the crisis began, although there are a number of largely unconfirmed theories. Since it first appeared in the Democratic

Republic of the Congo and South Sudan in 1976,² the Ebola virus has been a known name in equatorial Africa. However, the 2014 Ebola epidemic was the first time West Africa was affected by the disease, with Guinea as the epicentre. How did the virus migrate from East Africa to West Africa? Unconfirmed sources claim that the virus was manufactured at Kenema Hospital, where research on Ebola and experimental vaccine testing was done by the US military and Tulane University. This lab had been running since the 1970s and carried out biomedical research involving haemorrhagic fevers.³ Further, the US Centers for Disease Control and Prevention holds a patent (“Human Ebola virus species and compositions and methods thereof”) on a particular strain of the virus known as the Ebola Bundibugyo, or EboBun for short.⁴ In 2010 Tulane University, the Broad Institute and Harvard University in partnership with the Sierra Leone Ministry of Health and Sanitation conducted research on this particular strain,⁵ yielding information that sets the 2014 outbreak apart from previous outbreaks.⁶

In Sierra Leone the funeral of a respected traditional healer in Sakoma, a remote village in Kailahun district near the border with Guinea, is believed to have caused new cases seen in early June 2014. The healer became infected while treating Ebola patients who had crossed the border from Guinea seeking her healing powers. From a medical standpoint, for a disease to erupt in an area where it has never been observed before, the cause of its appearance must either be natural (as a result of mutation in the normal genetic sequencing) or man-made (manufactured in a laboratory during scientific research). EVD can be transmitted by humans, animals and inanimate objects. One of these might have carried EVD into the new environment. Some believe that the bat is the carrier of the disease. Research published by representatives of the US Army Medical Research Institute of Infectious Diseases and the late Dr Sheik Kumar Khan of Kenema Hospital indicated that EVD and other deadly viruses like yellow fever, Rift Valley fever, chikungunya and Marburg are present in the Gola Forest that borders Guinea, Liberia and Sierra Leone.⁷

This confusion regarding the source of the 2014 outbreak hampered the initial response by both local and international actors. If the international community and local governments had rapidly organized a response when

Médecins Sans Frontières (MSF) first raised concerns, the outbreak would probably not have escalated as it did. This was the case in Nigeria, Mali and Senegal, where national governments treated the outbreak as an issue of national security. In Sierra Leone, MSF was initially in charge of the response; the government only became involved much later, and still did not treat the outbreak as a national security problem. Instead of being managed directly by the Office of the President and the Office of National Security, it was left in the hands of the district health management team within the Ministry of Health and Sanitation. The crisis was perhaps beyond their management capabilities, and initial responses were slow and ill formed. However, lessons were learned, and eventually steps were taken.

- Isolation units were first set up in Kenema and Kailahun; these soon became overwhelmed as patients were brought in from every district of Sierra Leone. Holding centres were subsequently established at every hospital and health centre in the country, where infection prevention and control were implemented, including hand washing, disinfection with chlorine and the use of personal protective equipment.
- Sensitization messages were aired by all media outlets, disseminating key information on the prevention and transmission of Ebola.
- Checkpoints were established at every district and border crossing; health workers screened all travellers for signs and symptoms of Ebola.
- Airport screening was set up for passengers entering and leaving the country, following an incident in Lagos when a traveller who had been exposed to Ebola in Liberia left the hospital against medical advice. The individual took a flight from Monrovia to Lagos and, feeling unwell, was admitted hospital on arrival and initially treated for malaria. However, he remained unresponsive to treatment and subsequent tests showed he had Ebola. The patient unfortunately died, but estimates are that he exposed about 72 people at the airport and the hospital to the disease.
- A toll-free call centre was set up for people to report sick or deceased relatives. This allowed ambulances to be sent quickly to pick up and transfer patients to holding or treatment centres.

On 23 July 2014 the first Ebola case was diagnosed in Freetown.⁸ Within days the situation spiralled beyond the control of local authorities. President Ernest Bai Koroma declared a national state of emergency, bringing the Sierra Leonean military and Office for National Security together for response efforts alongside a number of international organizations and actors.

Each of these actors brought different approaches and expertise. As part of its response, the WHO declared the outbreak an international public health emergency in August 2014. It also published a road map to coordinate the international response to the outbreak, with the aim of stopping ongoing Ebola transmission worldwide within six to nine months; this outlined the key preventive elements of contact tracing, follow-up, social mobilization and awareness raising.⁹

However, it took another month for the UN Security Council to declare EVD a “threat to international peace and security” and establish the first UN mission for a public health emergency. Its main task was to coordinate the UN agencies’ response efforts and provide a rapid, efficient and coherent response to the Ebola crisis.¹⁰ This was relatively successful. For example, the World Food Programme provided food assistance to people living in restricted-access areas and medical logistics to support the government response.¹¹

Regional bodies such as the Economic Community of West African States (ECOWAS) created a solidarity fund to be used for containment of the outbreak,¹² while the European Union (EU) and others provided personnel and resources to assist with laboratory testing and government coordination.¹³ The African Union sent health workers, too.¹⁴

There were notable bilateral responses from China and the UK. China supplied teams of health workers, constructed and ran a treatment centre, and provided mobile laboratories to carry out Ebola testing. For some time this lab serviced the whole of Freetown, until more mobile labs were established to help shorten the time taken to obtain test results.¹⁵ The UK, meanwhile, sent health workers and deployed its naval ship *Argus* replete with military personnel and helicopters. These personnel provided both essential command-and-control structures and an infrastructural

foundation that significantly contributed to the scaling up of the response in Sierra Leone. Further, the British Army built the Kerry Town Treatment Centre.

Other health organizations, including MSF, GOAL, Partners in Health, the Red Cross, the International Medical Corps and the International Organization for Migration, coordinated their efforts to handle the outbreak. They each contributed various support measures, ranging from logistics to medical equipment and data collection and evaluation.

These collective responses each played an unquestionable part in controlling the epidemic that must not be downplayed. Yet the coordination and coherence between the efforts was not as effective as it might have been. The then WHO director-general, Margaret Chan (in office from 2006 to 2017), acknowledged the organization's "slow response to the outbreak", adding that "Ebola is a tragedy that has taught the world, including WHO, many lessons about how to prevent similar events in the future."¹⁶

Main problems encountered

Lack of trust

A lack of trust between the public and the government and health officials fuelled misconceptions about the government's intentions in the response to the Ebola epidemic, and was exacerbated by the manner in which the government initially handled the outbreak. This led some to believe that the Ebola epidemic was just another governmental ploy to persuade the international community to provide more financial assistance, and as a result many people did not take governmental warnings about the virus seriously

It did not help matters that the outbreak in Kailahun was greatly politicized. The opposition Sierra Leone People's Party blamed the All People's Congress ruling government for neglecting the outbreak in Kailahun, as it was one of the opposition strongholds. It claimed that the government did this to reduce the population numbers in the area,

especially as the census was about to be held. This is highly unlikely. However, the government decision to quarantine the entire Kailahun district was not popular, and was often ignored as a result. Consequently, the virus soon spread to every district.

But some government behaviour was questionable. For example, Ebola sensitization and awareness-raising campaign funds given to each of the 214 parliamentarians amounted to Le 69 million (US\$14,000), but there is little knowledge about how these funds were actually used. For some people this confirmed their belief that the Ebola epidemic was merely a ploy by government officials to make financial gains for themselves.

As the virus spread and the practice of taking blood samples grew, other people had more sinister suspicions - even that the collected samples might be for use in "rituals" by the sitting government to consolidate its grip on power in future elections. These suspicions were most prevalent among uneducated Sierra Leonean citizens, and severely complicated the collection of samples in some places.

The messages used during sensitization campaigns contributed to this distrust. Initially the campaigns emphasized the deadly nature of the virus, and stated that no known vaccine, treatment or cure existed. At the same time, the campaign advised the public to seek medical care at a hospital if they fell sick, to receive treatment and survive EVD. Confronted with these contradictory messages and the deadly nature of EVD, people decided to keep their loved ones at home - where they died feeling loved and well cared for.

Arguably, health workers were unable to make patients feel cared for. Due to inadequate protective gear, health workers often refused to touch patients if they were thought to be infected. The large number of health workers who contracted EVD while treating patients infected with Ebola and subsequently died contributed to this fear. This, in turn, resulted in a loss of confidence and trust in local health workers. Furthermore, in rural areas with very limited access to medical facilities (and given that government messages claimed that no medical cure existed for the disease), citizens often decided to seek help from herbalists and traditional healers - this massively enlarged the circle of transmission and in some instances wiped

out entire communities.

Poor healthcare system

After ten years of civil war the healthcare system in Sierra Leone was in extremely poor shape – indeed, only five hospitals in Sierra Leone met WHO standards, of which just one, the government hospital in Freetown, was equipped with adequate laboratories to test for Ebola.

For Sierra Leone, Ebola represented an old disease in a new context. The country had never experienced an EVD outbreak, and the health system initially failed to detect its presence. No laboratory or clinician in the county had first-hand experience with Ebola.

Maintaining basic infection and prevention control was especially problematic at government facilities, where obtaining gloves or simple disinfectants was a challenge. Doctors had to get such protective gear themselves. Similarly, patients had to buy gloves themselves so that nurses could attend to them. Government facilities did not even have functional triaging or accident and emergency units. Until his early death from EVD, Dr Martin Salia worked tirelessly to achieve his dream of having a functional treatment unit. Private facilities in Sierra Leone were better equipped for infection and prevention control, but they were too scarce and standards were still low. Proper systems to isolate patients and disinfect healthcare workers and hospitals were absent. Thus many medical staff became infected, and hospitals gradually became “no-go areas” for healthcare workers and patients alike. Moreover, patients died of other non-communicable diseases like hypertension, diabetes, asthma and malaria because they feared going to hospitals. There was also a shortage of ambulances to transport suspected or confirmed Ebola cases from their homes to the treatment centres in Kenema and Kailahun. Further, transportation of patients was hampered by poor road networks and conditions. The author vividly remembers an ambulance carrying about eight Ebola-positive patients from Bombali district having an accident on the way to Kenema. When asked about the reason for the accident, the driver stated he had not slept in days and had dozed off while driving.

After President Koroma declared a state of emergency, safe burial of all bodies by Ebola burial teams was mandated. However, due to the shortage of ambulances to take the deceased to burial sites, some people had to keep their dead for up to five days in their homes awaiting the burial teams. Understandably, some relatives took the risk of burying their dead without protection or precautions. Others simply dumped the bodies on the road, as they did not want to be quarantined. Tragically, those affected by Ebola are most infectious after death, and many people caught EVD while handling their deceased relatives.

Poverty

Acute poverty means many people cannot afford decent housing and are forced to live in slum areas or tiny shelters called “pan bodies” (small houses built with aluminium sheets and sticks). This had serious consequences. Overcrowding and inadequate sanitary and water facilities allowed the Ebola virus to spread rapidly in poorer areas, especially as most people in these areas did not have the financial means to seek out proper medical treatment.

Cultural beliefs and traditional practices

For most people it was customary to wash and befittingly dress the dead as they travelled to the next world. For some religious sects this was a moment when the dead person’s powers or other good traits were transferred: traditionally, the water used to bathe the dead would later be used by relatives to wash various parts of their bodies, or was even drunk. Relatives believed this practice would pass a special anointing of good luck, wisdom and power on to them. As a result of such practices, the infection rate increased significantly.

Porous borders

Sierra Leone’s borders with Guinea and Liberia are porous. Large

movements of people across these borders occur every day, making contact tracing very difficult as infected individuals frequently move from one country to another. This posed an even bigger problem. Even if Sierra Leone succeeded in getting the rate of infection under control and no new infections occurred, the country would probably continue to experience new cases of infection from Guinea or Liberia. Hence all three countries must reach and maintain zero cases of new infections.

Positive lessons

Based on direct experience with responses to the Ebola outbreak, a number of positive lessons can be learned.

- Setting up isolation units and triaging systems at all health delivery centres was crucial. This allowed all suspected cases to be easily identified and due process to be initiated and followed.
- Providing all health workers with personal protective equipment and training on infection prevention and control helped reduce the infection and death rate among healthcare workers. This boosted the morale to continue working under such dangerous conditions.
- Placing district surveillance officers and contact tracers in various communities facilitated the identification of and response to cases of infection. With adequate ambulances on standby, patients could be collected on alert and bodies did not have to remain in houses for hours before being taken away for burial.
- A three-day lockdown of the entire country took place on 19-21 September 2014. All citizens were confined to their homes while health workers searched houses to transport the sick to hospital and bury the dead. This occurred especially in parts of the country where the casualties had overwhelmed burial teams. The lockdown led to a significant drop in new cases.
- Information about patients was carefully entered into a central information system and their progress was monitored. In addition, a call centre was set up where people could call and enquire about the welfare of relatives.

The security sector

Following early interventions of health workers, the security sector emerged as a key player in the fight against Ebola. Indeed, it is likely that without the involvement of the military, both national and international, the Ebola crisis would have been prolonged.

Police officers were deployed at checkpoints and helped to quarantine homes. The Police Training School at Hastings was the first Ebola treatment centre set up in Freetown. The military was deployed after the president declared a state of emergency, with its main tasks including the following.

- Military doctors and nurses became front-line responders at the Hastings treatment centre. Young healthcare workers risked their lives daily while treating Ebola patients. They were the first to institute parenteral treatment, i.e. intravenous administration of drugs, and thereby went against the guidelines of the WHO and MSF, which mandated the administration of oral medication.
- Military health workers administered intravenous replacement fluids (vital during the “wet stage”¹⁷ of Ebola) as well as antibiotics and anti-malarial medication.
- Military personnel were deployed at quarantined homes and villages, where they maintained security, law and order.
- Ebola response vehicles, including ambulances, were driven by military drivers.
- Military technicians and engineers helped construct additional holding and treatment centres.
- Government hospitals and care centres deployed military personnel within their compounds to maintain security (including crowd control) and law and order.
- Military personnel maintained curfews and restrictions as outlined by the state of emergency. They conducted night patrols and manned checkpoints (often with police).
- Military personnel guarded and manned the command centres and were involved in logistics and transportation of food and water supplies to restricted areas and quarantined homes.

Just as all other institutions in Sierra Leone, the security institutions were unprepared and ill equipped to handle the outbreak. They lacked basic skills, expertise and equipment to implement the strategies and plans to tackle the outbreak. Unfortunately, many security providers lost their lives to Ebola.

Fortunately, the British Army provided urgently needed logistics and support that helped the Sierra Leonean military perform better. However, military personnel sometimes overstepped their boundaries when dealing with certain issues. This was especially problematic with regards to respecting human rights in sensitive humanitarian contexts. It is crucial that the gap between military actions and the protection of human rights is bridged by adequate preparation and practice.

Problems with international assistance

Over the course of the Ebola crisis the country became overwhelmed. Hospitals and health centres could no longer handle the outbreak and President Koroma appealed to the international community for assistance. On 3 September 2014 the president of MSF addressed the reluctance of UN member states to help, arguing that “six months into the worst Ebola epidemic in history the world is losing the battle to contain it”.¹⁸ Only after this speech did the international community (the WHO, the UN, the African Union, ECOWAS and other bilateral donors) act to address the outbreak.

International assistance was not without challenges. Firstly, many international partners and donors sent funds directly to the government of Sierra Leone through the Ministry of Health. Some of these funds remain unaccounted for and have likely been misused.

Secondly, ensuring that aid reaches its final beneficiaries is a time-consuming and bureaucratic process, but in the case of Ebola speed was critical. Often bureaucracy slowed and hampered responses.

Thirdly, experts on Ebola were lacking among the international advisers. While many had knowledge of and experience with some infectious diseases, hardly anyone was a true expert on EVD. Moreover, strategies were implemented by international advisers that might have

been feasible elsewhere but were not necessarily appropriate in Sierra Leone. However, international actors began to understand that no two communities were the same and responses had to be tailored to suit the context.

Fourthly, budgeting for these interventions was not always targeted firmly enough on the actual problem of containing the outbreak. Too much was spent on supporting the costs of international staff rather than what might be termed action, and in the future building indigenous local capacities will be vital to improve response times and reduce costs.

Concluding recommendations

It is important that lessons are learned from the Ebola crisis. Ebola laid bare the severe shortcomings of Sierra Leone's health system, lack of trust in the government and the compounding effects of poverty on public health. This section proffers some recommendations for both the government and the wider health system that may improve future responses.

Government

- Consider outbreaks of diseases such as EVD an issue of national security as early as possible, and immediately delegate the design and implementation of policies and strategies for handling the crisis to the Ministry of Health.
- The government should not politicize issues of national security or allow politics to obstruct its role in taking the most expedient course of action.
- The security sector, including the institutions providing security and those governing them, should invest in research as part of its mandate. This would allow possible outbreaks to be anticipated and simulated with "scenarios" in advance.
- Ensure transparency when communicating the results, to dispel any public rumours or conflicting messaging surrounding a given outbreak.

- Better cooperation with neighbouring countries is vital to prevent cross-border infections.

Health system

- A greater share of the national budget must be allocated to health. This is crucial to develop hospitals and health units, recruit and train new health workers and bolster the health system's human resources after substantial losses during the Ebola epidemic.
- As part of improving the national health system, structures need to be put in place to guarantee preparedness. These include:
 - maintaining high standards of infection prevention and control at all times
 - implementing strong surveillance mechanisms and exercising vigilance
 - ensuring high-quality laboratory facilities
 - strengthening research on tropical diseases and establishing well-equipped laboratories for rapid testing and diagnosis
 - offering financial incentives to health workers to motivate them and help to keep them from leaving the country in search of more promising employment prospects.

Community engagement

- Community engagement and raising awareness are essential. For example, health workers dressed in protective gear focused on treating patients without considering the impact their presence had in the villages and their threatening appearance to villagers. Health workers neglected to consider the sociological factors, but taking these into consideration would have improved their performance and facilitated greater impact in controlling the outbreak. They failed to engage with and involve the communities in their own treatment.
- The health community must learn that every individual deserves to be informed and allowed to be actively involved in matters concerning his or her welfare. This would generate trust and confidence between health workers and patients, especially in rural areas. This, in turn, reduces community resistance and makes the work of health workers more effective.

- No one single control intervention would be sufficient to control the Ebola epidemic or a similar health crisis. Practices such as strict infection prevention and control, aggressive contact tracing, safe handling of infected persons, safe burials, rapid surveillance and proper triaging, and isolating must be part of joint strategies. These must further include effective cooperation between health and security actors.
- The power of fear and uncertainty fuelled by uncompromising beliefs and traditions should not be underestimated. The dissemination of the government message that Ebola does not have a known cure, vaccine or treatment created massive panic among the population. As a result, people lost confidence in the health system and resorted to alternative strategies.
- It became evident during the epidemic that people resort to traditional healers and cultural networks to cope, as they offer a powerful source of comfort and hope. Working with these traditional systems will be vital in any future outbreaks, so that accurate messaging and information can reach the public as quickly as possible and, in turn, facilitate a more effective public health response.

The security sector has a role to play in every crisis the country may face. As a result, the sector must be better empowered and trained to make the necessary responses to future crises. Crucially, the police and military should be educated on negotiation skills and the importance of respecting human rights during crisis responses, to increase their diplomatic potential during times of heightened tension. This would improve the adaptability and quality of decisions made by military and police personnel at times when typical chain-of-command structures may be stretched.

Notes

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The Ebola Outbreak in Guinea

Samuel Kargbo

Introduction

The Ebola epidemic began in December 2013 in Guéckédou, in the southwest of Guinea, and quickly spread to neighbouring Liberia and Sierra Leone, where it had tragic consequences. Guinea was unable to stop the spread of the disease because of its dysfunctional healthcare system, poor road network and public mistrust of government officials. Some responses from the international community also escalated the crisis. The epidemic was traced back to an infant in the small village of Meliandou in Guéckédou prefecture. Sources close to villagers and healthcare workers in the Guéckédou regional district hospital confirmed that the infant was infected by a bat species, presumed to be the virus reservoir. The boy was taken to a traditional healer for treatment but died shortly after, as did other family members and the traditional healer.¹

In January 2014 the death toll rose as health practitioners, traditional healers and family members who attended funerals and nursed ill relatives became infected.² On 28 January 2014 a number of people in the villages surrounding Meliandou, as well as in the districts of Guéckédou, Macenta, Nzérékoré and Kissidougou, fell ill with the virus. Local health officials informed the district health official in Guéckédou regional hospital about victims displaying similar symptoms. Health personnel concluded that they were facing a new cholera outbreak.³ Médecins Sans Frontières (MSF) was the first international health agency on the ground, and samples its doctors took from patients also appeared to indicate the presence of cholera.

MSF quelled rumours of infection as best it could, but the situation worsened, with the as-yet-unidentified virus one step ahead of the response. On 13 March 2014 the Ministry of Health alerted the population about an “unidentified disease” that had taken the lives of an unconfirmed number of people. As the situation deteriorated, the ministry notified the World Health Organization (WHO), which subsequently carried out blood tests. The results tested positive for the Ebola virus, confirming the first outbreak in Guinea. On 25 March 2014 the WHO released a media report on Ebola in Western Africa, with 95 confirmed casualties.⁴

Main problems encountered

The outbreak created fear, panic and uncertainty among communities in the Forest region. A number of people went into hiding in the deep forest and nearby villages for fear of being taken to insufficiently equipped hospitals or village health centres.⁵ Community resistance was a major barrier to controlling the epidemic, particularly in epicentres of high-transmission zones.⁶ Resistance was first evident on 4 April, when an angry mob attacked an MSF treatment facility at Macenta⁷ on the suspicion that MSF staff and other foreign agents introduced the disease to kill people and harvest their organs. This damaging information spread even faster than the virus. The public interpreted the contact lists as death lists, indicating who would be the next victim to die. They believed that names of additional family members appearing on these lists would mean that they were condemned to death.

Population illiteracy aggravated the effects of misinformation. Other incidents of community resistance led to violent confrontations in Womé, Forécariah and elsewhere. Sensitization programmes on preventive measures to stop the spread of the disease were hampered by a tragic event that took place at Womé in southern Guinea on 18 September 2014: eight members of a sensitization team involved in a programme in Womé were found murdered, while others fled in fear for their lives.⁸ This incident had serious consequences for the inhabitants of Womé and its surrounding

areas. Government authorities sent armed military personnel who behaved heavy-handedly, resulting in atrocities.⁹ Other problems included a poor road network and a lack of trained healthcare staff, coupled with traditional beliefs and customs. None of this was helped by the common belief that Guinean authorities underestimated the true scale of the outbreak.¹⁰

Responses

An effective response implemented early on could have quelled the epidemic before it took tens of thousands of lives. However, an international response did not materialize at the start of the epidemic. During a meeting on the Ebola epidemic on 1 August 2014 held in Conakry, Dr Margaret Chan, then director-general of the WHO, addressed what was increasingly perceived as a public health emergency of unusual severity. She told leaders of the affected countries of WHO concern about the recent development, and stressed the need for adequate response measures. Front-line doctors and nurses were exposed to contamination, which led to a heavy death toll among health practitioners. There was a lack of latex gloves and protective gowns, and use of intravenous rehydrating fluids increased their exposure to the virus due to needle contamination. Furthermore, workers often carried bodies to the morgue without adequate protective gear.¹¹

France mobilized massive support to stop the disease in 2014. French experts had developed an emergency response plan, including medical treatment, funding, setting up and equipping laboratories, training for and protection of healthcare workers in treatment centres and medical evacuations. They also helped fund operational Ebola treatment centres in different localities in Macenta, Beyla, Donka, Guéckédou, Nzérékoré, Coyah, Kérouane, Forécariah and Kankan.¹² The programme supported local community awareness-raising activities on safe and dignified burials and took into consideration that Guinea has a predominantly Muslim population. Sensitization programmes were one of the most effective tools in combating the epidemic, especially when local and traditional leaders were involved in the process. This was crucial, because Guineans have little

trust in government officials.¹³

Initially traditional healers were not involved in the process, but behaviours towards the virus improved once they were. But despite improved sensitization and public information, response efforts were undermined by scant or inadequate treatment facilities and human resources. Overworked and overwhelmed medical staff struggled to communicate in a timely manner with concerned relatives, which led to public mistrust and even instances of sabotage against doctors and nurses. An exceptionally high level of population mobility stretched medical responses to the limit as the chains of infection grew.

The security sector – challenges and contributions

Experiences of community resistance to health crisis management raise serious questions about the role of the security sector in managing crises of such magnitude.¹⁴ Guinea's security sector has been characterized by indiscipline, gross violations of human rights in internal conflict management, excessive use of force and lack of professionalism despite a raft of reforms since the country returned to democratic rule in December 2010.¹⁵ Much work remains to be done if reforms undertaken are to achieve modern standards of accountability, transparency and respect for the rule of law.

Some of the tasks of the security sector in health crisis management are to enforce quarantine measures, provide border policing, restrict the movement of people in and out of infected areas and assist civilian healthcare providers in supplying swifter and more effective assistance. Furthermore, the security remit includes logistics, provision of medical items and food aid supervision and distribution.¹⁶ In collaboration with partners, the Guinean government organized a workshop for both security and health sector actors in Kindia on 12 December 2014. Dr Sakoba Keita, Guinean national coordinator for the fight against Ebola, argued that this workshop would help the health sector's efforts to realize a number of important actions to combat the epidemic. Some of these actions were

performed by the armed forces, such as assistance in deterring armed mobs from threatening the Ebola response team, support in restricting the movement of people to and from isolation zones, and stopping traditional burials and the transfer of corpses from one locality to another. In his remarks at the workshop, Dr Doma Traoré, administrative secretary of Kindia Town Council, said that with a better understanding of health-related matters, the military would be in a better position to offer technical information on Ebola sensitization programmes. Other participants spoke about security provision in border policing, and in transit and treatment centres around the country. The intervention of the military in the Womé tragedy brought an end to attacks by armed mobs in the densely forested region, but resulted in serious human rights violations. The incident also put mounting pressure on the political establishment about the overall management of the crisis.

Security sector involvement was also triggered by an event that took place in Forécariah, a region that borders Sierra Leone. On 23 September 2014 a group of Red Cross volunteers were attacked by an angry mob during routine safe burials. Two members of the burial team were seriously injured, and the highly infectious corpse was removed from its bag and taken to an undisclosed place by the mob.¹⁷ This unfortunate incident increased the fatality rate among patients and staff in one of the main regional hospitals in Forécariah district. The border with Sierra Leone was closed for a period of 60 days, reinforced by heavy presence of security personnel. The latter were also called upon to secure transit and treatment centres and enforce tough quarantine measures in Forécariah.

International assistance – problems and solutions

International response and assistance were very slow at the onset of the outbreak. The WHO's Global Outbreak Alert and Response Network deployed a team to Guinea on 28 March 2014;¹⁸ on 8 April it reported its findings and issued a stern warning to the international community regarding the severity of the situation.¹⁹ After an initial WHO report announcing a death

toll of 95 in Guinea,²⁰ the number rose to 168 cases and 108 deaths by 14 April 2014.²¹ MSF continued to focus on three aspects of medical response: diagnosis, prevention and treatment. The organization ran Ebola treatment centres in Conakry and Guéckédou. It also supported the Guinean Ministry of Health at the Macenta transit centre in transferring Ebola patients by ambulance to either Conakry or Guéckédou, as patients were arriving from near and far, including the region of Nzérékoré. Obstacles to international assistance included the lack of community awareness and the delay in constructing transit and treatment centres for new cases.

Community mobilization and sensitization and security sector involvement helped to resolve the situation. Local radio programmes, public forums organized by the Ministry of Health and local and international NGOs, and personal hygiene practice were among the measures promoted to fight the epidemic. However, many patients who were suffering from diseases unrelated to Ebola were hesitant to visit public hospitals, for fear of being infected with the virus. The fast progression of the disease in the Forest region led health experts and practitioners to conclude that the inability to respond to non-Ebola-related health threats may have inadvertently caused additional infections and deaths – estimated to be higher than those of the outbreak itself. The construction of transit and treatment centres reduced the fear of Ebola transmission at hospitals. The international response to the crisis intensified in September 2014, with UN agencies, national governments and humanitarian actors contributing in areas where their expertise and means were needed most. A subregional Ebola coordination centre was set up in Conakry on 16 August 2014, in response to the serious impact on health workers. It also tried to counter the general difficulty in understanding underlying socio-anthropological aspects of cross-border community migration, which increased the spread of the disease across borders and to the capital city, Conakry. The centre was a workplace for various technical partners. By the time it was opened a total of 1,093 cases had been detected, with a death toll of 660.²²

The socio-political situation in Guinea was a further problem in managing the crisis. Since the country's independence, Guineans have been deeply divided in their political views, often along ethnic lines. Every region

supports its own tribe in all aspects, be it social, economic or political. One instance in Womé, a village in the Forest region, illustrates how deeply the country and its people are driven by tribal affiliation. In a quest to control the Ebola situation, authorities heavily militarized Womé. Villagers fled to nearby villages and the deep forest. They wrote letters to the government accusing the military forces deployed at Womé of rape, looting and the imprisonment of young people. Only after a series of demonstrations by their relatives coming from the Forest region did villagers return to their homes. Some villagers only came out of hiding when they heard that two of their sons (Colonels Cheborow and Pivi) were among the delegates who had come to calm the situation. In Guinea, trust runs along tribal and ethnic lines. This was also evident in the construction of treatment centres and deployment of foreign troops in the Forest region. The Ebola treatment centre in Lankan was much easier to construct than one in the Forest region, given that members of the ruling party came from Lankan. This made it easier for them to understand the realities associated with the outbreak. Similarly, French troops who were expected to deploy in the Forest region²³ did not do so because of community perceptions about their interpretation of the epidemic. Their camps were instead built at Gbessia Airport in Conakry; as a result, the construction and opening of the urgently needed Ebola treatment centres in the Forest region took much longer than intended.

Lessons learned

The Ebola crisis was a tragedy, and mistrust of the government was probably one of the main reasons for the escalation of the disease. The outbreak took place in a predominantly forested area where very few of the local tribesmen were involved in politics. Thus local community members were not engaged in the outbreak response because their elite tribesmen were not strongly represented in politics. Community engagement was crucial in terms of information gathering, fact finding, eliciting behavioural change and ensuring their overall involvement in the crisis. Most of the

people in the teams set up for response were members of the ruling party or their families who could not communicate with the people living at the epicentre of the affected areas due to language barriers. Community engagement and empowerment are an important aspect in an epidemic of such magnitude. Managing health crises is not only about the construction of transit and treatment centres (physical infrastructure), but also about building community trust so as to change people's behaviour. The Forest region is located very far from Conakry city, with a poor road network and a dysfunctional healthcare system. Guineans living in this region are mostly illiterate and often rely on traditional medicine and "sorcerers", partly because they lack healthcare services. To improve community resilience to similar crises in the future, the government should improve healthcare services, run rural development programmes and invest in the infrastructure, including schools, hospitals and roads. At the start of the outbreak the government did not respond because of a lack of medical logistics, equipment, laboratories and medical personnel, or due to fear and uncertainty. Guinean health authorities should learn to deploy health workers when and where they are most needed.

The security sector played an important role, and its assistance to the health sector added great value. Quarantines that were imposed on individual houses, neighbourhoods, villages and in a few cases entire administrative districts (as in the case of Forécariah) were enforced by security personnel. In some cases, as mentioned previously, security personnel were frequently seen in border areas in countries surrounding Guinea to control the flow of people and thus prevent the risk of contamination. The Guinean government should continue its reforms to build a security sector that is as efficient, impartial, accountable and transparent as any other public service should be.

Notes

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The Nigeria Ebola Outbreak and Lessons Learned

Faisal Shuaib

Introduction

An Ebola virus disease (EVD) outbreak was declared in Nigeria on 23 July 2014 after a Liberian tested positive for the disease in Lagos. Under the leadership of the Federal Ministry of Health, the Ebola Emergency Operations Centre (EEOC) was established to manage the response. Led by an incident manager who reported to the minister of health, the EEOC was created with a six-team structure including team leads and subteams. With the support of two deputy incident managers (at the state level and at the Nigerian Centre for Disease Control), the incident manager provided programmatic oversight and leadership that contributed to the containment of the EVD outbreak in Nigeria. The initial response was not devoid of challenges. Although a national plan existed, it had never been simulated and thus preparedness was not optimal. No healthcare workers or other professionals were trained specifically for EVD management and no infrastructure had been fully prepared for case management or the EEOC. Despite these challenges, Nigeria effectively managed the confirmed and suspected cases in Lagos (Lagos state) and Port Harcourt (Rivers state). The level of success achieved can be attributed to the establishment of the EEOC to coordinate the response. This comprehensive strategy, based on a war-room approach, led to the interruption of transmission within two months and a relatively low fatality rate of 40 per cent (with only seven deaths out of 19 confirmed cases).

Management and coordination of the response were critical. Human resources, logistics, finance and private sector engagement were major areas of focus. Accountability systems were put in place as an inherent feature of the EEOC operations. Team meetings each morning were boosted by nightly feedback meetings chaired by the incident manager. Action trackers with action owners ensured that daily actions were monitored in a results-focused framework. An electronic dashboard with vetted indicators was displayed in the EEOC with traffic-light indicators, not only to ensure that data were real time but also to boost transparency in the response. The EEOC employed strategies that added significant value to the Nigerian experience. Firstly, key partners were visibly involved throughout the response process: the World Health Organization (WHO), the UN Children's Fund (UNICEF), the US Centers for Disease Control and Prevention (CDC) and Médecins Sans Frontières (MSF). The WHO led the epidemiology/surveillance team, CDC provided technical support across various teams, MSF led clinical management and UNICEF provided technical support to social mobilization and led the management and coordination team. The development partners were given the space to leverage their comparative advantage while transferring knowledge and skills. Red Cross volunteers in Lagos significantly boosted the point-of-entry capacity. In addition, the incident manager ensured that the WHO, CDC, UNICEF and MSF, along with the deputy incident managers and team leads, formed a strategy group that met daily, took rapid policy decisions and removed bottlenecks that crept up on a daily basis. This innovative model proved to be very efficient.

Discussion

The EVD outbreak in Nigeria affected various facets of life and provoked many reactions, ranging from initial panic, doomsday foreboding and financial impact at the individual level to the reduction in commercial activities and the hysteria and psychological impact of the disease in communities. As reported elsewhere,¹ Nigeria experienced a massive drop in per capita income, leading to an expected reduction in average annual

GDP (gross domestic product) of approximately US\$1.4 billion for the period 2014–2017. As a direct result of the increased focus on the EVD outbreak, other diseases such as malaria, diarrhoea and febrile illnesses received less attention. In some instances hospitals delayed giving treatment to patients with febrile illnesses or referred them inappropriately, leading to “excess mortality” from the aforementioned diseases and others. The exact mortality rates from this neglect have not been quantified, but estimates from neighbouring countries, where the outbreak lasted for a longer period, suggest how complex the challenge may have been. Stigmatization occurred upon an individual's return to the community as either a discharged case or an EVD contact. Once neighbours became aware that health workers were monitoring EVD contacts, they distanced themselves and exhibited behaviours that suggest stigmatization. This ran contrary to the traditional cultural setting of Nigerians whereby neighbours typically visit and support the sick in their communities. Consequently, the EVD outbreak affected the social fabric of many communities in causing suspicion and stigmatization.

The outbreak in Nigeria originated from an infected man who travelled from Monrovia to Lagos. Once the diagnosis of EVD was made at the private hospital where the man was admitted, the federal government established the EEOC. The EEOC was made up of working groups that were charged with specific responsibilities. One of these groups was the “point-of-entry” team, which rapidly set up screening of all passengers for history of contact, fever or other symptoms suggestive of EVD. All airports, seaports and land crossings had entry and exit screenings performed by health workers and volunteers. Anyone with a history of contact or a fever was referred for secondary screening by a medical officer to examine and determine the level of risk. In terms of preventive methods that worked, rapidly scaling up sensitization of communities and training and retraining of health workers on basic infection prevention and control methods were highly useful. Building capacity of health workers on how to prevent infection and protect themselves against any type of infectious disease in a hospital setting increased their confidence and willingness to manage cases of febrile illnesses. Interpersonal campaigns, including house-to-

house mobilization and sensitization and teaching proper hand-washing techniques, also helped in improving understanding of how to prevent the dreaded infection among community members. Knowing there was at least something they could do at an individual level helped reduce the panic in areas where people felt particularly vulnerable.

It is noteworthy that after the outbreak was officially declared over, the cost-benefit ratio of screening all passengers at all points of entry was analysed. After screening thousands of travellers and finding not a single case of EVD, one was left wondering if all the resources and efforts deployed in screening were worth the effort. Clearly, one will never know what could have happened without the screening, because it is possible that it deterred EVD cases from trying to cross the border to Nigeria once it became public knowledge that the survival rate of EVD cases was higher than average in Nigeria. Some hypothesize that perhaps the reason why the first case of EVD flew from Liberia to Nigeria was to access better treatment, having seen the high mortality rate from EVD while nursing his late sister in Liberia.

The Nigeria EEOC was an assembly of public health experts from international humanitarian, health and development agencies working together, agreeing on strategies and developing a joint plan that was implemented in a cohesive and comprehensive manner. The international partners were able to exchange information with their colleagues in other countries, especially concerning the travel of potential cases or contacts across borders of neighbouring countries. Military officers with medical or public health backgrounds were invited by the EEOC to support the response to the outbreak, and brought the discipline and organizing abilities that are central to military operations. Only ten military officers (nurses and environmental health officers) participated in the EVD response, helping with planning, forecasting requirements, contact tracing, logistics, supervision, organizing screenings, secondary evaluations of travellers at the ports and provision of security.

Planning. Given the concern that Ebola could potentially spread beyond Lagos to other states in Nigeria, the military was involved with strategizing around the lines of least resistance if this scenario were to

occur. Officers used their knowledge of the socio-geopolitical landscape in predicting where the highest risks, vulnerable populations, travel routes and population groups were. Their capacities were further useful in determining the best ways to mitigate the spread of the disease. They also provided advice on how to deploy limited resources to the most vulnerable and densely populated areas.

Forecasting requirements. The army officers helped the EEOC logistics and supply group to project the quantity of personal protective equipment (PPE) that would be required over time. Based on the prevailing incidence of EVD, the outbreak response was able to draw on the knowledge and experience of the security sector, working with epidemiologists to make accurate forecasts and thereby ensure that PPE and other supplies did not run out.

Contact tracing. Following up nearly 900 contacts of EVD patients was executed with the efficiency and precision of a military operation. Military officers with a public health background were involved in the planning and conduct of contact tracing. This involved identifying contacts, tracing their residences and visiting them on a daily basis to enquire about the potential onset of EVD symptoms and evaluating for signs such as fever (by monitoring body temperatures) for a period of 21 days following the last contact with an EVD patient.

Logistics. A very critical part of the EVD response was ensuring that vehicles, supplies, equipment for burials, transport to follow up hundreds of EVD contacts, etc., were available at the right time and in sufficient quantity. It was possible to do this using the experience of managing logistics in the polio programme. However, the expertise of army personnel was also useful in the efficient planning of how the logistics were deployed in a timely manner.

Security. The presence of security personnel among the teams was especially useful in some high-risk locations where contact team members had concerns about their safety – the riverine areas of Lagos and Port Harcourt were examples. In addition to providing military support, police officers were deployed to guard the Ebola treatment centres and EEOC, and as escorts to ensure rapid movement through dense traffic when

patients were being transported to treatment centres in ambulances or the deceased were conveyed for burial services.

The Nigerian EVD crisis lasted two months, which was short compared to the outbreak in other countries of West Africa. Nevertheless, several lessons can be learned.

- *There is no alternative for adequate preparedness.* States and districts have to be ready at all times. There is a need to designate an isolation facility where none exists.
- *Rapid action is required.* A command centre or emergency operations centre is needed to coordinate all resources. This prevents agencies from working in silos and at cross-purposes with one another. It also allows the use of cutting-edge, innovative technology by providing a platform for exchange of ideas and experiences.
- *Fear and panic can slow down the response.* Healthcare workers need to be adequately trained and provided with correct, up-to-date information. The public needs to be engaged early on using information, education and communication materials. As rumours and misinformation spread very fast, it is imperative to counter them early.
- *Contact tracing is critically important.* Identify cases early, and isolate them while conducting the necessary investigations. Once an EVD case is confirmed, it is crucial to follow up meticulously. This requires human resources, logistics and finances that can be harnessed through collaboration with the private sector.
- *Outcomes improve dramatically with good clinical care.* With improved medical attention, confidence grows in communities and misconceptions are reduced.

Conclusion

The Ebola outbreak in Nigeria was relatively short-lived. However, the importance of strong collaboration between local actors, the national government, the private sector and international development and humanitarian agencies cannot be overstated. This caused effective, unidirectional action towards the agreed strategies and goals of the outbreak response. Although the Nigerian response only drew on a small

number of army personnel, the discipline, focus and organizational capacity they brought to the table was self-evident. One can easily envisage how a larger contingent could have helped improve swift and professional delivery of some specific tasks. The key to preventing spillage into other countries is rapid action, which ensures that the disease is contained as early as possible. It is further crucial to guarantee that no individuals with a history of contact or symptoms suggestive of EVD are allowed to leave the country.

Notes

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PART III

The Roles Played by Security Institutions in Countries Affected by the Ebola Crisis

Assessing the Role of the Security Sector in Health Crises: The Perspective of the Sierra Leone Police

J.P. Chris Charley

Overview

Casualties from the 2014–2015 Ebola virus disease (EVD) outbreak were reported in five West African countries: Guinea, Liberia, Mali, Nigeria and Sierra Leone. The Mano River Union (MRU) countries, namely Guinea, Liberia and Sierra Leone, suffered the highest number of reported cases. The total number of deaths was approximately 12,000 and, with over 4,000, Sierra Leone was worst affected in terms of EVD caseload.

The disease had a serious impact on Sierra Leone's human health, economic development and security situation. According to a 2008 report by the UN Secretary-General, the security sector includes defence, law enforcement, corrections, intelligence services and institutions responsible for border management, the judicial sector, customs, civil emergencies and private security services.¹ In 2002, as the civil war drew to an end, Sierra Leone commenced the restructuring of its national security institutions and adopted a vision and strategy for their future roles. Led by the government, a more responsive security sector was put in place, including the National Fire Force, the Immigration Department, the Office of National Security (ONS), the Republic of Sierra Leone Armed Forces (RSLAF), the Sierra Leone Correctional Services and the Sierra Leone Police (SLP). During the crisis the SLP was responsible for assessing local needs and providing targeted assistance through community policing and assistance in controlling movements of individuals across local communities and borders.

As a member of the decision-making body of the SLP for more than 15 years, it was a privilege to participate in the transformational process to make the security sector more effective and accountable. Upon my return to Sierra Leone in 2014, after having worked for the United Nations, my role as director of the Community Policing Department involved facilitating the response to the Ebola crisis. It was the deadliest outbreak ever recorded in history.² The crisis revealed an inadequately integrated public health sector, a lack of trained professionals and disproportionate health and security sectors. However, the international community supported the MRU countries and their respective security sectors. Major international and national health actors as well as other agencies joined forces to keep the Ebola outbreak under control.

Specific security institutions involved in tackling the Ebola crisis

Security personnel were deployed from the USA to Liberia, from the UK to Sierra Leone and from France to Guinea. In Sierra Leone, British Army engineers helped build the specialist Ebola treatment centre in Kerry Town near Waterloo. A Chinese medical team, which included army engineers, helped build a treatment centre in Makeni in the Northern Province of Sierra Leone. The aforementioned security institutions worked relentlessly to get the situation under control, and the UK's military assistance complemented the efforts of the government. The immediate challenges of the Ebola outbreak exposed the security sector's lack of civilian oversight, the insufficient number of health professionals for disaster management and the unpreparedness of public health structures. In the eyes of many, the outbreak was first and foremost a health crisis and not a security crisis. The involvement of security personnel in the fight against Ebola became a major concern, as critical voices argued that they were not properly trained in public health provision. Three security providers were particularly visible in the fight against the outbreak: the SLP, the RSLAF and the ONS.

The RSLAF, the ONS and the SLP received much public praise for their efforts during the Ebola crisis. Although people believed that the role of

these security actors was limited to law enforcement, both the SLP and the RSLAF exceeded expectations by demonstrating the ability to uphold the rule of law in ways that were sympathetic to the suffering and grievances of the population during the outbreak. The SLP's and RSLAF's tasks consisted of protecting the country from external aggression and defending its territorial integrity. Furthermore, the SLP helped quell escalating internal riots. From the beginning of the outbreak in 2014 until its end in 2016, the assistance of security institutions was necessary to prevent violence and protect citizens. Paramilitary units of the RSLAF and SLP were deployed at the country's main border checkpoints to restrict any unnecessary or illegal border crossings. The RSLAF and SLP conducted joint training sessions to improve their response to the new challenges posed by EVD, but despite their efforts they were unable to tackle the disease effectively. The police were deployed to various provincial headquarters as reinforcements in districts to prevent potential public disorder. In the capital, Freetown, SLP personnel were based at various checkpoints as standby groups and carried out beat patrols. These teams provided intelligence used for contact tracing, prevention and the subsequent elimination of the virus. At a later stage, with the arrival of international assistance, the national security institutions improved their coordination.

Tasks and roles of the SLP

Senior SLP staff assisted at the National Ebola Response Centre (NERC) and District Ebola Response Centres (DERCs). Overall, the security sector performed many functions, including maintaining law and order, protecting people and property, defending the state against external aggression and providing correction and intelligence services. Security sector institutions performed coordinated searches of premises for sick people and took suspected Ebola victims to treatment centres. As the health crisis worsened, the professional and timely police response to outbreaks of public disorder was most visible. In mid-September 2014, during the first three days of a total ban on the free movement of people and traffic (except for essential

services), the SLP policed the entire nation unarmed.

The role of the RSLAF in the management of bodies was most notable. Like their SLP counterparts, army personnel were used to protect burial teams from attacks. The RSLAF also managed the deployment of safety teams in Freetown to reorganize the collection of bodies. This was a very urgent issue and caused community unrest throughout the country. The collection of bodies was suspended for three days, and this was believed to be a major source of infection.

The SLP provided its Police Training School (PTS) as a treatment centre for all affected and suspected cases of EVD. The centre recorded highly successful survival rates during the fight against Ebola. It provided well-trained police medical personnel, along with teams of doctors, nurses and staff skilled in logistics, transport and engineering at the service of the NERC and DERCs nationwide.

To manage increasing numbers of EVD cases, SLP and RSLAF engineers worked alongside the UK contingent in building treatment centres at Kerry Town and the PTS. Medical staff from the army and police cared for infected patients, especially at the PTS. Police personnel were on guard duties at the PTS treatment centre to prevent suspected sufferers from escaping. Furthermore, the SLP personnel and some members of the RSLAF provided security coverage at quarantine homes and acted as drivers and support staff. As the crisis turned into a national threat, the RSLAF mobilized military aid to support the civilian government in developing responses to the acute health crisis. Initially this involved assisting the SLP at checkpoints, supporting the maintenance of internal peace in the country and ensuring that the borders were closed. Two main police tasks are to protect people and property and to maintain law and order, and both tasks were effectively carried out by the SLP after the declaration of a public health emergency. Officers started policing health checkpoints countrywide, and monitored and protected Ebola quarantine homes and communities.

Which activities worked, and which did not?

What worked?

Many citizens, especially in parts of the eastern and southern regions, began to politicize and trivialize the Ebola crisis as a conspiracy by the ruling government. Thus it was the SLP's role, or more specifically my role as director of Community Policing, to inform the population about facts. The SLP tried to persuade sceptical citizens, through various forms of communication, that EVD was not an attempted annihilation of tribes or political parties, as was falsely reported.

Several activities proved to be successful.

- The majority of the population were sensitized to the dangers of EVD. Education and awareness raising were provided, as well as information on recent developments in the epidemic not only in the capital city but also in other parts of the country.
- By working at the community level with different transport trades unions - the *okada* union (motorcycle taxis), the taxi union and the *poda-poda* union (shared taxis) - the SLP helped sensitize their members. The media became a supportive partner in communicating the important measures that individuals and communities could put in place to prevent the spread of the virus. Furthermore, local music artists joined the programme and became campaigners.
- The Community Policing Department, in partnership with the ONS, acted as a liaison between the citizens and the government, and also served as a strategic planner in preventing Ebola from developing into a threat to state security. In collaboration with the army's command structures and other security actors, the SLP enhanced the Sierra Leonean government's capacity to monitor situations in the countries of the MRU.
- On arrival in Sierra Leone, the UK response team established the Combined Joint Interagency Task Force, with its headquarters in Freetown.³ Led by the UK Department for International Development, it joined the various UK government agencies involved in the response. British sources said that the task force was set up to be inclusive of a wide range of interests from NGOs, the WHO, UN agencies, the government of Sierra Leone, the

Sierra Leonean military, lead epidemiologists, the US Agency for International Development, the UN Mission for Ebola Emergency Response and representatives from national diplomatic services. Despite the fact that the death toll increased, public attitudes towards EVD changed, and the joint task force personnel were therefore more effective in maintaining public order.

- Based on a partnership between the armed forces and the police, the RSLAF provided support to the SLP by staffing checkpoints to curb population movements and deploying static guards for quarantine houses across entire districts, including Kenema, Kambia, Port Loko and the city of Freetown.
- Measures that highlighted the importance of hygiene, particularly hand washing, and promotion of orderly queuing for public transport proved very successful.

What did not work?

As events unfolded, Sierra Leone became the country with the largest number of reported cases in the region. Fear spread to health practitioners, many of whom were themselves infected with EVD, and many surviving practitioners refused to work. This was exacerbated by the fact that the systems and structures in place were inadequate and could not cope with such an unprecedented epidemic.

There were several deficiencies in approaching the EVD crisis.

- A high poverty rate combined with low education levels meant that most people and communities were in denial about the epidemic and only slowly recognized Ebola as a deadly virus.
- Years of poverty had left parts of the population without proper health standards and with no preventive measures in place.
- Given Sierra Leone's highly porous borders, the closing of borders proved difficult and unsuccessful. Infected persons were still able to move in and out of the country, thereby increasing the infection rate in Sierra Leone and neighbouring countries.
- In addition to the late response of medical teams to the emergency, their management of suspected cases, infected persons and corpses was chaotic. Misdiagnoses of Ebola as malaria led to the late detection of symptomatic patients infected with EVD. Similarly,

some deaths caused by malaria were included in the EVD death toll because of similar primary symptoms.

- The late arrival of medical teams to ascertain the cause of death often resulted in riotous situations. The police were called in, and faced with challenges for which they were not trained. Due to a lack of logistical support, most personnel deployed at strategic points were not adequately protected or trained to handle hazardous chemicals or enter quarantine homes.
- The lack of monitoring systems had a strong negative impact on the response time to the epidemic. As a consequence, people resorted to taking action to protect themselves, which was often in violation of health emergency laws and to the detriment of others.
- The closing of air links and borders hampered responses to the rapid spread of the virus, resulting in difficulties in the distribution of aid and medical supplies to affected regions.
- Survivors of EVD faced rejection, diminished quality of life and even violence as they were stigmatized in their communities.
- Apart from the high number of alleged misdiagnoses, the overuse and inhalation of chlorine killed innocent people.
- The confinement of infected persons together with those who had come in contact with the infected in the same holding area helped to spread the disease.
- Some people with disabilities (e.g. people with communication impairments or cognitive disabilities) were described as uncooperative or threatening by untrained security personnel.
- The specific needs of older people with disabilities were not respected during searches of premises.

The main challenges for and contributions by the security sector

Although the security sector was instrumental in managing the Ebola crisis in Sierra Leone, it faced a series of challenges. The deployment of security forces in quarantine homes was not respectful of gender balance, as most personnel sent on such assignments were men. Sometimes they met with resistance for religious or cultural reasons; in other instances they were refused entry to homes until the male head of household was present,

as a result of alleged rapes by security personnel. Most security forces were not given the means needed to respond to such a crisis. Operational police processes needed to be part of a holistic approach that included collaboration with other security services. Thus while the SLP played a very important role in the disaster response, it did not “step up” its efforts to face such an epidemic. In the context of building a true partnership between the security services, there is a fallacy of supremacy involving the main security actors (the military and the police). Consequently, guidelines specifying roles and responsibilities for collaborative action should be addressed. Furthermore, transparency in information sharing and the use of technology should be encouraged.

The loss of colleagues and family members to the virus caused suffering in the ranks of the police. In addition, there was no compensation in place for service personnel who lost their lives on duty. Given that most of these victims were the main breadwinners in their families, their deaths had severe economic consequences.

Cooperation with other security institutions

Médecins Sans Frontières (MSF) was one of the first international organizations to respond to the Ebola outbreak, signalling its concerns and establishing an isolation centre in Kailahun in 2014. It declared the outbreak “out of control” and called for a massive resource mobilization to help manage the outbreak. Given that the situation proved to exceed that of a health crisis, MSF again called for more assistance, including from the military and police. Major contributors in the fight included the African Union, the Economic Community of West African States, the MRU, the European Union, the International Committee of the Red Cross, the International Organization for Migration, countries including France, Germany, the Netherlands, Switzerland, the UK and the USA, and also developing nations such as China, Cuba and Uganda, non-governmental organizations and professional bodies (including the International Medical Corps, MSF, Save the Children and the World Medical Association), the UN

Mission for Ebola Emergency Response, the World Health Organization and the World Bank.

External security forces involved in affected countries came from the USA, the UK, France, Germany and China. The Chinese contingent provided mobile laboratories in various provincial towns, which facilitated the examination of suspected cases, and gave crash courses to the security services. In the case of the SLP, Chinese medical officials gave training on the handling of suspected cases, which made the work of the police in Ebola operations much more effective. The International Military Training and Advisory Team Sierra Leone and its successor, the International Security Advisory Team Sierra Leone, provided security sector actors with useful knowledge in the response to the outbreak. Improvements made during Sierra Leone's recent security sector reform process added value to existing government departments and enabled the establishment of the Ebola response mechanism, including the setting up of the NERC and DERCS.

Lessons learned for future engagement in health crises

For future involvement of various security institutions and based on the level of support provided to the armed forces and police in their response to the Ebola crisis, the following lessons should be taken into consideration.

- Gathering intelligence is a vital aspect in detecting the inception of an epidemic outbreak and monitoring its course, as well as putting structures and mechanisms in place to control it. Development of information-gathering systems is needed. Intelligence services of different security sector actors, such as the police, could potentially contribute to the establishment of such systems in a bottom-up approach, including local knowledge, views and practices.⁴
- At the strategic level, government officials' performance in response to the crisis was mixed. At the institutional level, discrepancies between the capacities of the RSLAF and the SLP became evident.⁵ Specific strategic and operational training should be provided for management personnel to deal with any future disaster.

- Collaboration at the strategic and operational levels of the RSLAF and SLP requires further clarification. The security services need to coordinate their functions to avoid overlaps or duplication of power and authorities. A single unit should be solely responsible for the response to any future health crisis.
- If quarantines are only partially enforced, they can have a counterproductive effect by giving a false sense of security.⁶ Support and procedures to maintain quarantines have to be guaranteed.
- Invest in capacity building, so that mechanisms and support are in place to reduce the health system gaps.
- It is essential to provide education and raise awareness. Only through sensitization can local communities be persuaded that traditional ceremonies, funerals and rites should be (partially) suspended during an epidemic. There seems to be proof that these traditions played a role in facilitating the spread of EVD.⁷
- It is crucial to improve the domestically owned and controlled communication channels,⁸ and to communicate on an ongoing basis as part of a preparedness outreach effort. Additionally, imparting skills in the effective use of communication tools facilitates trust building among health and security providers and between communities.
- For future engagement in dealing with national crises, new types of relationships are required between the health, development, humanitarian and security sectors. New modes of interaction and implementation as well as training of key actors are needed to improve their readiness and capacities, in compliance with international standards.
- Training of security sector officials at regional, national and international levels should include the use of modern technologies. A database should be established to keep a record of those who lost their lives due to the epidemic. It could be used to remind people of the importance of being more responsive to future health crises. Apart from their function as a benchmark, the data collected could be used for research.
- The nation's preparedness mechanism for national disaster should be subject to regular review. Furthermore, investments in disease surveillance and in the adoption of an early-warning system should be made.

- The screening of people travelling from and to Sierra Leone at the airports and border checkpoints needs to be improved.
- Certain infrastructure should be designated as temporary shelters or for counselling purposes during future crises.

In conclusion, it is imperative to consider the creation of a rapid response unit. The unit would have the competence to gather intelligence, provide medical assistance, help with environmental clean-ups and deal with epidemics, including the provision of bereavement counselling. It would be able to deliver training based on identified best practices, to mobilize resources and personnel at short notice, and to monitor and evaluate operations. It would furthermore be able to coordinate the multiple actors required to address future epidemics, including those in the security sector.

Notes

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Lessons from Border Policing in Response to the Ebola Outbreak in Sierra Leone

Jonathan Sandy

Introduction

The Ebola outbreak in 2013¹ in the Mano River Union (MRU) region (Guinea, Liberia and Sierra Leone) and by extension in West Africa (Mali, Senegal and Nigeria) brought several critical questions to the fore regarding border policing and security management efforts in this region.² The virus spread quickly across common borders. This calls for the effectiveness of past practices to be assessed and the identification of lessons learned to contribute to the prevention of and response to future outbreaks of global health crises in Sierra Leone, in the region and on the continent.³ This case study provides recommendations that should allow the security sector in Sierra Leone to advocate for more resources from the government, as well as to benefit from the African Union Border Programme. The programme was adopted in 2012,⁴ and has a particular focus on strengthening integrated border management agencies and building capacity aimed at tackling cross-border crime, terrorism, illegal migration, trafficking and smuggling, as well as landmines, infectious animals, plants and human diseases such as Ebola.⁵

Background and context

Border policing, security and management entail “controlling and regulating the flow of people, goods and services across a country’s borders in the national interest and usually for the maintenance” of law and order, peace,

security and stability.⁶ Several state security institutions are usually mandated to focus on these tasks. These include the customs and excise duties department; immigration; intelligence services; maritime and airport security officials; police; and the armed forces. Across Africa, border areas are receiving renewed attention due to the increasing transnationalization of violent extremism and terrorism. Moreover, the ability of global health crises (e.g. Ebola) to affect common borderlands and the increased activities of non-state armed groups are highlighted as problems for border areas. Lastly, growing populations around these areas, with protracted displaced populations and migration patterns,⁷ exacerbate the challenges. Historically, many of the borderlands, seaports and riverine areas in Africa have experienced difficult centre-periphery relations and have sometimes been entirely neglected. In January 2007, at the Eighth Ordinary Session of the Assembly of Heads of State and Government of the African Union, a decision was taken that encouraged the Commission of the African Union (AU) to pursue efforts aimed at structural prevention of conflicts through the implementation of the AU Border Programme. However, governments and their partners have thus far not provided sufficient resources to improve border security, policing and development interventions on the continent and in member states.

Border security and management remained a critical area of focus for security sector institutions in Sierra Leone when the civil war ended in 2002 after 11 years.⁸ Since the civil war, the country has undergone two different security sector review processes. These clearly suggest that border porosity poses a direct and significant threat to Sierra Leone's peace and security, as well as to the country's fragile development. The permeability of Sierra Leone's borders has contributed to its cross-border crimes, such as human trafficking, drug trafficking, smuggling of natural resources and illicit trade in small arms and light weapons.⁹ The Office of National Security (ONS) is tasked with coordinating and managing border policing, security and management efforts. Based on the findings and recommendations of the aforementioned reports, the ONS has decentralized operational structures and arrangements such as provincial, district and chiefdom security coordinating committees. To date, 15 border chiefdoms have established

committees. These security committees, alongside the Republic of Sierra Leone Armed Forces (RSLAF) and Sierra Leone Police (SLP) joint border patrols, constitute progress towards enhanced border policing in areas close to Guinea, Liberia and Côte d'Ivoire. The decentralization of customs and immigration operations at the regional level has further contributed to this.

In response to the outbreak and rapid spread of the Ebola virus disease (EVD) across common borders in the MRU region, the MRU heads of state and government met in Conakry, Guinea, in August 2014. Among many other resolutions, they agreed that extraordinary actions were required at the regional intergovernmental level to focus on cross-border regions with EVD infection rates of more than 70 per cent.¹⁰ Subsequently, President Ernest Bai Koroma of Sierra Leone announced the establishment of the new Ebola Emergency Operations Centre (EEOC) in the joint declaration of heads of state and government in 2015.¹¹ He appointed an operations coordinator to support the work of the Presidential Task Force, co-chaired by the EEOC, the country representative of the World Health Organization (WHO) and the chief medical officer. The EEOC architecture was anchored in district and border coordinating structures, known as District Ebola Response Centres (DERCs). The DERCs remained the main border-related structures in coordinating interagency border policing and security management efforts, such as those of the SLP and the RSLAF.

The involvement of border security institutions: Experiences with collaboration and cooperation

Several state institutions and actors are mandated to engage in border policing, security and management functions: the Ministry of Foreign Affairs and International Cooperation, the SLP, the RSLAF, the National Revenue Authority, the Immigration Department and the ONS. However, at the initial stages of the Ebola epidemic the government of Sierra Leone considered the outbreak to be a stand-alone public health crisis and therefore directed the Ministry of Health and Sanitation to work with its traditional partners

to fight the disease.¹² As the situation deteriorated the approach was widened to involve the RSLAF, the SLP, the ONS, immigration and customs officers, Ministry of Health personnel and local government authorities. It embraced international partners such as the WHO, the UN Development Programme, the UN Mission for Ebola Emergency Response, the UN Office on Drugs and Crime, the US Centers for Disease Control and Prevention (CDC), the International Organization for Migration (IOM) and the UN Office for the Coordination of Humanitarian Affairs. Moreover, international non-governmental organizations (INGOs) such as Médecins Sans Frontières (MSF) participated in the response alongside national NGOs such as the Boat Owners Association to reinforce local community efforts in the seven borderland districts (Kailahun, Pujehun, Kambia, the districts in the western area and those along the coastline) to contain the disease.¹³

In Sierra Leone, interministerial cooperation in response to national security and public health emergencies is directed by the National Security Council (NSC), chaired by the president. It is supported by the National Security Coordinating Group, which is chaired by the national security coordinator. National law mandates the ONS to serve as the secretariat for the NSC and the coordinating group, and to support coordination of border policing and security management efforts through its Border Security and Management Department.¹⁴ In carrying out this responsibility, the ONS routinely works in a coordinated manner with other security and humanitarian agencies such as the RSLAF and the SLP, and particularly through the district security coordinating committees in isolated cross-border zones. Under normal circumstances, local authorities, civil society organizations (CSOs) and relevant NGOs participate in meetings held by district security coordinating committees, which are expected to provide early warning and threat assessment in border communities. The ONS is responsible for the development of standard operating procedures (SOPs) to enhance collaboration and cooperation between the primary security forces – the SLP and the RSLAF – especially in joint border patrols and in the enforcement of by-laws related to border control and management.

The ONS was able to lead the process of developing critical prevention and control protocols and strategies, as well as SOPs for the management

of border checkpoints. The SLP and the RSLAF were crucial in enforcing local by-laws, which were formulated and agreed upon by local decision-making structures - for example in Kailahun district by the District Ebola Task Force, composed of chiefs and religious leaders and other volunteers. These measures included laws related to the temporary suspension of traditional cross-border trade fairs, which usually brought together farmers and mobile traders from various border towns and villages. Other security measures entailed the construction of checkpoints to control the movement of goods and services, screening of passengers and vehicle loads, monitoring the sale of non-prescription pharmaceutical drugs and organization of regular joint border patrols and monthly cross-border security meetings.¹⁵

The IOM worked in close partnership with the RSLAF, the SLP and public health personnel in activating several border control initiatives at Freetown international airport, at seaports (including the local fishermen's landing sites), at wharves for commercial boats and at ferry terminals.¹⁶ These initiatives included engaging in joint social messaging and mobilization efforts, data collection, surveillance and monitoring the population flow across border points. The IOM also took the lead in infection prevention and control training efforts. It helped mobilize personnel to respond to the outbreak at local commercial landing sites, such as Magazine Wharf and Susan's Bay. For example, 16 out of 17 local landing sites and wharves in Western urban district were identified with a medium- to high-level threat rating.¹⁷ In essence, the commercial and fishing boats operating out of these wharves and landing sites create a direct link to border districts such as Kambia and Port Loko, but also to the Republic of Guinea. With the support of the CDC and the IOM, airport passenger screenings were maintained at Freetown's Lungi international airport.

The level of collaboration and cooperation on border policing was particularly noticeable, with the support of the IOM.¹⁸ In collaboration with the RSLAF, the IOM trained and successfully deployed 21 moving monitors and 50 staff of the Passenger Welfare Organization to 47 borderland crossing points in the three chiefdoms of Gbileh Dixon, Samu and Bramaia in Kambia district close to the border with Guinea. These teams were

deployed daily, and used off-road motorbikes to cover the distances between designated crossing points. They promoted EVD awareness, provided hand-washing resupply, supported border agencies and collected mobility pattern data.¹⁹ Together with the Boat Owners Association, the IOM deployed personnel at sea landing ports and wharves and assisted the primary security forces in setting up flow monitoring points (FMPs). The FMPs were used to collect population flow data on a daily basis. This generated essential information that allowed both immediate health screening measures and the longer-term government strategy on migration health issues to be improved. The IOM also established a relationship with the Sierra Leone Port Authority, which was crucial in improving health screening at the Kissy ferry terminal.²⁰

Challenges identified

Sierra Leone has historically faced security challenges along its extensive borderland areas, hence the majority of the respondents interviewed for this study had mixed views regarding the overall impact of border policing, security and management efforts in the detection of, preparedness for, prevention of and response to the EVD outbreak. The impact was questioned especially at the seaports, local fish landing sites and in borderland communities. A number of factors challenged the effectiveness of official actions. First, the porous nature of the borderland areas hindered the efficacy of efforts. Sierra Leone shares seven border districts, including numerous illegal border crossings, with neighbouring Guinea and Liberia. This facilitated the spread of EVD across borders, given that many travellers preferred to use bypasses or illegal crossing points rather than official checkpoints. Second, the primary border policing and security agencies lacked adequate technology, logistics, training and equipment. Border security issues are not fully integrated into the country's national development programmes and strategies, despite a comprehensive border security management strategy put in place in 2002. As a result, border agencies were unable to engage effectively in health and humanitarian

crisis containment and response. Moreover, the absence of SOPs and an insufficient understanding of global health security threats proved to be key challenges in the initial stages of the Ebola outbreak.²¹

Third, the inability of border security agencies to engage effectively in early-warning and intelligence-gathering efforts hindered the impact of border policing, security and management. Progress was made in establishing structures, institutions and procedures for broader operational coordination and management of border policing efforts; but Sierra Leone's security sector institutions and their health counterparts still lacked capacity for effective collaboration and engagement in detecting, surveillance, monitoring, tracking and responding to health-related crises. In addition, appropriate equipment, such as detection and screening materials and EVD scanners, was initially not available at many border points, especially those further away from the capital and major cities.

Fourth, high population mobility and the high frequency of border crossings by infected travellers posed a significant challenge.²² Busy border traffic made it difficult to track and monitor cross-border Ebola transmission. As a result of weak transport and communication infrastructure, preventing the spread of and responding effectively to EVD cases was difficult. Restrictions placed on border crossings, quarantines and curfews crippled livelihoods and prevented border communities' access to trade, healthcare and education facilities. The isolation of local communities further exacerbated this. Above all, the population had concerns over the RSLAF's and SLP's involvement in the crisis. Criticisms included allegations of harassment, intimidation and use of violence at border crossing points, and conducting excessive protective security measures in quarantine households. Lastly, the actions of CSOs and vigilantes posed a challenge to the ongoing efforts. Their main tasks were limited to cross-border policing, security activities and organizing meetings. Border policing meetings and other decision-making events at the local level were usually conducted with limited participation of public health personnel and local actors. Hence collaboration and cooperation between the security, health and humanitarian communities were initially almost non-existent - limiting their ability to work collectively to prevent, detect and respond to the EVD

outbreak.

Lessons learned for future engagement in health crises

The first lesson learned relates to the delayed, confused and incoherent response at the beginning of the outbreak. Although EVD appeared in 2013 in neighbouring Guinea, border policing and security measures were only instituted in late August 2014 after the aforementioned summit of MRU heads of state in Conakry. At this summit the three heads of state decided that common borders needed to be partially closed, including land borders, river crossings, airports and seaports. Following this decision, testing centres and quarantine areas were eventually stepped up in the remaining open points of entry. Authorities, especially the police and the military, were mandated to prevent anyone who had been exposed to or exhibited symptoms of Ebola from travelling. Second, at the operational level, it is evident that many Sierra Leoneans and international partners attributed the fast spread of EVD from borderland areas to urban cities and towns to the country's weak border policing structures. These structures were unable to detect, prevent and respond to the virus effectively. Third, although Sierra Leone had adopted a comprehensive border security management strategy in 2002, a security threat component was still lacking in public health policies. Furthermore, the strategy did not include measurable indicators. Similar shortfalls are evident in the subregional and regional early-warning mechanisms: the absence of health and security indicators in the early-warning systems of the MRU, the Economic Community of West African States (ECOWAS) and the African Union was striking.

Fourth, Sierra Leone's national security institutions, including border security management agencies, had little to no public health role integrated into their work. In addition, there was no institutional framework that could serve as an interface between border policing or security agencies and public health officials or humanitarian agencies. There is room for improvement regarding the cooperation between these actors, for instance by enhancing joint efforts in border policing. Fifth, although the member

states of the MRU adopted a policy on joint border security and confidence-building units (JBSCBUs) in the framework of the Fifteenth Protocol for Peace and Security, the structures did not function effectively. In addition, because the JBSCBUs excluded non-state actors and CSOs representing the voices of local populations, member states were unable to address local cross-border needs. In future, MRU policy documents (e.g. the security strategy and protocols) should be disseminated and promoted at local and national levels to increase public awareness and enable citizens and their governments to identify appropriate roles and tasks for all actors involved.

Recommendations

The rapid rate at which EVD spread across the borders of Sierra Leone was alarming. What can the government and its partners do to enhance border policing, security and management efforts in a way that allows detection, preparation, prevention and timely response to any future transnational health security threat? The following issues need to be taken into consideration, and must inform future action.

- From the start of the outbreak, the ONS should have been empowered by the NSC to play a critical role as the country's key security sector coordinator. It could have incorporated activating border policing arrangements within its lawful mandate. During the crisis the ONS became the main actor in developing critical Ebola prevention and control protocols and strategies. These included articulating the government's public emergency regulations and the SOPs for the management of checkpoints and border patrols, among others. On 30 July 2014 President Ernest Bai Koroma declared a state of emergency and established the Presidential Task Force on Ebola to lead the response.²³ The ONS coordinated security-related linkages between the Presidential Task Force, the National Ebola Response Centre, the military, the police, and other national institutions and INGOs. In future crises, the ONS should play this role from the very beginning.
- It is essential for the government to institute mechanisms that can enhance proper monitoring and tracking of population flows in

border areas and at crossing points. The government must ensure that interventions are multisectoral, so that mobility becomes an integrated component of the Ebola emergency response. Sustaining monitoring and tracking efforts of mobile populations and collecting data across common border communities would give a greater understanding of regional mobility, which, in turn, can facilitate the process of strengthening future timely responses to infectious disease outbreaks.

- There is a need to seek support to conduct a multiagency threat and risk assessment. Findings obtained from such assessments could be used to guide the security sector's response to health-related humanitarian crises. This would allow the risk of potentially harmful consequences of the security sector's involvement to be minimized. Recommendations from the assessment report would help define the roles and responsibilities of security sector and health sector actors.
- Further in-depth research needs to be commissioned by the MRU Secretariat. Border security agencies and state and non-state actors should collaborate with civilian authorities in health-related humanitarian crises. This needs further systemic investigation. Such research could lead to the implementation of best practices across common borders and could especially strengthen the JBSCBUs.
- The need for training and capacity building for border policing and security management agencies in the field of early warning and intelligence gathering is widely recognized. Instead of being reactive, these agencies should become proactive in their preparedness for coming health crises.
- More local actors should be included in the JBSCBUs. Non-state actors and local authorities bear the brunt of local security decisions, so it is important to strengthen local capacities in border communities to contribute to early warning, threat assessment and policy decisions in relation to surveillance, contact tracing and quarantine. The function carried out by the IOM was crucial: the establishment of FMPs and the deployment of volunteers to work with security personnel proved useful at sea landing sites and borderland crossing points.
- The MRU Secretariat, ECOWAS, the African Union and its international partners, especially leading non-government and humanitarian agencies, must assist the Ministry of Health and the ONS in developing a robust disease control and human security

architecture. This should include border security management institutions.

- Information and communication networks between national authorities and border communities must be improved. This should be a priority for the Sierra Leonean government, as it will allow it to manage cross-border tensions effectively. This is crucial given that such tensions might arise from future public health crises. It is important that policy responses reflect local concerns. From the standpoint of prevention, public awareness must be increased and border control strengthened to facilitate early action. It is therefore vital to prepare an operational mechanism that allows police and military officers, medical personnel, local authorities and CSOs to work together to improve testing and screening of moving populations.
- National and district coordinating structures must be strengthened by including all relevant sectors in line with what could be called “one health security agenda”. This must be quickly instituted.
- Support must be provided to intensify cross-border policing and security management meetings. Moreover, health services in border communities, towns, airports and seaports should be strengthened.
- The government should consider supporting the development of SOPs to enhance the level of collaboration between the security and health sector institutions, as well as local authorities and CSOs associated with border communities.

Finally, the government should produce a report in which the role played by security sector institutions in enhancing border policing, security and management in the wake of EVD is evaluated. This would help identify lessons, gaps and challenges. Further, the report would assist the government in advocating for more resources to address the capacity gaps currently faced by these institutions, especially the RSLAF, the SLP, customs, immigration and border public health officers. Securing the required resources includes leveraging support from international actors.

Conclusion

Sierra Leoneans are facing a new reality. A public health crisis – the large-scale outbreak of EVD – resulted in the largest number of deaths since the end of the civil war in 2002. This case study demonstrates that threats to public health security will remain primary threats to national and subregional security, especially in the MRU region. Extraordinary efforts are needed to enhance border policing and law enforcement. This is crucial to improve prevention, preparedness and stabilization in the case of a renewed EVD outbreak. Continued coordination between national and border security efforts is needed. The ONS, the SLP, the RSLAF, the immigration border security agencies, several district security coordinating committees and the JBSCBUs are not currently functioning effectively due to a lack of national recognition, adequate training and ownership. In addition, these institutions are unable to address local cross-border needs without the involvement of local authorities, CSOs and international partners, such as the IOM. To increase awareness in each country and enable citizens and governments alike to communicate with each other, MRU policy documents (e.g. the border security strategy and protocols) should be disseminated and promoted at the local and the national levels. Furthermore, SOPs need to be elaborated to support border policing efforts at all times. In conclusion, the rapid transmission of EVD across borders highlights the need for the government of Sierra Leone, the MRU, ECOWAS, the African Union, the WHO and the UN to scale up engagement by strengthening relationships and capacities of state and non-state actors involved in border policing. This is particularly crucial in early-warning and threat assessments with specific reference to non-traditional security threats, such as Ebola.

Notes

- 1 The outbreak began in December 2013 in the small village of Macenta in the rural Guéckédou district of Guinea. Sierra Leone recorded its first Ebola case on 25 May 2014. Subsequently, the epidemic spread to all regions of the country. The government of Sierra Leone officially announced the outbreak on 29 May 2014.
- 2 Mano River Union, UN Office for West Africa and Economic Community of West African States (2013) “Strategy for cross-border security in the Mano River Union”, Conakry,

- 21 October, www.womenscount4peace.org/sites/default/files/sites/default/files/Document_legaux/Strategy%20-%20MRU%20-%20SECURITY%20STRATEGY%20-%20en%20-%2020140201_0.pdf.
- 3 Remote border communities were often more vulnerable to Ebola and were hit hardest by the effects of Sierra Leone's emergency response actions. UN Development Programme (2015) "Strengthening security, justice and social cohesion in border communities in Sierra Leone", www.undp.org/content/dam/sierraleone/docs/Ebola%20Docs/SL%20F5%20Borders%20Ebola%20Recovery.pdf.
- 4 The strategy is built on the understanding that African countries have not sufficiently secured their borders to prevent crime and encourage beneficial cross-border trading.
- 5 Lamptey, A. A. (2013) "Rethinking border management strategies in West Africa: Experiences from the Sahel", Kofi Annan International Peacekeeping Training Centre Policy Brief 12/2013, <https://www.kaiptc.org/kaiptc-publication/rethinking-border-management-strategies-in-west-africa-experiences-from-the-sahel/>.
- 6 Ibid.
- 7 Ibid.
- 8 UN Development Programme, note 3 above.
- 9 UN Office on Drugs and Crime (2020) "West African Coast Initiative", <https://www.unodc.org/westandcentralafrica/en/newrosenwebsite/TOC/waci.html>.
- 10 Mano River Union (2014) "Joint declaration of heads of state and government of the Mano River Union for the eradication of Ebola in West Africa", Conakry, Guinea, 1 August, www.emansion.gov.lr/doc/MRU_EBOLA_JOINT.pdf.
- 11 Kamradt-Scott, A., S. Harman, C. Wenham and F. Smith III (2015) "Saving lives: The civil-military response to the 2014 Ebola outbreak in West Africa", University of Sydney.
- 12 At the initial outbreak of the EVD, the government focused on a sector-specific approach.
- 13 Ministry of Defence of Sierra Leone (2016) "Policy 26. Military aid to civil authorities: A guide to operations in Sierra Leone", RSLAF Consolidated Policies, Doctrine and Administration Documents, [www.mod.gov.sl/docs/RSLAF%20Policy%2026%20-%20Military%20Aid%20to%20Civil%20Authorities%20\(MACA\).pdf](http://www.mod.gov.sl/docs/RSLAF%20Policy%2026%20-%20Military%20Aid%20to%20Civil%20Authorities%20(MACA).pdf).
- 14 By law, the ONS is the government's primary coordinator for the management of national emergencies (natural, artificial or man-made). Sierra Leone (2002) "The National Security and Central Intelligence Act", Supplement to the Sierra Leone Gazette, Vol. CVVII, No. 42, 4 July, www.sierra-leone.org/Laws/2002-10.pdf.
- 15 Interview with Chairman Sadiq Sillah, Pujehun District Local Council, 10 November 2015.
- 16 World Health Organization (2015) "Interagency collaboration on Ebola - Situation report No. 03 (18 August 2015)", <https://www.humanitarianresponse.info/en/node/109271>.
- 17 International Organization for Migration (2015) "Sierra Leone - Situation report, 25 July", <https://www.iom.int/sitreps/sierra-leone-situation-report-25-july-2015>
- 18 International Organization for Migration (2015) "Regional response to Ebola crisis, 24 August", www.iom.int/sitreps/regional-response-ebola-crisis-24-august-2015.
- 19 Ibid.
- 20 International Organization for Migration (2015) "Sierra Leone - Ebola response situation report, 20 June", <https://www.iom.int/sitreps/sierra-leone-ebola-response-situation-report-20-june-2015>.
- 21 IRIN News (2002) "Member countries agree on border security", 8 March, <https://www.thenewhumanitarian.org/fr/node/199498>.
- 22 International Organization for Migration (2015) "Sierra Leone - Ebola response situation report, 7-13 June", <https://www.iom.int/sitreps/sierra-leone-ebola-response-situation-report-7-13-june-2015>.
- 23 Republic of Sierra Leone (2014) "National communication strategy for Ebola response in Sierra Leone", September, p. 3, http://ebolacommunicationnetwork.org/wp-content/uploads/2014/10/National-Ebola-Communication-Strategy_FINAL.pdf.

Borders and Ebola: Health Crisis and Security Response in West Africa

Abdoulaye Diagana¹

Introduction

The year 2014 was marked by a serious health crisis that first shook the African continent and then became a global threat. By attacking volunteer workers on the ground and alarming border officers in the West, the Ebola crisis became a formidable challenge to the principles of free movement of goods and people. On the ground, the challenge was more straightforward: faced with limited health systems and healthcare policies in need of reform, will affected states and their neighbours be able to respond in a politically and economically viable manner? The situation was exacerbated by the inability to control national borders effectively. This chapter first reviews the measures taken by authorities in securing national borders. It examines border cooperation mechanisms developed by the countries involved in managing this health crisis, and considers the efficiency of border security policies and the forces mobilized for this purpose. Finally, an analysis of the difficulties encountered and lessons learned is offered.

West Africa overwhelmed

Although Ebola cases had been suspected since late 2013, Ebola virus disease (EVD) was found in Guinea in March 2014.² The epidemic quickly crossed national borders into the neighbouring countries of Liberia and Sierra Leone. It then continued to spread to Nigeria, Senegal and Mali, before reaching an intercontinental scale in Spain, France and the USA.

The astounding speed at which this epidemic spread across the subregion can be attributed to a number of factors. First and foremost is Guinea's geopolitical situation. Guinea shares borders with six countries: Guinea-Bissau (385 km), Senegal (330 km), Mali (858 km), Côte d'Ivoire (610 km), Liberia (563 km) and Sierra Leone (652 km). Its borders are not tightly controlled and allow distressed people from neighbouring states to cross over freely, given that it is difficult for states to assert their sovereignty in remote areas beyond a few official checkpoints. A further factor is the high population mobility of Guineans, who have established large colonies in neighbouring countries. This mobility, although economically motivated, can also be attributed to the chaotic political governance that has kept the country under a crushing weight since its independence in 1958, as well as Alpha Condé's ascension to power in 2010. However, the physical isolation of the country cannot be maintained, given that Guinean communities established abroad have a strong desire to stay in touch with loved ones still living in the homeland.

Border closures

In response to the Ebola crisis, some countries chose to close their borders to travellers from affected countries. Senegal closed its borders with Guinea for the first time from 30 March to 6 May 2014, before reopening them because of "the positive evolution of the disease".³ But on 12 August 2014 Guinea-Bissau decided to close the border that separates it from Guinea. Cameroon followed suit on 18 August 2014, and closed its 1,600 km border with Nigeria. On 22 August 2014 Senegal decided once again to isolate Guinea by reclosing its borders. Even far-off Australia and Canada took similar measures with respect to those travelling from affected countries. As control over arrivals and immigration in Guinea does not directly fall under the remit of the health services, it was necessary to appeal to other government agencies to implement immigration and border management. The use of armed forces to aid health services in maintaining order is not a novel idea: defence and security forces have been used to fight the spread

of epidemics whenever they begin to take on uncontrollable proportions.⁴ This was the case when MSF (Médecins Sans Frontières), which had led the fight against the virus since the beginning of the outbreak, declared the epidemic to be out of control.⁵ Two types of missions are generally assigned to armed forces. First are those with the aim of ensuring the security of health personnel on the front line: it is not uncommon that health workers themselves fall ill. In these cases there can be a tendency to deny them help and assistance, due to the social stigma surrounding the infected - this was the case in Guinea, Sierra Leone and Liberia during the Ebola crisis. And second are missions with the goal to contain the epidemic within a specific region and within national boundaries by establishing “buffer zones” and quarantines.

In a major health crisis public authorities encounter resistance as a result of poor communication and other sociological factors. The negative reactions of traditional healing practitioners⁶ to the “competition” of modern medicine and their attempts to discredit the system set up by the government exemplify this. The rumour mill is also fed by traditional communicators (*griots* - West African troubadour-historians), who have often been marginalized and neglected by the government. Given its nature, EVD forced countries that had fallen victim to the epidemic to impose greater discipline on their populations. This was an essential measure to limit the transmission of the virus both within and beyond national borders, but it required the mobilization of a considerable number of well-equipped and well-trained security and defence forces. As a result, military assistance from the USA, Britain and France was deployed to Liberia, Sierra Leone and Guinea, respectively.

The countries affected by the recent Ebola crisis in West Africa relied on customs agencies, border police, local police, military medics, civil administrators (prefects, governors, regional leaders, etc.) and intelligence services. In Guinea-Bissau, Prime Minister Pereira’s mission to “take the necessary measures for the proper management”⁷ of its borders was entrusted to the Departments of Defence and Interior. To this end, control measures and isolation rooms were installed at the Guinean border. A retired military official was appointed as head of the National

Ebola Response Centre in Sierra Leone, most likely to emphasize the involvement of defence and security forces. Once it was confirmed that the epidemic had reached the neighbouring countries of Mali and Senegal, Mauritania closed its land borders after only a few checkpoints had been established. The Military Medical Service enforced these measures under the technical supervision of civil health services primarily involved in these types of situations. In November and December 2014 the author had the opportunity to work as consultant for the Mauritanian minister of health. Authorities had established the National Coordination and Monitoring Unit in preparation for the Ebola response, composed of representatives from all concerned services, laboratories, central management, civil society, the Red Cross and Red Crescent Societies, MSF, World Vision, the UN Children's Fund (UNICEF), the World Health Organization (WHO), the UN Population Fund, Transfrontier Parks, security and defence services, Nouakchott Port, the Société des Aéroports de Mauritanie and the Agence Nationale de l'Aviation Civile. Within the country, the unit had regional chapters that met on a weekly basis, composed of representatives from UNICEF, the WHO, MSF, Transfrontier Parks, hospitals, the police and the army.

The Mauritanian government identified 21 checkpoints (maritime, aerial, terrestrial and fluvial) to be monitored along the border. Officially these border points, which are not staffed by medical teams, were theoretically closed. At each border crossing the local police, customs and the national gendarmerie were present. At each of the six border crossings into Mali (located in the Hodh Ech Chargui, Hodh El Gharbi, Assaba and Guidimakha regions), two gendarmes were stationed (12 in total). At each of the 11 border crossings into Senegal (located in the Brakna, Gorgol and Guidimakha regions), two police officers were stationed (22 in total). At Nouakchott and Nouadhibou airports four police officers, two customs agents and two gendarmes were stationed (16 in total). At each of Nouakchott's and Nouadhibou's autonomous ports, two gendarmes were stationed (four in total). All individuals involved underwent EVD awareness sessions and received protective gear, including disinfectant, gloves, facemasks, bleach, etc. The principal mission of these security forces included:

- registering arriving passengers
- maintaining order
- directing suspected cases to authorized health services
- securing surveillance posts
- sharing pertinent information with Moughataan (prefecture) chief medical officers and regional directors of health programmes.

Inland, a few kilometres from the capital of Nouakchott, the government established an isolation centre furnished with ten beds, food reserves, sampling kits and equipment for the secure transport of samples and suspected cases of infection. MSF contributed close to 30 tonnes of protective isolation gear to the crisis preparation. Was this rather radical choice to close the borders and create quarantine zones within the country the right one? The following section attempts to provide an answer.

Lessons learned ... or to be learned

The decision to close national borders in the face of a spreading epidemic raised a number of questions, to the point that the WHO advised against it. During the Ebola crisis, border closures were only theoretical due to the vast areas of the territories involved. Further, the necessary resources were not readily available due to the fragility of the affected states. The reality of a border is not the same in this region as it is in the West, where the Westphalian model of the state has had time to mature and produce clearly defined borders. In the countries in question, allegiances may be ideational and the territory functional, which often results in borders being ignored. The ties that link populations across national borders follow a logic that sometimes leads to situations where solidarity takes precedence over state authority. One only needs to add to this equation a little of the corruption that plagues so many customs border control points to understand how, in some places, the very idea of closing borders is downright utopian.

An example serves to illustrate this point. In response to the continued spread of the epidemic, Senegal put in place a number of provisions at

different checkpoints along its borders with Guinea. These included hand washing, taking temperatures using medical infrared thermometers and asking travellers to fill in information sheets to retrace their routes if necessary. Despite all this, a young infected Guinean student was able to reach Dakar, Senegal, exposing 74 people to the virus along the way.⁸ In the opposite direction, many Guineans traveling to their homeland from Senegal were not stopped or checked.

Senegal's eventual decision to close entirely all land, air and sea borders with afflicted countries (Guinea, Sierra Leone and Liberia) was misconceived. During a press conference held in Senegal near the Sommet de la Francophonie, Guinean President Alpha Condé reportedly commented to his Senegalese neighbour: "It is demagoguery to say that we want to protect the Senegalese by closing the borders. Who can close the borders in Africa? Senegal said they were closed OK, but how many have managed to get through? It would have been easier to control people by keeping them open and putting out provisions at the border. The risks are even greater when you close them than if you just keep them open. Or is it because you want Guineans to die from this disease? It is happening to us today, but it could happen to you tomorrow. Is it a crime to be sick?"⁹

Ironically, considering Mauritania's move to close borders, it was hit by an outbreak of Rift Valley fever virus from 14 September to 26 November 2015, resulting in 184 suspected cases, 57 confirmed cases and 12 deaths.¹⁰ In contrast, Mali did not close its borders; instead it seemed to consider informing its citizens and taking preventive measures to be sufficient. Border closures have a stifling effect on the formal economy – freight trucks in particular suffer the brunt of land border embargos. With regard to air borders, airports remained under the supervision of health workers, with the assistance of security forces. However, when direct connections to and from affected countries are suspended, this can have negative repercussions on businesses, cooperation between countries, movement of skilled labourers, and supplies of equipment, medicine and other support that would normally be shipped by air. In addition, by keeping travellers (including those who are simply in transit) as "prisoners" in affected countries, border closures forced some of them to develop

alternative strategies to bypass these countries by travelling via third countries. Such strategies were easy due to the fact that Royal Air Morocco did not interrupt its flights to Freetown, Bamako, Conakry or Monrovia, to name a few. Travellers wishing to return to Mauritania from Bamako or Dakar, for example, could easily use Royal Air Morocco to fly to Casablanca before reaching Nouakchott. In a case of contamination, the traveller would expose everyone in close proximity to the virus along the way. It seems evident that closing borders only served to increase the number of those exposed to the disease. In these cases, security and defence intervention would not have been able to mitigate the risk of contagion.

Conclusions

The intervention of security and defence forces in managing major health crises is an unavoidable necessity, particularly when there is a need to secure and monitor borders. However, experience has shown that police forces should not be confined only to the role of regulating traffic. The views of President Condé are largely shared by many who know this part of the African continent. Where the European Union and the United States did not succeed, despite the means used and their old traditions of border control, we cannot easily contemplate the idea of success for countries with limited means and where the state culture needs reinforcement. In this context, it is necessary to consider the following suggestions.

- Coordinating activities between security/defence services and civil services is likely to be difficult and will not occur without major frictions. This may be due to differences in mission, mandates and rules of engagement. Difficulties may arise particularly in terms of information exchange. During major epidemics, it would be useful for security and defence services to submit to the command and control of civilian authorities (i.e. health services). This might not be easy to achieve, especially considering the role that the military and police play in the political affairs of some countries, as well as their difficulties in conforming to the Oslo Guidelines.
- It is necessary to initiate thorough reform of security policies, as well as the missions and mandates of security and defence forces.

Their missions would need to be broadened to meet requirements that are unique to contexts of major health crises.

- Proper communication must play a larger role because of the disastrous effects that rumours, fear and a lack of confidence can have on public discourse. This means that traditional communicators need to be involved: if marginalized, these people can fan the flames of rumours and distrust against authorities.
- Traditional healers should also be incorporated in the response, so they do not feel abandoned in favour of modern medicine. It is important to make them aware of the risks to their own lives, those of their patients and a significant portion of the population if they do not adapt their habits to the challenges posed by infectious diseases.

The population should be reassured that proper measures are taken. They should not be left to their own devices and rumours. Infected individuals and those suspected of being infected must be given special attention to avoid stigmatization. If they understand that containment is a better way to monitor their recovery while protecting their families and loved ones, they might well change their position on implemented security measures. After all, open and transparent communication facilitates voluntary support and is therefore more efficient than coercion and the indiscriminate closure of borders. These measures are all the more crucial when security and defence forces, which alone could not meet the challenge, are mobilized.

Notes

- 1 This chapter has benefited from very helpful comments by Mouhamed Khaly Thiam, Idrissa Sow and Bowba Sow. The author is grateful for their feedback.
- 2 World Health Organization (2015) "Ebola virus disease", Factsheet No. 103, August, www.who.int/mediacentre/factsheets/fs103/en/.
- 3 Leral.net (2014) "Evolution 'positive' de l'épidémie de fièvre Ebola en Guinée: Dakar annonce la fin de la fermeture de la frontière", 5 May, www.leral.net/Evolution-positive-de-l-epidemie-de-fievre-Ebola-en-Guinee-Dakar-annonce-la-fin-de-la-fermeture-de-la-frontiere_a112782.html.
- 4 The author held a number of enriching discussions with Dr Idrissa Sow, a former WHO official responsible for the Urgences et Action Humanitaire Afrique based in Geneva and the WHO Regional Office for Africa.
- 5 Médecins Sans Frontières (2014) "Ebola in West Africa: The epidemic is out of control", 23 June, <https://www.msf-me.org/article/ebola-west-africa-%25E2%2580%259C-epidemic-out-control%25E2%2580%259D>.
- 6 Generally, people in these countries turn first to traditional healers. Unfortunately,

- 7 these traditional healers are often ignored by teams charged with fighting epidemics.
20 Minutes (2014) "Ebola: La Guinée-Bissau ferme ses frontières avec la Guinée", 12
August, [www.20minutes.fr/monde/1427919-20140812-ebola-guinee-bissau-ferme-](http://www.20minutes.fr/monde/1427919-20140812-ebola-guinee-bissau-ferme-frontieres-guinee)
[frontieres-guinee](http://www.20minutes.fr/monde/1427919-20140812-ebola-guinee-bissau-ferme-frontieres-guinee).
- 8 World Health Organization (2014) "The outbreak of Ebola virus disease in Senegal
is over", Ebola situation assessment, 17 October, [www.who.int/mediacentre/news/](http://www.who.int/mediacentre/news/ebola/17-october-2014/en/)
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- 9 Bah, S. (2014) "Alpha Condé sur la fermeture des frontières du Sénégal: 'C'est
démagogique...'", *VisionGuinee.info*, 1 December, [https://www.visionguinee.](https://www.visionguinee.info/2014/12/01/alpha-conde-sur-la-fermeture-des-frontieres-du-senegal-cest-demagogique/)
[info/2014/12/01/alpha-conde-sur-la-fermeture-des-frontieres-du-senegal-cest-](https://www.visionguinee.info/2014/12/01/alpha-conde-sur-la-fermeture-des-frontieres-du-senegal-cest-demagogique/)
[demagogique/](https://www.visionguinee.info/2014/12/01/alpha-conde-sur-la-fermeture-des-frontieres-du-senegal-cest-demagogique/).
- 10 Bob, N., H. Bâ, G. Fall, et al. (2017) "Detection of the northeastern African Rift Valley
fever virus lineage during the 2015 outbreak in Mauritania", *Open Forum Infectious*
Diseases, 4(2), <https://academic.oup.com/ofid/article/4/2/ofx087/3869285>.

The Ebola Crisis and Border Management: Lessons Learned

Andrus Öövel and Goran Krstetski

Introduction

In 2014 the unprecedented outbreak of Ebola virus disease (EVD) confirmed that neither the international community nor the countries directly affected were prepared to cope with an epidemic of this magnitude. In the context of this crisis, the UN Security Council adopted Resolution 2177 in September 2014, declaring EVD to be a “threat to international peace and security”.¹ This virus is highly lethal and virulent, and like all viruses it is unaffected by state borders, which made it a transnational threat almost by definition. According to the “G7 agenda to help prevent future crises”, the Ebola virus “illustrated the challenges of providing effective governance and [delivering] services in border areas, [underlining] the importance of Integrated Border Management (IBM)”.²

As Ebola spread, extraordinary preventive measures were put in place by relevant national authorities under the IBM mechanisms. These included countries not directly affected by the EVD epidemic, because IBM is one of the most important tools in both preventing and fighting the spread of communicable diseases beyond national borders. The intercontinental transmission of communicable diseases is most likely to occur via water or air. Consequently, harbours and airports are crucial points of transmission that must be considered in addition to traditional land border crossings. Furthermore, critical situations often require extreme measures, which should correspond to a common objective and be comprehensive, well thought out, well designed and well coordinated.

This chapter aims to emphasize the key features and the formally expected added value of the IBM concept and mechanisms in dealing with issues related to the transmission of communicable diseases at national and European levels. The chapter underlines that the existing national and European IBM-based mechanisms appear to lack effective tools to address non-traditional security risks. Based on this, the chapter urges a redefinition and an overhaul of current IBM policy and practice in light of the new European lessons learned.

The added value of IBM policies and practice

Several factors hinder the ability of existing measures implemented at international border crossing points to prevent the spread of communicable diseases, including increasing numbers of international migrants and refugees.³ An upsurge in the transport of goods and persons, as well as the increased permeability of state borders, contributes to this effect. This poses new challenges to preventing the transmission of communicable diseases. To respond adequately, it was and remains necessary to implement comprehensive and multifaceted measures and coordinated activities. IBM and the multisector approach are the most effective in that regard.

In border control it is important to ensure a delicate balance: adequate control of state borders to limit the transfer of communicable diseases across borders on the one hand, and guaranteeing the free movement of persons, vehicles and goods on the other, to distribute necessary aid and services while accelerating the restoration and establishment of normal living conditions in the affected areas.

To this end, the efficiency of IBM is reflected in three primary variables:

- the degree of interdependency of the parties included in the IBM system through mutual interactions
- the level of uncertain situations, seen as the possibilities inherent to potential epidemics of communicable diseases, which require continuous flow and exchange of information to analyse the cases

- the level of joint activities, shown as group time and target operations, which result in the implementation of comprehensive measures and activities for prevention and timely detection of possible threats from the spread of communicable diseases.

Thus it is crucial to create a permanent system for monitoring, analysing and evaluating potential epidemics of communicable diseases posing regional and global threats. Synergies should be created through adequate interaction between different groups involved in IBM. These synergies would serve to coordinate such interactions, which should further be defined by the range of internal dependency, sequential interdependency and reciprocal interdependency between the parties involved. Where IBM occurs in a dynamic environment with a high number of stakeholders, the task itself becomes uncertain and stakeholders must make an effort to gather information so as to adapt successfully to changes in this operating environment. But with increasing dynamism comes uncertainty, which in turn requires a greater emphasis on providing steady flows of information between actors and the affected communities to ensure the coherence needed to reduce disease transmission.

Many risk factors can accelerate the spread of highly communicable diseases. These include increasing volumes of trade and growing population mobility, armed conflicts,⁴ mutation by genetic modifications, widespread use of chemical substances and antibiotics,⁵ migration, refugee flows, cultural practices and traditional beliefs,⁶ extensive population movements⁷ within countries and across borders, and inadequate coverage by effective and systematic containment measures.⁸

As noted above, the timely flow of accurate, relevant information – suitably analysed – is the foundation upon which good decisions can be made within an IBM environment. Numerous definitions of information management (IM) exist, but they can be summarized as the means by which an organization efficiently collects, collates, analyses, controls and disseminates its information. This ensures that the value of that information is exploited to the fullest. Every organization, agency and stakeholder involved in IBM will have its own IM systems. These may be

paper based, rely on electronic databases or be of a hybrid nature. They are designed to assist those organizations in achieving their own specific border management goals and objectives. It should be noted that these goals and objectives may not necessarily reflect the goals and objectives of IBM in general, and are very unlikely to be concerned with preventing the spread of communicable diseases in particular.

Every IM system within these organizations, agencies and stakeholders will have either explicit or implicit methods for each of the stages detailed in the composite IM definition above, i.e. collection, collation, analysis, control and dissemination of information. Information can be obtained through tasked collection (which means that it is sought deliberately) or routine collection (which means that it is collected through day-to-day activities).

Tasked collection is normally undertaken to support a specific purpose. Thus, in the event of an outbreak of a communicable disease, it would be preferable if each organization, agency and stakeholder involved in IBM had the IM system capability to react to a tasking order and be ready, willing and able to collect, collate, analyse, control and disseminate information in a homogeneous manner. However, even when facing a specific risk such as the spread of a communicable disease, it should be recognized that much of the data compiled through routine collection may also be of value. Thus it is imperative that those stakeholders involved in IBM inform their partners of the data collected routinely, which include border entry and exit records, licence applications, etc.

Once collected, the data have to be stored. Most agencies use electronic databases to store and retrieve data relevant to their work. While a database is a powerful tool, it only delivers optimum results if it is appropriately configured, populated and maintained. These factors will be regulated within the data management model of the agency. The internal architecture of the database must facilitate the purpose for which it is created. Accordingly, databases can be neither used directly "off the shelf" nor configured in the same way. The more care that is taken when creating the database, the less time will be wasted later in having to alter it to meet its objectives.

In a multiagency IBM environment it is almost impossible to create a common IM system with enough flexibility and protocols to allow sharing all information from a tasked data collection to all stakeholders. It has taken Frontex, the European border and coast guard agency, almost two decades to build a system to share the most basic data across the Schengen countries. In practice, the optimum solution is usually to task each organization, agency and stakeholder with collecting and storing particular pieces of information. Then each agency is tasked with analysing that information against the agreed aims and objectives of the tasking (e.g. preventing the spread of communicable diseases) and presenting the results of that analysis.

The analysis of data within an IM system is crucial for good decision-making. Analysis is all about “going beyond the facts”, creating meaning or understanding from the mixed and incomplete pieces of data that are available. This requires creative and critical thinking as well as the application of specific analytical tools and techniques relevant to the tasking. This process should then provide the analytical product(s) that addresses the tasking objective(s). When considering IBM and tackling the spread of communicable diseases, these tools and techniques may have to provide analytical outcomes at both a policy (strategic) and an operational (tactical) level.

The results of that analysis must be presented in a manner that allows dissemination among all IBM stakeholders. National and international responsibilities for border management are often spread across a number of different agencies at both state and local levels. While each agency has its own particular mandate and responsibility, these often overlap with others. Accordingly, one agency may hold information that could be useful to another, and vice versa. This requires them to share data. The extent to which this occurs depends on the legal, procedural and technical arrangements in place.

- *Legal.* National law will regulate the extent to which different agencies can share data. Where data exchange is allowed, the means for doing so is often described in a memorandum of understanding agreed by both parties. The memorandum sets any

limits on the use of data, and defines the procedural and technical means by which the data will be shared.

- *Procedural.* The procedural arrangements describe the steps that must be taken to exchange data. One approach is for the requesting party to make a specific demand to which the supplying party responds (a “pull” system). Another approach is for the supplying party to make all its data available by granting the requesting party access to its database (a “push” system). The former approach allows the supplying party to maintain close control over its data, whereas the latter greatly reduces the administrative burden on both sides.
- *Technical.* The speed and simplicity of data exchange depend to a large extent on the technical arrangements within and between agencies. Do the different agency databases share a common data format? How similar is the use of codes and terminology? Is there a direct, secure means of communicating data electronically between agencies?

Even where legal, procedural and technical arrangements are fully in place, trust still plays a major role in facilitating data exchange. Parties who trust each other will likely share their data to a greater extent than those that do not. Trust is difficult to build and easy to lose. Clearly defined and properly followed legal, procedural and technical arrangements help to establish an environment of trust.

Classification levels for items of information indicate the harm that would be caused should that information fall into the wrong hands or become public. The degree of confidentiality attached to an item is expressed by assigning it a confidentiality code. The specific classification systems that are used will vary from country to country. Membership of some international organizations requires states to adopt a common classification regime. Where multiple stakeholders are partners to IBM it is important that the rules regarding information confidentiality and their application have been expressly agreed.

It is normal for the original owner of an item of information to want to retain control over it. One reason could be that s/he wants to protect her/his source or prevent a sensitive investigation from being compromised. Hence when s/he shares this information with a third party, s/he will want

to ensure that it will not be used in such a way that might jeopardize her/his interests. The use of handling codes, which are agreed bilaterally or multilaterally among the parties who intend to share data, may serve to ensure that information is not misused.

Some commonly used handling codes are:

- for intelligence use only, not to form part of a judicial file (evidence)
- not to be further transmitted without prior reference to data owner
- may be shared with (X) but not with (Y).

A complete IBM approach must detail how each stakeholder's information can be used and by whom. This will facilitate responding to specific requests, given that protocols for the exchange and use of information will already have been established. Thus a tasking to assist in tackling the spread of a communicable disease will not be slowed down by discussions on what information can be shared with which organizations.

Finally, the outcomes from the actions taken as a result of the analysis work completed should be communicated back to all stakeholders and entered into their own IM systems. By analysing what worked and what had little or no effect, lessons can be learned for the future. These may include lessons in specific areas (e.g. tackling communicable diseases) or more generic lessons on IBM.

The overall importance of IM in IBM should not be underestimated. The true value is in isolating each aspect of the IM system (collection, collation, analysis, control and dissemination) and addressing these from an IBM perspective. Furthermore, it is necessary to ensure that each IBM stakeholder is aware of the requirements for its participation and the benefits (e.g. improved border protection and control) that it can gain by actively participating.

Recommendations for preventing potential outbursts of communicable diseases

After the outbreak of EVD in 2014, various awareness-raising campaigns were launched to prevent a worldwide spread of the disease. Strict instructions for international airport staff in the USA were provided. For instance, guidance was given on how to tighten the entry screening procedure,⁹ and ring cards and posters were prepared¹⁰ for use by border officials to help recognize, isolate, notify, and give support to travellers showing signs and symptoms of diseases of public health concern. Further, according to Decision No. 1082/2013/EU on serious cross-border health threats, the EU member states should, “in liaison with the Commission, coordinate the response within the Health Security Committee ... for the monitoring, early warning or combating of such threats”.¹¹

Successful management and prevention of potential outbreaks of communicable diseases require increased cooperation between all stakeholders in IBM. Greater integration is needed to raise the level of cooperation and joint work, and to strengthen the structural connections between all parties working in the field of communicable diseases and immunization. These include the World Health Organization, the European Centre for Disease Prevention and Control and the US Centers for Disease Control and Prevention. Success will depend on a jointly agreed coordination mechanism, as well as the streamlining of the goals and timeframes among parties. This is a truly complex and long-term process demanding great efforts and knowledge by both managers and employees; it requires well-trained and fully engaged participants who preventively and efficiently carry out all activities to achieve the security goals. They must further be able to influence the other subjects involved through leading by personal example.

Recommendations for required global and regional measures:

- introduction of a comprehensive system for cross-border surveillance and establishment of international and regional coordination centres

- development of operational procedures for cooperation among competent regional and international stakeholders in the IBM framework for the control and prevention of communicable diseases and other global security threats
- development of operational procedures for immediate border assessments in the most affected countries and regions
- development of an IBM concept based on education, interaction, information flow and integration.

The activities at all points of entry (international airports, road and rail crossings and seaports) should be divided into three categories.

Activities for prevention

- Raise awareness and improve knowledge and understanding of citizens and officials¹² to decrease possibilities of transmission of communicable diseases (through contact or airborne).
- Inform officials on data collection, awareness raising in the community and necessary practical skills to screen travellers.
- Provide appropriate facilities¹³ and adequate personal protective equipment,¹⁴ depending on the risk and manner of transmission of the communicable disease.

Activities for detection

- Introduce people-flow monitoring points to screen travellers.
- Set up isolation facilities,¹⁵ comprehensive control measures and contact tracing and monitoring during the incubation period.
- Develop a national and international monitoring and evaluation system, including a database to monitor the spread of communicable diseases in border regions, directions of legal and illegal border crossing and places where travellers gather.¹⁶
- Improve infrastructure, equipment and technological resources, and provide qualified staff, to enable the collection, analysis and dissemination of information.
- Prepare and exchange statistical indicators and bulletins that can be used to determine the suitability of certain measures and activities.

Activities for adequate response

- Secure the cooperation of all stakeholders in the IBM process (ministries of health, services for immigration and foreign affairs, international responders, local communities and other parties involved in health and border issues).
- Design adequate operational procedures: hierarchy of management, command, control and coordination mechanisms and procedures and protocols.¹⁷

These measures shall be implemented in all countries that are potentially exposed to a risk of transferring communicable disease. The need for increased preparedness is greatest in countries that share borders or have extensive direct travel and trade relations with the hardest-hit countries in an ongoing communicable disease epidemic.

Conclusion: IBM's added value

The difficulty European countries have had recently in managing refugee flows and addressing organized crime and human trafficking suggests that the existing mechanisms established under the IBM concept do not provide effective tools for prevention of disease transmission. Europe would be similarly unprepared for an epidemic outbreak of a highly infectious communicable disease, signifying an urgent need for the EU to redefine the present IBM policy and practice to enhance the collective ability to counter emergent threats such as the transmission of communicable diseases. This may be achieved through building more constructive, trustful partnerships as the foundation for coordinated and effective work of the IBM authorities.

Apart from increased cooperation, reinforcing the proactive and timely contribution to the work of the competent agencies and authorities via more effective IM is required. Monitoring the threats and obtaining a comprehensive picture to support decision-makers and authorities in effective planning, organizing and implementing common actions are increasingly relevant. Maintaining practical synergies with competent

institutions, agencies and regional actors should remain an important common responsibility. Streamlining their efforts is imperative to increase mutual complementarity, maximize the effect of their cooperation and ensure the optimal use of countries' significant investments of financial and human resources. Effective and comprehensive cooperation between all relevant national and IBM authorities and the implementation of efficient IM at the European level are urgently needed.

Notes

- 1 UN Security Council (2014) "UNSCR 2177", 18 September, UN Doc. S/RES/2177, <http://unscr.com/en/resolutions/doc/2177>. According to Snyder, "In taking up the issue, the Security Council acknowledged that Ebola was not just a health crisis, but a security crisis. Ebola has shown that health crises can be deadlier than some intra-state conflicts and can bring governments and economies to their knees." Snyder, M. R. (2014) "Security Council response to Ebola paves way for future action", *IPI Global Observatory*, <https://theglobalobservatory.org/2014/12/security-council-response-ebola-action/>. See EU Luxembourg Presidency and European Commission (2015) "Lessons learnt for public health from the Ebola outbreak in West Africa - How to improve preparedness and response in the EU for future outbreaks", high-level conference, 12-14 October, Mondorf Les Bains, https://ec.europa.eu/health/preparedness_response/events/ev_20151012_en.
- 2 German Federal Foreign Office (2015) "Beyond Ebola: A G7 agenda to help prevent future crises and enhance security in Africa", press release, 15 April www.auswaertiges-amt.de/sid_DCA37F6E9614EF593E927CCCF9D6DB82/DE/Infoservice/Presse/Meldungen/2015/150415_G7_Beyond_Ebola.html.
- 3 United Nations (2016) "244 million international migrants living abroad, worldwide new UN statistics reveal", www.un.org/sustainabledevelopment/blog/2016/01/244-million-international-migrants-living-abroad-worldwide-new-un-statistics-reveal/.
- 4 Armed conflicts increase the possibility of using various types of communicable diseases as an instrument of war. Experience from armed conflicts shows that a rise in conflicts increases interest in research in that scientific field. Today there are legal public and military laboratories conducting research in this area. This increases both the danger of accidental transfer of carriers of communicable diseases and the danger of such materials falling into the hands of individuals who intend to cause general disorder, i.e. bioterrorism.
- 5 The continuous use of chemicals to increase yields in farming, uncontrolled use of chemicals and antibiotics in the raising and distribution of animals used for nutrition, a constant increase in genetic modifications and the uncontrolled overuse of antibiotics in humans also increase the possibility for mutation of existing bacteria and viruses and the spread of communicable diseases.
- 6 Different ethnic groups and nations in the world have different traditional cultural practices, beliefs and customs (procedures for curing or treating infected persons, use of traditional medicines, folk beliefs or stigma, etc.) that can greatly facilitate the spread of communicable diseases.
- 7 Activities should not only be directed at international air, road and water border crossing points, but also in the interior of every country. There should be continuous monitoring of illegal routes and crossing points, migration (origin, directions of movement and destinations, age and gender structure, possible symptoms), and

locations (places with drinkable water, parking places, petrol stations, restaurants, etc.) where travellers assemble, tourist centres and locations for cultural events and business interactions.

- 8 There is a need for effective containment measures, such as early detection and isolation of cases, contact tracing and monitoring, and rigorous procedures for infection control. The capacities for early diagnosis and detection of symptoms of communicable diseases such as EVD, malaria, typhoid fever, Lassa fever, etc., are very important.
- 9 Entry screening was conducted on travellers who had come from risky regions. See www.cdc.gov/vhf/ebola/travelers/ebola-screening-factsheet.html. Non-contact measurement of temperature was conducted on travellers suspected of having an increased body temperature or other symptoms or possible exposure to Ebola. See <https://stacks.cdc.gov/view/cdc/24857>. This implied conducting a full check to determine if the persons in question can continue to travel or should be taken to a hospital for evaluation, testing and treatment, while travellers were also provided with health information and referred to a local health department for further monitoring.
- 10 US Centers for Disease Control and Prevention (2014) "Enhanced Ebola screening to start at five U.S. airports and new tracking program for all people entering U.S. from Ebola-affected countries", press release, 8 October, <https://www.cdc.gov/media/releases/2014/p1008-ebola-screening.html>.
- 11 European Parliament and Council (2013) "Decision No. 1082/2013/EU of 22 October 2013 on serious cross-border threats to health", *Official Journal of the European Union*, L291, http://ec.europa.eu/health/sites/health/files/preparedness_response/docs/decision_serious_crossborder_threats_22102013_en.pdf.
- 12 This includes personnel in border police services, officials in healthcare organizations, international institutions and non-governmental organizations, and local persons in charge of property and hygiene maintenance.
- 13 This includes isolation rooms and rooms for changing personal protective equipment after work shifts.
- 14 E.g. appropriate vehicles for transport of personnel and potentially infected travellers, appropriate facilities for hygiene and disinfection, appropriate disinfection of surfaces, premises and open spaces where there is contact with travellers, among others.
- 15 It is necessary to provide sufficient and adequate accommodation for treatment of patients and potential carriers of the virus who are being monitored during the incubation period; the latter should be separated from persons who are confirmed to be ill.
- 16 Listed in note 7 above.
- 17 Operational procedures for the treatment of potentially infected travellers, procedures for transport to healthcare institutions and transport of equipment and personnel, among others.

Epidemics and Pandemics: The Role of Swiss Research Centres

Cédric Invernizzi

The European mobile laboratory

In the early stages of the unprecedented Ebola epidemic, the European Mobile Laboratory (EMLab) was deployed in a rural region of Guinea where cases of infections had peaked. EMLab is a collaborative project funded by EuropAid and the European Commission's Directorate-General for International Cooperation and Development, entitled "Establishment of mobile laboratories up to Risk Group 4 in combination with chemical, biological, radiological and nuclear defence (CBRN) capacity building in sub-Saharan Africa" (project reference IFS/2011/272-372). The project was intended to last four years and aimed to increase "the capacity in Europe and Africa to respond to infectious disease outbreaks" and strengthen "the collaboration between scientists on both continents".¹

Global outbreak alert and response network

EMLab is part of the Global Outbreak Alert and Response Network (GOARN) of professionals and experts. GOARN was established in April 2000 by the World Health Organization (WHO) to expand the pool of available experts and resources to match global needs in cases of emergency. GOARN is an independent body providing a technical partnership between the WHO and more than 150 professional institutions and networks. In its coordinating role, GOARN can draw on experts and resources of network partners to provide support and assistance in public health emergencies of

international concern.

In the creation of GOARN, aspects of global health security were taken into account, expanding the scope of public health to add security-related issues. Thus GOARN is not only a valuable platform for institutions concerned with issues of public health but also attracts institutions with a different scope, largely centred on security issues, such as Spiez Laboratory. Spiez is the Swiss Federal Institute for Nuclear, Biological and Chemical Protection, and deals with the scientific and technical aspects of hazards associated with CBRN incidents. It is part of the Swiss Federal Office for Civil Protection within the Department of Defence, Civil Protection and Sports.

Spiez laboratory collaboration with GOARN and EMLAB during the Ebola epidemic

As with GOARN, EMLab links capacity building in public health to CBRN-related security issues. These two international networks make it possible for Spiez Laboratory to contribute its expertise (primarily focused on CBRN issues) to public health issues. For instance, several scientists from Spiez were given the opportunity to attend specific training sessions in EMLab prior to the widely unexpected outbreak of the Ebola epidemic across West Africa. Hence this emergency situation was perfectly tailored to the core aims of EMLab and triggered immediate translation of the training into real-world application. In about two years of continuous work in the field in various strongholds of the devastating epidemic, EMLab proved to be very dependable for many organizations, such as Médecins Sans Frontières (MSF) and the WHO, by providing rapid and accurate diagnostics and identification of the Ebola virus in patient samples. Even under difficult and dangerous work conditions, rapid testing procedures were established and successfully used on a regular basis. Work at EMLab was carried out in shifts, and teams were replaced every four weeks. To optimize transfer of current information and the knowledge base in more general terms, the workforce was supplemented by national staff who collaborated with

international teams. Such capacity building may be invaluable for future challenges, when countries with fragile public health response systems are faced with a new state of emergency.

The lessons learned by the Spiez scientists are valuable for future national and international responses, whether to a public health emergency situation or a CBRN-related incident. There was a leap forward for the laboratory's analytical and diagnostic capabilities, increasing their knowledge and experience of working in unfavourable field conditions. This will eventually translate into more resilient capabilities for Spiez's current and future functions as a primary diagnostic laboratory, and even more so as a reference laboratory.

Spiez laboratory's work on Ebola and other viruses

Spiez Laboratory currently has two reference functions: it serves as the National Reference Centre for Anthrax and the National Reference Centre for Tick-Transmitted Diseases. The former is not limited to the identification and characterization of anthrax, but also works on bacteria responsible for tularemia, plague, brucellosis and botulism. In the latter, identification and characterization are mainly focused on tick-borne encephalitis, but include Lyme disease and Q fever. Both reference functions are primarily focused on public health aspects as recognized by the mandating authority, the Swiss Federal Office of Public Health. They are further focused on aspects of health security, much like in GOARN. There is also the Regional Laboratory Network that was established after 9/11; this subdivides the Swiss territory into six regions and is contracted by the Swiss Conference of Cantonal Ministers of Public Health to establish and maintain capabilities and capacities for the rapid laboratory-based primary diagnosis of pathogens in case of a biological emergency, whether of natural or accidental origin or due to deliberate release. Spiez Laboratory is responsible for primary diagnosis in one of the six regions. Through the National Reference Centre for Anthrax it runs a reference diagnosis scheme of a given set of relevant bacterial agents for all of Switzerland. In addition, Spiez supports

the National Reference Centre for Emerging Viral Infections in Geneva: the laboratory is the only biosafety level 4 (BSL4) facility in Switzerland with the ability to conduct work with Risk Group 4 pathogens, such as the Ebola virus, that goes beyond simple inactivation of samples for diagnostic purposes.

Reference work at the Spiez BSL4 facility includes culturing Risk Group 4 viruses for morphological studies and neutralization assays. Within the context of an international effort to develop vaccines against the Ebola virus, Spiez is currently conducting neutralization assays at BSL4 conditions. In other words, several hundred serums from Swiss, Kenyan and Gabonese vaccines that participated in a clinical trial are now currently challenged with live Ebola virus. The project, entitled “Vaccine safety and immunogenicity signatures of human responses to VSV-ZEBOV (VSV-EBOVAC)”, is funded by the European Commission and industry, and was designed for the Innovative Medicines Initiative’s “Ebola+” call for research proposals.

Spiez Laboratory had a different type of reference function during the influenza H1N1 pandemic in 2009, more commonly referred to as “swine flu”. As soon as the first cases emerged in Switzerland, the Swiss Army mandated Spiez to conduct diagnostics of all patient samples collected from military personnel suspected of being infected. Results were to be delivered within a maximum timeframe of 24 hours. Due to the large number of samples at peak times of the pandemic, Spiez partnered with trained Swiss armed forces to complete the work. Spiez Laboratory’s expertise, which reaches beyond infectious agents and includes toxins, stands ready to help in the event of activation of the UN Secretary-General’s Mechanism for Investigation of Alleged Use of Chemical and Biological Weapons (UNSGM). This investigative instrument was established by the UN General Assembly in 1987 and operationalizes the Geneva Protocol of 1925, which calls for a general prohibition of any use of chemical and biological weapons.

In 2013 the UNSGM made the news headlines with the launch of a UN mission to investigate the alleged use of chemical weapons in Syria. UN inspectors collected a large number of samples that were handed over to

the Organization for the Prohibition of Chemical Weapons in The Hague, which forwarded them for off-site analysis to laboratories within its designated laboratory network. Spiez Laboratory received some samples. Laboratories designated by the Organization for the Prohibition of Chemical Weapons maintain internationally accepted accreditation and undergo stringent quality testing on an annual basis. Since the Chemical Weapons Convention entered into force in 1997 (and before), these laboratories have been validating analytical methods and developing criteria for the reporting of analytical results for the identification of chemical warfare agents and related chemicals. In the absence of institutional resources in the biological field, any UNSGM investigation of alleged use of biological weapons will rely on the UNSGM roster of designated laboratories. Certainly, expert laboratories around the world maintain the capability to identify infectious microorganisms and toxins for various types of samples by applying different diagnostic methods and techniques. These laboratories maintain their own quality systems and have established reporting criteria that meet their customers' requirements. However, analysis strategies and quality assurance requirements might not fully satisfy the expectations of the international community in an investigation of alleged use of biological weapons. Switzerland, having nominated Spiez Laboratory for the UNSGM roster, currently addresses this issue through a workshop series.

These examples of involvement and engagement of Spiez Laboratory represent a multifaceted approach and demonstrate that there are no clear-cut boundaries between public health and CBRN-related issues: the response to a biological event and the consequence management it entails may look very similar, whether it is of natural or accidental origin, or due to deliberate release. Today's concepts require holistic approaches that bring together public health and CBRN aspects. It is therefore all the more important that research centres affiliated with their respective ministries of defence consider these dual aspects so they may become an indispensable source of support and assistance in public health emergencies, in pursuit of global health security.

Notes

- 1 European Mobile Laboratory Project (2016) "Background", <https://www.emlab.eu/background.html>.

The Role of the Security Sector in the Management of the Ebola Crisis in Guinea, Liberia and Sierra Leone

Komba Mondeh

Introduction

Colonial boundaries are reflected in the modern borders between contemporary West African states, cutting across ethnic and cultural lines, and often dividing single ethnic groups between two or more states. Sadly, diseases continue to stand out as a hindrance to human development in the region. The environment, especially the tropical rainforest, allows many single-cell organisms, parasites and bacteria to thrive and prosper. The 2014–2015 Ebola outbreak became endemic in scale and reached a regional, if not global, crisis level. However, despite the vicious character of Ebola, it does not spread as easily as other viruses. Infected individuals can be effectively quarantined with proper healthcare facilities. Such facilities were not, however, available in West Africa. The healthcare systems in the region, already weakened by decades of civil war, collapsed under the strain of the epidemic.

Born out of colonial linkages, three major powers - the USA, the UK and France - launched humanitarian missions with military operations and other forms of support in their former colonies. The USA deployed up to 3,000 troops to Liberia. The UK deployed at least 750 troops to its former colony Sierra Leone as part of its own humanitarian mission. France provided financial support to Guinea and constructed military hospitals for the treatment of patients. Considered as one of the largest investors in Africa, China dispatched human resources to the affected countries, bolstering its reputation as an active participant in the global fight

against Ebola and combating perceptions of disinterested mercantilism in Africa. The UN Security Council created the first-ever UN mission for a public health emergency, the UN Mission for Ebola Emergency Response (UNMEER). UNMEER's primary task was coordinating the UN agencies' vast resources to combat the epidemic under the leadership of the World Health Organization (WHO). The African Union and the Economic Community of West African States also sent missions to the affected countries to combat the disease.

In all, the contributions of local and international security forces were driven by the understanding that the Ebola epidemic constituted a global challenge which had to be met with a global solution. As with a fight against any adversary, any policy predicated solely on self-isolation and avoidance would not be a winning strategy. The roles played by the British and US forces, the Republic of Sierra Leone Armed Forces (RSLAF), the Sierra Leone Police (SLP) and other security agencies demonstrate the uniqueness of operations for which only military forces would be qualified. Despite the presence of considerable challenges, similar to any conventional or asymmetric warfare, the military managed to break the chain of transmission and pin down the disease. Soon Ebola virus disease (EVD) was losing ground on a daily basis, with Liberia the first of the affected countries to be declared free of Ebola. The military forces also demonstrated their ability to deploy in fields of operation outside the traditional war theatre. This chapter seeks to elucidate the role of specific security forces involved in the global management of the Ebola crisis in West Africa. It focuses on the three worst-affected countries in the Mano River Union (MRU): Guinea, Liberia and Sierra Leone. It highlights the mode of operation and identifies activities that worked well, as well as challenges and lessons to be learned for future engagement of military forces under similar circumstances.

Impact of the Ebola outbreak

Guinea, Liberia and Sierra Leone were hit hardest by the Ebola epidemic.

The outbreak was unprecedented in its scale, claiming more lives and spreading quicker and further than any other epidemic in recent history. To make matters worse, EVD spilled from rural into urban centres, which distinguishes it from previous outbreaks¹ in Africa. Household incomes dropped, poverty spread and inflation and food prices rose, while productivity and production volumes fell. The governments of these countries faced budget overruns and higher fiscal deficits. At the same time, their economic growth and revenue inflows plummeted. The poor were becoming increasingly vulnerable in the Ebola-affected countries. The population's access to services and food considerably worsened. The costs of the fight against the Ebola outbreak plus the costs of reduced productivity induced by the disease placed a very high burden on these countries.

The role of local security forces

The outbreak of the epidemic caught West African nations utterly unprepared. Their health sectors were overwhelmed and not equipped to fight EVD, so the disease completely outstripped the ability of health workers to stem its spread. The lack of medical personnel and beds in Ebola treatment units, the complexity of identifying active cases and contacts, and the slowness of the response exacerbated the spread and severity of the epidemic.² Consequently, the governments of Guinea, Liberia and Sierra Leone were left with no other option but to authorize the deployment of security forces in support of their respective health ministries to curb the epidemic. The roles performed by the security forces in all three countries were very similar. The discussion therefore examines the work of the RSLAF and SLP as examples of local forces' roles in the MRU basin, and the roles played by the US and UK military forces deployed in Liberia and Sierra Leone. The RSLAF and SLP were deployed at the height of the Ebola crisis to curb the disease, and operated side by side in delivering many of the tasks assigned to them. The major roles performed by the local forces can be divided into one task jointly undertaken by the RSLAF and the SLP,

and other tasks specifically undertaken by the RSLAF.

The work jointly performed by the two sister forces included the provision of security, enforcement of travel restrictions and quarantines, undertaking sensitization and community awareness programmes and joint border control.

- *Security provision.* In the initial phase of the outbreak, locals in Guinea, Liberia and Sierra Leone were in denial about the existence of Ebola in their communities. This shared belief among an angry and despairing population created a hostile environment for health workers. On several occasions health workers were attacked and their facilities vandalized. This impeded their work and was a setback in the fight to contain the disease. As a means of remedying the situation, governments in the hardest-hit countries deployed their security forces to protect health workers and allow them to perform their tasks unhindered. In Sierra Leone, the RSLAF and SLP provided security to workers from the Ministry of Health and Sanitation and local and international non-governmental organizations (NGOs and INGOs) to allow them to function in a secure environment. The two forces also jointly provided perimeter security at treatment centres.
- *Enforcing travel restrictions and quarantines.* To break the chain of transmission and avert further spread of the disease into non-affected areas of the country, the government of Sierra Leone and its Guinean and Liberian neighbours placed travel restrictions across the country. They also quarantined homes of persons infected or suspected of having contracted EVD. These restrictions and quarantines were enforced in the public health emergency law by the RSLAF and SLP. The forces jointly manned checkpoints, quarantined homes and conducted patrols on both land and sea. The forces also enforced lockdowns and curfews imposed by the government.
- *Undertaking sensitization and community awareness programmes.* To reduce EVD spread, the WHO recommended raising community awareness of the risk factors for Ebola infection and the protective measures individuals could take. These included avoiding contact with infected individuals and regular washing of hands with soap and water. The RSLAF and SLP complemented civil society organizations in staging public awareness campaigns among the communities.

- *Joint border control.* There was serious concern that the disease would spread further within West Africa or elsewhere. Among the three most-affected neighbouring countries there was fear of serious cross-border outbreaks of EVD. To prevent spillover across their joint borders, affected regions were isolated by force in the triangular area where Guinea, Liberia and Sierra Leone are separated by porous borders. This practice was subsequently replaced by a series of simple checkpoints for hand washing and measuring of body temperature on major roads throughout the region, manned by either local volunteers or the SLP and RSLAF.

A series of additional duties were performed specifically by the RSLAF.

- *Surveillance and contact tracing.* Contact tracing is essential to the prevention of the disease. Firstly, it requires effective community surveillance so that possible cases of Ebola can be registered and accurately diagnosed as soon as possible. Secondly, it involves the search for and identification of everyone who has had close contact with infected persons, as well as tracking them for 21 days. This activity requires careful record-keeping by properly trained and equipped staff. The British military and its International Security Advisory Team, with support from the UK Department for International Development (DFID), provided training for some RSLAF personnel in this role.
- *Construction of treatment and holding centres.* RSLAF engineers were the first to start construction of treatment centres outside Kailahun district when EVD struck the country, and built the Kerry Town treatment centre. Later they were supplemented by the UK Royal Engineers, and the two teams of engineers constructed additional treatment and holding centres across the country.
- *Manning treatment centres.* Tragically, the shortage of personal protective equipment (PPE) resulted in multiple infections and deaths among medical personnel. As the disease spread further, some people avoided treatment for fear of being infected. At the height of the epidemic, health facilities had little to offer in terms of equipment, staffing and laboratory services. While treatment centres were overflowing with patients, others waited to be admitted. There were so many dead patients that it was difficult to arrange for safe burials. This prompted the RSLAF to establish a treatment facility at the Police Training School (PTS) in Hastings and to renovate one of its wards at 34 Military Hospital as a holding

and treatment centre. Both the 34 Hospital and PTS treatment centres continued to be manned by RSLAF health workers. These treatment centres registered many success stories in the fight to contain the Ebola epidemic.

- *Collecting swabs and samples in remote areas of the country.* RSLAF personnel were involved in swab and sample collections in remote areas of the country. Areas in the hinterland are inaccessible by road in the rainy season, but with air mobility support from British forces, RSLAF troops were able to collect swabs and blood samples in those areas to have them tested in the capital, Freetown.
- *Management of safe burial teams.* RSLAF personnel were deployed across the country to provide oversight and direction for safe burials. This contributed to the eventual containment of EVD.
- *Command-and-control function.* As the unexpected outbreak of the dreaded disease continued to claim the lives of many citizens, President Ernest Bai Koroma, the commander-in-chief of the armed forces, decided to put in place a military-style response by reinvigorating the Ebola Emergency Operations Centre as a separate entity with a robust command-and-control structure to eradicate the disease effectively; he renamed it the National Ebola Response Centre (NERC). President Koroma appointed Defence Minister Alfred Palo Conteh as chief executive officer of the NERC on special secondment, while Koroma provided general oversight of the Ministry of Defence. Backed by British forces and other civilian representatives, the RSLAF provided personnel to staff the NERC and District Ebola Response Centres (DERCs). Collectively, the NERC provided command and control and implemented the national Ebola response plan, and also implemented all programmes pertaining to the Ebola crisis. Alongside other players, it coordinated the efficient and sustained utilization of the massive support coming into Sierra Leone from diverse sources.
- *Mobility support.* While transportation is a fairly easy logistical function to plan, it is difficult to execute. The movement of personnel, equipment and supplies is crucial for the success of military operations. The EVD outbreak triggered extensive transport support from the RSLAF to civilian authorities, the NERC, INGOs, NGOs and civil society organizations, and thus helped to contain the disease. The RSLAF provided lifting capabilities for personnel, equipment, drugs and other medical supplies to various locations within the country. It supplied the backbone support of transport for the NERC, especially in the initial phase of the Ebola

operation, and also loaned vehicles to the Ministry of Health. It provided drivers for ambulances and other vehicles used for the EVD operation at a time when qualified civilians were unwilling to provide these services for fear of contracting the disease.

International security forces

International contributions in the fight against Ebola were made primarily by the UK and the USA. The UK provided military support in Sierra Leone, while the US military did the same in Liberia.

British forces

In October 2014 the British Ministry of Defence announced the deployment of 750 personnel to help with the establishment of Ebola treatment centres and an Ebola training academy.³ The British contribution included the deployment of the Royal Fleet Auxiliary naval ship *Argus* with about 250 personnel, enabling three Merlin helicopters, aircrew and engineers to provide crucial transport support to medical teams and aid experts. Over 200 military personnel were deployed to run and staff a WHO-led Ebola training facility that assisted in the training of healthcare workers, logisticians and hygiene specialists who were needed in treatment units, while 300 military personnel focused on delivering support to the Sierra Leonean government in command and control, logistics and engineering capacities that provided the backbone of infrastructure, commodities, training and management required to scale up the response in Sierra Leone. These included 22 field hospital units, 35 squadrons, five armoured medical regiments, troops from the Royal Army Medical Corps and soldiers from the Queen's Own Gurkha Logistic Regiment and the 1st Battalion Royal Regiment of Scotland.

The role played by British forces in the fight against the EVD included the following activities.

- *Construction of treatment centres.* The Royal Engineers constructed six EVD centres in concert with RSLAF engineers. During the initial phase of the outbreak there were no treatment centres outside Kailahun and Kenema towns. Even in those areas, the centres manned by MSF in Kailahun and the Ministry of Health at Kenema Government Hospital were much too small to cope with the growing number of EVD patients. The six treatment centres constructed by British forces were therefore perceived as relief and an important step in eventually defeating EVD. The centres were opened in several phases to ensure the safety of patients and staff; they were staffed by a mix of local, international and UK National Health Service volunteer health professionals and run by a variety of organizations, including GOAL, International Medical Corps, Medicos del Mundo, Aspen and Emergency. Nationals from Cuba, Norway, Australia, New Zealand and Denmark also contributed, shoring up the country's stretched public health services to help contain the disease.
- *Training of health workers/EVD responders.* British forces carried out a series of training exercises with support from DFID. They trained EVD responders, including nurses. In total, British forces trained 5,000 medical personnel.
- *Command and control.* British forces assisted the government of Sierra Leone's command-and-control capability at the national level through support to the NERC. It also aided in the roll-out of district-level command centres through the DERCS in areas of high transmission. British forces helped in establishing clear lines of communications and reporting to support informed decisions at the strategic level.
- *Manning of treatment centres.* Together with NGOs, British forces participated in running the Kerry Town hospital to help diagnose and treat medical personnel affected by EVD.
- *Mobility support.* British forces provided mobility support in the Ebola fight through the Merlin detachment, Royal Marine helicopters and boats from the RFA *Argus*.
- *Policy planning and development.* British forces assisted the NERC in developing policies and supporting charities on the ground to promote funeral practices that allowed people to honour their

friends and relatives while ensuring the safe burial of bodies.

US forces

As the MRU governments failed to cope with the outbreak and the resulting panic, the spillover effects crippled government infrastructure and societal structures, creating major security issues. Smaller steps earlier on could have halted the epidemic much sooner. Unfortunately, as with other governments in the MRU, events overtook the government of Liberia and only the military with its vast organizational and command-and-control capabilities could do what was needed to coordinate multinational efforts and contain the virus. Logistics and leadership played crucial roles.

The contribution by the 3,200-strong US military deployment in the fight against Ebola in Liberia involved the following.⁴

- *Leadership and coordination.* The US military deployed half of the headquarters element of the 101st Airborne Division to coordinate multinational and interagency efforts between several actors – the Liberian government, the US Agency for International Development, UN aid workers and US armed forces. This was a complex organizational challenge for which the US military was uniquely qualified.
- *Treatment centres and mobile labs.* The US military engineers and support contractors constructed 17 prefabricated treatment centres to help isolate and treat the sick, and provided mobile labs to allow health workers to identify and separate Ebola patients from others.
- *Transportation.* As commercial airlines showed increasing reluctance to fly between affected countries, US military transport supported the flow of medical workers and supplies. This included critical aid such as hygiene kits and protective gear.
- *Training.* Military medical personnel were able to train over 500 local health workers and volunteers per week in basic self-protection procedures. The empowerment of local workers was crucial in stopping the epidemic, while also limiting direct exposure of US troops.

Activities that worked well

The activities that worked well in the fight against EVD varied across the subregion. However, as far as the situation in Sierra Leone is concerned, the following points could be observed.

- *Coordination.* The establishment of the NERC at the national and the DERCs at district levels provided the required command-and-control capacities. The NERC coordinated all activities efficiently, and was charged with the responsibility for receiving donations and approving appropriate disbursement of funds.
- *British forces and the RSLAF.* There was a good working relationship between the RSLAF and British forces, which was crucial for their joint operations.
- *Quick planning.* The quick military planning and decision-making style resulted in more effective and efficient delivery of assistance.
- *Logistics mobility.* The use of military helicopters, vehicles and boats greatly enhanced the resupply of food items and movements of troops.
- *Social mobilization and education.* Social mobilization and public education are preventive measures that had a highly positive impact after the outbreak of the epidemic. Military personnel and volunteers organized radio spots and theatrical performances, put up posters, trained village residents as instructors in education campaigns and built disinfection stations. Today, the majority of people know how to protect themselves against the virus.

Challenges and pitfalls

A number of challenges and pitfalls can also be observed.

- *Medical staff and military personnel not trained at first.* Medical staff and military personnel were not trained in proper use of PPE, and medical experts with genuine knowledge and experience in dealing with Ebola were in extremely short supply. Tracing units and burial teams had to be organized and trained. Mass training of medical staff in government and private hospitals, treatment centres and isolation units/wards was offered only after the outbreak had

occurred.

- *Insufficient ambulances and treatment centres.* The lack of sufficient ambulances had a negative effect during the initial stages of the outbreak. Ambulances had to be procured or refitted to accommodate Ebola victims. In addition, the general population protested vigorously that regular patients and Ebola patients had to go to the same facility for medical treatment, putting the uninfected population at higher risk.
- *Lack of sensitivity in dealing with traditional customs.* The Sierra Leone Ministry of Health, as well as the military and police, showed little sensitivity in dealing with the affected population. Rumours were plentiful regarding the causes of the epidemic and the role of the government in responding to it. In some cases the outbreak and response were attributed to political dynamics, as the outbreak started in the opposition party's stronghold or heartland. There was a genuine lack of trust between those who desperately wanted to assist and those who desperately needed the assistance. This lack of trust developed into opposition and resistance dynamics that fed on and grew into misinformation and rumours.
- *Limited military resources.* The RSLAF had to employ its vehicles to sustain transportation at the earlier stages of the outbreak. This put pressure on the military in managing the Ebola operation and its ongoing military tasks, and resulted in the RSLAF suspending all training to concentrate its meagre resources on general security and the Ebola operation.
- *Working closely with NGOs.* Working alongside humanitarian organizations was challenging for the militaries, as is highlighted by British forces' close cooperation with DFID. It took some time for the security forces to adapt to the ways INGOs/NGOs do business, which are completely different to those of the military, as are the speed or pace of decision-making and planning processes.
- *Military personnel running treatment centres.* Responding to EVD was a new challenge for the security forces. The RSLAF personnel running the Hastings Ebola treatment centre were scared and challenged from the onset, given the lack of resources. British forces were similarly affected after the opening of the Kerry Town treatment centre. The outbreak required everyone to rethink and do things differently than in the past. Moreover, it was critical to find the right people to run the centres.

Lessons learned

As a major lesson, the outbreak and the inability to contain it reflect the weak institutional and infrastructural capacities in the worst-affected countries. Extreme poverty, a dysfunctional healthcare system, mistrust of government officials after years of armed conflict and a delay of several months in responding to the outbreak all contributed to the failure to control the epidemic. Other lessons learned include the following.

- The military forces were instrumental in winning the war on Ebola, without firing a single shot. They need to build capacities and structures to include dedicated units trained and equipped to deal with disasters of this nature in the future. Investments should be made, especially in the areas of transport and medical support, to enable a better response to unexpected environmental threats.
- In any future operation the military should develop a memorandum of understanding with other government agencies prior to its intervention. This will avert challenges such as those experienced by the RSLAF during Operation Octopus (in which, in early August 2014, 54 RSLAF medical workers were among 750 military personnel deployed to Kailahun and Kenema districts in support of the Ministry of Health and Sanitation and the SLP in the fight against Ebola), and other EVD operations that relied on RSLAF transport, material and medical support. While the RSLAF supplied the main transport for the NERC and the Ministry of Health, neither of them provided reimbursement for these vehicles. If any vehicles broke down or were damaged during such operations or as a result of wear and tear, the RSLAF would bear the cost. When spare parts were needed for repairs, the RSLAF covered the costs from its own budget.
- The display of good and persuasive leadership is essential to secure cooperation by everyone for effective operations. Effective leadership will lead to goal congruence. The security forces have for the large part been able to display such leadership.
- A coordinated and unified approach yielded dividends. The establishment of the NERC and DERC structures provided a viable means of coordination and collaboration that enhanced command and control and provided the nucleus for the fight against the dreadful disease.

- Empowerment was achieved through training and a participatory approach. At the beginning of the outbreak most health workers were hesitant in executing their duties because they had no knowledge about the virus. However, with training, local health workers were seen taking control of the fight in the front line. Moreover, once participation and local ownership were encouraged, commitment grew despite the real dangers involved.
- Finally, EVD is exacerbated by poverty, and the three hardest-hit countries in West Africa, Liberia, Guinea and Sierra Leone, are among the poorest nations in the world. A small outbreak of 20 cases occurred in Nigeria and there was one case in Senegal, several cases were reported in Mali and an isolated case occurred in the UK. Imported cases in the USA and Spain led to secondary infections of medical workers but did not spread further. But all these countries were able to contain EVD. In the MRU area the majority of Ebola victims, except for those who contracted the virus in their line of work, such as health workers, were from the lower classes of society.

Conclusion

Guinea, Liberia and Sierra Leone were hit hardest by the epidemic in West Africa, and the outbreak greatly affected household incomes and general socio-economic activities in the MRU basin. The inability of local health workers to contain EVD prompted global intervention and the deployment of national and international security forces. The roles played by the RSLAF, SLP, British forces and the US military are worth commending and included, among others, security provision for health workers; enforcement of travel restrictions, curfews, lockdowns and quarantines; social mobilization, surveillance and contact tracing; construction and staffing of holding and treatment centres; collection of swabs; management of safe burial teams; transportation support; and development and implementation of policies, training, coordination, command and control. Activities that worked well include coordination among the different security forces and other agencies spearheaded by the NERC; quick planning and decision-making; social mobilization; training; and logistics mobility. The challenges and

pitfalls encountered range from a lack of knowledge about the disease and use of PPE to insufficient ambulances and treatment centres at the onset of the outbreak, limited military resources and difficulties encountered by the security forces in working with INGOs and NGOs. However, important lessons were learnt that will hopefully enhance the engagement of these security forces in future outbreaks.

Notes

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PART IV

International Military Support Missions

The UK Military Contribution to Controlling Ebola in Sierra Leone

Louis Lillywhite

Introduction

This chapter describes and assesses the UK's military contribution to the Ebola response in Sierra Leone. It provides a short background on Sierra Leone and the British military medical services, and further outlines the British government's overall response. It then describes the UK's military contribution, noting that this benefited from contributions made by other countries' militaries and non-governmental organizations (NGOs). Finally, it seeks to assess the military contribution and address the question of where in terms of control the military organization fitted into the overall response. What this chapter cannot and does not do is describe the significant changes that occurred within the Sierra Leonean response at national, district and local levels. At all levels new structures and organizations developed and evolved, and authority shifted between individuals and organizations. Within such a dynamic situation, it is difficult to answer conclusively the most interesting question: who was in charge? The answer to this question has to be based on a "balance of probabilities".

Sierra Leone

Sierra Leone is a former British colony, initially used as a place to resettle freed slaves from the Americas and those captured from illegal slave traders. An independence movement was formed in 1952, and independence was granted in 1961. Initially democratic, Sierra Leone was

the subject of a number of military coups and periods of single-party rule. In 1991 it descended into a civil war, which continued with occasional respites caused by military interventions – carried out initially by the Economic Community of West African States Monitoring Group, and then by the UN Mission in Sierra Leone (UNAMSIL).¹ The involvement of a British military force in 2000, independent of UNAMSIL, is credited by the population as being instrumental in ending the cycles of violence. Further, it almost certainly influenced the response of the Sierra Leonean population to the British intervention in the Ebola crisis, even though the British were only one element of the international response that ended the civil war.

The British military retained a presence after 2000, initially as the British Military Training Team, and then as an element of the International Military Assistance and Training Team Sierra Leone. The team has a broad security remit which includes policing and prisons, and is able to call upon British military technical expertise, for example in developing rural bases for Sierra Leone's military. In addition to the military component, the British continued to contribute to the improvement of the country's infrastructure and administer financial and material aid. This included support to the traditional chiefs,² which might also have contributed to the eventual acceptance of the British involvement in the Ebola outbreak. Thus the British had a military presence in Sierra Leone when the Ebola epidemic started. The British military was well liked and respected, understood the local administration and its limitations, and knew the country. As the brigade commander who led the British military response stated: "Significantly, a large proportion of the population have great respect for the British military, who they see as the saviours of the country during the last civil war; in many ways, someone in British combat uniform draws more respect and has more access and influence, than NGOs and aid workers – I know of no other country where this would be true."³ This comment serves as a word of caution on extrapolating the lessons of British military involvement in Sierra Leone to other situations.

The British military

Like many other countries, the UK maintains its forces at high readiness to ensure that they are capable of conducting military interventions at very short notice. Although designed as a combat force, the Army Logistic Brigade Headquarters is part of the high-readiness force, and includes specialist engineers, medics, communicators and logisticians. Helicopters, intelligence personnel and naval units are also ready to be deployed at any time. These were to form the backbone of the British military assistance.

This capacity has, however, deteriorated over time. During the Cold War the British Army and Royal Air Force were able to deploy hospital units capable of accommodating 13,200 casualties. In 1991, for the first Gulf War, the UK deployed hospitals capable of accommodating 2,600 casualties, in addition to “other nations medical assistance”, which comprised a number of hospital units from other countries.⁴ These hospitals were specifically designed and the personnel trained to carry out treatment in chemical and biological protective clothing. However, various restructurings of the British military in response to the changing strategic environment and the lack of a direct threat to the UK have gradually led to a reduction of deployable available military hospitals to currently three, each of 200 beds.⁵ Furthermore, the UK now embeds its military medical personnel in National Health Service (NHS) hospitals, while the deployment of all 600 beds would require the mobilization of some reservists, most of whom would come from NHS hospitals. This reduction is mirrored in most Western countries. It is clear from discussions with Médecins Sans Frontières (MSF) personnel that the reduction in military medical capacity went unnoticed. It would seem that their call for military medical deployment was based on capacity assumptions from the last century, rather than the actual situation in the twenty-first century.

Although the capacity of deployed military hospitals has reduced, the clinical capability, honed by over a decade of modern conflicts, has immeasurably increased in two main areas: the management of injury and, pertinent to the management of Ebola, the pre-deployment preparation that enables a deployed hospital to “hit the ground running”. However,

these medics are not highly trained in chemical or biological protection, nor are the deployable hospitals optimized for the care of those suffering from infectious diseases.

The UK's initial response to the crisis

Information on Ebola was received by the UK government via its sources in Sierra Leone and the declarations of NGOs and the World Health Organization (WHO). Initial concerns were based on the potential for British citizens in Sierra Leone to contract the disease. On 25 July 2014 the UK's Department for International Development (DFID) announced the allocation of £2 million to the International Federation of Red Cross and Red Crescent Societies and MSF to assist in fighting the disease.⁶

However, the highest level of the government was concerned about the situation, and formed the Cabinet Office Briefing Committee⁷ to monitor it. The first meeting, chaired by the foreign secretary on 30 July 2014,⁸ appears to have been concerned almost solely with the potential arrival of infected persons in the UK. The foreign secretary told the BBC: "What we need to do to protect British citizens abroad in the area any steps that we need to take [*sic*] to ensure that the UK remains safe."⁹ At the same time, the prime minister publicly called on the European Union (EU) to double its contribution in the fight against Ebola from £400 million to £800 million,¹⁰ without indicating what this increased contribution would fund. At the second Cabinet Office briefing meeting on 7 August 2014¹¹ the concern had switched to the problems in Sierra Leone, and it was decided that a "further £3m would now be provided to strengthen health systems in Sierra Leone and Liberia and support the WHO, UNICEF and the International Rescue Committee". Despite the fact that the Royal Air Force would monitor the situation because of its standing commitment to be responsible for transporting highly infectious UK nationals abroad back to the UK, there appeared to be no intention at the time of using the armed forces in the response. UK Prime Minister David Cameron spoke to US President Barack Obama on 9 August 2014 about the Ebola outbreak,

but, according to the official press release, without agreeing to any specific US or UK intervention.¹²

Military involvement – decision and overall leadership

It appears that the UK's military involvement was a direct response to a request from the WHO and the government of Sierra Leone, combined with the perceived lack of an international humanitarian response. The involvement was officially announced¹³ on 8 September 2014. It is unclear to what extent MSF influenced this decision, as it was apparent that the military medical capability called for by MSF simply did not exist. The UK government also sought to distance its military medical services from direct involvement with treating the Sierra Leonean population, fully in line with the Oslo Guidelines.¹⁴ To this end, the government sought to develop a partnership with the NGO Save the Children, which would be directly responsible for providing an Ebola treatment facility. The military medical services provided a small, high-tech, high-dependency medical facility to treat any international health volunteer who contracted Ebola. Indeed, the major UK response was not the clinical capability that it deployed, although that received the most publicity. The UK also sought military support from other countries. On 20 October it was reported¹⁵ that "The Ministry of Defence has engaged widely, securing assistance from Norway, Canada and the United Arab Emirates, among others."

The UK approach was led within the government by DFID¹⁶ in support of the military and the Foreign and Commonwealth Office (FCO). Strategic direction and policy were set by the Cabinet Office Briefing Room Committee, which comprised relevant ministers, senior officials and appropriate advisers from across the government, who exerted strategic, political and sometimes (perceived) operational control. The decisions were taken during twice-weekly Cabinet Office briefing meeting sessions and daily meetings of Whitehall officials from across the government. This structure was mirrored in Sierra Leone by the Combined Joint Interagency Task Force (CJIATF), headed by a senior official of DFID and including

military (the brigade commander) and FCO deputies. Leadership was thus always civilian.

The aforementioned announcement on 8 September 2014 included an agreement for Save the Children to staff the facility responsible for providing care for infected Sierra Leoneans, and the plan to set up the CJIATF with the deployment of a military planning and reconnaissance team the same week. Subsequently, on 6 October 2014,¹⁷ the UK government announced an increase in the deployed military forces. Following the integration of the Canadian military component on 20 December 2014 and the Irish military contingent on 17 January 2015, the CJIATF became the Combined Inter-Agency Task Force. In addition, from December 2014 the US Agency for International Development and Australian efforts were integrated into the wider coalition response.

UK military effort

The UK military effort comprised the following.

- *Institutional support.* A command, control and communication capability was used to support the CJIATF, and the ineffective Ebola Emergency Operations Centre was transformed into the new National Ebola Response Centre (NERC), led by the previous Sierra Leonean minister of defence. The NERC was supported at lower levels by officers of the Republic of Sierra Leone Armed Forces (RSLAF) and British personnel. Moreover, they supported the establishment of District Ebola Response Centres (DERCs).
- *Training.* A medical regiment reinforced an existing WHO-led, MSF-accredited training facility to form the Ebola Training Academy, which was staffed by the RSLAF and national and international aid workers and trained over 4,000 local health workers in four weeks. The Ebola Training Academy included a “social mobilization and influence” element.
- *Military engineering.* In conjunction with contractors of DFID and locally employed staff, the main medical unit in Kerry Town and six 100-bed Ebola treatment units, funded by the UK, were constructed. Specialist engineering advice was provided in support

of the construction of a further 300 beds.

- *Medical support.* A 12-bed military medical specialist unit was provided within the facility operated by Save the Children. The initial strategic aim of this unit was to reassure international health workers that, should they contract Ebola, they would receive the highest possible quality of care.
- *Mobile support.* A separate facility, based on the Royal Fleet Auxiliary ship *Argus*, provided maintenance of helicopters and routine medical care (e.g. for injuries) for troops ashore.
- *Evacuation.* The UK Royal Air Force operated strategic evacuations to the UK for expatriates who had been (or were suspected of having been) infected with Ebola.
- *Logistics support.* Three Merlin helicopters were provided for logistic tasks.
- *Transport.* As reinforcement of local/national efforts, required vehicle lifts were provided; for example, the Royal Fleet Auxiliary ship *Argus* collected 32 pick-up trucks from Gibraltar *en route* to Sierra Leone.

Following the decision on 8 September 2014 to commit military forces, military planners deployed the same week. Initial deployment of equipment, some specially modified for the fight against Ebola, commenced on 6 October and the first field hospital was completed in-country by 16 October. A list of the specifics of the UK's contributions is provided in Table 11.1. The main Kerry Town facility was fully operational by 5 November, and by the same date 4,012 local health workers had been trained by a deployed UK medical regiment. The reduction in military forces began on 12 March 2015 (see Table 11.2). The UK military also provided a focus for military contributions from other countries. The Canadians announced on 12 December 2014 that they would deploy a contingent of 40 healthcare and support staff, who transitioned via the British training facility in the UK to Kerry Town, where Cuban health professionals were already deployed. The Royal Norwegian Air Force and the Royal Netherlands Navy were also leveraged to join the effort. The UK's knowledge of the RSLAF, for which it had provided training since the civil war, facilitated its integration into the in-country response.

Assessment of the UK's contributions

Initial deployment

The initial response started with the arrival of planners only hours after the decision to deploy was taken. The construction of the Kerry Town facility was finished within two weeks. Specially modified ambulances were delivered within four weeks. These were undoubtedly significant achievements, considering the need for some pre-deployment training. However, the Kerry Town facility did not open until almost two months after the decision to deploy. This might seem rather a long delay, but there was a need to source and procure specialist medical and personal protective equipment and to bring together and train the whole staff of the hospital at the training facility in York. This was necessary to ensure the hospital staff were immediately effective on arrival in Sierra Leone. Nevertheless, as addressed below, some have claimed that greater risk should have been taken.

Relations with the host government

The perception that the UK helped Sierra Leone end the civil war created an environment conducive to cooperation with the government and among the public. However, an issue early on was the perceived ineffectiveness of the Sierra Leone Ministry of Health. It is probable that the UK's discreet diplomatic intervention, led by the FCO with the support of DFID and the UK military, contributed to the transfer of authority regarding the management of the national response. As a consequence, the NERC became embedded in the central government and was not led by the minister of health but by the previous minister of defence. It is still unclear whether the officials of the UK or the government of Sierra Leone had most authority within the NERC. Similarly, it is unclear whether civilians or officers of the RSLAF had more influence within the Sierra Leonean effort. The British certainly attempted to demonstrate a Sierra Leonean lead, but it cannot be denied that the NERC relied heavily upon British military infrastructure and

money. For this reason, other actors involved perceived the intervention as UK led. For instance, the US Centers for Disease Control and Prevention (CDC) in its "Timeline of events" for 20 October 2014 include the statement: "United Kingdom takes over command of the response"¹⁸ despite the fact that at that time the Ministry of Health still had the lead. The evidence does suggest a true partnership, with the British initially having the most authority before the Sierra Leonean government assumed the lead through the NERC. The later inclusion of personnel from the UN Mission for Ebola Emergency Response further complicates the ability to interpret where power and decision-making lay. The lack of clear leadership by the Sierra Leonean government may be due to the close relationship between the UK and Sierra Leone. However, this could as well be a significant issue in other contexts, where building a relationship between the UK and the national government would be much more difficult.

*The role of the military within the control structure*¹⁹

The issues of who had overall control of the local response within Sierra Leone following the British deployment and the role of the military are difficult to determine. This reflects in part the rapidly changing circumstances within Sierra Leone, such as changes in overall control within the Sierra Leonean government and ministries (for example the aforementioned lead shifting from the Ministry of Health to the central government) and changes in the response organizations. Perceptions of those involved seem to differ depending on when and where they were in the organization. The UK certainly appears to have believed that it was acting in support of the Sierra Leonean government (and informal discussions indicate that this was also the view of those within the Sierra Leonean government). However, in the middle of a very fast-evolving emergency, facts and perceptions can, and usually do, differ.

According to the UK's doctrine, any deployed forces remain under civilian political control. However, the doctrine also provides that while the military is under civilian command, it is allowed to determine, within agreed parameters, how to accomplish its mission. Thus once a particular

plan (including financial resources) is agreed, the military forces have full responsibility for implementation within set parameters. The military also has the concept of “mission command” whereby subordinate commanders are expected to use their initiative to achieve a required goal. This can confuse civilians not aware of how the armed forces work, and might have led some to believe that the military was in command. This was certainly the perception of the WHO Ebola Interim Assessment Panel,²⁰ which reported that “In Sierra Leone, when the United Kingdom military came in to coordinate the response, command and control was not initially given to [Sierra Leonean] civilian leadership.” However, given the general acceptance that the Sierra Leonean Ministry of Health was not providing effective leadership, it is not unreasonable to conclude that the British *did* provide leadership at this very early stage. This may have continued while the UK contributed to the setting up and development of the NERC. Nevertheless, it is important to note that the British task force was led by a civilian from DFID and not by the military. Apart from this, it also seems that while there was civilian and Sierra Leonean primacy at government and district levels, the military frequently had earlier access to developing situations using its integral communications and information services. It further had the resources to respond and the ability to move quickly (both physically and in terms of decision-making). For example, decisions at national level would travel fastest down military channels, thus suggesting military leadership. However, informants indicate that on occasion and when considered critical by the military, they took action on their own initiative in the absence of decisions.

The military was also better at vocalizing and documenting plans than its civilian counterparts. It has standardized approaches to assessing, planning, publishing, communicating and executing plans, supported, for example, by well-resourced back offices (in contrast to civilian organizations). The military naturally used its standard approach in Sierra Leone, with the “mission” clearly being the elimination of the Ebola virus, and “friendly forces” being the various other organizations working within Sierra Leone. The plan for eliminating EVD followed the usual template for military plans, such as the “shaping and influence” campaign used to

change behaviours at the local level. The first phase of the plan involved securing Freetown and showing a visible presence; the second phase expanded the efforts to districts; and the third phase was focused on gaining control through being proactive, using surveillance, and contact tracing and isolation. The three-phase plan was flexible, following WHO advice, and was able to adapt to changing circumstances – for example responding to an unprecedented number of cases in western Sierra Leone by sending a surge of personnel and supplies to intensify efforts in these hotspots. Using a template military approach can, however, cause uneasiness with some humanitarian personnel, both because of the language and as it somehow implies military leadership. The overall involvement of the UK was called Operation Gritrock, and local plans were also called “operations” – for example, Operation Western Area Surge. Ironically, it appears that civilians sometimes also adopted “military speak”, for example by suggesting military-sounding names for a particular initiative, adding to the perception of a military lead.

So which description most accurately reflects reality? It seems clear that the Sierra Leonean government did lead the response, at least once the NERC was effective. However, the government was receptive to advice from UK officials (both civilian and military) and from the USA, which had a significant presence in the form of the CDC. It also seems that the military was subordinate to the civilian authority, with DFID clearly leading the response. Furthermore, it seems to be the case that the military did sometimes act on its own initiative and in a way that would suggest to an external observer that there was a military lead.

Could the response have been better? Probably not. The almost anarchic and evolving situation was not amenable to a textbook template. The principles of Sierra Leonean leadership and civilian supremacy over the military were adhered to, but when the situation demanded it, parts of the organization used their discretion and initiative. All involved were living in a situation where death was a frequent occurrence. In the early days the mortality rate was increasing dramatically, and individuals were very conscious that decisions, or lack thereof, were costing lives. It is thus unsurprising that sometimes individuals took the initiative. On top of that,

the military culture of “mission command” within well-practised groups would sometimes contribute to a perception of military leadership.

Training

The military spends most of its time training for operations that only occur rarely, while civilians spend most of their time carrying out tasks for which they are trained. It is thus not surprising that one particular skill contributed by the British military was in the area of training. Two contributions stand out particularly. The first was the contribution by 5 Armoured Medical Regiment to the training of local healthcare workers, developing the Ebola Training Academy which built on an already existing training facility run by MSF. The second was the use of a hospital training facility near York in the UK. This is a facility that can be reconfigured to replicate the layout of a facility in the country to which the medical services are deployed. It was used routinely during the conflicts in Iraq and Afghanistan, with hospitals forming up in York to develop procedures and rehearse processes. UK hospitals drew military personnel from across the UK, but they often deployed with military contingents from the USA, Denmark and Canada. Often these contingents had practices, procedures and cultures that were not immediately coherent with the situation in the field. Training in York enabled these to be addressed, so that on arrival at their operational location the armed forces were immediately effective. The York facility was used for preparations for Ebola treatment, including the integration of Canadian military reinforcements. The Kerry Town facility run by Save the Children did not have this opportunity, and unsurprisingly took some time to become fully operational after the arrival of the clinical staff. In fact, it probably only became effective after some leadership positions were filled by individuals seconded from the UK military.

The long-term investment in training of the RSLAF also appeared to have been a major contribution to the success of the operation. A British trainer stated that its performance throughout the operation was “first class, reflecting the significant investment given by the UK over the past 14 years; the performance of the young officers and SNCOs [senior non-

commissioned officers] was particularly notable”.

Risk

A criticism of the UK's intervention is the length of time it took for the Kerry Town facility to become operational, and the extent to which the UK sought to avoid the risk of infection to its deployed personnel (civilian and military). The Kerry Town facility was built to a specification that some humanitarian actors considered over and above what was needed, and Save the Children insisted on slow, partial commissioning so that it could ensure safe operation. The extent to which the UK's military personnel should be subject to risk, or the degree of risk that can be assumed by civilian volunteers working in an NGO facility, became an issue. While the UK's military forces (unlike civilians) can be required to put their lives at risk, politicians are naturally hesitant to cause loss of life in combating a situation where the UK is not perceived as directly threatened. Similarly, NGOs are hesitant to put lives at risk owing to their public profile and, probably in this case, the impact it might have on further volunteering. Ultimately, the decision on the degree of risk that is acceptable is appropriately a political one. With regards to the operation in Sierra Leone, the government of the UK was clearly prepared to accept a certain degree of risk, but sought to mitigate it as much as possible while still deploying a force.

Finance

The rise in the UK's financial commitment to eradicate Ebola is shown in Figure 11.1. Some of these funds were contributed through a large number of international institutions, such as the WHO, MSF, the International Committee of the Red Cross, the African Development Bank, the EU and the World Bank. Other contributions were used to fund projects in Sierra Leone directly. Of interest is the proportion of the overall amount budgeted for the armed forces. It is now the UK's policy to charge for the use of the military at “marginal rates” rather than full rates. Charging at marginal rates involves only charging to the aid budget any expenditure which

exceeds the amount that the Ministry of Defence would have spent in any case. Thus allowances for those deployed are chargeable to the aid budget, but the basic salaries (which would have been paid anyway) are not. However, there is scope for debate – for example, heavy use of the Merlin helicopters will bring forward the need to replace parts earlier, so should these be charged to the aid budget? As of July 2015, the cost to the Ministry of Defence for the intervention amounted to £28 million out of a total of £427 million committed. As the cost of the UK intervention is only “marginal”, the total economic contribution by the UK significantly exceeds the £427 million. For instance, had the military not intervened, the resources required to replace the Royal Engineers’ efforts, the command-and-control resources and other military contributions described above would have been significant. While it could be argued that the £28 million would have been better spent on direct aid, this would fail to recognize the full benefits that the £28 million released.

Conclusion

The majority of the UK’s military intervention was of a logistical nature. This effort complied fully with the Oslo Guidelines, as it is unlikely that alternative logistic resources would have been forthcoming. The medical deployment also complied with the Oslo Guidelines because the personnel did not treat Sierra Leoneans, with the exception of infected healthcare workers. Without the provision of a high-quality facility, it is unlikely that either expatriate healthcare workers or sufficient local healthcare workers would have been prepared to risk their lives. While the quality of the military medical facility was acknowledged, there was some criticism over the length of time that the centre and the co-located facility, managed by Save the Children, took to become operational. This appears to have resulted from a combination of the requirement to train for the specific environment and a desire to minimize risk. However, had the medical facilities deployed earlier and sustained cases of Ebola, the impact on the willingness of others to deploy (or for their families to allow them to deploy) could have

been significant.

The military training contribution – over the long term to the RSLAF and during the emergency to local healthcare workers – was significant. The latter is probably worth further assessment, given its potential for tackling future emergencies. The successful contribution of the RSLAF also appeared to reflect recognition of the democratic basis of engagement of armed forces and seems to have been well received by the Sierra Leoneans.

The most difficult issue to assess is that of where overall authority was located: between the UK's personnel and those of the government of Sierra Leone or between the UK military and civilians. It does appear that the UK sought to be in support rather than in the lead, but the UK undoubtedly exerted significant influence, especially at the beginning. It is clear that there was an effective civilian (DFID) lead within the CJIATF. However, it also seems that some participants, at least in the humanitarian community, perceived a military lead. Indeed, there is evidence that on occasions the military did take the initiative when decisions were not forthcoming in a timely manner. However, there is no evidence that the military ever acted contrary to civilian direction. Certain characteristics of a military organization (e.g. the speed of passage of information) and culture (e.g. labelling plans as “operations”) might have given the perception of a military lead.

The overall approach of the UK appears to have been particularly effective and might provide a template for future humanitarian emergency operations. The structure and functioning of the CJIATF under the command of DFID, the FCO and military deputies were successful. This is not least due to the partnership between the UK's military and the RSLAF (with a similar professional ethos) and the historical link between the UK and Sierra Leone. Nevertheless, there is general agreement in Sierra Leone that the overall contribution of the UK was critical to the successful elimination of Ebola.

Table 11.1: UK military contribution during the Ebola crisis in West Africa

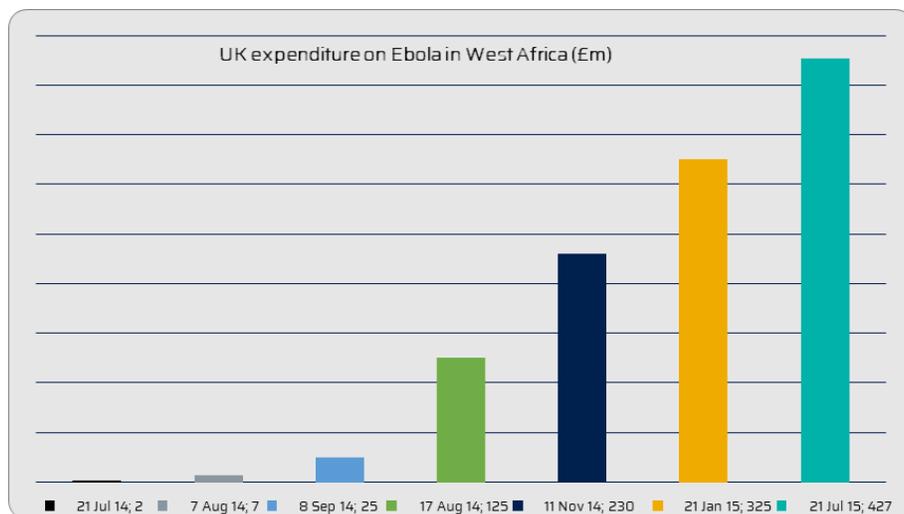
UK Military Contribution

Army Logistic Brigade Headquarters
Role 2 Medical Regiment
Field hospital component
Merlin helicopters x 3
Specialist teams of Royal Engineers
Royal Engineers construction teams
Command-and-control and communication units
Individual reinforcements to national and regional control centres
Royal Fleet Auxiliary ship (support of helicopters and medical support for force ashore, accidents, etc.)

Table 11.2: Timetable of main events related to the UK's response to the Ebola outbreak in West Africa

Timetable of Main Events

21 Jul 14	First Cabinet Office briefing meeting - main concerns about impact on UK
7 Aug 14	Second Cabinet Office briefing meeting - decision to contribute to strengthen local response
2 Sep 14	MSF calls for military involvement
2-8 Sep 14	WHO and Sierra Leone government request UK assistance
8 Sep 14	UK government announces military deployment
12 Sep 14	Military planners deploy to Sierra Leone
28 Sep 14	Military medical training facility operational at York, UK
6 Oct 14	Royal Air Force delivers ambulances (modified) etc. to Sierra Leone
8 Oct 14	UK increases military forces committed
16 Oct 14	22 field hospitals complete in country
17 Oct 14	Royal Fleet Auxiliary sails with Merlin helicopters plus medical personnel
21 Oct 14	5 Armoured Field Ambulance personnel deploy to Sierra Leone to train local health workers
26 Oct 14	Reservists mobilized to UK training facility
5 Nov 14	Kerry Town facility (Save the Children plus military) opens
5 Nov 14	5 Armoured Field Ambulance personnel return to UK
26 Nov 14	World Food Programme requests UK helicopter support
12 Dec 14	Canadian military medical personnel deploy to UK training facility in York, UK
15 Dec 14	Five treatment centres each of 100 beds handed over to NGOs
20 Dec 14	UK military reservists plus Canadian military medical personnel deploy
12 Jan 15	DFID states £28.8 million transferred to UK Ministry of Defence (50 per cent for ship plus helicopters)
21 Jan 15	UK supports "Western surge" led by government of Sierra Leone
12 Mar 15	UK announces future plans, including draw-down to military forces
17 Mar 15	Royal Fleet Auxiliary leaves Sierra Leone (helicopters replaced by commercial operators)
Jul 15	Remaining are some UK military personnel plus ongoing support to command and control

Figure 11.1: UK expenditure on Ebola in West Africa

Notes

- 1 United Nations (2005) "United Nations Mission in Sierra Leone", <https://peacekeeping.un.org/mission/past/unamsil/index.html>.
- 2 Pickering, J. (2009) "Policy coherence in international responses to state failure: The role of the United Kingdom in Sierra Leone", LSE Working Paper Series, <https://www.files.ethz.ch/isn/137965/WP76.pdf>.
- 3 International Institute for Strategic Studies (2015) "Presentation draft script."
- 4 White, M. (1995) *Gulf Logistics - Blackadder's War*. London: Brassey's.
- 5 British Army (2016) "Field hospitals", www.army.mod.uk/medical-services/29905.aspx. The three regular field hospitals (22, 33 and 34 Field Hospitals) each have 200 beds. In addition, there are ten reserve field hospitals that would be entirely manned by reservists and are not available other than for a major conflict (and then only with major disruption to the National Health Service).
- 6 DFID and International Development Secretary Justine Greening (2014) "Britain to provide new assistance to combat Ebola in West Africa", press release, 29 July, <https://www.gov.uk/government/news/britain-to-provide-new-assistance-to-combat-ebola-in-west-africa>.
- 7 The Cabinet Committee was called "COBR", based on the place where such committees meet - the Cabinet Office Briefing Room.
- 8 ITV (2014) "Foreign Secretary to chair Cobra meeting on Ebola", 30 July, www.itv.com/news/update/2014-07-30/foreign-secretary-to-chair-cobra-meeting-on-ebola/.
- 9 Ibid.
- 10 ITV (2014) "Cameron calls on EU to double Ebola funding", 18 October, www.itv.com/news/story/2014-10-18/cameron-calls-on-eu-to-double-ebola-funding/?page=63.
- 11 DFID, FCO and Foreign Secretary Philip Hammond (2014) "The Foreign Secretary chaired a further meeting of COBR to discuss Ebola", press release, 7 August, <https://www.gov.uk/government/news/the-foreign-secretary-chaired-a-further-meeting-of->

cobr-to-discuss-ebola.

- 12 Prime Minister's Office (2014) "PM call with President Obama", press release, 9 August, <https://www.gov.uk/government/news/pm-call-with-president-obama--2>. The conversation covered Iraq, Ukraine and Gaza, but also "touched on the Ebola outbreak".
- 13 DFID and Ministry of Defence (2014) "UK treatment centre to tackle Ebola in Sierra Leone", press release, 8 September, <https://www.gov.uk/government/news/uk-treatment-centre-to-tackle-ebola-in-sierra-leone>. This lists the totality of support being given at that time to combating Ebola.
- 14 Office for the Coordination of Humanitarian Affairs (2007) "Oslo Guidelines - Guidelines on the Use of Foreign Military and Civil Defence Assets in Disaster Relief", revised November, <https://www.unocha.org/publication/oslo-guidelines-use-foreign-military-and-civil-defence-assets-disaster-relief>. These guidelines state that insofar as military organizations have a role to play in supporting humanitarian work, it should, to the extent possible, not encompass direct assistance, so as to retain a clear distinction between the functions and roles of humanitarian and military stakeholders.
- 15 House of Commons (2014) "Oral answers to questions", 20 October, [www.parliament.uk/publications.parliament.uk/pa/cm201415/cmhansrd/cm141020/debtext/141020-0001.htm#1410204000068](http://www.parliament.uk/publications/parliament.uk/pa/cm201415/cmhansrd/cm141020/debtext/141020-0001.htm#1410204000068). The speakers also referred to a recent donor conference in London, an EU foreign ministers' meeting on that very day in Brussels and a forthcoming EU Council meeting.
- 16 House of Lords (2014) "Sierra Leone: Written question - HL1938", 26 September, www.parliament.uk/written-questions-answers-statements/written-question/lords/2014-09-26/HL1938. Minister of State Mark Francois stated that "DFID is leading on this operation. It has a clear lead, working with international partners. We in the [Ministry of Defence] are supporting the DFID strategy. It is DFID's lead, and it is paying for this."
- 17 DFID and Ministry of Defence (2014) "British aid supplies arrive in Freetown to tackle Ebola outbreak", press release, 6 October, <https://www.gov.uk/government/news/british-aid-supplies-arrive-in-freetown-to-tackle-ebola-outbreak>.
- 18 US Department of Health & Human Services, Centers for Disease Control and Prevention (2016) "CDC's response to the 2014-2016 Ebola epidemic - West Africa and United States", Morbidity and Mortality Weekly Report, Supplement, 65(3), p. 31, table 2, www.cdc.gov/mmwr/volumes/65/su/pdfs/su6503.pdf.
- 19 This section is based on personal comments made to the author in the UK, comments made by Sierra Leoneans and unpublished reports.
- 20 World Health Organization (2015) "Report of the Ebola Interim Assessment Panel", July, www.who.int/csr/resources/publications/ebola/report-by-panel.pdf?ua=1.

France's Reaction to the Ebola Crisis – Lessons Learned

Christine Fages

Introduction

The emergence of the Ebola virus disease (EVD) epidemic in West Africa in March 2014 quickly overwhelmed the health systems of the affected countries – first Guinea, then Liberia and eventually Sierra Leone. It is commonly believed that the first cases of the outbreak occurred in the Forest region of Guinea in December 2013. In April 2014 several patients were detected in the neighbouring countries of Liberia and Sierra Leone. However, in 2014 the Ebola virus was not unknown. It was discovered in 1976 in what is now the Democratic Republic of the Congo (DRC) and bears the name of the Ebola River, located in the region where the first cases were discovered. Since that discovery the virus is known to have caused some 20 epidemics, all contained and controlled, in several countries. In the case of West Africa, it became apparent that the evolution of the disease would render any attempts to control it much harder than during previous outbreaks. In July 2014 the data generated showed that the epidemic was present in all three aforementioned countries. Additionally, imported cases began to appear in Nigeria. By the end of August more than 3,000 cases in the three most-affected countries of West Africa had been detected. A major health crisis coupled with a humanitarian catastrophe and a brutal economic crisis were unfolding.

In this context, the World Health Organization (WHO) declared the epidemic a public health emergency of international concern on 8 August 2014 and called for international solidarity.¹ A senior coordinator for the

United Nations (UN) was named, Dr David Nabarro, and a clear roadmap was adopted by the WHO, with a budget of US\$490 million.² On 18 September 2014 the first UN health-related mission, the UN Mission for Ebola Emergency Response, was created by General Assembly Resolution 69/1 and Security Council Resolution 2177.³ From this point onwards, an unprecedented health and humanitarian response was organized to assist those countries most affected and try to limit the spread of the virus. At the same time, the response aimed to avoid any economic isolation that would only serve to magnify the negative effects of the outbreak. The organization and coordination of such an endeavour were undoubtedly the biggest challenge of this crisis. At the strategic level, the task of consulting with various actors slowly took shape.

Different organizations created working groups, bringing together international organizations and non-governmental organizations (NGOs) for regular meetings to disseminate up-to-date information and jointly discuss solutions that could be put in place. Examples include the European Union (EU) Ebola Task Force coordinated by the Directorate-General for European Civil Protection and Humanitarian Aid Operations (ECHO), and the UN's weekly meeting of the Global Ebola Response Coalition organized around Dr Nabarro. On the ground, coordination remained a significant challenge due to the absence of local response structures and the plethora of actors. Taking this difficulty into consideration, the UN asked the USA, the UK and France to assume leadership roles alongside the Liberian, Sierra Leonean and Guinean governments, respectively. To save time, it was understood that the UK, the USA and France would use existing national networks to help the local authorities structure their responses. No precise mandate was provided, and each country coordinated the response with its partner.

France's response strategy

First response

With nearly €10 billion spent on aid every year, France is the world's fourth-largest contributor to international public aid.⁴ The African continent is the largest beneficiary of this (55 per cent), especially the sub-Saharan Africa region (41 per cent).⁵ France is also the world's second-largest contributor (first among European countries) to the Global Fund to Fight AIDS, Tuberculosis and Malaria.⁶ By way of example, France contributes to funding treatment for 4.2 million HIV-positive patients and 9.7 million patients suffering from tuberculosis, and it helps distribute over 310 million insecticide-treated mosquito nets to combat malaria.⁷ In this context and due to its active health cooperation with all the countries in the region, France was among the first nations to respond to the crisis, and concentrated most of its activities on Guinea and the neighbouring countries. Assistance included expertise and fact-finding missions, and support given to the French and Guinean Red Cross for medical and prevention missions. The worsening of the crisis during the summer of 2014 led to reinforced intervention decided at the highest level of state. A task force bringing together the main executive players (the Ministries of Home Affairs, Research and Health and the Foreign Office) was created under the leadership of Professor Jean-François Delfraissy, the interministerial coordinator nominated by the prime minister. This task force met on a weekly basis, and the international effort was placed under the authority of the French Foreign Office and the leadership of the author of this chapter, supported by an interministerial team. Regular meetings with NGOs and international organizations were arranged.

A global crisis strategy covering Guinea and all of West Africa, and also general multilateral aspects (communications, border controls, etc.), was adopted on 22 October 2014. In Guinea the objective was to help the government fight the spread of the epidemic and to coordinate international interventions. Due to the weakness of local health structures, which turned out to be the source of contamination (as local health centres initially helped

spread the virus), and the past experiences of Médecins Sans Frontières (MSF) on the ground, the creation of *ad hoc* treatment units separate from the regular health infrastructure was favoured in all three countries affected by the disease. It soon became apparent in Guinea that to operate those units in a context where speed was essential, the quickest solution was to fund NGOs, often from countries in the northern hemisphere, which could deploy very quickly. Three courses of action followed: medical care, assistance to communities, and training and protection of health workers.

- *Medical care and assistance to communities.* Along with the French Red Cross, France created a first treatment unit in Macenta (Forest Guinea), at the heart of the epidemic's epicentre. Health personnel and staff came from the Red Cross and the French Ministry of Health. The treatment unit, built with the local community in mind (including a nursery for orphans) using in-kind donations from a laboratory resourced by the Institut Pasteur, opened in November 2014. Two similar facilities were created in Kérouané and Beyla, and handed over to the French Red Cross and the NGO Women and Health Alliance International. These facilities were equipped by the French civil security services (Ministry of Home Affairs), and a detachment was sent to Guinea to carry out the logistical mission.
- *Training and protection of health workers.* The planning for these deployments highlights the need to identify trained personnel as a prerequisite for an effective response. In the case of Guinea, a complicating factor was the demand for francophone personnel. Two training centres were created in France and Guinea. The pedagogical curriculum was decided upon and put in place by the French medical corps, Établissement de Préparation et de Réponse aux Urgences Sanitaires (EPRUS), and civil security, with the help of MSF. These centres trained nearly 140 staff between November 2014 and March 2015. Another training centre was created in the suburbs of Conakry for Guinean healthcare workers in need of a refresher course. It was necessary to give healthcare professionals guarantees concerning their treatment should they themselves become infected, as well as the possibility of repatriation. A treatment centre dedicated to healthcare workers was set up with personnel from EPRUS in Conakry in January 2015; between January and September 2015 it received 61 patients. Finally, France collaborated with its European partners to establish a reliable evacuation system starting in October 2014 and dedicated to healthcare workers.

Transition

In January 2015 the spread of the virus seemed to decline in Forest Guinea, and the few cases imported into Mali, the USA and the UK did not cause epidemics in these countries. However, the disruptive consequences of the crisis for the healthcare systems and economies of those countries most affected already appeared to be substantial. In April 2015 the World Bank estimated that the three West African countries would “lose at least US\$2.2 billion in forgone economic growth in 2015 as a result of the epidemic”.⁸ In this light, planning for a transition period as well as the management of the aftermath began even while operators on the ground were still battling the virus. The absence of a global vision of health systems in developing countries had already been identified as a risk factor and as partly responsible for the original outbreak. The UN and the WHO in association with the EU and international financial institutions began a long process that would eventually lead to a reconstruction plan for each of the three countries, presented during the spring assemblies of 2015. Bilateral actors were to play a crucial role: France agreed a transition plan in coordination with local partners in February 2015.

The plan had three key objectives. The first was the adaption of the response to the escalating epidemic that was contaminating maritime Guinea and the capital city, Conakry, as well as more isolated localities. In this context, two treatment units in Forest Guinea were closed down and their laboratories transferred to Conakry and Forécariah, a town close to Sierra Leone. The funds given to NGOs were diverted to localities where the virus was still active to accomplish relevant tasks (such as the introduction of hospital hygiene). Training in Guinea was made available to a wider audience, and included prevention, infection control and medical care for identified patients. The idea was to enable Guinean authorities to combat the virus themselves with more autonomy and a long-term agenda. In parallel, since the outbreak of the Ebola epidemic French-funded NGOs had supported the management of other ongoing health emergencies (such as vaccination and maternal and child healthcare programmes) to avoid additional health crises, especially in Guinea's Forest region. Further,

research efforts were intensified.

The second objective was to build on the emergency response structures to contribute to the reconstruction of a prevention system in Guinea and other West African countries in the medium term. It was necessary to identify the threat at the outset of the crisis, especially in light of the failure of the medical systems of the three aforementioned countries. A team from the French civil security services was dispatched to Guinea to help train, equip and deploy multidisciplinary regional alert and response teams. Training was organized by the French Institute for Public Health Surveillance (InVS) and the Bioforce Institute. The teams were trained in improved local diagnosis capabilities. A project aiming at building laboratory capacities in Guinea with the help of the Institut Pasteur and Fondation Mérieux was launched to complement the creation of an Institut Pasteur in Conakry, already funded by the Agence Française de Développement. At the regional level it was necessary to improve the monitoring and warning system by laying the foundations for a subregional monitoring and warning system, the Network of Public Health Institutes in West Africa. This network will be supported by French organizations like the InVS, the French School of Public Health (EHESP), the Instituts thématiques multi-organismes, the French International Technical Expertise Agency (Expertise France), the French military centre for epidemiology and public health (CESPA) and various international actors. At the national level, diagnosis capabilities required improvement. Training in this area was provided through the RESADLAB (West African network of biomedical analysis laboratories) project and implemented by Fondation Mérieux in seven countries: Benin, Burkina Faso, Guinea, Mali, Niger, Senegal and Togo.

The third objective was to build hospital hygiene capacities. With partners from the European ESTHER Alliance, Expertise France launched a project to assist in building hospital hygiene capacities in eight countries of the subregion. To guarantee the efficient functioning of the project, it was necessary to rely on long-term actors such as Expertise France, the Agence Française de Développement, the French National Institute of Health and Medical Research (Inserm), the Institut Pasteur, the Institut Mérieux and the InVS.

Quantified data

Funds released for the initial response included €160 million for West Africa, with €110 million for Guinea and €20 million for neighbouring countries' action plans against Ebola. Reconstruction has been funded with €150 million for projects aiming at the reinforcement of health systems, debt cancellation, education and training.

The PREPARE project ("establishing a regional team of warning and response to epidemics (ERARE), charged with early detection and rapid treatment of infectious diseases before these reach an epidemic level, in each of the 8 administrative regions of Guinea, including Conakry"⁹) was funded with €4.7 million from the EU Directorate-General for International Cooperation and Development and €1 million from the French government. The EBOVAC1 vaccine project at Inserm received €15 million for the period 2015–2017. Research projects directed by the P4 laboratory in Lyons and Inserm received €2.3 million (REACTION, EVIDENT, Ebola TX --> H2020, EBOVAC2, Ebola MoDRAD --> IMI2). The French blood bank received €310,500. These amounts do not include the support given by ECHO to several French NGOs operating in Guinea and the region.

Some 600 healthcare professionals were mobilized for the Ebola response: 230 in West Africa (EPRUS, civil security and military medical corps) and 370 on French territory (medical research, health security measures and civil security). More than 17,000 staff of emergency units were trained to treat suspected cases of infection. Approximately 5,000 staff of emergency and mobile intensive care teams were trained to treat suspected or probable cases. Six NGOs were associated with the French response plan, 12 healthcare facilities were certified and two confirmed cases of EVD were evacuated to France and successfully treated.

Lessons learned

The Ebola epidemic caused 11,316 deaths among the 28,638 declared cases.¹⁰ It created a health catastrophe. National health systems collapsed

and healthcare for “ordinary” patients suffered severely. For instance, HIV checks plummeted by 40 per cent. The epidemic caused a humanitarian crisis, with 2 million people in precarious nutritional situations, along with heavy economic consequences. The reconstruction plans of the countries presented to the World Bank in July 2015 amounted to over US\$1.3 billion for Guinea over three years, US\$360 million for Sierra Leone and US\$547 million for Liberia for two years. The human, budgetary and economic costs of the crisis and its disruptive long-term effects are tremendous. Moreover, other viruses exist that could create even more contamination. Globalization accentuates these risks, especially for airborne diseases. We can thus not rule out another major epidemic caused by another known or unknown disease. This unprecedented crisis must lead us to rethink our collective reaction to health crises. To this end, France organized a “lessons learned” conference on 29 October 2015, chaired by Annick Girardin, minister of state for development and francophone affairs. The conference brought together a wide range of actors with experience in the Ebola epidemic; the various inputs were intensely debated and operational conclusions were reached. The main lessons are summarized in the following paragraphs.

A consensus has been reached

In the consensus reached, health security has been identified as an essential element for global security. Emerging infectious diseases pose a serious threat and can generate global crises, whether they are health-related, economic or political. The Ebola crisis has demonstrated that, currently, neither states nor international organizations are ready to face this risk.

Planning is an essential element

The response to a health crisis, just as for any other type of crisis, must be prepared well in advance, both to reduce the duration of the intervention on the ground and to render it more efficient. The task of planning for crisis management requires the combined effort of the public sector and

humanitarian partners at the national level. Clear procedures must be in place to enable a quick reaction. At the international level, the WHO, the UN and the EU must be encouraged to propose a crisis management system that is compatible with health-related crises by specifically targeting the issue of rapid deployment. In other words, it is of paramount importance to develop a mechanism that can be activated quickly in each country. Furthermore, the first 90 days are crucial, so it is essential to have a pool of multidisciplinary expertise as well as an emergency fund readily available. Several issues are linked to this: the issue of “first entry” in the field (strategy, funding and human resources); the sharing of responsibilities between international organizations, such as the WHO or the UN, regional players such as the Economic Community of West African States and the EU, and national governments; and the establishment of South-South partnerships to enable emerging countries to establish their solidarity fully with affected countries. The international agencies working on health crises, in particular the WHO, must increase their responsiveness, both from an institutional perspective (including governance of regional offices) and in terms of the mechanisms for organizing and coordinating rapid crisis responses. An instrument to assess and grade crises with an associated response mechanism must be put in place.

The goal for the next crisis must be to have a process in place that makes it possible to give a mandate to an international actor with the necessary financial resources (such as through an emergency fund) and human resources (including a pool of trained professionals). These resources can then be mobilized quickly to develop a strategy in coordination with the relevant authorities and implement a fast response. The European Centre for Disease Prevention and Control could be instrumental in the mobilization of human resources. As mentioned, the first 90 days of a crisis are crucial. Support for the first wave of emergency assistance, which only NGOs have the capacity to implement, is essential. This has been shown in the cases of Senegal and Nigeria. Finally, a clear and proactive communications strategy aimed at providing information instead of reacting to rumours must be prepared at the international, regional, national and local levels.

These international, regional and national (re)organization and planning efforts must be well thought out, well prepared and undertaken before new crises strike. In short, an effective crisis management system must include a strong local response involving civil society, backed up by an international response. The latter should be organized by a coordinator, and have sufficient human and financial resources that can be quickly mobilized to enable NGOs to be deployed to the affected regions as soon as they arrive in the country. The organization of such a crisis management system must be planned in advance, based on political-military crisis planning models. The issue is not addressing a crisis through a security-oriented lens, as the humanitarian aspect must be preserved to gain the trust of local populations. Rather, it is necessary to use existing know-how to prepare an effective reaction to a humanitarian crisis.

Planning includes national preparation. The rise of infectious diseases does not only concern developing countries: the Ebola epidemic demonstrated the need for all countries to consider the risk of the emergence of serious, highly contagious communicable diseases and their ability to spread across borders. Preparation needs to incorporate all aspects of crisis management, including regulatory aspects, and particularly the terms of application of the International Health Regulations (IHRs). Experiences with national responses in several Northern countries, such as France, the UK and the USA, show several similarities in organizational terms, including the decision to give the responses political priority at the highest level and the creation of dedicated interagency task forces. From the outset, healthcare action must be seen as part of a broader response; and more detailed discussions must be had on the general doctrine for responding to infectious risks, focusing in particular on changing the procedures for caring for patients with a high risk of infection, mainly by teaching hospitals. For instance, would a model focused on a domestic health system response be suitable in a health crisis linked to an infectious agent that is less virulent but more prone to airborne transmission?

As epidemics know no borders, the adaptation of protocols to fight viruses must include a regional component. In other words, regional organizations (such as the EU and the West African Health Organization)

must deal with these issues to ensure greater harmonization of methods and thus more efficiency. This means including protocols for border protection and control measures through thermal screening and traceability records, for both air and maritime transport. The Ebola crisis has shown the need to strengthen and harmonize procedures and protocols at regional and European levels. Experience shows that the IHRs are neither sufficiently known nor observed. Even within the EU, differences in methods and equipment between member countries complicate and slow down harmonization. Finally, media coverage of the Ebola crisis highlighted the need for closer ties between the media and the various actors working with a task force. As communication is essential during crises of this magnitude, such collaboration would help strengthen the actions of the state as well as reassure the population. The dedicated task force model has shown its effectiveness: there must be a multidisciplinary core group that is entirely focused on the crisis. However, controlling incoming flows is a genuine problem that necessitates changes to the patient care model, given the risk of infection by highly transmissible agents.

On the ground, coordination is everything. Several unprecedented means of intervention were used in the three worst-affected West African countries. Moreover, tools used varied from country to country: from quarantining entire neighbourhoods to the broadcasting of radio messages calling for the collaboration of local communities with health authorities. In addition, the establishment of a relationship of trust between affected communities and health workers proved to be a crucial aspect, not only for treating new patients but also for stopping the spread of the virus in new areas. There are several essential elements for ensuring the effectiveness of field efforts: a “single point of contact” with a clearly identified national coordinator organizing a multisector, multidisciplinary platform (such as a “humanitarian cluster”); coordinated efforts not only at the central level but also at the local level, as close as possible to the affected population (for instance at the level of prefectures/districts); and initial and sustained support from civil society to plan and strengthen the fight against isolation and stigmatization. The Ebola crisis also demonstrated the need for mobile teams in the field, with flexible protocols and procedures, able to adapt to

the evolving epidemic. In terms of cooperation in the field, humanitarian access to the affected population must be ensured. Detailed knowledge of the socio-cultural context is crucial to raise the population's risk awareness quickly and ensure its full cooperation and trust. Indeed, lack of public confidence is a factor that can seriously amplify epidemics. From the outset, response teams need to include sociologists and ethnologists specialized in the affected areas to support the various civil society stakeholders. In addition to a coordinated, proactive communications strategy suited to social realities and aimed at mobilizing local communities, control and dissemination of information have proven decisive for effective management of an epidemic. A rapid, standardized information process for public health stakeholders and national authorities can reduce response time and hence the risk that viruses spread undetected.

Financing and coordinating operational research. The importance of financing and coordinating operational research must be acknowledged at national and international levels. Although the Ebola virus has been well known since 1976, it was only after the initial outbreak of the 2014–2015 epidemic and strong international reactions that relevant research organizations, including those in France, obtained the necessary funds to develop treatments and a potential vaccine. Several issues remain to be resolved before research cooperation and coordination trigger an integrated vision of response. These include a better understanding of the reasons for the widespread ignorance about Ebola, despite the fact that the virus has been known for 40 years, the lack of both public and commercial responses, and the mobilization of research cooperation in academic institutions, NGOs, research institutions and private companies. Finally, organizational, regulatory, budgetary and ethical barriers need to be lifted during and between crises to foster constructive research cooperation. Despite the fact that the Ebola virus was first identified in 1976, no means of prevention, quick diagnosis or treatment were developed. This situation raises the issue of financing research on emerging and re-emerging infectious diseases and the importance of a professional interagency response structure between crises.

Nevertheless, there have been positive developments. Lessons learned in combating HIV in Africa have been precious in fighting Ebola, as they have helped mobilize research teams quickly and apply proven procedures. The response benefited from excellent research coordination, including internationally. Also, the EU has been commended in particular for its rapid financial support to research programmes. Cooperation between NGOs and research teams proved essential, particularly in the context of clinical trials. The Ebola crisis also demonstrated the importance of finding a balance between simplifying research protocols to respond to therapeutic emergencies and the obligation for rigour and patient protection during field trials. Research efforts have to be part of an international vision to prepare for and respond to health crises, and need to be seen as an opportunity to reaffirm the importance of essential partnerships between the public and private sectors. Moreover, the Ebola crisis is a reminder of the absolute need to build health policies that draw on research results. Operational research is an integral part of the crisis response, and must continue afterwards. To improve the effectiveness of research programmes during infectious diseases (similar to “REACTing”), operational platforms with dedicated budgets that foster North-South partnerships need to be designed and given political backing.

Finally, research between crisis periods must be not only medical but also sociological and anthropological, to train and provide a pool of specialists who when required are capable of advising awareness campaigns and training emergency assistance teams in local ways and customs. In short, operational research is an essential component of responding to crises linked to emerging infectious diseases. It needs to receive both *ad hoc* and permanent funding, be mobilized in the framework of international coordination of stakeholders when crises break out, and work primarily with NGOs in the beginning. Preparation between crises is essential at both national and international levels.

The importance of health in development policies has to be restored. This Ebola crisis thrived on the collapse of the healthcare systems in infected countries. Healthcare was no longer viewed as a priority by either the governments in question or the international funds and trusts.

However, health must be perceived as an investment, not as a cost and a burden. Base-line healthcare has too long been neglected. The work of vertical funds,¹¹ such as the aforementioned Global Fund, although touted as useful and pertinent in their areas of expertise, no longer allows for a much-needed global approach to health systems. On the ground, access to primary healthcare and the mechanisms of surveillance and epidemiological alert must once more become priorities for African states. In this light, the installation of an effective international health regulation body, including an efficient evaluation and control mechanism, must be a priority. The IHRs could double as an instrument to collect health-related data, which are useful in planning for crisis prevention and management.

In short, action on primary health systems is an absolute priority in preparing to combat the spread of emerging infectious diseases. During crises, involving civil society and the private sector is essential in efforts to limit an epidemic's effects on the entire social and economic system and facilitate a quick exit from the crisis.

Notes

- 1 World Health Organization (2014) "Statement on the first meeting of the IHR Emergency Committee on the 2014 Ebola outbreak in West Africa", 8 August, www.who.int/mediacentre/news/statements/2014/ebola-20140808/en/.
- 2 World Health Organization (2014) "Ebola response roadmap", WHO/EVD/Roadmap/14.1, 28 August, <http://apps.who.int/iris/bitstream/10665/131596/1/EbolaResponseRoadmap.pdf?ua=1>.
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- 4 France Diplomatie (2020) "Graphic: Overseas development assistance", www.diplomatie.gouv.fr/en/french-foreign-policy/development-assistance/french-official-development/article/graphic-overseas-development.
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- 8 World Bank (2014) "World Bank Group Ebola response fact sheet", 24 December, www.worldbank.org/en/topic/health/brief/world-bank-group-ebola-fact-sheet.
- 9 Expertise France (2015) "Warning and response to epidemics: Launch of the PREPARE Project in Guinea", 8 July, www.expertisefrance.fr/eng/News/Warning-and-response-to-epidemics-launch-of-the-PREPARE-Project-in-Guinea.
- 10 These figures represent the numbers reported to the WHO as of 17 January 2016. They are primarily in Guinea, Sierra Leone and Liberia, but Mali, Nigeria, Senegal, Spain, Italy, the USA and the UK are also included in the figures. See World Health Organization (2016) "Ebola situation report", 20 January, <https://apps.who.int/>

ebola/sites/default/files/atoms/files/who_ebola_situation_report_20-01-2016_1.pdf?ua=1&ua=1.

- 11 “Vertical funds are created in response to high visibility, single-issue advocacy campaigns and to tackle specific development issues. They are frequently administered by the World Bank.” UN Development Programme (2015) “UNDP’s funding channels”, August, www.undp.org/content/dam/undp/library/corporate/Partnerships/UNDP-Corporate-FundingMenu_August_2015.pdf.

Epidemics, Pandemics and Other Disasters: A Possible Role for the Swiss Armed Forces' Medical Services

Sergei Bankoul

Introduction

The roles of the armed forces in national and international conflict situations are reasonably well defined, as is their role in enforcing law and order. However, many other functions exist which may be carried out by the armed forces. For instance, they can contribute to the provision of medical services. This is a very particular role, at least in the context of Switzerland. In Switzerland, the federal government draws on the armed forces as its only and last reserve in a nationwide emergency or other large-scale event where the affected cantons are unable to manage the situation effectively (the subsidiarity principle). Given the strong tradition of armed forces' involvement in provision of medical and emergency services, the Swiss government has created Coordinated Medical Services (CMS) to enhance possible cooperation in the medical field. CMS is the permanent national network for coordination and steering of all national medical support assets in extraordinary situations of national dimensions, major disasters and war. It is used continuously as part of disaster preparation, or whenever disaster response is considered a federal responsibility.

Coordinated medical services

CMS was originally set up to coordinate nationwide responses to life-threatening events, such as epidemics, natural disasters, major accidents and terrorist attacks. It represents all emergency organizations, including

emergency control centres, hospitals, police, medical services, fire brigades and executive staff in Switzerland's 26 cantons (administrative regions), as well as the armed forces. Notably, the medical services of the Swiss Armed Forces are the largest and most powerful partners in this national network, so the Federal Council has tasked the Surgeon General of the Swiss Armed Forces with the overarching coordination of planning and preparation for the employment of all healthcare-providing partners and their resources in special and extraordinary situations. Thus the Swiss Surgeon General appears to have a dual function and wears both a military and a civilian hat. This dynamic is unique and helps simplify the planning of CMS cases, as fewer agreements between individual actors are required. For several years the medical services have been developing and evaluating various scenarios to plan potential medical responses; for example, as a potential response to a smallpox outbreak, CMS designed vaccination centres, calculated requirements for materials and manpower, and prepared information that could be distributed to the public. The centres allowed the Swiss Armed Forces to support the national health system effectively. Importantly, these preparatory steps were put in place through a series of agreements that would speed up the response considerably if an emergency calls for rapid reaction.

The experience during the H1N1 pandemic

During the 2009 H1N1 pandemic (often called "swine flu"), various institutions and locations were selected to participate in the vaccination of the population. The Swiss Department of Defence was asked by the Departments of Interior and Exterior to vaccinate foreign and diplomatic personnel stationed in Switzerland, so CMS planned its centres in locations in the vicinity of cities with the highest number of foreign residents. For the purposes of the pandemic, logistics, vaccines and medical personnel were provided. In addition, CMS created and used a powerful tool to keep track of all vaccinated personnel, both military and foreign. The case reports and vaccination protocols were written electronically and then digitally stored

for easy access. For early and proper preparation, monitoring and response to emergency situations, an information and operation system is used. This tool serves different purposes, including near-real-time overview of all military and civilian medical assets in Switzerland and their specific capacities; real-time information on patients, lost persons and objects in disasters; a nationwide alarm and medical manager contact network and database; planning, support and implementation of nationwide medical management in disasters and war; expert advice, instruction and training on medical disaster preparedness and management issues; and management of CMS infrastructure and equipment.

What can be learned from the Swiss experience? The example of Switzerland, with its federal political system and institutions, has shown that envisaging possible crisis scenarios is crucial. For each scenario, all possible players have to be identified. Interactions and dependencies have to be highlighted, and memoranda of understanding and rules of engagement put in place. If preparations are made in advance, time-consuming negotiations can be avoided in an emergency. The example of Switzerland is also applicable to an international, multilateral collaborative effort. It is important to consider the various assets different partners can and are willing to provide. Multipartner support must be organized in such a way as to ensure that individual contributions complement each other. Figuratively, the different pieces of the puzzle must fit together to provide the necessary support.

Lessons from the Ebola epidemic

Examining the response to the Ebola epidemic, it is evident that the nations leading the response did not take into account all the potentially available support. For instance, Switzerland was asked by the UN High Commissioner for Refugees to provide helicopters to support those assisting on the ground. Within a short period of time, the Swiss Armed Forces made a relevant proposal and started to assign and train personnel. To deploy helicopters and personnel, the Swiss Armed Forces searched for

a partner able to provide the necessary logistics. Unfortunately, a scenario of such a devastating infectious disease outbreak had not been foreseen at an international level at that time, so a series of negotiations had to be undertaken. The process progressed slowly, and ultimately took too long to trigger a positive political decision in Switzerland. Nonetheless, it was important for the Swiss to engage in the planning process, because it pointed out the shortcomings of the Swiss Armed Forces in engaging in a global health emergency and outlined further steps Switzerland needs to take to prepare its forces for a global health crisis. Accordingly, lessons have been analysed and attempts made to anticipate all necessary national and international agreements and memoranda of understanding required for speedy and successful involvement in future crises.

Regarding the possible roles of armed forces in health crisis management, military forces are primarily associated with the protection and stabilization of their country. However, armed forces may be used aggressively inside or outside the country. This inflicts long-term damage on the reputation of the armed forces. Concerning potential non-traditional capabilities of the armed forces, many roles can be identified in disaster situations such as health crises. For instance, armed forces often have well-developed and well-equipped logistical structures in place. Further, well-trained medical services are often part of the armed forces, and can contribute important capacities during health crises in terms of logistics and medical support. However, depending on the situation in the affected country or region, the international community might nevertheless not be able to provide medical and logistical assistance. This is often the case in post-conflict countries, which are characterized by unstable and dangerous conditions. This certainly applied in the case of the Ebola epidemic. Guinea, Liberia and Sierra Leone were post-conflict states, and as a result memories of armed and uniformed personnel among the population were mostly negative. Nevertheless, armed forces are crucial during health crises because they can provide security and facilitate logistics and medical supply. Notably, this is widely recognized by non-governmental organizations. During the Ebola epidemic, Médecins Sans Frontières prominently called on the international community to provide security,

medical and logistical assistance by deploying civilian and military medical teams. In summary, security institutions, including the armed forces, can play an indispensable role during health crises, but must be used wisely and with careful prior preparation.

PART V

Responses by Regional and Global Organizations

The European Union's Reaction to the Ebola Crisis

Cristina Barrios

Introduction

This chapter discusses the actors, actions and policy processes that characterized the European Union (EU) approach to the Ebola crisis. The EU is the most integrated regional project in the world, but still depends on its member states for funding and policy. Furthermore, while it has the capability to undertake external action, it has fairly rigid limitations with regard to security operations. The EU prioritized a humanitarian emergency response in West Africa, and there was limited interest in and capacity for contributions from the security sector. This is partly explained by the usual conceptualization of health crises as mainly humanitarian – a perspective that is now challenged by research showing that “health threats are security threats, and vice versa”.¹ The EU’s limited legal competence regarding security policy, together with its complex and slow policy-making process, further explains this. The EU’s reaction to the Ebola crisis was nevertheless a positive example of its comprehensive approach and coordinated action, as it defined its framework for both European Commission policies and the Common Foreign and Security Policy in one single document.²

The EU’s involvement covered humanitarian, political and financial support, and also required significant amounts of internal preparedness to overcome the challenge of dispersed actors, policies and processes within the EU. Thus it was able to deliver through a “political” platform, the Health Security Committee (HSC), and a pragmatic arm, the EU Civil Protection and Humanitarian Aid Operations (ECHO). However, the EU was not able – or

willing – to engage significantly with the security sector. Member states did not develop a Common Security and Defence Policy (CSDP) *vis-à-vis* the Ebola crisis, preferring to deliver services via national rather than European mechanisms. On the broader international stage, the EU clearly supported the multilateral system and deferred to the UN for overall leadership and coordination. In future, a stronger comprehensive approach that includes a CSDP may help to rebalance EU capabilities to address global health threats more successfully.

Actions – humanitarian, political and financial support

The official reaction to the Ebola crisis was slow – the UN declared the situation a public health emergency of international concern only on 8 August 2014. This declaration triggered the EU's action. In this sense, the EU did not have a quick, preventive reaction to the crisis, but it joined the international community from the start and remained engaged in the long term, eventually moving towards a focus on monitoring and prevention. It could be said that the EU both *responded* to the humanitarian crisis politically, diplomatically and financially, and began the process of better *preparing* for future disasters.

First and foremost, the EU response involved *humanitarian support*. The assistance offered to Guinea, Sierra Leone, Liberia and their neighbouring countries focused on equipment to be used in treating patients and stopping the spread of the epidemic: non-food items including medical supplies, hospitals and hospital beds, isolation units, mobile laboratories (crucial to establish and monitor the evolution of Ebola), ambulances and diverse equipment needed in the logistical process. The EU also sent Ebola experts and personnel who could assist in treatment, detection and training on the ground. The UK, France, Germany and the Netherlands offered security sector support to help with civilian protection and humanitarian delivery in the affected countries. The EU was approached by some of the intervening partners (most notably the UN Office for the Coordination of Humanitarian Affairs) to *provide transport* for materials and medical staff. Transport

needed to be available by road, sea and air. In response, member states proposed and mobilized military assets, and even put forward an initiative for coordinated planning of airlifts and medical evacuation. However, the EU fell short of a Europe-wide mechanism for medical evacuation or transport support.³ Both Accra (in Ghana) and Dakar (in Senegal) were used as hubs for transport provision, instead of concentrating all European support in one hub.

In addition to the humanitarian response there were European initiatives of a more *political and diplomatic* nature. EU delegations and Brussels authorities favoured *regional* cooperation among countries in West Africa. The EU defended the position of not isolating countries where Ebola was active, recommending caution and monitoring – including screening at airports and border crossings – but avoiding the closure of borders. Nevertheless, neighbouring countries such as Côte d’Ivoire and Mali preferred to “close up” their borders at times, not fully convinced about the regional approach. The EU also supported multilateralism as a principle, as expressed at specific international diplomatic gatherings, such as an international conference in Brussels in March 2015 co-chaired by the affected countries, UN authorities and the EU.⁴ In October 2015 the Luxembourg presidency of the Council of the European Union sponsored another conference on “lessons learned”, and the European Health Prize of the year was given to non-governmental organizations (NGOs) that had been active in fighting Ebola.

Finally, the EU made funds available for humanitarian work, *channelling assistance* through Médecins Sans Frontières, the International Federation of the Red Cross and Red Crescent Societies, the International Medical Corps, Save the Children, the International Rescue Committee, Alima, the World Food Programme’s Humanitarian Air Service, UNICEF (the UN Children’s Fund) and of course the World Health Organization (WHO). In autumn 2014 Europeans pledged to raise €1 billion, and by the end of 2015 the commitment had not only surpassed but almost doubled that amount – with an estimated €1.8 billion made available for the affected countries and humanitarian partner organizations active on the ground.

These elements of humanitarian, diplomatic and financial response to the epidemic in West Africa were complemented by an investment in *preparedness*, prevention and eventual management of cases across the EU - but this was not matched with a centralized approach. The risk of the Ebola epidemic was considered low in European countries. Regular medical information exchanges took place through bilateral channels and European hubs. The European Centre for Disease Prevention and Control (ECDC) activated its network of scientists and translated their assessments into advice and guidance, and the EU HSC was in charge of synchronizing efforts for measures across Europe. Member states decided on their own on airport screenings, but their policies mostly matched and very complementary official advice was given to the public. Cases evacuated to European countries were treated at the national level, with frequent information exchange between the main European medical centres. The positions and approaches of European companies also broadly coincided, although, for example, at a certain point in autumn 2014 Air France terminated its flights to Freetown while Brussels Airlines maintained flights to the affected region. These inconsistencies occurred within the common background of the "Schengen space" that allows free movement of people within a large part of the EU, which was never put in question.

Processes in the EU institutions - towards a comprehensive approach

It is important to map the different institutions and processes that were involved in the EU response to the Ebola crisis. The EU is a complex institution in which all 28 member states play a crucial role; policies are grounded in processes that build consensus and compromise. EU policy-making and decision-making capacities in a specific policy area depend on the competence of its institutions. The area of public health and risk management remains the mandate and remit of member states; the European Commission's powers are thus limited. Yet member states showed a strong political will and were inclined to cooperate pragmatically, making use of *EU institutions and instruments* to confront the Ebola

epidemic and its potential implications.⁵ Member states meet and make decisions in thematic, sectoral committees or formal council meetings, for example by gathering health ministers on health-related issues, or in more transversal meetings, such as in the Political and Security Committee and the Foreign Affairs Council. The European Council takes the form of a summit, gathering heads of state and government to offer guidelines and political directions for EU action. Using all these different formats, European leaders and governments were active in numerous meetings from autumn 2014 onwards to coordinate a European response to the Ebola crisis. The EU Commission's HSC overcame complex EU institutional barriers to make a major contribution to this effort (see Table 14. 1).

The European Commission played a crucial role in the EU's response, as it has the power of initiating legislation, and alongside the European Parliament drafts and allocates budget for development and humanitarian policy. It is organized into departments or directorates-general. The Directorate-General for International Cooperation and Development, for example, was in charge of managing the support to recovery, and longer-term policies to prevent Ebola in West Africa. However, the reaction to the crisis was forged and arguably controlled in the ECHO department. Here the EU activated the Civil Protection Mechanism to coordinate the deployment of assistance by the EU and its member states. The EU Emergency Response and Coordination Centre facilitated the coordination of member states' in-kind assistance. In parallel, some member states offered bilateral assistance and contributed to the broader international humanitarian partnership to reinforce the outreach. Norway, which is not a member of the EU, also participated in the Civil Protection Mechanism. As Figure 14.1 illustrates, the assistance provided required intense coordination. This was welcomed by partners such as the WHO, as they found it easier to coordinate through one EU interlocutor instead of 28 member states. The Civil Protection Mechanism and the European Commission leadership in the implementation of the response were essential for EU-wide coordination. Still, additional platforms were needed to adjust responses to the broader political context and uphold active information exchange and cooperative engagement among the governments of involved European countries.

Table 14.1: Response by the EU Commission's Health Security Committee

The EU policy processes are complex when seen from the outside, but the EU is neither static nor weak. It was able to address the Ebola crisis pragmatically by following “legal steps” to allow the progressive institutionalization of EU cooperation.

An illustration of this is the HSC, composed of member states' representatives (usually the health ministers) and chaired by the European Commission. It is a respected space for policy exchange at a high level. The HSC was behind the collective push for risk assessment, response planning and cooperation in the Ebola crisis within Europe, but also oversaw the EU institutional action in the external response in West Africa. It is the likely driver for any future political initiative by the EU in matters of epidemiological surveillance and other health threats, which other bodies and processes will then transform into specific policy and implementation.

As biological, environmental and public health threats have become more salient and have a clear transnational nature, the EU has progressively institutionalized cooperation in the HSC. This safeguards the competence and exceptional prerogatives of member states while fostering common work and planning, mainly through the European Commission. The HSC has evolved amid politics, policy and a necessary grounding in EU law. From 2001 it existed as an informal group composed of representatives from member states working on bioterrorism. Its work was lauded and expanded to other areas of cross-border threats to health, including preparedness and response planning; the HSC was then formally established in a 2013 decision of the European Parliament and Council (Decision No 2119/98/EC).* In the most recent official European Council conclusions on “Lessons learned for public health from the Ebola outbreak in West Africa – Health security in the European Union”, of December 2015,** member states and the European Commission are invited to identify, assess and take forward cooperation, and to strengthen EU expertise in the prevention, control and management of cross-border health threats, “notably within the HSC”.

Nevertheless, if the EU wanted to strengthen the role of the security sector in its external policies, it would most likely involve the Political and Security Committee, which oversees the Common Foreign and Security Policy and is specifically responsible for the CSDP, where security tools (such as civilian missions and military operations) can be mobilized. The committee is composed of member states' ambassadors based in Brussels; it monitors international situations and can recommend EU strategy in general. Arguably, for this reason the Political and Security Committee followed Ebola closely, but since the CSDP was not the main approach to the health crisis, the most decisive role remained with the HSC.

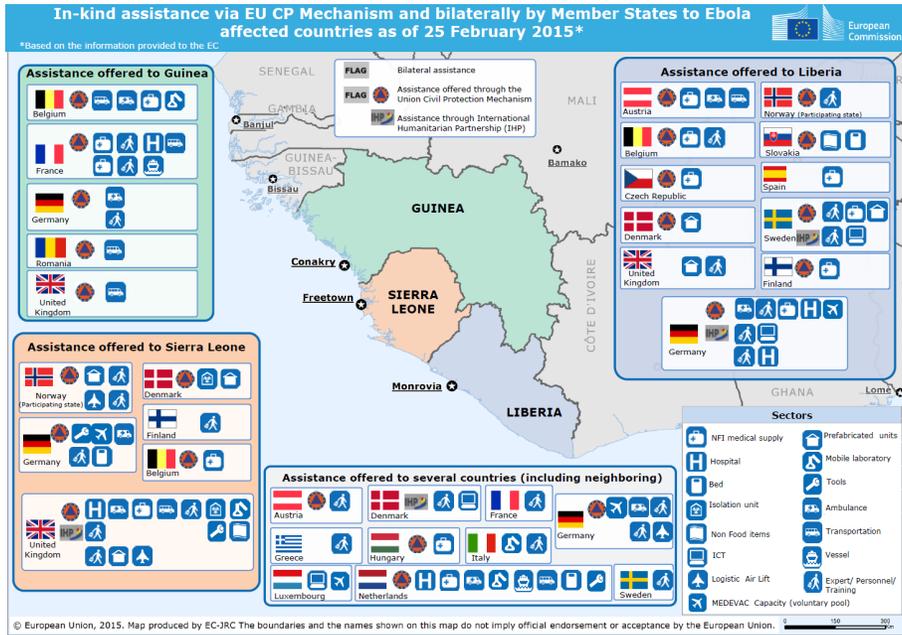
* European Parliament and Council (1998) “Decision No. 2119/98/EC of 24 September 1998 setting up a network for the epidemiological surveillance and control of communicable diseases in the Community”, Official Journal of the European Union, L268, op.europa.eu/s/n4Fv.

** European Council (2015) “Council conclusions on ‘Lessons learned for public health from the Ebola outbreak in West Africa — Health security in the European Union’”, Official Journal of the European Union, 2015/C 421/04, pp. 6–8, [eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52015XG1217\(02\)](http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52015XG1217(02)).

The EU Ebola Task Force brought the European Commission together with the European External Action Service (EEAS) and its delegations on the ground – the EEAS itself bringing input from its geographical divisions and, importantly, the pillar dealing with the CSDP. The EU Ebola Task Force met two or three times a week, with participation of member states and actors on the ground as needed. It also liaised at the international level with the UN Mission for Ebola Emergency Response. In addition, early in October 2014 an overall EU Ebola coordinator was appointed, in the person of Commissioner Christos Stylianides.⁶ The ECDC, an EU agency, offered some support through scientific advice. However, it was only a small agency (based in Sweden) with a limited mandate, and could not be compared to the US Centers for Disease Control and Prevention (CDC). Indeed, there were major differences between them regarding staffing, budgets and operational capacities: at the time of writing, only around 300 people work in the ECDC, compared to around 15,000 in the US CDC. Major differences also existed in terms of the deployment of laboratories and the number of staff in the field. For the most part these had to happen through EU member states or partners on the ground, compared to the independence and close connection to the executive offered by the US CDC.

In sum, the Ebola crisis of West Africa led the EU to bring together the powers of the European Commission, the EEAS and the European Council. The model was one of “network governance”, in that it depended on the capacities and agreement of member states to act on behalf of the EU, and on the implementation efforts of organizations such as NGOs and other international institutions that were financially supported by the EU.

Figure 14.1: In-kind assistance provided by the EU and its member states



Priority of civilian humanitarian tools

The crisis was considered a humanitarian problem in the summer of 2014, hence the EU processes and actions were designed from the perspective of humanitarian policy-making. For example, there was a crisis platform but, instead of being housed in the EEAS and its CSDP structures, it was led by ECHO in the European Commission. If the EU had confronted a health threat such as bioterrorism or a crisis within a situation of armed conflict, there would have been more grounds for initiating a response from the perspective of security policy. But the challenges posed by Ebola blurred the distinctions between the humanitarian and security realms, and the actions on the ground also combined civilian and military aspects. This was the case, for example, regarding the potential evacuation of European personnel and medical evacuation of international health workers in West Africa, which involved referral to member states' military capacities and

instruments. The EU's focus may also be explained by its significant capacity in the areas of humanitarian intervention and development cooperation: institutional competence according to EU law, its own (or pre-pooled) budget, and an identified network of "implementers" with whom the EU agrees on specific policies and for which they receive support. By contrast, in the field of security policy the CSDP is mainly intergovernmental and the EU has limited capacities in terms of both financial and human resources. There are legal possibilities for cooperation, and instruments such as the CSDP missions and operations and the EU battlegroups. However, with weak EU competence and the lack of an initiative by the European Commission, member states have to agree on and provide resources for practically each and every CSDP action.⁷

There was EU input on security matters, albeit limited. Within the EEAS, the Crisis Management Planning Directorate, which is part of the CSDP structure, was very active during the response to the Ebola crisis. It worked on theatre analysis and contributed to the EU Task Force. The directorate suggested plans to enhance civil-military instruments in the EU response, including the potential use of a battlegroup and other options within or outside the CSDP, such as enabling the protection of facilities and humanitarian actors, or further supporting UN peacekeeping or other security actions. The European Council asked the EU Military Committee to continue working on scenarios and possibilities for using military assets. The European Commission (ECHO) asked about airlift and evacuation capacities, and a military planning cell was activated to assess capacity and eventually coordinate EU action. However, EU member states prioritized civilian approaches to Ebola. Regarding security and military options, they maintained *ad hoc* communication and exchanges, but not regular, centralized planning and execution. Somewhat informally, and because of historic and pragmatic connections, the UK appeared as "lead nation" for security cooperation in Sierra Leona and the USA in Liberia, and France took up a similar role in Guinea. In fact, the EU's security sector contribution was minimal, but the crisis illustrated the pertinence of the EU's comprehensive approach and the need to combine and harmonize policies across institutions and across military-civilian perspectives.

Conclusion - a stronger and comprehensive approach

The EU approach to curb Ebola illustrates that political will for cooperation and coordination was hampered by institutional processes, in particular giving time for member states to input adequately as required in EU law. Because of the nature of the threat, the crisis was initially characterized as humanitarian. The EU was able to contribute significant logistical and material assistance, mobilize diplomatic and political support internationally, and finance the response of partners on the ground. Security and military aspects were considered in assessments and planning. Nevertheless, the limited and slow EU action on military assets and decisions in the CSDP overall relegated the security response to *ad hoc* policies agreed by governments with host countries and the broader UN community. In future, the EU could make better use of the full range of its resources for preparedness for and response to global health challenges.

Cooperation with international actors and alignment with the UN was maintained by the EU Ebola Task Force and the HSC. EU coordination was essential for easing the broader coordination of international response. It meant there was one single EU input to factor in during the response, instead of 28 separate inputs. Cooperation with actors on the ground was pragmatic. For example, despite support from the EU through financial contributions to African Union Support to Ebola in West Africa, local implementing agencies emerged as better placed to deliver front-line responses. This commitment to flexibility and effectiveness was vital.

The EU followed UN action when it declared the epidemic an emergency, acting only late in the summer and autumn of 2014 despite earlier warnings from NGOs that spring. Stronger independent early-warning systems may emerge as the EU's comprehensive approach takes root and expands.

The complex institutional setting and policy processes described here did not prevent the EU from being a powerful, indispensable actor in curbing the Ebola threat. Ongoing engagement is undertaken as development cooperation but, within the evolving legal and institutional framework, it does not have to exclude a significant role for the security sector. The EU did not produce a definitive reaction to the Ebola crisis in the security field

at the time, but a stronger, comprehensive EU security approach is in the making, spurred on by the 2016 EU global strategy for foreign and security policy.⁸ Time will tell if helps improve the EU's preparedness to face future health and security crises.

Notes

- 1 Matlin, S. A., A. Schnabel, I. Kickbusch, T. Winkler, M. Sangiorgio, M. Told, U. Trepp and W. Werder (2016) *The Security Sector and Global Health Crises: Lessons and Prospects. A Policy Brief*, June, Geneva: Global Health Centre, Graduate Institute of International and Development Studies and DCAF, p. 1.
- 2 An internal working document called "EU comprehensive response framework for the Ebola virus outbreak in Western Africa" was jointly put together by the European Commission and the EEAS early in October 2014, and updated in subsequent "working versions".
- 3 Air medical evacuation required well-equipped aircraft and personnel, which were scarce and costly, and included some civilian and some military assets. There was an international (from the UN) request for the EU to provide such air medical evacuation, for which the EU tried to plan and provide European contingency capacity. This proved difficult, precisely because the capacity and assets were scarce and highly valuable for the member states which held them, and because of the legal limits and policy process difficulties in the EU CSDP.
- 4 European Union, High Level International Conference on Ebola, Brussels, Belgium, 3 March 2015; see the event website at https://europa.eu/newsroom/events/high-level-international-conference-ebola_en.
- 5 Unlike other policies, public health and risk management is not a EU prerogative in which the European Commission can take initiative to legislate, but the treaty on the functioning of the European Union (Article 6) still foresees that "the role of the EU is to support, coordinate or supplement actions of the Member States" in that realm.
- 6 Commissioner Stylianides was the head of ECHO in the European Commission, but his appointment as EU Ebola coordinator stemmed from meetings of member states in the European Council and the Foreign Affairs Council. This is a classic example of how member states appoint the European Commission in roles of coordination that also involve a political drive.
- 7 There is a possibility of financing the CSDP with the EU budget, but only *civilian* (not military) aspects.
- 8 European Union (2016) "Shared vision, common action: A stronger Europe. A Global Strategy for the European Union's Foreign and Security Policy", https://eeas.europa.eu/top_stories/pdf/eugs_review_web.pdf.

The African Union's Contribution to Eradicating Ebola in the Mano River Union Subregion

Prosper Nii Nortey Addo¹

Introduction

An outbreak of Ebola virus disease (EVD) in December 2013 in the Forest Guinea town of Guéckédou near the borders of Liberia and Sierra Leone spilled over into these two other Mano River Union (MRU) countries, causing major health and economic crises. This undermined ongoing peacebuilding efforts in the subregion.² The largely unknown and mysterious disease caused major health and humanitarian problems owing to its highly infectious nature, and provoked widespread fear across the globe as a result of movements to and from the region. This led to calls from affected countries, various health institutions and the World Health Organization (WHO) to initiate a global effort to contain and possibly eliminate the virus, given the delayed response to the outbreak.³ In response to this call and earlier efforts to fight diseases of this nature, the African Union (AU) deployed its first-ever AU Support to Ebola Outbreak in West Africa (ASEOWA) mission to the three affected countries, rallying continental support in the spirit of African solidarity. ASEOWA was deployed as a combined civilian and military humanitarian mission to contain the spread of EVD and, if possible, eradicate it from the region. Since its deployment, ASEOWA has made significant contributions towards containing the spread of EVD, and its subsequent prevention and eradication.

This chapter focuses on the AU's contribution to the management of EVD in the West Africa region, and lessons to be drawn from its intervention alongside varied responses from the global community to this emergent

health crisis. The chapter draws lessons from the useful engagement of the security sector in the management of global health crises, and the effective collaboration between security and health actors in the health management process. It traces the policy processes initiated by the AU in combating the spread of EVD, the deployment of ASEOWA and its coordination with other actors in the fight against the disease, and the impact of its intervention. It further draws out challenges, opportunities and lessons learned from the AU's contribution to the fight against Ebola.

The policy process

The AU, like other international organizations, has a bureaucratic system that requires following due process in decision-making and responses to crises. Many have questioned the AU's ability to respond rapidly and effectively to crises based on early-warning signals. Notwithstanding, AU responses in recent times have improved quite significantly in addressing conflicts and humanitarian crises on the continent. The AU's initial response to the Ebola crisis in West Africa began in April 2014 at the First Meeting of African Ministers of Health, jointly convened by the African Union Commission (AUC) and the WHO in Luanda, Angola, on 16-17 April. At this meeting a solidarity motion on control of the Ebola epidemic in West Africa was passed, requesting the WHO to continue to provide support in the area of epidemic preparedness and response, and commending the governments of countries that had sent experts to the nations affected by the epidemic. The motion also requested African countries to take the measures required in accordance with the International Health Regulations (2005). A declaration issued at the end of the meeting recommended the establishment of the African Centre for Disease Control and Prevention (ACDCP).

Following this meeting, a series of efforts were made by the AU to establish ASEOWA and deploy the mission in response to the deadly EVD. These included holding an AU Permanent Representative Council meeting on 30 July 2014; holding the 450th AU Peace and Security Council (PSC)

meeting in Addis Ababa, Ethiopia, on 19 August 2014; and a meeting of the AU Executive Council on 8 September 2014. The emergency session of the Executive Council on Ebola at the AUC in Addis Ababa adopted a common position and defined appropriate strategies to enable Africa to combat the Ebola epidemic. At its meeting the PSC invoked Article 6(f) of the Protocol Relating to the Establishment of the Peace and Security Council of the African Union, which mandates the PSC to perform functions related to humanitarian action and disaster management. This was supported by Article 15 of the same protocol: Article 15(1) calls on the PSC to “take active part in coordinating and conducting humanitarian action in order to restore life to normalcy in the event of conflicts or natural disasters”; Article 15(3) requests the African Standby Force, the military component of the AU peace and security architecture, to be adequately equipped to undertake humanitarian activities in its mission areas under the control of the chairperson of the AUC; and Article 15(4) calls for the African Standby Force to facilitate the activities of humanitarian agencies in mission areas.

The PSC decided at this meeting to authorize the immediate deployment of an AU-led military and civilian humanitarian mission to the three affected countries. The mission comprised doctors, nurses and other medical and paramedical personnel, as well as military personnel required for the effectiveness and protection of the mission.⁴ In addition to authorizing the deployment of ASEOWA, the PSC authorized the AUC to develop the concept of operations (CONOPS) to guide the military and humanitarian mission.⁵ A multistakeholder steering committee called the Ebola Strategic Task Force was established at the AUC in Addis Ababa to spearhead coordination and planning for the mission. It drew together representatives from AU departments – mainly the Department of Social Affairs and the Peace and Security Department – and the Strategic Partners Group comprising African Humanitarian Action, UN agencies, the Economic Community of West African States (ECOWAS), Médecins Sans Frontières (MSF), the International Federation of the Red Cross, the European Commission’s Civil Protection and Humanitarian Aid Operations, Cuba and other partners. The task force was led by Commissioner for Social Affairs Dr Mustapha Sidiki Kaloko. This was the very first humanitarian mission

to be led by the AUC Department of Social Affairs. An AU evaluation/assessment team was deployed to the three Ebola-affected countries from 25 August to 5 September 2014 to undertake an initial assessment of the public health crisis on the ground.⁶ The team's report informed the drafting of the CONOPS and mission support plan for ASEOWA's deployment.

Execution of mandate

ASEOWA's deployment and execution of its mandate were defined by its CONOPS, which clearly outlined the mission and its strategic objectives and output, among other things. ASEOWA was deployed to contribute to ongoing national and international efforts to stop the transmission of EVD and contain the international spread of the deadly disease. Thus it had the strategic objective of supporting efforts in the fight against the disease and to achieve an Ebola-free Africa.⁷ The strategic objectives of the mission included the enhancement of existing national and international response mechanisms through the provision of technical, resource, political and financial support. It was intended to complement ongoing humanitarian assistance efforts and support the coordination of responses to augment field responses to the operations; and aimed to embark on advocacy to support public awareness and preventive measures across Africa, specifically in the affected region.⁸

In the execution of its mandate, the mission had a structure in which operational authority was vested in the chairperson of the AUC, who in turn delegated overall responsibility for operations to the commissioner in charge of Social Affairs. The chairperson appointed the AU head of mission, who served as the political and administrative head at the operational level and took charge of implementing the mission's mandate. He also exercised the AUC's authority over the ASEOWA team sites in the various countries at the tactical level; his deputy led the substantive elements and units. Team leaders represented the head of mission at the tactical level, overseeing the activities of the team in the field.

Deployment of ASEOWA

ASEOWA was formed on 20 August 2014. Based on his experience of successfully fighting four major Ebola outbreaks in Uganda, Ugandan MP Major-General Dr Julius Facki Oketta was appointed as its first head of mission.⁹ His background as a soldier with a PhD in logistics proved useful. Initial preparations included the recruitment of ASEOWA health workers by health-worker-contributing countries (HWCCs); health workers' curriculum vitae and medical screening, and preparation of contracts; facilitation of logistical and other arrangements in the three affected countries by the AU Liaison Office in Liberia¹⁰ and the ASEOWA team in Monrovia; two days' training for ASEOWA health workers qualified for deployment; and subsequent deployment of the teams. All these activities were undertaken within a two-week period. The 13 weeks following deployment were used to receive team members in the affected countries; organize 12-15 days of EVD in-country training; and deploy the health workers for 75 days, including one week of rest and recuperation. Following deployment, an exit/rotation strategy was put in place to facilitate two days of travel by the health workers, 21 days of observation and debriefing, and either a contract extension for a second deployment or the health worker's exit.

Based on these arrangements, the ASEOWA mission was deployed between September 2014 and January 2015; 720 health workers from 12 African countries were deployed during this period, with HWCCs being Burundi, Cameroon, Congo, the Democratic Republic of the Congo (DRC), Ethiopia, Kenya, Niger, Nigeria, Rwanda, Tanzania, Uganda and Zimbabwe. The initial deployment of volunteers was carried out on 20 September 2014, comprising a small team as an advance party after the arrival of the head of mission on 15 September 2014. This advance party, including civilian and military personnel, was not recruited under the HWCC arrangement but directly by the AUC, based on the urgency of the Ebola situation. The aim was to initiate the AU response before ASEOWA deployment. The West African Health Organization (WAHO) deployed further health workers alongside its ASEOWA counterparts. The decision to send military medical personnel to bolster the fight against EVD came from an extraordinary

meeting of the Committee of Chiefs of Defence Staffs in Accra, Ghana, on 8 December 2014. Countries that pledged volunteer health workers to WAHO included Benin, Burkina Faso, Côte d'Ivoire, Ghana, Guinea-Bissau, Nigeria, Senegal and Togo. In all, pledges made translated into 24 medical personnel per country and 192 in total.¹¹ In the end, WAHO finally mobilized 116 health workers, bringing the total number deployed by ASEOWA and WAHO to 836.

Deployments under ASEOWA in January 2015 are shown in Table 15.1.¹² More volunteers were deployed in June 2015, including 19 health personnel from the Republic of South Africa.¹³

Table 15.1: ASEOWA deployments

Origin	Guinea	Sierra Leone	Liberia	Total
AU volunteers	21	32	33	86
Nigeria	0	110	86	196
Ethiopia	0	101	86	187
DRC	81	0	0	81
Kenya	0	75	95	170
Total	102	318	300	720
WAHO	49	27	39	116
Total + WAHO	151	345	339	836

Source: African Union Commission.

Coordination and resource mobilization

The multidimensional Ebola Strategic Task Force established at the AUC to coordinate the affairs of the ASEOWA mission facilitated drafting of the CONOPS and mission support plan, and the security of the team in the field. A group from the AU Peace Support Operations Division, in the AUC Peace and Security Department and made up of military personnel and a representative from the UN Office for the Coordination of Humanitarian Affairs, provided support to their civilian counterparts from the AUC

Department of Social Affairs to develop the CONOPS and mission support plan. The CONOPS for ASEOWA defined specific engagement with actors in areas of coordination, collaboration and resource mobilization to facilitate the work of the team in the field. Firstly, the mission was required to colocate, coordinate and integrate its operations with the national coordination centres of affected countries. Secondly, the mission was expected to establish strong coordination with national emergency mechanisms, humanitarian agencies, international organizations and ECOWAS. These requirements were strictly followed in ensuring a well-coordinated and coherent approach to in-country training and deployment of ASEOWA and WAHO health workers.

In Liberia and Sierra Leone the coordination task force mechanisms, respectively termed the Incident Management System¹⁴ and the National Ebola Response Centre,¹⁵ formed the fulcrum around which response interventions were coordinated and implemented. These national coordination centres were led by government officials and staffed by health and security experts, humanitarian personnel and representatives from donors and international organizations. They facilitated easy access to information and updates, coordinated efforts and common purpose, and a leadership and management structure to give political and strategic direction in the fight against Ebola. All responses were channelled through this mechanism, and ASEOWA had adequate representation: not only did it send representatives, but the team also contributed to restructuring and effectiveness in coordinating responses, as challenges came up regarding duplication of efforts, *ad hoc* responses and lack of clear direction and guidance, among other issues.¹⁶

However, the major issue regarding ASEOWA concerned mobilizing sufficient resources to facilitate its deployment. A team from the AUC Department of Social Affairs led the resource mobilization efforts. Several state and non-state actors contributed to funding the ASEOWA mission on the ground. Table 15.2 captures the contributors, amounts pledged and received, and those yet to be collected (as of 27 May 2015).

Table 15.2: Contributors to ASEOWA

Contributor	Amount (US\$)	Pledges received (US\$)	Pledges uncollected (US\$)
Special Emergency Assistance Fund for Drought and Famine in Africa	300,000	300,000	-
AU Emergency Assistance Fund (member states)	500,000	500,000	-
AU Special Fund for Refugees and IDPs	100,000	100,000	-
AUC Staff Association	100,000	100,000	-
China	2,000,000	2,000,000	-
European Commission	4,528,655	4,528,655	-
Japan	3,247,216	3,247,216	-
Kazakhstan	300,000	300,000	-
Norway	2,559,413	2,559,413	-
Sweden	2,640,799	2,640,799	-
USA	10,000,000	10,000,000	-
Turkey	1,000,000	1,000,000	-
African Development Bank	2,300,000	-	2,300,000
World Bank	15,700,000	9,000,000	6,700,000
Africa against Ebola Solidarity Trust*	50,000,000	24,000,000**	26,000,000
Total	91,028,870	56,028,870	35,000,000

Source: Progress report of the Chairperson of the AU Commission on the Ebola Virus Disease to the 521st Meeting of the AU Peace and Security Council, 29 July 2015.

* Trust set up by the African private sector.

** With grant agreement (i.e. commitment) to give up to US\$50 million, including provision of about US\$2.4 million for the take-off and activities of the ACDCP in 2015, and to sustain ASEOWA until the end of its mission.

The impact of the AU response

Following arrival in the affected countries, the ASEOWA team underwent two weeks of induction training and orientation. This training was coordinated mainly by the WHO, MSF and the US Centers for Disease Control; ASEOWA personnel with expertise in handling viral infections and EVD were later brought on board to work as trainers in the three countries. Following training, the health workers were deployed in the field to support the fight against the disease. Within two weeks of deployment, results started trickling in from the Ebola treatment units, laboratories and hospitals, and from communities with regard to awareness creation. The military component of the mission gave operational and logistical support to facilitate the other efforts. There was, however, no arrangement for security protection for the AU volunteers in the mission or provision of security for ASEOWA facilities. In the case of Liberia, for instance, health workers depended on the Liberian security agencies and the UN Mission in Liberia to provide security during their tour of duty. Sensitization and awareness creation in communities in the affected countries were handled by social workers and communication and public information experts.

Later on the ASEOWA team took on post-Ebola infection prevention and control (IPC) in various health centres and schools across Liberia. Donations, including generators, were made to some hospitals so they could run clinics in affected communities. Following epidemiologists' initial concerns of EVD contagion in funeral homes, ASEOWA provided burial teams among its competencies.¹⁷ It must be emphasized that the effort leading to the containment and eradication of EVD was collective, but was based on the expertise and large numbers of the ASEOWA/WAHO health workers deployed in the field. They courageously staffed the Ebola treatment units and hospitals, taking care of patients. This assertion is backed by the recognition given to these health workers by the governments of the affected countries and their citizens, foreign residents, the HWCCs and international partners.

Challenges

Challenges beset the mission at strategic, operational and tactical levels. On the strategic front, planning and coordination for deployment were undoubtedly swift, but could have happened much earlier if the potential impact of the deadly disease had been known. But mobilization of resources for the mission took a long time, in turn delaying the deployment of the mission and its operations. At the operational level, the issue of logistics posed major problems for the team, with initial challenges related to accommodation and transport. However, as funds and resources became available, operations ran smoothly. At the tactical level, apart from the high rates of infection and the deadly nature of the Ebola virus, the safety and lives of health workers were at risk, especially in Guinea and to an extent in Liberia. This was due to community residents who protested against being quarantined, insisted on maintaining entrenched cultural habits, denied the existence of EVD and refused to observe health regulations and routines. Additionally, some believed that government officials were corrupt and exploited the Ebola situation to divert funds meant for fighting the virus.¹⁸

Opportunities and prospects

The Ebola outbreak in West Africa had devastating consequences for all parts of the economy, including the primary, secondary and tertiary sectors. Death tolls were huge, estimated by WHO statistics at over 11,000 as of June 2016.¹⁹ The economic impact in the three most-affected MRU countries was very significant, as reflected in their gross domestic product (GDP) losses. However, the impact was minimal in West Africa and Africa as a whole, as the 2013 economic estimates of these three countries accounted for only 2.4 per cent of West Africa's GDP and 0.68 per cent of that of Africa.²⁰ But notwithstanding these negative consequences, the outbreak provided opportunities for more effective future responses. First, the AU initiative of establishing the ACDCP gives prospects for future research into both known and unknown diseases, as well as their early detection and

prevention to forestall humanitarian disasters like EVD epidemics. Also, in future deployments of this nature the AU must provide a special guard unit to protect AU personnel, AU facilities and strategic installations in the mission.

The AU's African Solidarity Initiative²¹ was reinforced when the continent mobilized its own human, fiscal and material resources to fight EVD. Pledges realized through this initiative, particularly from the private sector across Africa, were impressive, and provided options for consolidating the AU programme. This offers prospects for Africans to look inward and support each other as opposed to depending on donors or partners from outside the continent. The intervention of the AU also provided the chance to beef up capacity, transfer know-how and provide avenues for strengthening the weak health systems of the three most-affected countries in the MRU. Its active engagement in the post-Ebola IPC programme helped backstop activities within the health sectors and the final exit of the team from affected countries. The AUC Department of Social Affairs had its first-ever opportunity to lead a humanitarian mission in efforts to contain and eradicate EVD. The deployment of both civilian and military personnel in the mission proved very useful. Assistance offered by the AUC Peace Support Operations Division proved vital in the development of the CONOPS and mission support plan, given that this task is usually undertaken by the Peace and Security Department. Military officers deployed in the mission provided strategic, operational and tactical direction and guidance in the team's deployment and activities. They also contributed immensely to the establishment of ASEOWA's logistics base. However, the security of health workers suffered a setback, particularly in Guinea, as the AU could not deploy a guard unit to protect the mission.²² Joint training proved useful and contributed significantly to the preservation of lives of the ASEOWA health workers, as no deaths of ASEOWA personnel from EVD were recorded during their intervention in the three countries.

Lessons learned and recommendations

The outbreak of EVD brought important issues to the fore, requiring attention to guide future policies and interventions in cases of similar health or humanitarian crises. The first issue to note relates to Africa's ability to respond to major humanitarian/health crises. The AU has demonstrated its capacity to respond effectively to health and humanitarian emergencies when given the necessary support both within and without. This is crucial, as the outbreak of the EVD spurred on ideals of African support, solidarity and initiative in combating a virus that was foreign to the West African region and scared many people away, both health and non-health workers. The large number of ASEOWA health workers deployed despite the deadly nature of EVD demonstrated the desire for and commitment to shared values and norms for African unity and integration. Going forward, there is a need for better preparedness for rapid or faster deployment in future humanitarian or health-related crises. This could be facilitated by effective coordination, collaboration and cooperation between the AU and regional economic communities and AU member states. In addition, better preparedness must be complemented by strong early-warning and response measures directed mainly towards adequate prevention of health emergencies. In ongoing emergencies, however, complementary measures for effective management and eradication of such diseases must be put in place. This will require the reinforcement and strengthening of processes, mechanisms and existing institutions to achieve the stated goals and objectives at the national, subregional, regional and continental levels. Secondly, the expertise, experience and professionalism of health workers, as well as a better appreciation of the context, contributed significantly to saving not only the lives of many EVD survivors, but also their own lives. No single case of infection or death was recorded among the ASEOWA/WAHO health workers deployed. This is a reflection of their knowledge and appreciation of the culture and terrain, and the experience they brought to bear in handling Ebola cases. The Ebola victims and affected community residents could easily identify with their counterparts from other parts of the continent, facilitating the building of trust, partnerships

and the commitment to achieve results. Thirdly, the decision to establish the ACDCP is laudable and must be realized, given that such a centre on the continent has provided options for research and laboratory systems, emergency preparedness and response, and partnerships and data-driven technologies to detect and respond quickly and effectively to disease threats and outbreaks.²³

On the security and health fronts, the deployment of civilian and military personnel in the ASEOWA mission proved useful, in that the civilian component of the mission would have found it very difficult to stay the course alone, without the expertise provided by their military counterparts. The engagement of the security sector in such crisis situations is therefore crucial in facilitating a well-coordinated mission with each actor taking the lead in its area of expertise. In working together, however, the lives and safety of health workers and related personnel must be guaranteed by adequate provision of security or the creation of humanitarian corridors for health workers. This is necessary to ensure effective intervention. In this regard, arrangements must be made by either the AU for its own security provisions for personnel deployed or by liaising with relevant member states to provide the needed protection in the field. The desire is always high to be seen as the institution, bilateral partner or multilateral organization that provided the most assistance in the minimization, elimination or eradication of humanitarian/health crises. This approach or attitude of attribution, however, has the tendency to undermine the coordination of joint efforts. Hence to guarantee effective, efficient and productive collaboration in the health and security sectors, a multistakeholder approach is recommended. In this light, stakeholders or partners must consider their assistance, mainly financial or technical support, as a contribution to the collective effort for the achievement of the greater goal, rather than seek attribution at all cost, since no single entity can do it all. Finally, no training or simulation exercises were undertaken prior to the deployment of ASEOWA or WAHO volunteer health workers, as a pandemic on such a scale was unpredicted. The lessons drawn from this disease, however, highlight the need for future joint training/simulation exercises between health workers and their security counterparts at the regional and continental levels to facilitate the

easy drafting and implementation of CONOPS and standard operating procedures, as well as smooth interoperability within and between both sectors.

Conclusion

The AU's contribution to the containment of the EVD outbreak in West Africa since 2014 lived up to requirements, despite some challenges. The rapid planning, mobilization of resources and deployment of ASEOWA to the three affected countries in the MRU region deserve praise. Even more commendable are the initiative and courage of the AU volunteer medical and military personnel jointly deployed to fight EVD with other partners in the field. The novel nature of the mission presented opportunities, challenges and many lessons that are highlighted here. It is hoped that lessons gathered and recommendations made in this chapter may inform future policy decisions, enhance support and solidarity and promote joint efforts, particularly regarding security sector engagement in health or humanitarian crises, and thereby contribute to saving lives in the future.

Notes

- 1 The opinions expressed in this chapter do not necessarily reflect those of the African Union Commission. The author contributes to this publication in his own individual capacity.
- 2 For more details on the socio-economic impact of EVD in Africa see UN Economic Commission for Africa (2015) "Socio-economic impacts of Ebola on Africa", revised edition, January, <https://repository.uneca.org/handle/10855/22723>.
- 3 See details in Médecins Sans Frontières (2015) "International response to West Africa Ebola epidemic dangerously inadequate", www.msf.org/article/international-response-west-africa-ebola-epidemic-dangerously-inadequate.
- 4 African Union (2015) "Progress report of the chairperson of the Commission on the Ebola Virus Disease", PSC 520th Meeting, 29 June, PSC/PR/3(DXX), Addis Ababa, Ethiopia.
- 5 The ASEOWA CONOPS envisaged the deployment of about 1,000 health workers in the field on a rotational basis for an initial six months from December 2014 to May 2015, depending on the effectiveness of the response to contain the spread of EVD. The deployment cycle has three major phases, characterized as pre-deployment (two weeks); deployment (13 weeks including one week of in-country rest); and exit or rotation (three weeks' rotation).
- 6 The team comprised representatives from the Department of Social Affairs and the

- Peace and Security Department of the AUC, and UN OCHA.
- 7 African Union (2015) "Fact sheet: African Union response to the Ebola epidemic in West Africa, as of 1/26/2015", https://au.int/sites/default/files/documents/30999-doc-fact_sheet_as_of_26_jan_2015.pdf.
- 8 Ibid.
- 9 Interview with Major-General Julius Facki Oketta, September 2015.
- 10 The AU Liaison Office in Liberia was established in August 2004 to monitor and update the AUC on the post-conflict peace process in the country. Apart from its early-warning functions, it undertakes peace-strengthening projects to consolidate ongoing post-conflict reconstruction and development activities in Liberia.
- 11 ECOWAS (2014) "ECOWAS member states pledge military personnel to bolster Ebola fight", press release, <https://www.ecowas.int/ecowas-member-states-pledge-military-medical-personnel-to-booster-ebola-fight/>.
- 12 See deployment statistics at http://pages.au.int/sites/default/files/FACT%20SHEET_as%20of%2026%20Jan%202015.pdf.
- 13 For more on subsequent ASEOWA deployment of volunteers, its draw-down and the reduction of volunteers deployed see African Union, note 4 above, pp. 4-5.
- 14 The Incident Management System in Liberia was established by the Liberian government with the support of the US Centers for Disease Control and Prevention. The Liberian Health Ministry created a national task force and a technical expert committee to provide oversight in the management of Ebola-related activities. For more details see US Centers for Disease Control and Prevention (2014) "Developing an incident management system to support Ebola response - Liberia, July-August 2014", 17 October, www.cdc.gov/mmwr/preview/mmwrhtml/mm6341a4.htm.
- 15 See the NERC website for more on its activities, www.nerc.sl/.
- 16 African Union, note 7 above.
- 17 Musabayana, W. (2016) "The African Union's intervention in the Ebola crisis was a game changer", press release, 11 February, <https://au.int/en/pressreleases/20160211>.
- 18 For more on public perceptions of governance and responses to the Ebola outbreak in Liberia see Mukpo, A. (2015) "Surviving Ebola: Public perceptions of governance and the outbreak response in Liberia", International Alert research report, June, www.international-alert.org/sites/default/files/Liberia_SurvivingEbola_EN_2015.pdf.
- 19 World Health Organization (2016) "Ebola situation report - 10 June 2016", https://apps.who.int/iris/bitstream/handle/10665/208883/ebolasitrep_10Jun2016_eng.pdf;jsessionid=5166E81EFDB46EFF787F565C77471C86?sequence=1.
- 20 UN Economic Commission for Africa, note 2 above, p. xiv.
- 21 See details of the AU African Solidarity Initiative at www.peaceau.org/en/topic/the-african-solidarity-initiative-asi.
- 22 ASEOWA (2014) "Interview with Maj.-Gen. Dr. Julius Oketta, former HoM, ASEOWA", December. The interview revealed that ASEOWA in Guinea came under attack from some Guinean citizens who believed health workers were responsible for the Ebola outbreak. The ambushed ASEOWA health workers had to be rescued by Guinean security forces to escape imminent mob action.
- 23 African Union (undated), Africa CDC - Our Work, africacdc.org/our-work/.

Deployment of Security Forces in Health Emergencies in the ECOWAS Region

Olatunde Olayemi

Introduction

The West African Ebola outbreak in 2014–2015 was the worst in recorded history, resulting in over 11,000 deaths and severe socio-economic consequences. The epidemic affected five West African countries, with the epicentre in Guinea, Liberia and Sierra Leone. While the outbreak was declared over in early 2016, the West African region must intensify efforts to prevent a resurgence of the epidemic. The region must develop and maintain appropriate capabilities for surveillance, prevention and response to ensure preparedness for Ebola virus disease (EVD) and other infections. For instance, the Marburg virus, Lassa fever, SARS, H1N1 and H1N5 (avian influenza) might constitute a threat to public health, peace and security. Other major infectious diseases, including food-borne and waterborne diseases such as hepatitis A and E and typhoid fever and vector-borne diseases like malaria, dengue fever, yellow fever and plague, continue to afflict West Africa. EVD stands out among this wide range of diseases due to its high transmission rate, excessively low survival rate (so far without a reliable cure) and the risks involved in treating and handling patients. In all cases, the West African region must critically evaluate its response and coping capacities and strengthen its ability to deal with disease outbreaks.

The connections between pandemic and epidemic diseases and the concepts of regional, human and national security must be considered. The concept of “regional security” is linked to issues of strategy and geopolitics. “During the Cold War, regional security and stability were defined largely

in terms of the place that a region occupied in the strategic calculation of the United States or the Soviet Union”,¹ according to James Sperling. In contemporary terms, regional security is linked to a continuing focus on “traditional geostrategic calculations”; different opinions on which “variables contribute to regional (in)stability and (dis)order”; the possible applicability of the Euro-Atlantic model of security governance to other regions of the world; and “the nature of the interaction between ... regional and international systems of order”.² The Organization of African Unity, the predecessor of the African Union (AU), introduced the notion of maintaining colonially delineated borders in the Cairo Declaration of 1964. The aim was to stop wars between African states over disputed territory and prevent European nations from regaining a foothold in African affairs by intervening in regional conflicts.³ Furthermore, in line with existing international human rights instruments and the recognition of some human rights as *jus cogens*⁴ in international law, it could be deduced that regional security prioritizes regional approaches to maintaining peace, security and respect for the most cherished norms of international human society. The basis of these norms can be found in the Universal Declaration of Human Rights and the legally binding International Covenants on Political and Civil Rights and on Economic, Social and Cultural Rights. These norms tie into the normative and strategic concept of human security, which focuses on the individual, the family and the community as the main objects of security. Traditional notions of security were almost exclusively focused on the primacy of the state, but health, political, economic, humanitarian and security issues are inseparable. In this context, the efforts of the Economic Community of West African States (ECOWAS) in responding to epidemics, such as EVD, become relevant. A “health security” preparedness posture can be considered, and should be promoted, as a crucial regional responsibility.

ECOWAS as an instrument for regional peace and security

In 2006 the ECOWAS Secretariat transformed itself into a commission, and ECOWAS has subsequently grown into a formidable multilateral institution

with a strong emphasis on conflict management and peacekeeping. This was born out of the realization that the goal of regional economic integration could not be achieved in the absence of peace and security. Accordingly, while the initial impetus for regional cooperation was economically motivated, political, peace and security concerns soon achieved greater prominence. Today, ECOWAS is made up of 15 member states⁵ and has made significant progress not only in the economic areas of its mandate but also in the promotion of collective security. The ECOWAS Revised Treaty sets the tone with respect to issues of peace and security (including health security) by stating in Article 58(1) that member states should strive to “safeguard and consolidate relations conducive to the maintenance of peace, stability and security within the region”.⁶ The 1999 Protocol Relating to the Mechanism for Conflict Prevention, Management, Resolution, Peacekeeping and Security provides in Article 2(d) that a basic principle of the protocol is “protection of fundamental human rights and freedoms and the rules of international humanitarian laws”.⁷ According to Article 3(e) and 3(f), the protocol’s objectives include maintaining and consolidating “peace, security and stability within the Community”, and the establishment of institutions and the formulation of “policies that would allow for the organization and coordination of humanitarian relief missions”.⁸ Article 40 on humanitarian assistance calls for ECOWAS to take an active part in coordinating and conducting humanitarian assistance, promote the alleviation of human suffering and “restore life to normalcy in the events of crisis, conflict and disaster”.⁹ It also tasks ECOWAS with developing its own “capacity to efficiently undertake humanitarian actions for the purpose of conflict prevention and management”.¹⁰

More specific to the organization’s peace and security mandate is the ECOWAS Conflict Prevention Framework (ECPF).¹¹ This was adopted in 2008, with the aim of guaranteeing peace and security in situations of conflict and disaster through effective observation and monitoring, preventive deployment and humanitarian intervention. It also entails training and equipping multipurpose composite standby units made up of military and civilian components in member states within the framework of the ECOWAS Standby Force (ESF) arrangement.¹² As a tool for conflict

prevention, the ECPF analyses threats to peace and security and examines how the various components or thematic areas of an intervention interact to mitigate threats. The ECPF features a humanitarian component that seeks to “[m]itigate the impact of humanitarian disasters and emergencies that would result in social and political upheaval”, “[s]erve as a bridge between relief/emergency assistance and medium term rehabilitation”, “[p]rotect sustainable development ... through ... crises prevention and preparedness activities”, “[f]oster interregional harmony and security through cooperative arrangements to ensure effective humanitarian crisis prevention and preparedness programs”.¹³ There is clearly a connection between the ECOWAS humanitarian mandate (including health security) and its security mandate.

The ECOWAS Standby Force

The ECOWAS Revised Treaty generally endorses a humanitarian role for the military in the region. The ECOWAS heads of state or Council of Ministers define the rules of engagement by the military in each case of intervention or assistance, including command and control, and cooperation and coordination between and among different units, in a precise, context-specific and time-specific mission mandate. First priority is given to UN Security Council resolutions or mandates that might already exist. Within and beyond these, the ESF is deployed to support humanitarian responses through provision of emergency services and stand-by arrangements, communication, transportation, contingency planning, stockpiling of equipment and supplies, information management, personnel training, community drills and field exercises, public education and coordination arrangements.¹⁴ ECOWAS is making efforts to ensure that, in collaboration with other units, the ESF is able to fulfil its humanitarian mandate in support of the broader regional objectives of the organization.¹⁵

In addition to observation and monitoring, peacekeeping and restoration of peace, preventive deployment and enforcement of sanctions and embargoes, the ESF handles the crucial role of “[h]umanitarian intervention

in support of humanitarian disaster”.¹⁶ In line with its objective, the ESF is tasked to “train and equip multi-purpose composite standby units made up of military [police] and civilian components in Member States within the framework of the African Standby Force arrangement”.¹⁷ According to Alicia Kamara, “it is composed of several standby multi-purpose modules (civilian, police and military) in their countries of origin and ready for immediate deployment”.¹⁸ Furthermore, Kamara states that “Most Member States pledged standby police and military units; however, not all states have made good the pledged [*sic*] and not all the units are ready to deploy at short notice. The ESF is yet to embark on its first mission.”¹⁹ The humanitarian impact of the Ebola epidemic in 2014 revealed significant shortcomings in the ability of the ESF to fulfil its mandate.

The ECOWAS peacekeeping mandate and experience

Through its multilateral military unit, ECOWAS has intervened in member states experiencing crises since 1990. Over the years, ECOWAS has responded to conflict situations in the region with military action, starting with operations in Liberia in the 1990s. The earlier ECOWAS Monitoring Group was modified to become the multidimensional ESF with military, police and civilian components. The ESF could not be deployed in 2014 in the fight against EVD because it was not yet fully operational. Several concerns were raised, such as differing standard operating procedures and the need for coordination. Moreover, it was considered important to establish a joint command-and-control structure to govern different components of a humanitarian mission.

The ECOWAS humanitarian affairs programme

The ECOWAS Directorate of Humanitarian and Social Affairs within the Department of Social Affairs and Gender is primarily responsible for leading the humanitarian programme of the ECOWAS Commission. Its operations

are based on the ECOWAS Humanitarian Policy and Plan of Action²⁰ and the Policy and Plan of Action on Disaster Risk Reduction. Notably, the humanitarian readiness and response mechanism of the ECOWAS Commission employs the classical phases of the disaster management cycle, including forecasting, prevention, mitigation, preparedness, response and rehabilitation/development. Other major programme initiatives related to the subject of humanitarian affairs within the directorate are the ECOWAS Emergency Response Team,²¹ responsible for operational field assistance, and the Social Affairs Programme, responsible for nominal coverage of health issues. The quality of coordination within the ECOWAS structures, both internally (within the primary humanitarian functions) and in its extended relationships with the ECOWAS peace and security actors, remains a critical question.

Other relevant structures within ECOWAS and its mandate for humanitarian intervention

Regional Peace and Security Observatory System (Early Warning). The main aim of the establishment of the Regional Peace and Security Observatory System is to prevent conflicts. It consists of a situation room, located at the ECOWAS Commission and housed within the Early Warning Directorate, and observation and monitoring zones with four zonal bureaus in Banjul (The Gambia), Ouagadougou (Burkina Faso), Monrovia (Liberia) and Cotonou (Benin). The mission of the directorate is to collect data from member states, analyse these for humanitarian and security implications, and prepare reports for the ECOWAS Commission leadership. The directorate works in collaboration with the UN, the AU, regional economic communities, research centres and civil society. The reports present response options for the attention of the president of the ECOWAS Commission.

West African Health Organization. ECOWAS established the West African Health Organization (WAHO) as a specialized body to respond to health-related challenges within the region. WAHO has been at the forefront of responses to the EVD challenge, in partnership with the ECOWAS

Commission. Although the epidemic has currently subsided, the managerial and operational mechanisms between the ECOWAS Commission and WAHO must be strengthened. This will require actions related to effective collaboration, examination of the general state of coordination between both organizations and definition of strategic pathways for future engagement.

The ECOWAS response to Ebola

In 2005 the World Health Assembly adopted the International Health Regulations (IHRs)²² - the key mechanism for global disease preparedness and response; 196 countries around the globe agreed to implement them and the IHRs became a binding instrument of international law, entering into force on 15 June 2007. However, full implementation has regularly been postponed. The West African countries affected by Ebola did not fully comply with the IHRs, and no single African country has fully implemented the IHR core capacities.²³ With specific reference to West Africa, this is symptomatic of broader contextual realities of these societies - including the fact that many West African states fall within both the category of "least developed countries" and the category of "heavily indebted poor countries". As a result, response capabilities are likely to be weak given that these countries are characterized by poor health infrastructures and humanitarian coping capacities, as well as poorly synchronized security doctrines, architectures and pandemic preparedness schemes. This is not unique to the countries that were most affected by the 2015 epidemic, and in fact applies to all West African nations. The current situation requires ECOWAS member states to develop capacities in the three connected areas of health, security and humanitarian services. Mutually reinforcing doctrines, policies and operations must further be linked to allow an effective response in future. At the regional level, WAHO was a crucial player in the Ebola response, carrying out surveillance and responding to clinical and related challenges brought about by the epidemic. The ECOWAS Commission was involved in the development and implementation of an

Ebola response operational plan for authorization by heads of state and committees of health ministers, and also rallied efforts of actors within the ECOWAS region and beyond to combat the epidemic.

Setting an agenda for health security in the ECOWAS region

In elaborating an approach to EVD management, three phases can be identified: before the outbreak (pre-outbreak), during the outbreak (early stages) and after the outbreak (post-outbreak transition). Possible engagement by security services in health crisis response should be analysed in all three phases. While frameworks, principles and doctrines must be elaborated and institutionalized to allow the constructive involvement of security services in addressing health security issues, the phases yield particular opportunities and potentials for addressing outbreaks in a timely and effective manner. This applies to contributions at the levels of both national and regional security structures.

Pre-outbreak phase. At the national level, prior to an outbreak intelligence agencies should assist public health services in monitoring potential epidemics by collecting and analysing data. Although civilian health authorities are primarily responsible for disease surveillance, it is advised that intelligence agencies draw on these data and include them in national security planning and threat estimates.²⁴ Such a warning system can raise awareness among policy-makers and generate support to increase the security budget. High levels of preparedness by national security institutions might attract criticism,²⁵ given that the military could be perceived as neglecting its traditional mandate. But despite such concerns, most modern militaries perform very well in a variety of tasks, in terms of both their traditional mission and military operations other than war. These include peace support operations.

Early stages of an outbreak. The involvement of security assets in the early stages of an outbreak appears to yield the greatest potential for managing health crises. This was evident during the EVD epidemic, where early engagement by well-trained military assets could have made a critical

difference. For instance, the military could have assisted civilian authorities in maintaining public order, delivering humanitarian aid (which in turn is critical to maintaining public order), providing transportation to remote areas for health service personnel and coordinating service delivery. When the EVD outbreak had gained momentum, it could no longer be contained by national efforts alone and required intervention from other countries, particularly more economically developed countries. Notably, the potential of security assets and institutions is based on the assumption that the population have confidence in the political order and the state's institutions. Moreover, security institutions are expected to possess the required capacities and training to act with high levels of professionalism. At present, these premises remain mere assumptions in the West African region.

Post-outbreak transition phase. Security forces must prepare exit strategies during the response phase, and implement these plans on a gradual basis at the end of an outbreak. At this point an evaluation (debriefing) of the engagement should be undertaken and lessons should be identified, shared and integrated into training and doctrine for future missions.

Conclusion

The ECOWAS Commission can play an important role in dealing with possible future outbreaks of disease in West Africa in the short, medium and long terms. The ultimate goal remains the achievement of peace, security and development by aspiring to and surpassing the standards of developed countries. In the short term, the ECOWAS Commission should implement its pre-positioning and standby arrangements, as outlined in existing instruments. It should create a standing arrangement for responses to epidemics, with a planning cell located at ECOWAS headquarters. The ESF should be a composite cell operated in conjunction with the ECOWAS Emergency Response Team. In the medium term, involvement of the ECOWAS Commission could yield the greatest potential payoff. It might

prioritize outlining a civil-military coordination doctrine for the ESF which could be implemented in the armed forces of its member states at a later stage. The 1994 Oslo Guidelines,²⁶ which establish the basic framework for formalizing and improving the effectiveness and efficiency of the use of foreign military and civil defence assets in international disaster relief operations in times of peace, are crucial here. These guidelines recognize the sovereignty of the affected state and the primary responsibility of the military to provide humanitarian assistance on the state territory. They further define humanitarian assistance and the core principles by which it should be delivered (humanity, impartiality, neutrality), and categorize types of humanitarian activity (direct, indirect, infrastructural) that international military assistance might appropriately support.

Other important measures include the adaptation of guidelines for the use of military assets for the ESF and their application to member states. The ECOWAS Commission should integrate a health security doctrine in its security sector governance and reform efforts and support to member states' security institutions. Additionally, it should develop a regional health security management plan that covers border management and health monitoring at ports. Apart from developing a capacity-building strategy and strengthening the architecture for responding to health security threats, it is imperative that the ECOWAS Commission (specifically the Department of Social Affairs and Gender and the Directorate of Humanitarian and Social Affairs) works closely with WAHO, its member states, international organizations and private stakeholders to accelerate progress towards making the region safe and secure from pandemic and epidemic diseases.

It is crucial that greater emphasis is placed on the promotion of effective social organization within West African societies, as well as emergency education using a whole-of-government and whole-of-society approach, as a way of building resilient communities. This approach, drawn from a four-level applicative model for humanitarian affairs,²⁷ identifies the regional, national, subnational and local/community levels as the key areas for action. In this sense, effective public education with an emphasis on citizenship, leadership, civics, organization and problem solving will reinforce the ability of the population to build up resilience and

anticipate risks, including health security challenges. More specifically, public education and the promotion of effective social organization should enable citizens to identify specific risks and threats (e.g. disease outbreaks, terrorist threats, etc.) and build capacities to prepare for and respond to them. Containing epidemics will therefore require collaboration with state structures, including security forces.

The whole-of-government approach to effective social organization involves planning and coordination at vertical and horizontal levels of government and across various departments and agencies, particularly where coordination mechanisms are non-existent or insufficient. Identifying the key agencies that should take up responsibilities before, during and after an outbreak helps to avoid coordination loopholes which may affect information sharing and civic education and engagement. Identifying key departments and agencies can also help in coordinating state resources for active disease surveillance, incident tracking and response planning. Through its facilitative and convening modes of action, ECOWAS can contribute to the development of this practice in member states. Similarly, the whole-of-society approach places community-based resilience at the centre of pandemic preparedness and response. Communities are the first to experience and respond to disasters. However, national pandemic plans are often difficult to implement directly and unsustainable at the local level. In operationalizing the whole-of-society component, governments should further the development and subsequent deployment of a professional cadre of personnel assigned specifically to the role of community mobilization and engagement on a permanent basis. This includes mapping and engagement with actors in rural and peri-urban areas to build a culture of active consciousness towards positive health practices and the promotion of hygiene. The response to the Ebola epidemic highlighted that such an approach can yield collateral benefits, for instance reducing the transmission of common illnesses.²⁸ Furthermore, availability of a professional cadre allows a focal link to be established between national and community-based preparation and response, particularly in early warning and community communication. To this end, governments could either appoint a community engagement officer or train local volunteers.

For example, community-based volunteer networks in Vietnam fill the gap between households and the lowest levels reached by national surveillance systems.²⁹ In Nigeria the National Orientation Agency plays such a role in collaboration with the National Youth Service Corps.

Capacity building through education and civic leadership are instrumental in achieving effective societal organization. Knowledge can be tailored to the specific needs of the population through media sensitization, training activities and establishing a detailed training framework consisting of instructional manuals, guidelines and tools. Further practical steps in the whole-of-society approach include identifying historical experiences, highlighting possible health risks through active monitoring and promoting public hygiene and education through leadership. Providing civic education and organizing groups that are able to respond to potential outbreaks are important. From this perspective, effective social organization not only mitigates potential health crises but also facilitates improved coordination and response to potential threats. Effective social organization remains essential for several types of responses, such as in the case of the Ebola outbreak in West Africa.

The Ebola outbreak highlighted that ECOWAS must develop capabilities to confront future threats that pose a risk to regional security and stability. The integrated approaches discussed in this chapter should be taken into account at the strategic level. These approaches ensure continuity in resilience building for effective responses to future pandemics.

Notes

- 1 Sperling, J. (2015) "Regionalsecurity", *Oxford Bibliographies*, www.oxfordbibliographies.com/view/document/obo-9780199756223/obo-9780199756223-0048.xml?rskey=Lqza5T&result=1&q=regional+security#firstMatch.
- 2 Ibid.
- 3 African Union (2010) "Declaration on the African Union Border Programme and the modalities for the pursuit and acceleration of its implementation", 25 March, p. 2, www.peaceau.org/uploads/aubp-dec-e.pdf.
- 4 The term *jus cogens* refers to peremptory norms or fundamental principles of international law from which no derogation is permitted.
- 5 The member states are Benin, Burkina Faso, Cabo Verde, Côte d'Ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo. Mauritania withdrew from membership in 2005.

6 ECOWAS (2010) Revised Treaty, Abuja, p. 36, www.ecowas.int/wp-content/uploads/2015/01/Revised-treaty.pdf.

7 ECOWAS (1999) Protocol Relating to the Mechanism for Conflict Prevention, Management, Resolution, Peacekeeping and Security, Lomé.

8 Ibid.

9 Ibid.

10 Ibid.

11 ECOWAS (2008) “The ECOWAS Conflict Prevention Framework”, Regulation MSC/REG.1/01/08, http://old.ecowas.int/publications/en/framework/ECPF_final.pdf.

12 Ibid., Article 89.

13 Ibid., Article 93.

14 Kamara, A. (2013) “The role of the military in humanitarian crises response: A case for West Africa”, ALC Working Paper No. 10, African Leadership Centre, Nairobi, www.africanleadershipcentre.org/attachments/article/177/ALC%20Working%20Paper%20No.10%20Alicia%20Kamara.pdf.

15 The target date for the full establishment and functioning of the ESF was initially set for 2010; this was reviewed in 2009, with a new target of 2015.

16 ECOWAS, note 7 above, Article 22.

17 ECOWAS, note 11 above, Article 89.

18 Kamara, note 14 above, p. 19.

19 Ibid.

20 The ECOWAS Humanitarian Policy, developed in March 2012, aims to articulate the vision, mission, strategic objectives and core humanitarian principles on humanitarian challenges in the region.

21 The ECOWAS Emergency Response Team, coordinated by the Directorate of Humanitarian and Social Affairs, was conceptualized in 2001 and became fully operational in 2006. Its establishment is provided for in Articles 2(d) and 3(f) of ECOWAS, note 7 above.

22 World Health Organization (2017) “International Health Regulations”, www.who.int/topics/international_health_regulations/en/.

23 World Health Organization (2014) “Summary of States Parties 2013 report on IHR core capacity implementation”, www.who.int/ihr/publications/WHO_HSE_GCR_2014.10/en/.

24 This factor is closely linked to the potential use of pathogens by terrorists, and is reinforced when considering the possible effects of major disease outbreaks on public order and safety.

25 This issue is addressed in the subsequent paragraphs.

26 UN Office for the Coordination of Humanitarian Affairs (2007) “Oslo Guidelines – Guidelines on the use of foreign military and civil defence assets in disaster relief”, revised November 2007, <https://www.unocha.org/publication/oslo-guidelines-use-foreign-military-and-civil-defence-assets-disaster-relief>.

27 ECOWAS (2012) “Humanitarian affairs policy”, www.ifrc.org/docs/IDRL/Action%20Plan,%20ECOWAS%20Humanitarian%20Policy_en_1.pdf.

28 For instance, during the Ebola response in implementing the full package of interventions, community ownership, acceptance by the community and its involvement in interventions were key factors that led to a drop in Ebola cases in Liberia’s Lofa district in 2014.

29 Morotti, W., V. Briac and H. Papowitz (undated) “Community-based pandemic preparedness – Multi-sectorial action for safer, healthier and more resilient communities”, Towards a Safer World – Practical Approaches to Advance Disaster Preparedness, <http://towardsasafeworld.org/sites/default/files/TASWreportoncommunitypreparedness.pdf>.

Assessing the Role of the Mano River Union in Response to Global Health Crises: Lessons from the Ebola Epidemic in West Africa

Jonathan Sandy

Introduction

After the Ebola crisis in West Africa was gradually contained, global attention shifted towards assisting the severely affected countries in the Mano River Union (MRU) region - Sierra Leone, Liberia and Guinea - in their post-Ebola recovery efforts.¹ Alongside this effort, the need to conduct research and build on lessons learnt was identified as an important step in the prevention of, and preparation for, future outbreaks. Hence the main objective of this chapter is to assess the contribution and level of involvement of the MRU as a subregional organization in the prevention, response to and management of the 2014–2015 Ebola epidemic in West Africa. The chapter highlights the degree of partnership, cooperation and collaboration in responding to the crisis between the MRU Secretariat and other actors, including the African Union (AU), the Economic Community of West African States (ECOWAS), the UN Mission for Ebola Emergency Response (UNMEER), the African Development Bank and the World Bank. It concludes with identifying practical lessons and important challenges, and evaluates how future coherent engagement strategies can be enhanced between security and health sector institutions to advance preparedness, prevention, early warning and threat assessments, as well as responses to the potential outbreak of future health crises in the subregion.

Background and context

The MRU comprises the “parrot’s beak” subregion of West Africa: Liberia, Sierra Leone, Guinea and Côte d’Ivoire. It was established on 3 October 1973 as a customs union by Presidents William Tolbert of Liberia and Siaka Stevens of Sierra Leone, and enlarged by the accessions of the Republic of Guinea and the Republic of Côte d’Ivoire on 25 October 1980 and 15 May 2008, respectively.² The MRU was envisioned to promote regional economic cooperation and integration among member states. Its strategic objectives include expansion of trade through the elimination of all trade barriers; cooperation in expansion of international trade; creation of favourable conditions for mutual production and capacity; and securing fair distribution of the benefits from economic cooperation. To realize these objectives, a joint MRU Secretariat was established in Freetown in January 1974 to facilitate and coordinate its activities. The MRU was most active in the period 1977–1981, during which it met its objectives through the introduction of a common external tariff at the intra-union trade level and the liberalization of goods of local origin. As an urgent priority the MRU undertook feasibility studies aimed at promoting joint investment projects in the areas of cement manufacturing, wood-based industries, textiles, rubber, fibre bags, fruits, vegetable- and palm-oil processing, utensils and animal ware. Moreover, it identified the importance of MRU industries and pre-investment studies. Country sponsorships were actively pursued in several areas: agricultural implements and tools, textiles and knitwear, industrial sacks, industrial rubber products, cassava pellets, salt and more. However, nowadays these measures exist more on paper than in practice, and have had little impact on the economic policies adopted by the MRU member states. In 1982 Peter Robson observed that after years of existence, the impressive work of the MRU had little impact on trade or development of its member states and citizens.³ Authoritarian rule, violent armed conflicts, the growth of cross-border organized crime, money laundering, human trafficking, drugs, dealing in small arms and light weapons and extreme poverty continue to be the most visible symptoms of instability in the region. These threats have progressively affected MRU

member states and the institution, and have led to prolonged economic hardship and political instability. The conflicts in Sierra Leone alone produced an estimated number of 70,000 deaths, most of them civilians.⁴

In the recent past, political unrest in Côte d'Ivoire and Guinea has fuelled massive social displacement. In addition, a growing culture of impunity has intensified the development of criminal practices in the subregion. Consolidating the fragile peace and security in the MRU basin remains a top priority and an important challenge. The fragility in the subregion is closely linked to its long history of conflict and the existence of common borders between these countries. Given the subregional dimension, it is crucial to promote regional cooperation, good governance, peace, security and economic integration to avoid a relapse into political instability and conflict. Ebola virus disease (EVD) emerged in the midst of this project to consolidate peace and security in the MRU region and West Africa overall. The epidemic threatened human lives and undermined social cohesion, economic prosperity and national and human security in the region. Guinea, Sierra Leone and Liberia in particular experienced the unprecedented dimensions of this health crisis, which was declared a public health emergency of international concern by the WHO in August 2014.⁵ According to the WHO, this outbreak of EVD was first reported in December 2013 in Forest Guinea, and dramatically evolved and spread to Liberia, Sierra Leone, Mali, Senegal and Nigeria. It claimed 11,299 lives from an estimated 28,599 reported infections, mainly in the three most severely affected countries: Guinea, Liberia and Sierra Leone.⁶

In 2014 the AU observed that the current Ebola outbreak was the worst since the first cases occurred in Africa in 1976. The epidemic had a major socio-economic impact on the MRU countries, West Africa and Africa as a whole. The World Bank assessed that West Africa was bound to experience a potential economic loss of US\$32.6 billion by the end of 2015 if the epidemic spread into neighbouring countries.⁷ In addition, the epidemic added new pressure that deepened existing mistrust between the state and society, frayed social cohesion and increased the risk of social disorder. UN Security Council Resolution 2177 (2014) states that "the peacebuilding and development gains of the most affected countries concerned could

be reversed in light of the Ebola outbreak ... and, unless contained, may lead to further instances of civil unrest, social tensions and a deterioration of the political and security climate".⁸ Bilateral, regional and multilateral organizations, private and individual donors, corporate institutions and friendly nations made substantial contributions to the humanitarian effort to combat the disease and support preventive and recovery efforts in the three worst-affected countries. In addition, it is increasingly recognized that security sector institutions, particularly the army, police, intelligence and immigration services, were essential in responding to the different stages of the Ebola outbreak in the affected states.

Scope and level of involvement

The involvement of the MRU Secretariat has been, and continues to be, based on a number of policy instruments and protocols, in particular the Fifteenth Protocol to the MRU Declaration on Cooperation on Defence, Security, Internal Affairs and Foreign Affairs (2000).⁹ This calls for the establishment of structures, systems and mechanisms to facilitate information gathering and analysis of security issues, and dissemination of appropriate security information to stakeholders with a view to ensuring common understanding and appreciation of developments on the security front. It further suggests monitoring borders, holding appropriate meetings to understand and address security issues and concerns, and creating an atmosphere for confidence building within and among communities, especially along the borders. Overall, the protocol aims to make national and subregional human security the business and responsibility of all security institutions.¹⁰

Within this framework, the MRU Secretariat initiated several interventions. These included, first, the provision of direct financial contributions as "seed money" to Guinea, Liberia and Sierra Leone in the wake of the initial Ebola outbreak. It is argued that these initial donations motivated other bilateral and multilateral organizations to increase support rapidly to the three affected states. Second, the MRU Secretariat

convened and continued to facilitate higher-level intergovernmental technical, policy and decision-making meetings that enhanced the process of developing coherent subregional approaches, programming and operational interventions. For example, from July 2014 to the end of 2015, seven technical meetings, four interministerial meetings and three heads of state summits were held in response to the Ebola outbreak. Third, the MRU initiated a cross-border health assessment mission in partnership with the West African Health Organization (WAHO) prior to the outbreak; the preliminary mission recommendations were used to provide emergency medical assistance in affected strategic border towns. Fourth, in the security sector the MRU continues to support cross-border checkpoints. Fifth, at the operational level the MRU Secretariat facilitated cross-border platforms and interactive meetings of Guinea's President Alpha Condé and Sierra Leone's President Ernest Bai Koroma with local authorities, for example in the border regions of Kambia (Sierra Leone) and Forécariah (Guinea). Finally, the MRU carried out national consultative meetings and engaged traditional leaders, youth, women, the media and the private sector. Reports of these meetings were shared with member states, and supported the process of formulating their respective national recovery plans.

The latest involvement is the elaboration of the three-year MRU Post-Ebola Recovery Advocacy Programme (2015–2017).¹¹ Its broad aim is to harmonize approaches to infectious disease threats, especially emanating from the border zones or of a cross-border nature. In this way the programme aims to ensure zero new infections and strengthen regional integration; to build on national experiences in the fight against EVD; and to develop a more proactive MRU system that would be able to respond appropriately to future occurrences. The specific objectives include instituting policies, actions and programmes to strengthen resilience to future threats and remedy the weaknesses at the subregional level that were revealed by the Ebola outbreak; reprioritizing current or planned initiatives within the MRU that could support its recovery efforts, including accelerating the implementation of planned programmes; contributing to the creation of an enabling environment that allows MRU member states to restore their

economic growth potential and exploit available opportunities to enhance inclusive economic growth and development within the subregion; strengthening the achievement of the economic development agendas of the affected member states; ensuring restoration of basic education service delivery systems; and building resilience in post-EVD MRU member states.

Partnerships, cooperation and collaboration

Leveraging partnerships through the MRU Secretariat proved useful in enhancing international cooperation and collaborative arrangements with other actors, and such cooperation is crucial for jointly addressing global health crises like Ebola. For instance, the MRU Secretariat successfully organized several higher-level technical and interministerial meetings with UNMEER, the AU, the African Development Bank and ECOWAS. These meetings helped generate discussions and enhance the process of decision-making and development of coherent policies, programmes and standard operating procedures (SOPs). Logistical support provided by UNMEER facilitated the meetings. Upon conclusion of its mission, UNMEER donated six vehicles to the MRU Secretariat.¹² Furthermore, with the AU and ECOWAS, the African Development Bank Ebola crisis response project for border communities, which supported the training and deployment of staff, was successfully implemented.

Lessons identified

Understanding the meaning of Ebola

At the start of the outbreak knowledge about Ebola was scarce, and local communities in particular had little understanding of the virus. As a result, the level of trust was low at the community level in messaging, advocacy, public awareness and education, whether on clinical, psychological or hygienic topics. There was a need for a quick and thorough understanding of the Ebola virus, its transmission and the implications for human survival and disease.

Political leadership

The Ebola outbreak highlighted that the MRU's political leadership should have immediately considered and treated the virus as a serious threat to human security and to economic and political stability in the subregion. The executive authorities in the three most-affected countries initially treated the crisis exclusively as a public health emergency, and thus a matter of concern for the Ministry of Health. As a result they put strategic and operational coordination in the hands of health sector professionals, rather than activating their respective national security systems and cross-border coordination architecture. A timely executive decision-making process, such as the response of Côte d'Ivoire, which went beyond treating the crisis as a public health emergency, would have ideally triggered a multiagency response and coordination mechanisms by national governments and among the MRU member states.

Delays in formulating coherent national response policy frameworks

The initial outbreak of EVD occurred at the intersection of the three affected MRU member states, in a small village in Guinea. From there it rapidly evolved into a subregional phenomenon. The response by the MRU Secretariat was delayed: it should have responded quicker by convening technical and high-level meetings to recommend a harmonized approach and taken immediate action in emergency response and stabilization intervention.¹³ In future the MRU Secretariat needs to be proactive rather than reactive in the prevention of and response to widespread and cross-border health crises such as Ebola. Immediate collective stabilization action by all member states could have contained the virus at a much earlier stage after its outbreak on 26 December 2013.

National approaches versus a subregional integrated response strategy

Based on interviews conducted in August 2015, MRU Secretariat staff recognized that no single government was able to prevent, manage and

respond to the Ebola epidemic alone. During the initial stage of the outbreak, national governments worked in silos on potential response mechanisms and preparedness: an integrated MRU approach and response strategy was missing. However, this integrated approach began to emerge with the help of the WHO, UNMEER and ECOWAS, and has proved useful in developing and coordinating both national and international efforts.

Engaging cross-border peace and security structures and institutions

While an MRU peace and security architecture is in place to support operational response mechanisms across common border communities, this architecture is weak. The affected member states already faced severe institutional constraints, including inadequate governance systems, underresourced health capacities and weak security sectors; as a result, they were unable to respond to the sudden and rapidly evolving epidemic. State security forces continued to play a central role in the Ebola response in all three countries, but their operational capabilities were weak. They lacked sufficient training, logistics, fuel, stipends and rations to engage in effective border patrols and management of checkpoints and border posts, immigration offices and other key tasks. Coordination, integrated planning and assessment as part of the multiagency threat and risk assessment at airports, maritime and land border crossing points have been irregular. Human rights observers have documented cases of extortion and excessive use of force by security forces responding to the Ebola crisis, notably at cross-border checkpoints and during the enforcement of quarantines. Observers also reported that the deterioration in health security conditions resulted in unrest, given that some patients were turned away from health facilities. All of this exacerbated the rapid spread of EVD across border communities in the MRU region.

Important challenges

National security in a globalized world, and the fragmentation of the Ebola response strategy by member states

Traditionally, national security decision-making processes take into account the assessment of both internal and external threats. Moreover, globalization and regionalism present challenges as well as opportunities. This was evident in the MRU region during the Ebola crisis. Arguably, the age of globalization and regionalism requires a new international system based on democratization of decision-making processes and information sharing by nation-states at the national, subregional, continental and global levels. This, in turn, creates an increasing dependence on global governance structures such as the WHO and the UN Security Council, and regional multilateral organizations such as ECOWAS and the AU for strategic advice and decision-making. This also applies to global health crises such as EVD. National security threat assessments and early-warning systems must be strengthened so that they are able to respond adequately to the threats posed by the age of globalization to human security.

Lack of cooperation

International advisory support in response to the Ebola crisis was provided only to the health sector and not to other areas, including the security sector, as part of a whole-of-government approach. Moreover, this support did not serve to empower or entrust responses to higher-level executive decision-making bodies such as the affected states' national security councils (NSCs). For instance, relationships between the Sierra Leonean Ministry of Health and Sanitation, the WHO, other specialized UN agencies, the Sierra Leonean Office of National Security (ONS) and the Secretariat of the Sierra Leonean NSC (which is responsible for early warning, threat and disaster risk assessments) were not explored. The response was not anticipated or considered to be a joint action. It is evident that disease epidemics, like all man-made or natural disasters, require effective cooperation and

collaboration between the health sector and other relevant public and private sector institutions, including the security sector. The MRU offers an important opportunity to ensure that ministries responsible for the primary security forces and institutions work together with those responsible for public health management within the framework of the Fifteenth Protocol of the MRU. Strengthening working relationships at the operational and tactical levels, across common border regions and zones, can empower member states' governments to make correct and timely decisions in response to future global health crises such as Ebola.

Lack of standard operating procedures

At the institutional level, the Ebola outbreak revealed that the primary security forces and institutions lacked experience based on tested processes.¹⁴ There were no SOPs to guide their operational support to the health sector in preventing or responding to EVD. Although relevant SOPs were available elsewhere, it must be noted that implementing joint procedures between French-speaking and English-speaking security forces and health professionals across border points posed a serious challenge.

Transparency and accountability

At the outset, some member states engaged in *ad hoc* disbursement of finances to tackle EVD. Standard financial rules and procedures, including procurement standards and bidding processes, were not followed; hence initial national audit reports indicated a high level of corruption in the use of Ebola funds. For example, the World Bank auditor-general's report on the use of Ebola emergency funds suggests that in the earlier stages of the outbreak in Sierra Leone the misuse of funds was to blame for the government's inability to design a timely and robust anti-Ebola response plan. The lack of accountability regarding the use of Ebola response funds remains a source of mistrust.¹⁵

Accessibility to affected communities

The three most-affected countries are characterized as either post-conflict or fragile states. Given that they are considered to be among the poorest states in the world, they have limited infrastructure. Thus access to affected communities, especially along borders, proved to be an almost impossible task in the MRU region. Improving road networks and health infrastructure in rural areas in the MRU region is crucial.

Funding

Funding remained a critical challenge. The MRU Post-Ebola Recovery Advocacy Programme will require substantive donor engagement if the security and health sectors are to be adequately supported.

Recommendations

Based on the analysis above, a number of recommendations can be put forward.

- *Mapping of institutional capacities among the security and health sector.* To reduce effectively the risk of future outbreaks and global health crises such as Ebola, the MRU Secretariat must conduct a mapping exercise to identify the strengths and weaknesses of security and health sector institutions, particularly those deployed in borderlands. Gathering and analysing such information can assist in developing joint training and capacity-building activities.
- *Adoption of the concept and practice of stabilization.* To ensure a coordinated and strategic approach to subregional prevention, preparedness, stabilization and response mechanisms for the MRU region, a policy dialogue must take place that involves all relevant ministries, agencies, donors and other relevant stakeholders with the mandate to engage in a multiagency arrangement in all areas of concern.
- *Integrated planning and assessment processes.* Security sector capacities must be properly used. This involves formulating

integrated and strategic planning and threat assessment processes, which in turn allows a more collective, timely, well-informed and well-structured response to future outbreaks.

- *Sustained dialogue emergencies.* The handling of the Ebola crisis created tensions, and these have sometimes resulted in violence and appear to have threatened the security and stability of the region. It is therefore crucial for the MRU Secretariat, and its local and international partners, to continue providing a platform for building trust and confidence among national governments. This platform should also encourage, inform and support the affected local populations, and serve to consolidate their understanding of the effect of EVD and help demystify their perceptions of the epidemic. In addition, it is important for national governments and regional and international actors to support sustained dialogue initiatives to resolve tensions as they emerge.
- *Creation of a reliable international warning and response mechanism.* To allow member states to respond early to an infectious disease outbreak, an international early-warning and response system should be established, based on which affected members can notify their status and accept the need for international assistance.
- *Common training and capacity building.* To cooperate effectively, both security and health sector institutions must standardize training and capacity-building initiatives across the MRU states. Technical guidance notes and SOPs for security and health sector professionals on the prevention of and response to global health crises, based on harmonized principles, are a priority.
- *Advisory support.* To strengthen the capabilities of national governments to make rational executive decisions and support a subregional approach to future responses, it is important to provide advisory support as early as possible. Furthermore, it is crucial to facilitate the embedding of strategic advisers in ministries of health, strengthen their capacity and create opportunities for them to engage in health security issues at the NSC or cabinet level.

Conclusion

EVD broke out in Guinea and rapidly evolved into a subregional phenomenon. This prompted the MRU's involvement to ensure a collective response by affected member states. Cross-border communities in the

MRU region tend to share similar cultures, customs and social bonds, and address their day-to-day concerns based on joint structures that exist at local and community levels. While a well-coordinated MRU subregional and collective response to the Ebola outbreak was needed, it was critically delayed. This exposed the limited capacity of national health systems, especially infrastructure and facilities in border areas. Despite these limitations, the MRU Secretariat proved useful for addressing cross-border threats such as Ebola. However, it will require funding and advisory support to recover from the recent outbreak and prevent future ones. It must also build up regional health security advisory support capacities. International assistance will help train and enhance the ability of health and security institutions to work in a collaborative manner in detecting, preventing and responding to future outbreaks.

Notes

- 1 Up to November 2015 the MRU subregion recorded more than 28,599 (confirmed, probable and suspected) cases and 11,299 deaths, i.e. nearly ten times the number of total deaths from all other Ebola outbreaks combined. World Health Organization (2015) "Ebola situation report - 11 November 2015", <http://apps.who.int/ebola/current-situation/ebola-situation-report-11-november-2015>.
- 2 Mano River Union (undated) "History", <https://mru.int/history/>.
- 3 Robson, P. (1982) "The Mano River Union", *Journal of Modern African Studies*, 20(4), pp. 613-628.
- 4 See <http://web.undp.org/evaluation/documents/thematic/conflict/SierraLeone.pdf>.
- 5 World Health Organization (2014) "Ebola virus disease update - West Africa", 8 August, www.who.int/csr/don/2014_08_08_ebola/en/.
- 6 World Health Organization, note 1 above.
- 7 World Bank (2014) "The economic impact of the 2014 Ebola epidemic: Short- and medium-term estimates for West Africa", working paper, 7 October, <http://documents.worldbank.org/curated/en/524521468141287875/The-economic-impact-of-the-2014-Ebola-epidemic-short-and-medium-term-estimates-for-West-Africa>.
- 8 UN Security Council (2014) "UNSCR 2177", 18 September, UN Doc. S/RES/2177, <http://unscr.com/en/resolutions/doc/2177>.
- 9 In general, overall guidance and direction of the MRU interventions come from national laws, ECOWAS and AU protocols and other international conventions relating to global and regional peace and security threats.
- 10 Mano River Union (undated) "Joint Security Committee on Peace Security and Defense", press release, mru.int/joint-security-committee-on-peace-security-and-defense/.
- 11 At their Third Extraordinary Summit on 28 June 2015 the MRU heads of state adopted the subregional Ebola Recovery Programme, as well as the institutional and financial frameworks.
- 12 Interview with Deputy Secretary-General Linda Koroma, MRU Secretariat, August 2015.

- 13 IRIN News (2002) "Member countries agree on border security", 8 March, www.irinnews.org/news/2002/03/08/member-countries-agree-border-security.
- 14 Haenlein, C. and C. Godwin (2015) "Containing Ebola: A test for post-conflict security sector reform in Sierra Leone", *Stability: International Journal of Security and Development*, 4(1), pp. 1-15.
- 15 World Bank, note 7 above.

Perspectives from the International Organization for Migration

Davide Mosca and Kolitha Wickramage

Introduction

This chapter reviews the involvement of the International Organization for Migration (IOM) with security sector stakeholders, with specific emphasis on the organization's response to recent global health emergencies. The chapter is divided into four parts. The first presents a brief overview of the IOM's history and scope of engagement with security sector actors in health interventions in humanitarian emergencies. The importance of population mobility in the context of infectious disease prevention and response is highlighted, as is the role security forces can play in mitigating cross-border transmission. The second part elaborates the rationale, experiences and lessons learned from IOM engagement with the security sector in the outbreak of Ebola virus disease (EVD) in West Africa from 2014 to 2015. The third part critically reviews existing guidance tools and legal frameworks in humanitarian health and security sector engagement, and briefly charts the IOM's retrospective application of such tools in its humanitarian health operations. The chapter concludes by providing key areas for strengthening engagement with security sector actors during health crises.

Background*Brief overview of IOM humanitarian health action and engagement with the security sector*

The IOM's involvement in health responses following large-scale humanitarian emergencies can be traced back to medical evacuations of stranded migrants in 1951 following the establishment of the organization in the aftermath of the Second World War - a role that the organization coordinates to this day through its Migration Health Department. In recent decades the IOM has implemented health programmes in humanitarian emergencies, post-conflict contexts, natural disasters and health emergencies. These include, for instance, the protracted conflicts in Yugoslavia (1992-1997), Cambodia (1999-2000), Iraq (2003-2004), Sri Lanka (2009-2015), Bosnia and Herzegovina (2010-2013) and Colombia (2014-2015); natural disasters such as the tsunami in Aceh, Indonesia and Sri Lanka (2004-2005), earthquakes in Haiti (2010) and Nepal (2015), and floods in Pakistan (2010); and infectious disease outbreaks such as highly pathogenic avian influenza (2008-2010), Middle East respiratory syndrome coronavirus (2012) and the Ebola outbreak in the West African region (2014-2015). The two public health emergencies of international concern (PHEICs) to which the IOM has responded are the influenza A (H1N1) pandemic that emerged in 2009 and the EVD outbreak in 2014.

In undertaking a retrospective analysis of IOM health action from 1990 to 2015, we found that it has primarily engaged with three types of security sector actors:¹ military forces of a country affected by a crisis or disaster event; foreign military forces sent to conflict and disaster settings to give logistical assistance and/or direct medical care, maintain political and community stability and/or provide transportation; and border security and immigration authorities. The IOM has undertaken a wide range of humanitarian health interventions in partnership with these security actors. These include coordinating medical evacuation of stranded migrants from Iraq in 2003; enhancing infection prevention and control (IPC) capacities of immigration and border security officials at international points of entry (POEs) in West Africa (2015); establishing a national border

health information system jointly with civil, aviation, military, immigration and health officials in Sri Lanka (2014); partnering with US military medical services for treatment and referral of victims of the tsunami in Banda Aceh (2004); and evacuation of patients with spinal injuries following the earthquake in Haiti (2010). One intervention domain where the IOM works intensively with security sector actors is the disarmament, demobilization and reintegration (DDR) process. Providing health services to ex-combatants is a key component in such programmes.²

Since 1992 the IOM has supported the design and implementation of some of the largest DDR operations in the world, including in Afghanistan, Angola, Bosnia and Herzegovina, Cambodia, Colombia, Guatemala, Haiti, Indonesia and Sri Lanka. These operations have assisted thousands of former combatants and their dependants to return to normal civilian life after many years of conflict and, as such, have contributed to national and regional reconciliation and stabilization, preventing further negative migration. DDR operations are complex and often characterized by continuing security risks, weak or absent public administration and protracted discussions over issues not sufficiently explained or settled in peace negotiations or agreements. There are many interrelated tasks, including political, military, humanitarian, security and socio-economic activities. Experience has shown that neglecting one of these components can quickly lead to the failure of an entire process. The right to health of demobilized soldiers and their families is a fundamental and essential feature of the DDR process. Each individual's access to healthcare, or continuity of care for those with chronic conditions (e.g. tuberculosis, HIV/AIDS, disabilities, mental or psychosocial health conditions), should be maintained during demobilization and while ex-combatants reintegrate into civilian life, even if this process takes a very long time. Thus the IOM's approach to DDR health is to ensure integrated and coordinated linkages among health authorities, military actors and DDR-related non-health governmental authorities.³ The IOM's global experiences with the DDR process show that health services are a desired and expressed need of ex-combatants, child soldiers, women associated with armed forces and their families, particularly in settings where health systems have collapsed due

to prolonged conflicts. Conflict-affected communities are not only exposed to physical injuries and disabilities, communicable and non-communicable diseases, and mental and/or psychosocial problems, but they are also often excluded from the provision of health and social services by the state. In some cases women and children are active participants in an armed struggle, increasing the risk of threats to their physical, emotional and social well-being, and triggering long-term consequences. Special consideration within the IOM's DDR health programmes is given to the rights and well-being of children in armed conflict, as well as to the needs of vulnerable groups such as female combatants, families of demobilized soldiers and disabled or chronically ill soldiers. Table 18.1 provides a brief overview of such interventions since 1992.

The IOM's engagement with security sector actors extends well beyond the acute emergency and post-disaster response phase to long-term recovery and capacity-building programmes aimed at strengthening health systems and supporting community resilience. Such efforts have included strengthening health and border management systems at the national level and across regions. In Sri Lanka the IOM has engaged with the Ministry of Health, the armed forces (army, air force and naval authorities), the immigration and border management authority, the atomic energy authority, animal health authorities and the Ministries of Foreign Affairs, Tourism and Finance to build capacities at airports and seaports to respond to PHEIC events. This includes the establishment of a border health information system, standard operating procedures (SOPs) and training for security sector actors (immigration, police and military), including desktop and live simulations to address health security threats.

The IOM's approach in responding to infectious disease outbreaks of public health importance

Human mobility is a key factor in the spread of diseases across borders and is crucial to address global health security challenges. In today's globalized world an unprecedented number of people are on the move along multidirectional, seasonal or circular pathways within and across borders.

Table 18.1: Examples of IOM health interventions in DDR programmes

Working in close collaboration with government, health and defence authorities as well as other relevant partners, the IOM's health interventions within DDR processes have included the following.

- Provision of emergency medical services at demobilization sites and assembly/ cantonment areas.
- General health and psychological/mental health assessment, documentation and confidential data management for demobilized soldiers' health condition(s).
- Treatment, follow-up and/or facilitating referrals for communicable diseases such as tuberculosis, malaria and sexually transmitted infections, including HIV/AIDS.
- Treatment, follow-up and/or referrals for non-communicable diseases such as hypertension and diabetes.
- Identification of mental health problems; use of linkage and referral system with existing outpatient mental health clinics for appropriate treatment and counselling.
- Development of initiatives to provide psychological support, social care, recreational community activities, self-help groups and community-based awareness-raising campaigns.
- Documentation of physical disabilities and conditions for physiotherapy and referrals for rehabilitation, including provision of prostheses or other benefits.
- Voluntary counselling and testing, and referral for management of HIV infection; provision of condoms.
- Treatment and counselling for cases of substance addiction, and psychosocial reintegration support.
- Close coordination and collaboration with national and local health counterparts, including technical advice and support in planning, needs assessments and the delivery of healthcare services.
- Travel health assistance, including medical escort services.
- Reconstruction and rehabilitation of primary healthcare services in areas of return, including capacity building for health and non-health personnel and support for national programmes on tuberculosis and malaria.

The IOM supports member states to develop practical, evidence-informed intervention strategies and policies to protect and promote the public health of migrants, mobile populations and communities, such as those stemming from health emergencies due to pandemics. The IOM is committed to the Global Health Security Agenda that aims to prevent, detect and respond to disease outbreaks and other emerging health threats while minimizing the impact on cross-border movement, trade and economic activity. Building resilience of communities and systems (such as health, immigration and border security) is a key part of the IOM's strategy in responding to health emergencies. As the leading international organization on migration, the IOM's approach to responding to outbreaks of diseases such as EVD and highly pathogenic avian influenza is particularly focused on the dynamics of human mobility in propagating disease spread. The IOM's approach is outlined in its framework on health, border and mobility management (HBMM),⁴ which provides a platform to develop country-specific and multicountry interventions to support the goal of improving prevention, detection and response efforts for infectious disease outbreaks such as EVD, and for health threats along the "human mobility continuum". At the most basic level, the continuum captures human mobility dynamics at origin, transit, destination and return points. A critical pathway is the cross-border movement of people across sovereign borders of two or more states. Such mobility dynamics for the purposes of formal and informal trade, culture, employment, education and seeking healthcare remain an essential part of life for many communities worldwide.

Lessons learnt from IOM engagement with the security sector in the EVD outbreak

The IOM's engagement with the security sector in the EVD response in the three affected countries of Sierra Leone, Liberia and Guinea, and in surrounding "ring" countries such as Mali and Guinea-Bissau, included foreign military forces, border management authorities and border security officials. The IOM's cooperation with the security sector in the EVD

outbreak response was anchored along three trajectories (see Table 18.2). The first trajectory involved the establishment of healthcare facilities and capacities for the management of EVD cases. This included engagement with foreign military medical services in the construction of three Ebola treatment units (ETUs) that were managed and operated by IOM medical teams. The second pillar involved engagement with border security guards, immigration and law enforcement officials in both affected and ring countries in implementing the HBMM framework. At the core of HBMM is the understanding that mobility is a continuum that extends well beyond the physical or regulated border areas, such as the official POEs as stipulated in the 2005 International Health Regulations (IHRs). Intervention, in the form of the establishment of flow monitoring points (FMPs), mainly took place in immigration and border posts at international points of entry (airports, seaports and ground crossings) and dynamic border crossings along land and water routes. Training and capacity-building activities for local, state and regional authorities formed the third thematic pillar. Examples of key interventions within each of these thematic areas and the type of security sector actor involved are summarized in Table 18.2.

Establishing Ebola ETUs

A foreign military medical facility, the Monrovia Medical Unit staffed by officers of the Commissioned Corps of the US Public Health Service, was established in the immediate aftermath of the EVD outbreak in Liberia, and cited by a senior IOM project manager as a major factor in ensuring “medical protection for humanitarian actors that were engaged in the acute phase of the EVD response”. The military medical facility provided services to international and national ETU staff, giving humanitarian workers more confidence in moving forward in their field operations while their own ETUs were being built. The speedy and successful scaling up of the number and locations of ETUs outside the capital city was mainly due to the fast-paced engineering capability and the capacity for large-asset movement and rapid logistics, clearly evident in the way ETUs were built by military personnel. In the early stage of the response there were limitations, with some key

design elements within ETUs that were not immediately adapted to IPC practices. These included, for instance, lack of a dedicated phlebotomy area, appropriate toilet facilities, ventilation and water points, and clinic floor materials that were not suited to high-volume use. Upgrading and retrofitting ETU facilities to make them viable for operational use had to follow after the hand-over from military actors to humanitarian agencies.

An important lesson learned was the need for early collaboration between humanitarian and military actors in the design of optimal ETUs to manage resource constraints, IPC requirements and cultural competencies. Various inflexible feedback mechanisms, or as a field operational manager stated, “algorithmic thinking”, that at the time characterized the military apparatus may represent a challenge in civil-military partnerships. As one programme manager stated in the course of the response: “If they [the military] allowed civilian humanitarian partners to collaborate with them more to solve problems that would be ideal. However, we totally understand that even if the field officers wanted to, they had limited scope for flexibility due to internal controls and systems that are part of the military apparatus.”⁵ Additional flexibility or funding for humanitarian actors to work alongside the military is important.

Training and capacity building for border security and law enforcement officials

Experiences at airports and land ports yield useful insights for training and capacity building for border security and law enforcement officials.

Airport experiences. Border security officials involved in health screening at airports viewed it as a largely “tiresome imposition” on the local population that met with a lot of reluctance. There was resistance by border officials to continue screening practices. The military and police were embedded at numerous health-screening checkpoints to “enforce” screening operations: their assistance made it easier for border security officials to ensure compliance. During the “getting to zero EVD cases” phase, the military scaled back operations, with emphasis given to border security staff to maintain compliance with screening processes and protocols.

Table 18.2: Security sector engagement within the IOM’s Ebola response activities (2014–2015)

Intervention area	Security sector actor/s	Examples of interventions
Establishing healthcare facilities/ capacities for management of EVD cases	Foreign medical corps	<ul style="list-style-type: none"> ▪ ETUs were initially built by foreign military forces and transferred to the IOM after retrofitting of the facility by the IOM to suit clinical management; the IOM managed three ETUs in Liberia at Tubmanburg, Sinje and Buchanan ▪ Provision of clinical training; support of access to existing healthcare and referral services to ensure continuity of healthcare for affected communities; engagement in border and community health needs assessments and gap analyses to inform border health authorities and mitigate cross-border and health risks stemming from reimporting Ebola into Liberia
Enhancing HBMM capacities	Immigration and border guards/ security officials, law enforcement officers (police), foreign military officers	<ul style="list-style-type: none"> ▪ Health screening and establishment of SOPs at international airports and POEs in Sierra Leone, Mali, Ghana and Côte d’Ivoire, and at various internal checkpoints in Sierra Leone, Guinea, Liberia and Mali ▪ Enhancing capacities of border security officials to contribute to monitoring mobility flows and traveller sensitization at 15 POEs in Mali, three in Guinea, seven in Liberia and ten in Sierra Leone ▪ EVD preparedness activities, such as training border personnel, surveillance and reinforcement of community engagement in Côte d’Ivoire, Liberia, Senegal, Burkina Faso and Ghana ▪ Rehabilitation of border posts and prefectural emergency operational centres in Côte d’Ivoire, along the border with Liberia and Guinea and in Guinea; and improvement of IPC measures at border posts in Liberia ▪ Strengthening the capacity of border health and non-health staff to identify and refer suspect EVD cases using appropriate personal protective equipment (PPE) and IPC procedures in three affected and five ring countries
Training and capacity building of local authorities	Immigration and border guards/ security officials, law enforcement officers (police), foreign military officers	<ul style="list-style-type: none"> ▪ The Ebola National Training Academy in partnership with the College of Medicine and Allied Health Services in Sierra Leone provided modular training on clinical, IPC and PPE practice; mobile training teams deployed to undertake training in remote border areas; 598 national participants including security sector personnel were trained

The IOM worked with the foreign military health unit, airport authorities and the Sierra Leonean Office of National Security to develop an innovative approach to ensure health protection of staff working at airports and boost IPC practices for suspected EVD cases within the airport. Real-time digital mapping technologies were used to locate all staff accessing the airport and to check SOPs developed at the POEs.

Land border experiences, including collaboration with military police in the establishment of FMPs. In Kambia (Sierra Leone, bordering Guinea), 150 military personnel enforced and carried out health-screening operations at 53 border control posts. IOM “roving monitors” on motorbikes monitored and supported the health-screening and mobility-mapping activities of these military personnel at all the posts. The IOM provided intensive training, health-screening supplies, data capture, information technologies and reporting capacities to military and border security officers. The military and police were required at FMPs to enforce health screening and traveller participation in origin/destination surveys. The IOM has no authority to oblige traveller participation in any of the public health interventions and data collection initiatives carried out at borders. It trained and partnered with both military and police forces to monitor and screen travellers effectively using FMP methodologies detailed in the HBMM guide, including respect for the safety and dignity of travellers and compassionate management of cases. FMPs were established at very strategic locations, typically installed at points where roads merged and intersected to avoid inconvenience for travellers. However, corruption is perceived to be widespread in West Africa, and “impromptu” and non-strategic checkpoints are known as places where some military and police have been documented as extorting “passage fees” from travellers. Thus there was a risk that an international organization’s reputation could be damaged by mere association with military or police at these checkpoints.

Limitations of existing international legal frameworks and guidance tools for security sector engagement in health emergencies

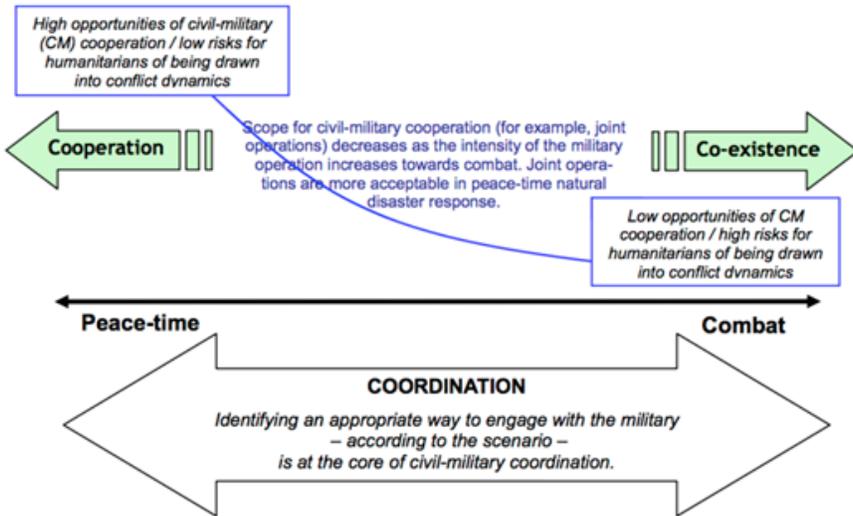
Within the humanitarian arena there are undoubtedly contexts in which engagement of the military in responding to crises is paramount. The superior logistical capacity of military actors is essential in conducting search and rescue operations for mass casualty incidents in highly treacherous terrains, such as rescuing stranded communities in mountainous regions after landslides. In resource-poor settings, the military is often the sole actor with the capacities to respond quickly and effectively by saving lives. Yet areas of concern remain, especially in countries where trust in the security sector is low. The nature of crises and the geopolitical sensitivities and dimensions of military intervention must be taken into account within the intervention space. The UN Oslo Guidelines on the use of foreign military and civil defence assets in disaster relief clearly articulate the use of military assets to support essential humanitarian functions.⁶ However, the guidelines provide little reference or guidance for situations of complex health emergencies such as experienced during the Ebola epidemic. Moreover, humanitarian health sector actors' engagement in specific PHEIC events, such as those involving deliberate or accidental biological, chemical or radioactive spills and leaks, is not well defined.

Restrictions on human mobility, such as closure of border points and quarantines of entire towns, are often enforced by border officials and law enforcement and/or military forces to inhibit cross-border movements and thus contain epidemic spread during health emergencies. Research evidence on the effectiveness and impact of such measures in limiting the spread of outbreaks remains controversial,⁷ with closures having a detrimental effect in exacerbating communal tensions and violence, and overall economic stability.⁸ Closure of formal border crossings is also circumvented by communities using alternative crossing points dotted along porous national boundaries - as evident in the Ebola outbreak in West Africa. Adopting evidence-informed methods to map the corridors of human mobility is therefore a vital strategy to enable health authorities to provide targeted prevention, detection and response efforts, especially

in border areas. Meaningful partnership with immigration authorities and border security actors is not just inevitable but essential in enabling public health protection. The IHRs and accompanying training guidelines provide little guidance for countries that choose to implement border closures and quarantines. As witnessed in the Ebola outbreak, some affected countries choose to implement strict enforcement protocols by military force. To ensure balanced and substantive procedural safeguards for the work of public health authorities (which are enforced by the security sector), the IHRs should incorporate by reference the Siracusa Principles.⁹ These principles allow temporary suspension (derogation) of the right to free movement, are well accepted by the international community and offer guidance on the use of public health authorities in ways that are consistent with human rights norms. When states restrict the movement of individuals, entire villages or towns (involuntary detention), the Siracusa Principles must be met: such restrictions should be of a limited duration and subject to review and appeal. It is critical that restrictions, when applied, are based on scientific evidence and not imposed arbitrarily in an unreasonable or otherwise discriminatory manner.

As an integral member of the Global Health Cluster,¹⁰ the IOM adopts its guidance framework for country-level health clusters by applying civil-military coordination principles to humanitarian health operations. The framework stipulates that there are marked differences in the requirements for civil-military coordination of responses to natural disasters that occur in a peaceful environment and those that occur in the midst of complex emergencies. For instance, it recognizes that in complex emergencies such as a protracted civil war, military forces and humanitarian actors often have different agendas, strategies, tactics, mandates and accountability frameworks (see Figure 18.1). Although challenging, humanitarian actions by health actors should be guided by evidence-informed assessment of the impact and evolution of the crisis and the corresponding needs of the population. The sensitivity of the humanitarian space should be respected and accounted for.

Figure 18.1: Range of civil-military relationships



Source: UN civil-military coordination course module in 2011 Inter-Agency Standing Committee guide on civil-military coordination during humanitarian health action, https://www.who.int/hac/global_health_cluster/about/policy_strategy/ghc_position_paper_civil_military_coord_2_feb2011.pdf.

Internationally deployed military forces involved in peace operations or disaster response should provide direct or indirect health assistance to civilians only as a last resort, i.e. in the absence of any comparable civilian alternative and to meet the critical needs of the affected population. In this framework, civil-military “coordination” is not meant as acting together for a common goal, but simply establishing the most appropriate civil-military relation necessary to fulfil the humanitarian mandate in the context of a specific scenario. Table 18.3 presents an adaptation of the risk assessment tool for military involvement in health action in crises by scenario and typology of task.¹¹ It is evident that coordination is essential in some humanitarian contexts, while in others action is best done in parallel. The notion of health actors working in conflict (in engagement with the military) or around conflict (avoidance of military cooperation) is implied. As a limitation of this tool, however, engagement with non-military security sector actors, such as border officials at POEs and other law enforcement

services, has not been considered. A literature review also shows no systematic application of the tool since its formulation in 2011. We applied the Global Health Cluster guidance tool to IOM health interventions involving security sector actors in a wide range of humanitarian crisis situations (from the conflict in Yugoslavia in 1992 to the 2014 EVD outbreak). The level of risk of military involvement in all humanitarian operations by country and by typology was mapped. Risks concern the protection, independence and impartiality of humanitarian actions and interventions in crises. Results indicate that the majority of IOM interventions are within the “low to medium” risk domain when using military assets and partnerships. The “high-risk” interventions were concentrated on work with governments and militaries during peacebuilding processes, and more specifically providing direct healthcare to DDR programmes. The EVD and pandemic influenza responses fell within the “low-risk” category.

Conclusion: The need for greater dialogue, partnership and operational guidelines with the humanitarian community and the security sector

The authors advocate a joint humanitarian and security sector interagency working group to build guidelines and clarify the role and rationale for security actors in emergency response, especially in relation to PHEIC events. We posit that there should be a context-specific basis for security sector engagement. What these conditions are, the role of humanitarian engagement, how interventions may fit within the UN cluster system, and potential risks and advantages of intervention should be clearly examined. Beyond guidelines and legal frameworks, the authors propose training exercises that go beyond desktop work to offer real-life simulations that are sensitive to differing dynamics and capacities in various contexts. We suggest that health emergency plans such as those for pandemic preparedness need to be written and used in a way that accommodates these multiple perspectives and takes into account a range of sensitivity analyses carried out for each PHEIC event. Public health decision-making based on scientific evidence in relation to contextual factors and

characteristics of the spread of pathogens may be in conflict with the military prerogative to protect entire populations by forced detention and quarantine. Clarification of roles and responsibilities of – and between – the military, the overall security sector, the national public health system and humanitarian actors in global health crises is essential. A more transparent and iterative approach is needed to incorporate evidence into public health decision-making that reflects the realities of external pressures present during a health emergency.¹²

The importance of intersectoral action and cross-border coordination in enhancing IHR core capacities and addressing global health security threats is a key lesson that has been echoed in the aftermath of the EVD outbreak.¹³ We assert that security sector actors form a key stakeholder in enhancing effectiveness of humanitarian health emergencies to save lives, but also within recovery phases to enable disaster preparedness and response capacities, enhance IHR capability and mitigate future risks. We argue that in the event of responding to PHEICs that involve chemical and biological agents (through deliberate or accidental release), such partnerships with the security sector become even more critical. In the context of IOM programmes following health emergencies, engagement with security sector actors such as border officials and security stakeholders is an inevitable consequence of advancing the IOM's HBMM goals. While the Oslo Guidelines provide parameters for civil-military engagement and mechanisms to map risks associated with it, greater engagement is needed with health sector actors to understand better the contexts of intervention with the security sector. Future engagement may include technical working groups to provide input into revitalizing existing tools, guidelines and legal frameworks by harnessing evidence and commissioning dedicated research on the topic.

Table 18.3: Risk assessment of military involvement in health action by scenario and typology of task

Typology of intervention tasks	Scenarios according to the role of the military*			
	Peacetime	Peace-keeping	Peace enforcement	Combat
Indirect health assistance				
<i>Generic indirect assistance</i>				
Rehabilitation of infrastructures (e.g. roads, bridges, debris removal)				
Provision of water and sanitation systems				
Construction of camps/provision of shelters				
Transporting relief items				
<i>Health-specific indirect assistance</i>				
Preparedness/contingency planning for humanitarian health response				
Health assessment and sharing information/ joint health assessment				
Rehabilitation/construction of public health facilities				
Provision of equipment to health facilities/institution				
Direct health assistance				
Triage/first aid/medical evacuation				
Direct patient care (including trauma and non- trauma care)				
Vaccinations and other public health interventions				
Distribution of relief goods				
Health monitoring and surveillance				

*Scenario descriptions:

Peacetime: Missions in non-conflict-related events, including situations such as response to natural, technological and environmental emergencies

Peacekeeping: Missions generally are deployed with the consent of at least the main actors involved in the conflict, and are tasked to accompany a peacebuilding process assisting or directly implementing a number of actions (e.g. DDR programmes)

Peace enforcement: Peace enforcement operations are forcible military interventions by one or more states into a third country with the express objective of maintaining or restoring international, regional or local peace and security to end a violent conflict within that country

Combat: Combat missions are those in which the primary purpose of the operation is the defeat of a designated enemy; affiliation of civilian aid organizations with military personnel jeopardizes the local population's perception of the impartiality of the assistance provided

Legend:

Green: low risks with strong opportunities for health humanitarian actors to cooperate with the military for the benefit of the affected population.

Orange: medium risks, as the benefits of using military assets should be assessed against the protection of independence and impartiality of actions.

Red: high risk of impacting on humanitarian principles.

Source: Adapted from UN civil-military coordination course module in the 2011 Inter-Agency Standing Committee guide on civil-military coordination during humanitarian health action.

Notes

- 1 Security sector actors are defined in Schnabel, A. and H. Born (2011) "Security sector reform: Narrowing the gap between theory and practice", SSR Paper No. 1, DCAF, Geneva.
- 2 International Organization for Migration (2016) "Disarmament, demobilization and reintegration (DDR) of ex-combatants", https://www.iom.int/jahia/webdav/shared/shared/mainsite/activities/mepmm/op_support/epc_ddr_070912.pdf.
- 3 International Organization for Migration (2015) "Migration health within DDR operations", www.iom.int/jahia/webdav/shared/shared/mainsite/activities/health/IOM-Migration-Health-within-DDR-Operations.pdf.
- 4 International Organization for Migration (2015) "Health, border and mobility management fact sheet", www.iom.int/sites/default/files/our_work/DMM/Migration-Health/mhd_infosheet_hbmm_18.01.2019_en.pdf.
- 5 Interview with the authors of this chapter.
- 6 UN Office for Coordination of Humanitarian Affairs (2007) "Oslo Guidelines - Guidelines on the use of foreign military and civil defence assets in disaster relief", revised November 2007, <https://www.unocha.org/publication/oslo-guidelines-use>

foreign-military-and-civil-defence-assets-disaster-relief. According to clause 94, p. 19, "In an emergency, prospective Assisting States with military resources deployed in the affected area, or in reasonable proximity, should take appropriate action to facilitate relief operations. This could include information on any assets available to support essential humanitarian functions including the transport of relief goods, the movement of persons at risk, and the reestablishment of basic human services, including medical care."

7 Barbera, J., A. Macintyre, L. Gostin, T. Inglesby, T. O'Toole, C. DeAtley, K. Tonat and M. Layton (2001) "Large-scale quarantine following biological terrorism in the United States: Scientific examination, logistic and legal limits, and possible consequences", *Journal of the American Medical Association*, 286(21), pp. 2711-2717.

8 The trade and economies of the affected and neighbouring countries suffered tremendously, with the World Bank economic analysis estimating that Guinea, Liberia and Sierra Leone would lose at least US\$2.2 billion in 2015 as a result of the epidemic. World Bank (2015) "Ebola response fact sheet", 1 September, www.worldbank.org/en/topic/health/brief/world-bank-group-ebola-fact-sheet.

9 UN Commission on Human Rights (1984) "Siracusa Principles on the limitation and derogation of provisions in the International Covenant on Civil and Political Rights", annex, UN Doc. E/CN.4/1984/4.

10 The Global Health Cluster, under the leadership of the World Health Organization, is made up of more than 30 international humanitarian health organizations that have been working together since 2015 to build partnerships and mutual understanding and to develop common approaches to humanitarian health action.

11 Ibid.

12 Rosella, L. C., K. Wilson, N. S. Crowcroft, A. Chu, R. Upshur, D. Willison and V. Goel (2013) "Pandemic H1N1 in Canada and the use of evidence in developing public health policies - A policy analysis", *Social Science & Medicine*, 83, pp. 1-9.

13 World Health Organization (2015) "Report of the Ebola Interim Assessment Panel", July, www.who.int/csr/resources/publications/ebola/report-by-panel.pdf?ua=1.

PART VI

Opportunities for Constructive Cooperation between Health and Security Sectors

Global Health Crises and the Security Sector: Cooperation in Training, Simulation and Early Warning

Lea Ellmanns and Albrecht Schnabel

Introduction

In recent years we have seen the convergence of the health and security sectors. This has been, in part, driven by a pervasive counterterrorism agenda following the attacks on 9/11. Indeed, the Seventeenth Ministerial Meeting of the Global Health Security Initiative, which brings together ministers and commissioners from Canada, France, Germany, Italy, Japan, Mexico, the UK, the USA and the European Commission, recognized the need for multisector cooperation and emphasized that collaboration with the security sector is crucial “to mitigate the impacts of terrorism attacks” and “critical in reducing this global security threat”. Despite this increased cooperation and coordination between the sectors, the 2014 Ebola virus disease (EVD) epidemic caught actors off guard, laying bare the importance of security sector actors in health crisis preparedness and response. Questions arose about how best to do this, with coordination, governance and information sharing identified as major challenges in the current system.

This chapter outlines the importance of and opportunities for constructive cooperation among the health and security sectors in regard to *training, simulations and early-warning systems* (EWSs). Civil-military and health-security cooperation in humanitarian and health crises, respectively, are important, but problems may arise regarding such cooperation. These may be addressed in joint training of civilian/health

and military/security agencies. Training modules for individual and joint sectors, especially on the use of personal protective equipment (PPE), exist and may be drawn upon in designing further modules that enhance health-security cooperation and joint responses to health crises. While training for individual sectors is important and yields benefits, especially concerning infection control and PPE, examples of joint training reinforce the benefits of cooperation. The identification of disease hotspots and modelling and simulating multiagent and cross-sectoral responses to health crises are essential. Emerging disease hotspots are located where humans and animals live in close proximity, thereby greatly increasing the chances of zoonotic disease emergence. Mapping the vulnerability of countries and national health systems to infectious diseases may yield useful insights about locations that are likely to be affected by future outbreaks. This is also the case in terms of social vulnerabilities within those areas. Regional and global surveillance are crucial, and must focus on hotspots of emerging infectious diseases (EIDs).

Modelling cross-sectoral cooperation through different types of simulations is thus highly useful in practising collaboration, testing protocols and procedures, and pointing out gaps in cross-sectoral cooperation. EWSs are indispensable in establishing preparedness of health and other sectors for disease outbreaks and health emergencies. Many systems already exist, and thus the use of existing technologies may be more effective than creating new ones. While effective surveillance of infectious diseases remains a challenge for public health, advancements in computational sciences have led to event-based surveillance methods to detect outbreaks and emerging public health threats - prominent examples of these systems are HealthMap, EpiSPIDER and BioCaster. This chapter outlines examples of EWSs, including the World Health Organization (WHO) Early Warning, Alert and Response System (EWARS) and similar systems in Afghanistan and China, to illustrate that these technologies are widespread and highly useful. The ultimate aim is to highlight that training modules, simulations and EWSs are opportunities for increased cooperation between the health and security sectors, and should become standard practice within and across both sectors.

Background: Increased incidence of emerging infectious diseases

EIDs are defined as infectious diseases that are “newly recognised, newly evolved or occurred previously but have shown an increase in incidence or expansion of geographical, vector or host range”.¹ Re-emerging infectious diseases are those that reappear in more pathogenic forms with rapidly increasing incidence, or in new geographic locations after having been eradicated or controlled in the past.² Twenty-five per cent of the 60 million deaths that occur worldwide annually are said to be due to infectious diseases,³ and a staggering 335 infectious diseases emerged between 1940 and 2004. Viral pathogens were highlighted as a particular threat given their ability to adapt to new hosts.⁴ Within EIDs, the vast majority are caused by zoonotic pathogens; in other words, pathogens of non-human animal origins.⁵ Human activities that interfere with ecological and environmental conditions have increased, thereby greatly increasing the risk of human contact with new pathogens. Indeed, zoonoses are the most threatening EIDs.⁶

Why health and security sector cooperation?

Disasters are occurring more frequently and with increased intensity. As a result, countries must be better prepared to implement relief efforts addressing large-scale disasters.⁷ Military and civilian actors are increasingly working together in implementing responses in cases of large-scale natural and man-made emergencies,⁸ so cooperation by both sectors in the same space must be facilitated.⁹ Multisectoral and intersectoral collaboration are crucial to synchronize the activities, roles and responsibilities of relevant sectors in addressing issues that are multifactorial in nature and thus affect different sectors. This applies to health crises, which inevitably affect multiple sectors, including health, security and other public services. Collaboration prevents conflicts and duplication of activities, allows goals to be achieved in a fast and cost-effective way and facilitates improved planning of disease control programmes. Biological risks, including

disease outbreaks, threaten human health and concern various sectors, making collaboration between different sectors indispensable.¹⁰ Problems regarding civil-military cooperation frequently arise as a result of the opposing doctrines of humanitarian assistance and guaranteeing civil security.¹¹ This same problematic clash of doctrines emerges in the cooperation between health and security agencies during joint responses to health crises. Problems also arise as a result of a limited knowledge of the other sector's organizational identities. This leads to negative perceptions on both sides. Vastly different working protocols may further hinder the effectiveness of a joint response.¹² Thus more effective civil-military and indeed health-security relations will facilitate improved cooperation and efficient division of tasks during joint responses.¹³

Training

More effective cooperation may be achieved through joint training of civilian and military health and security agencies. To achieve disaster preparedness across sectors, practitioners from both sectors should be in regular contact, status of forces agreements should be in place and certified training should be carried out.¹⁴ Interagency coordination could be strengthened through regular training exercises. These must include the assigning of roles prior to health crises, inferring risk tolerance and deducing the respective strengths and weaknesses of each sector.¹⁵ Training could further increase knowledge and understanding of the other sector's doctrine, operational procedures and capabilities. Diverging operational terminologies complicate multiagency responses.¹⁶ Standardizing terminologies seems unrealistic; it is therefore more useful to increase knowledge of other sector's use of operational terminologies through joint training.¹⁷ This is highly useful on an operational level and could substantially improve preparedness, generate best practices and increase knowledge of the other sector's working environment.¹⁸ Joint training may be carried out through civil and military schools as well as local, national, public and private initiatives. Joint courses would be useful¹⁹ to intensify the positive effects on cross-sectoral collaboration.

Simulations

Simulation exercises allow different sectors to practise collaboration and expose decision-makers to critical situations. Indeed, “the only way to ensure that ... plans can effectively be implemented is to test them in regular exercises to assess the validity of the arrangements and then to update the plans in the light of experience”.²⁰ Crisis simulations are highly useful because they replicate the emotions and behaviours that occur during real-life crises. This allows participants to gain experience and receive guidance in crisis response.²¹ Crisis simulations require particular types of problem-solving skills, including interpreting data, manipulating a situation to change it, monitoring that change and responding to such rapidly changing conditions.²² In addition, many crisis simulations replicate complicated situations that require multilevel²³ and multisectoral responses. Hence simulations contribute to multisectoral preparedness for health crises such as disease outbreaks.

Early warning

Early warning requires sending out signals in the early stages of an infectious disease outbreak to warn people and stakeholders of its potential risk to public health.²⁴ Early warning is not the same as prediction, as it includes decision-making, verification of the threat, information dissemination and responses.²⁵ An EWS, then, involves the “provision of timely and effective information, through identified institutions, that allows individuals exposed to hazard to take action to avoid or reduce their risk and prepare for effective response”.²⁶ Notably, disease surveillance provides the basis for early warning. Advancements in epidemiology, computer science, geography, artificial intelligence, veterinary science and other fields have allowed surveillance, and hence early-warning technologies, to develop further.²⁷ To be effective, an EWS must be based on surveillance data that are accurate and timely. An EWS must further engage in fast detection and warning during the early stages of an outbreak, and provide evidence-based guidelines to inform tangible responses.²⁸

Current developments in training, simulations and early-warning systems

Training modules

Training modules, both joint and for individual sectors, exist and may be drawn upon in designing further modules to enhance health-security cooperation and joint responses to health crises. An example of training modules for the military is “Humanitarian assistance response training”, which prepares military staff for civilian-led humanitarian assistance and disaster responses in foreign countries. In this module, military personnel learn to apply their planning and decision-making processes to foreign humanitarian assistance and relief. The module highlights how military assets are used and what their supporting role looks like, and outlines some of the public health, logistical and information-sharing problems they are likely to encounter.²⁹ Training modules have also been developed for health workers, for example the web-based learning programme on proper and safe use of PPE developed jointly by Johns Hopkins University and the US Centers for Disease Control (CDC).³⁰ The Efficiency by Edification Programme, commissioned by the German Ministry of Health and initiated by the Robert Koch Institute, trains medical personnel in how to manage Ebola and other highly contagious infectious diseases.³¹ The three-day course includes lectures, transfer exercises, reflection and hands-on simulations. It covers concepts such as PPE, triage and isolation, waste management and communication.³² The International Centre for Infectious Diseases offers extensive courses on biocontainment and biorisk management for biosafety professionals and facility operators.³³ In addition, the WHO’s Unit on Disease Control in Humanitarian Emergencies conducts intensive short courses for health coordinators and medical advisers from non-governmental organizations, ministries of health, UN agencies, international organizations, universities and other institutions. Training covers infectious disease transmission, risk assessment, outbreak investigation and response and other modules.³⁴ OpenWHO offers training modules on “public health interventions in pandemics and epidemics”, which provide practitioners with the relevant knowledge and

tools to manage disease outbreaks and health emergencies. This course also focuses on risk communication, pandemic influenza preparedness, geographic information system (GIS) data, operationalizing emergency response and other subject areas.³⁵

Examples of jointly developed training further illustrate the benefits of such projects. For instance, US Army divisional staff and units underwent training prior to deployment to Liberia to assist in the fight against Ebola. This included mandatory training on “donning” (safely putting on PPE) and “doffing” (safely removing PPE), as well as other standard pre-deployment training. Further training focused on the operational environment and interagency partners, including the US Agency for International Development and the US CDC. A two-day seminar brought together staff from all interagency partners.³⁶ Similarly, Canadian military health workers were trained in PPE prior to deployment in the international Ebola response.³⁷ The training modules developed by the University of Nebraska Medical Centre for the US Department of Defense are also notable. They aim to ensure that the defence force is trained and ready for deployment in disease outbreaks. In addition, training programmes are being developed to improve laboratory efficacy in responding to EIDs.³⁸ As an example of joint training, the Global Health Security module offered by the German Führungsakademie der Bundeswehr brought together representatives from the military, development and health sectors in examining the commonalities between global health and security at political and operational levels.³⁹ Similarly, the CDC Division of Global Health Protection’s Global Response Preparedness Team is building up Jordan’s emergency response capacity in collaboration with the US Defense Threat Reduction Agency using health-focused training to coordinate responses during emergencies. Participants include representatives from different ministries and the Jordanian armed forces.⁴⁰

Simulations

National plans of avian influenza simulations have incorporated table-top exercises, drills and full-scale exercises.⁴¹ Simulations can be *table-top*

exercises based on hypothetical scenarios, which require participants to provide realistic responses based on existing procedures and resources. They evaluate different responses and existing emergency preparedness and response plans that are in place, and thus allow training, strengthened coordination and validated instruments and processes.⁴² Notably, such simulations are only beneficial if emergency response plans are in operation.⁴³ For instance, Dausey and Moore conducted pandemic influenza table-top exercises with 14 countries that were part of existing subregional disease surveillance networks.⁴⁴ The simulations were created by exercise development experts from RAND Corporation and senior health leaders from the participating countries. The multisectoral exercises involved participants from the health, agriculture, environment and defence sectors in managing an unfolding pandemic influenza crisis at different stages.⁴⁵ Upon completion, participants observed that the simulation allowed them to clarify roles and responsibilities of their respective organizations in responding to a pandemic,⁴⁶ evaluate plans, identify priorities for improvement and build relationships. But despite enhancing preparedness and response capabilities,⁴⁷ it was found that the exercise did not test operational capabilities and thus did not help to identify key gaps in performance of the different individuals and sectors involved.⁴⁸ So while table-top exercises remain valuable low-cost tools,⁴⁹ drills and full-scale simulations may be most useful in ensuring multisectoral preparedness for future infectious disease outbreaks.

A *drill* is a “practical exercise in managing operations which simulates damage and injuries in a hypothetical emergency situation”⁵⁰ and requires the mobilization and use of human and material resources.⁵¹ Drills identify the responsibilities of participants, confirm established roles, evaluate performance and skills and, most importantly, test interagency coordination and operational relationships.⁵² They also focus on a specific part of the emergency plan. For instance, Japan carried out multisectoral drills in November 2007 at Narita Airport and Narita Red Cross Hospital. The exercise involved the National Police Agency, the Ministries of Defence, Foreign Affairs and Health and local response agencies.⁵³ Drills at the airport and hospital surrounded a suspected case on board an

incoming aircraft from a country experiencing a pandemic. They included testing processes and procedures for passenger separation on board, health check-ups by quarantine medical staff, handling of close contacts and training on the use of PPE, especially for staff coming from other duty stations.⁵⁴ Participants highlighted that the multisector approach of this drill was useful in involving all the participants needed in a pandemic response. However, they felt that the comprehensiveness of the exercise did not allow full evaluation of the actual operational capabilities that were in place at the time. In addition to multisectoral exercises, it was suggested that single-agency and single-sector drills could serve to enhance the benefits of multisectoral simulations.⁵⁵ Overall, both table-top exercises and drills facilitate training, evaluation of protocols and processes, and the practice of intersectoral coordination.⁵⁶

Full-scale exercises mobilize different parts of the response plan at the same time, often include a field component and are carried out in a highly stressful environment. These exercises also evaluate the operational capacity of systems with command centre coordination.⁵⁷ Debriefing and producing detailed exercise reports after completing such exercises are particularly useful, considering the high time and cost expenditure that is involved in organizing multiagency exercises.⁵⁸ A simulation carried out by the Indonesian government on 25–27 April 2008 in Bali is an example of a full-scale exercise drawing on different sectors. It tested the Indonesian national plan for influenza “epicentre containment protocol”, and involved ministries and agencies from the government of Indonesia, Bali provincial government, Jembrana and Tabanan district governments and the security sector (police and military).⁵⁹ Notably, this was the first full-scale containment exercise of its kind, and distinct from exercises carried out in other countries.⁶⁰ The scenario tested the participating district, provincial and national governments’ operational plans for containment of early human-to-human transmission of the H5N1 virus.⁶¹ In general, ASEAN (Association of Southeast Asian Nations) countries have worked towards multisector pandemic preparedness to mitigate impacts besides those on health since 2006.⁶² Initially, no multisector pandemic preparedness plans were in place;⁶³ Singapore was the only country in the region that had

engaged in this type of planning, in the aftermath of the 2003 outbreak of severe acute respiratory syndrome.⁶⁴ Thus a large-scale simulation exercise drawing on ASEAN member states was carried out in Phnom Penh in August 2010, the “Southeast Asia regional multisectoral pandemic preparedness and response table-top exercise: Managing the impact of pandemics on societies, governments and organizations”.⁶⁵ The exercise identified which sectors were essential in pandemic responses,⁶⁶ and improved multisectoral preparedness and response capacities at national, regional (ASEAN) and global levels.⁶⁷

The AniBioThreat project initiated by the European Commission considers simulation exercises crucial for improved contingency planning.⁶⁸ In the past it has conducted various simulations, including “Insider”, “Decision making”, “ShareSec” and “SAMBIO 2013”.⁶⁹ It draws on a “one health” approach to training and simulation exercises to include different sectors. While the project focuses on animal bioterrorism threats,⁷⁰ lessons learned from these simulations are also applicable in situations of natural disease outbreaks. SAMBIO 2013 was a large-scale pilot exercise, and marked the first time that coordination organizations, law enforcement authorities and public health authorities came together on a national level to conduct such an exercise.⁷¹ It was carried out to strengthen intersectoral cooperation and communication, focused on training and included both table-top and field simulation exercises. This highlighted the need for authorities within the different sectors to collaborate to allow efficient management of a future public health event. SAMBIO 2013 emphasized that many aspects of intersectoral cooperation remain to be developed. Communication channels must be clarified, roles and responsibilities for the different sectors established, information sharing improved and procedures for information sharing developed to allow increased operational capability.⁷² Overall, the AniBioThreat project resulted in improved interoperability, updated contingency plans and shared contacts across different sectors.⁷³

Early warning and early analysis

EWSs are crucial for timely implementation of response mechanisms, such as joint security and health sector responses to health crises. EWSs involve different steps, including generation and analysis of surveillance data, verification of analysis outcomes, dissemination of information to the relevant stakeholders and communities, and implementation of suitable responses.⁷⁴ *Setting early-warning targets* prioritizes infectious diseases with great potential to spread quickly and those that potentially have devastating consequences. This is crucial in a climate of limited resources. Consequently, the Global Outbreak Alert and Response Network focuses primarily on highly pathogenic diseases with substantial potential to spread internationally, given that these, alongside EIDs such as Ebola, will likely have the most significant impact on the global economy.⁷⁵ *Early-warning data collection* depends on both the availability and the timeliness of data. Data from other sectors can make crucial contributions, such as weather information that may provide insights into the outbreak of respiratory diseases. Data collection should further draw upon the media, both traditional⁷⁶ and social media. *Early-warning data analysis* refers to the early identification of health threats through the construction of an early-warning model, the setting of a “normal” threshold, the generating of early-warning signals when the observed indicators exceed the threshold and the evaluation of the alert prior to information dissemination.⁷⁷ Early-warning models, specifically *spatial*, *temporal* and *spatio-temporal*, are employed to determine irregularities by comparing the expected value with the actual value in the collected data.⁷⁸ *Early-warning information delivery* is crucial, and must focus primarily on the people and agencies responsible for responding to infectious diseases.⁷⁹ Lastly, health departments and national centres for disease control must implement *early-warning responses* as soon as the early-warning signal is received. Before taking action, disease prevention professionals must investigate and verify the signals through a preliminary field survey, followed by in-depth, detailed investigation.⁸⁰

Examples of event-based surveillance and EWSs include the Global Public Health Intelligence Network (GPHIN), ProMED-mail, HealthMap, EpiSPIDER and BioCaster. GPHIN is a multilingual internet-based early-warning tool developed by the WHO and Canada. It uses informal information sources, such as news websites, to collate information about events that could constitute potential public health concerns, including disease outbreaks.⁸¹ Interestingly, the vast majority of initial outbreak reports originate from unofficial sources requiring verification.⁸² The Programme for Monitoring Emerging Diseases (ProMED-mail) is another internet-based reporting system, drawing on media and official reports, online summaries and local observers. It aims to disseminate information on infectious disease outbreaks and toxin exposure globally.⁸³ But despite these positive developments, there are gaps in disease detection using online sources. Problems arise particularly with limited internet access, which is often the case in areas with high incidences of diseases but low capacity for detection and reporting.⁸⁴ Local media surveillance can have a positive impact by increasing the knowledge of health events in the internet systems.⁸⁵ Indeed, one study determined that local media surveillance added greatly to global digital disease detection systems, as they reported health events that would otherwise not be picked up by HealthMap.⁸⁶

A positive example of an early-warning system is the Disease Early-Warning System (DEWS) developed by the WHO for Afghanistan in 2006. The system was designed to reduce mortality associated with disease outbreaks by monitoring 15 priority infectious diseases and reporting on suspected outbreaks. In 2012 an average of eight investigations were carried out per week,⁸⁷ and DEWS investigated and reported on 331 suspected outbreaks.⁸⁸ The WHO's EWARS initiative provides technical support, training and tools that can be used in the field by national ministries of health and other health actors. As part of this, it distributes a field-ready piece of equipment called "EWARS in a box". This allows surveillance and response activities to be established and maintained in the field. The system has been used in a camp for internally displaced people in South Sudan to monitor disease outbreaks.⁸⁹ Similarly, the WHO launched an electronic integrated disease early-warning system in Sana'a, Yemen, in

January 2017 that combines the national surveillance system and DEWS into one system to give improved data collection and analysis in terms of speed and efficiency at 1,982 reporting sites throughout the country.⁹⁰ The China Infectious Disease Automated Alert and Response System is an example of an effective national EWS. It was implemented in 2008 and modelled on the web-based nationwide notifiable infectious disease reporting information system;⁹¹ it focuses on 30 infectious diseases, which it classifies into Type I (high severity and low incidence) and Type II (low severity and high incidence). The system detects irregularities in disease occurrence by comparing data in the current observation period to the corresponding historical data for the same period. Dedicated staff are required to verify an outbreak by phone interviews and on-site investigations, and report back to the response system within 12 hours.⁹²

EWSs use easily available information, such as infectious disease surveillance data, and simple and quick analysis methods to yield qualitative results.⁹³ Advancements in GIS and computer technologies have resulted in technological advancements of EWSs, for instance by allowing spatio-temporal clusters to be detected. In future, multiple early-warning technologies could be combined for improved results. Surveillance data could draw from the fields of animal epidemics and environmental meteorology, as well as hospital emergency departments. Refining laboratory networks will further assist with identifying relations between cases that initially appear unrelated.⁹⁴ However, effective surveillance of infectious diseases remains a major challenge for the public health sector,⁹⁵ mainly because the rate at which novel pathogens are emerging is increasing faster than global surveillance capabilities.⁹⁶ Further research should work towards more accurate prediction of EID events. In addition, more attention should focus on human activities that promote the emergence of diseases, such as actions that degrade or alter environmental and ecological conditions and thereby increase human and animal contact,⁹⁷ increasing the potential for cross-species pathogen transmission. Surveillance systems are crucial for the prediction of diseases, but the capacity for surveillance of animal health is crucially underdeveloped in densely populated and disease-prone areas such as Southeast Asia.⁹⁸

Lessons for future multisector training, simulations and early-warning systems⁹⁹

Training

The lack of civil-military coordination and information sharing represents a significant barrier to the joint involvement of health and security sector actors in health crisis responses. Some military academic institutions offer courses for personnel from both sectors on technical and clinical subjects, but operational, strategic and political issues persist. These issues are rarely addressed with an objective of facilitating common understanding; they should therefore form an integral part of joint training modules. Ideally, training modules would include contextualization for quick interventions, different policy frameworks, human rights law, risk communication and fear management. While Ebola was crucial in generating momentum for global health security, the 2014–2016 outbreak in West Africa is not the only example of a health security crisis. It is thus crucial to prepare health and security sectors for other potential health crises.

Simulations

The largest challenge revealed by full-scale simulations is the vast amount of incoming information that needs to be analysed and prioritized for subsequent use. The information must be rapidly translated into tangible decision-making and matched with an appropriate response mechanism. This remains one of the most significant challenges in simulations and real-life cross-sectoral health crisis responses alike. The Harvard Humanitarian Initiative runs annual simulations with a range of participants; they include recent technological and other developments. Thus the meetings focus on geo-coordinates, GIS, crowd sourcing and SMS as technological elements, and present participants with new realities, such as attacks on healthcare facilities, transport vehicles and health workers. Health systems often act as an amplifier rather than a solution for health crises. This is particularly the case when the systems are severely underdeveloped and thus unprepared to allow adequate implementation of a response to a crisis.

Early warning

The introduction of the concept of “precision public health” had significant impacts on casual disease monitoring through facilitating targeted public health interventions with modern technologies. Communication between countries is crucial to enable information sharing. This was highlighted during the 2011 cucumber crisis in Spain, which could have been resolved much faster if EU member states had agreed to share data with each other. Cell-phones provide a crucial tool for early warning in data tracking and keeping the public informed during disease outbreaks. This requires protocols on data tracking in emergency situations and the promotion of integrated information systems, especially when required technologies and facilities are absent.

Concluding remarks

While it seems that multisector training in particular has not yet become standard practice, there are indications that simulations and EWSs are increasingly widespread. Overall, the importance of multisectoral cooperation is becoming clearer. For instance, the report of the European Commission Health Security Committee plenary meeting on 29–30 June 2017 highlighted that joint external evaluations regarding preparedness were very useful in bringing together all the involved sectors.¹⁰⁰ Similarly, ministers at the Seventeenth Ministerial Meeting of the Global Health Security Initiative participated in a scenario-based discussion on cross-sectoral responses to terrorist attacks, which must include health and security sector actors.¹⁰¹ Although not directly related to health security crises, this does highlight the increasing importance of cross-sector cooperation. In addition, participants at the G20 health ministers meeting in Berlin in May 2017 carried out a simulation exercise to test a response to a fictitious epidemic, with a focus on multilateral coordination and the International Health Regulations. Crucially, lessons learned in the Ebola outbreak were incorporated.

In sum, multisectoral cooperation can be greatly enhanced by the implementation of joint training, simulations and use of EWSs. These three tools present opportunities that can further strengthen future cooperation, and this is crucial given that the chance of zoonotic disease emergence is steadily increasing, alongside the incidence of disasters requiring responses by many sectors. Issues are increasingly multifactoral in nature and require multisectoral responses. Collaboration is therefore needed to synchronize and streamline activities, roles and responsibilities of relevant sectors in addressing them. Military and civilian actors are increasingly cooperating in cases of natural and human-made disasters, but such cooperation suffers from diverging doctrines and terminologies. Improving relations between and across sectors will facilitate improved cooperation and more efficient division of tasks during joint responses to health crises. This can be achieved through joint training modules and simulations. EWSs provide a further opportunity for increased collaboration. Examples of training, simulations and EWSs exist and may be drawn upon to intensify existing cross-sectoral cooperation. Training may improve relations and ensure that those in the security sector understand the nature, scope and purpose of their support during health crises, with an emphasis on the logistical, information-sharing and public-health-related issues they might encounter. Training in PPE is crucial to ensure preparedness for deployment. Simulations of infectious disease outbreaks requiring multisectoral responses have been implemented in and among different countries. These are crucial to test protocols and decision-making procedures and practise cross-sectoral collaboration. EWSs exist and are useful in triggering timely response mechanisms, including joint health and security sector responses.

Overall, the Ebola outbreak was an event that generated important momentum for improving preparedness for future global health crises, particularly through cross-sectoral cooperation in training, simulation and early warning.

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Precision Public Health and Digital Data: Sources Are an Issue

Patrick Zylberman, Danny Sheath, Nefti-Eboni Bempong and Antoine Flahault

Digital epidemiology involves using digital data streams to collect and share epidemiological data.¹ With the advent of high-speed fibre-optic internet connections and mobile 4G, coupled with advances in mobile technology and satellite communication, the potential for harvesting and sharing data faster than ever before is great, improving response times to disease outbreaks and disease forecasting with mathematical models. This relates not only to data that are generated specifically by or for epidemiologists but also data that are publicly available: both are useful. Data can be collected from a wide range of sources, including social media, wireless sensors and mobile devices, and analysed in real time, speeding up epidemic responses. Seasonal influenza, for instance, affects millions of people each year and creates a huge burden for public health, with increased hospital admissions and mortalities. It also has economic costs, with increased strain on healthcare systems and increased illness-induced staff absences. But due to the unpredictable nature of these viral pathogens and the individuality of outbreaks, predicting the spread of influenza proves challenging, with reliable predictions limited to three weeks.²

The problem with this timeframe is that with conventional public health surveillance, data reporting can take a few weeks. This limits the opportunity for early intervention. Internet giant Google launched its Flu Trends project in 2008 with the aim of monitoring seasonal influenza outbreaks by tracking the use of selected search terms. While early signs were promising, providing an early-warning system for the start of an

outbreak and enabling better planning for vaccination centres, the scheme had some major shortcomings. In January 2013 Flu Trends wrongly predicted an influenza outbreak in New York City. Public services and pharmacies were inundated with panic-stricken members of the public rushing for vaccinations. Media attention exacerbated the problem, and only prompted more people to search symptoms on Google, which worsened the illusion of the epidemic. Unsurprisingly Google received some harsh criticism from the press and public health organizations for this blunder, and as a result decided to terminate its open-access website.³ This method of monitoring online resources to evaluate disease status, or “biosurveillance”, clearly has the potential to harvest important epidemiological clues, notwithstanding the obvious failings of Google Flu Trends. Such methods are not confined to notifiable diseases, but rather complement conventional monitoring techniques to give a much more comprehensive picture of public health.

Lessons can and will be learned from this example, and the field of biosurveillance will undoubtedly grow. Indeed, it has already been shown that using data collected only from the search history of health professionals may be more informative. Commonly searched items on online medical reference sites for physicians, such as UpToDate, have shown their potential to act as an early-warning system for disease outbreaks.⁴

Brussels and early-warning and response systems

To gauge the impact, or lack thereof, of early-warning and response systems (EWRs) on infectious disease risk governance, it is useful to have a quick look at the health security record within the European Union (EU).

On 19 October 2001 a meeting of the Council of Heads of State and Government at Ghent asked the Brussels Commission to look into the possibility of greater cooperation in risk assessment and early-warning systems. Right in the middle of the anthrax hoaxes crisis, Brussels built a set of institutions that would form the base for health security. This came in a series of measures for promoting alertness and preparedness.

- On 26 October 2001 the Directorate-General for Health and Consumers (DG SANCO) and the Council of Health Ministers establish the Health Security Committee (HSC): as far as health is concerned, members states are in charge of coordinating their responses and facilitating rapid communication in case of a crisis.
- On 17 December 2001 BICHAT (Biological and Chemical Agents Threats) was established as a cooperative programme for preparedness for and rapid response to biological and chemical attacks.
- On 1 May 2002 a task force was created under DG SANCO (today called the Health Threats Unit).
- In June 2002 RAS-BICHAT was created, a rapid alert network for chemical, biological and radioactive threats linking the HSC to representatives from member states. Attached to the EWRS for transmissible diseases set in action in December 1999, RAS-BICHAT covered the complete range of possible threats: doubtful food products, suspicious mails, mass destruction and so on.

As one further step towards more advanced systems, the digitization of EWRSs is building on previous policies. For example, since 1993 the European Parliament has advocated border surveillance, and in June 1994 the Council of Health Ministers gave priority to communicable disease surveillance. Member states retain their prerogatives as far as public health is concerned, although they have been forced to tolerate an increasing amount of EU intervention. The culmination of these measures came ten years later: on 30 April 2004, with the creation of the European Centre for Disease Prevention and Control (ECDC), the European Commission recovered part of BICHAT's remit and thus strengthened its tools of governance through the provision of early warning and emerging infectious risks assessments. Brussels carried out an incipient centralization of expertise (or "pooling", in the Brussels Commission's parlance), in an effort to address the problem that David Byrne, then DG SANCO commissioner, raised in 2002 when he said, "I am concerned that we are not fully prepared for epidemics of major communicable diseases, and other serious health threats, which require a rapid and co-ordinated reaction."⁵ Extremely decentralized networked information conduits will certainly complicate further the difficult relations

between Brussels and member states.

The quality of sources: A critical issue

“Encouraged” by the revised International Health Regulations (IHRs) of 2005, early warnings and alerts are collected from a variety of sources, including social media sites and mobile devices. Notwithstanding the increased uptake of this novel approach, it seems unlikely that digitally tracking epidemics will completely replace conventional methods. Instead, a combined approach of classical public health monitoring and digital monitoring will likely prevail in the future. Twitter has been used to improve influenza forecasting errors over historical forecasting alone by 17–30 per cent, representing a two- to four-week head start in forecasting an outbreak.⁶ Beyond merely telling us when and where a disease is spreading, textual analysis on social networking sites such as Twitter also allows us to make inferences about how disease propagates through human behaviour and interactions.⁷

Despite the potential utility of these innovative approaches they still have serious shortcomings, which need to be addressed. The mishap of Google Flu Trends wrongly predicting an influenza outbreak in New York City in January 2013 was not an isolated incident, and the quality of the sources is a critical point of many informal outbreak-reporting systems. Here we offer brief descriptions of these shortcomings.

The ebb and flow of informality

EWRSs are supposed to combine the two characteristics of anticipation: a passive side (intelligence, surveillance) and an active side (preparedness, response). More responsive, non-hierarchical networks have captured the passive side of anticipation and at the same time crippled the active side, which traditionally was the preserve of centralized networks (usually governmental). Non-hierarchical networks of surveillance are not a new concept: Health Canada saw the potential for this system in the late 1990s

and as a result developed the Global Public Health Intelligence Network (GPHIN). GPHIN is a secure multilingual online monitoring tool that continuously searches global media sources, particularly online news sites, to provide an early-warning system for disease outbreaks and other public health emergencies. More than 60 per cent of initial disease outbreak reports come from unofficial sources, so the ability of GPHIN to monitor these sources makes it very important for early intervention, despite such sources needing formal verification.

On average, from 1996 to 2006 reports by non-governmental (non-hierarchical) sources had a ten-day head start over governmental (centralized) sources. Yet this advantage would soon vanish. In spite of the 2005 IHRs reform, which removed governments from their former veto power, centralized networks recovered their domination little by little through the verification of potential international public health events of importance.⁸ It is not difficult to see why this has been the case. The selection for verification of outbreaks collected, for instance, by GPHIN was made the preserve of the World Health Organization (WHO) Outbreak Verification System. Such a process takes time and entails a suspicious lack of transparency. However, delays in verifying reports prevent release of inaccurate information.⁹ State action remains crucial, but due to the state's reluctance to be transparent, centrality may provoke bottlenecks in public communication that can slow down the flow of information.¹⁰ The 1996–2001 “mad cow” (bovine spongiform encephalopathy) crisis is a case in point. It shows how centrality can feed public paranoia and make the response of the health authorities more difficult.

Phony evidence

What kinds of data sources do the global health networks consider? It is a general question accompanying technical ones, such as how do the information systems extract information? As providers of data, global health networks' main consideration is given to free or low-cost sources of unstructured information (the internet included) and the media. Tweets are most often based on media articles and online news sites, and GPHIN

is churning out press releases and media articles instead of doing original reporting. Such articles report scores of cases, directly or indirectly, and it is therefore to be expected that these sources convey the risk of phony evidence. Since the alerts put out by most of the data sources GPHIN uses for surveillance are not verified by health professionals, the potential for generating false alerts is high.¹¹

Discrepancies between the sources and the reality

The number of searches on Google networks at the time of the 2009 flu pandemic showed discrepancies between the time of search and the time of the epidemic. Searches peaked much earlier than the cases, supporting expert opinions that these spikes were driven by publicity rather than actual disease incidence. The internet, it is said, “may not work well for disease with considerable media exposure”, as in the case of severe acute respiratory syndrome (SARS) or flu pandemics.¹² Surprisingly, this delay hardly happened in France, with the peak of disease cases reported strong temporally correlated with peak Google searches for influenza.¹³ This demonstrates clear case- and context-dependent variability in the method, which we should endeavour to overcome by all means.

Homophily of the sources

“Churnalism”¹⁴ set an additional trap. Networked sources have a tendency towards homophily, which gives (undue) significance to data that are similar in properties or affinity to specific items of a specific network. A frequent phenomenon, this is due to the very nature of social networks.¹⁵ Similarity and sameness therefore remove difference and diversity from the debate, narrowing its scope and utility.

Not recognizing the utility of readily available data

Communication between disciplines needs to improve, particularly in the form of published findings. In this instance of information sharing,

technology is no longer the limiting source, but humans are. Not recognizing the utility of readily available data has caused preventable diseases to turn into large outbreaks. Satellite data and predictive models suggested high potential for an outbreak of dengue fever in 2015 in Brazil, but the relevant authorities failed to respond adequately to the threat. Then a Zika outbreak occurred, as the mosquitoes that carry dengue also carry Zika. However, this link was not made at the time and the risk was not fully understood. It is a delicate juggling act, as creating alerts and responding to every threat of an outbreak, which may or may not happen, has the potential to overload healthcare systems and cost governments enormous amounts of money. An example of such an intervention occurred in 2009, when the WHO declared swine flu (H1N1) an international public health emergency and governments started stockpiling vaccinations; however, the pandemic was not as severe as predicted, and ended up costing governments hundreds of millions of dollars in unused vaccines. Of course, the WHO was not wrong in warning of this particular pandemic, as preparedness is vital in managing outbreaks, but it does highlight the need for continued severity assessment and response adjustment over time.

System overload

With respect to EWRSs, the European Commission and members states have had conflicting agendas from the start. Health security means close cooperation between member states and the EWRS run by the European Commission. However, nothing in the EU treaties makes redistributing information to Brussels mandatory. Information predominantly circulates along a bilateral rather than a communal path. Moreover, most of the time member states are hesitant to share their data with other member states when it comes to infectious diseases. The “Spanish” cucumber crisis of 2011 (*Escherichia coli* O104:H4 outbreak of food-borne illness) is a perfect case in point. Despite all the efforts made by the ECDC, cooperation between Brussels and members states was very limited on this occasion.¹⁶ Unfortunately, so it remains to this day.

Given this ill-integrated epidemiological information, it is not surprising that the EU alert systems suffer from overloads from time to time. An exercise called Common Ground commissioned by DG SANCO and run by the Health Protection Agency in London at the end of November 2005 is a perfect example. The scenario simulated the chain of decisions set in motion after the WHO alert system scaled up from phase 5 to phase 6 during a flu pandemic outbreak. In addition to member states, the newly formed ECDC was invited to participate, along with the European Economic Area states, Switzerland, the WHO, the European Agency for the Evaluation of Medicinal Products and European vaccine manufacturers and pharmaceutical companies. The exercise evoked mixed feelings from the participants. "EWRS was available to all Member States plus Norway, Iceland and Switzerland. There was considerable overloading and heavy traffic on the system. In the early stages of the exercise, EWRS performed effectively, however, as the exercise progressed the system rapidly became overwhelmed with messages. The resulting criticism from players was that excessive time and resource was expended tracking relevant information and for some, this became impossible."¹⁷ The value of the sources was not so much of a problem, but rather the technological and human capacity of the "pipeline" conveying information - a factor that will always indirectly affect the quality of sources.

Fostering citizen science?

The 2005 reform of the IHRs undid the monopoly of epidemic intelligence and information that states had held since at least 1951. But is this the end of the road? Probably not. Digitizing alerts does not mean that anybody can indiscriminately use epidemic intelligence. Admittedly, what retired army doctor Jiang Yanyong did in 2003 was no mean feat: he reported to Chinese television and Hong Kong broadcast station Phoenix that Beijing authorities had knowingly hidden SARS patients from a WHO mission. The immediate consequence of his action was a political earthquake in China. We must support this type of lay expertise and reporting so that responses to health crises are driven by need rather than political interests.

In addition, networks are profoundly undemocratic. In the world of surveillance and alerts, open-source search networks are captured by monopolies or near-monopolies dominated by companies such as Google or Facebook. How, under those circumstances, can distributed networks foster a “citizen science”?¹⁸ How could one believe in a “utopia of netizens, all equal in cyberspace”?¹⁹ Network policies must be evaluated by taking great care not to be caught in various techno-utopias, such as “hyper-connected society” or “global community”, all laden with ideology.²⁰ The Silicon Valley messianic vision seems rather difficult to uphold when homophily turns social networks into clusters of self-segregated nodes with similar attitudes and properties, each like an echo chamber that is deaf to other networks.²¹

Concluding remarks

There are challenges facing the global health approach in general, and many of them are specific to the types of digital innovation used to tackle particular aspects of infectious disease outbreak management. Identifying these challenges and working towards overcoming them are essential for the betterment of infectious disease outcomes. Implementing warning and response systems raises many novel ethical, legal and societal questions. These will be extremely difficult to tackle in the absence of previous models and growing resistance to social surveillance, particularly in times when people are acutely aware of increasing surveillance abilities and there are growing fears of living an Orwellian life with “Big Brother” keeping a close eye on everyone’s activities. Notwithstanding, if such systems were able to provide proven, easy-to-measure, demonstrable, positive health impacts, these challenges and fears would not be insurmountable. Hence future research should not be discouraged, but targeted at strengthening the links between existing technology and the development of robust public health information tools. Through the advancement of integrative implementation sciences and the elaboration of innovative evaluation methods, it should be possible to demonstrate the impact on the health of populations and

support further focus on and interest in these systems. It is also important to consider the security and privacy of individual users of the systems. When sharing sensitive information, digital security is a key challenge. The recent waves of cyberattacks, some of which have been focused on health services (such as the UK National Health Service) and aimed at ransoming patient information, highlight the relevance of this challenge.

The key to an effective disease outbreak response lies in timely and accurate intervention, facilitated by early detection. The global health approach of bringing knowledge from all relevant disciplines together to tackle the problem of infectious diseases is one that should vastly improve our understanding and management of the threats they pose. Not only are we living in an era of unprecedented global change in terms of environmental and health challenges, but also in terms of the digital revolution, which has the potential to help us manage these challenges. Big-data analysis, artificial intelligence and computer learning systems present an exciting and promising opportunity for producing integrated predictive, early-warning and prevention tools for infectious diseases. By embracing and advancing technological tools like those featured in this chapter, we can further develop high-precision global health interventions.

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Health Emergencies and Crisis Training Modules for Health and Security Agencies

Christian Haggemiller, Margaret Bourdeaux and Anja Opitz

"... We need to form new partnerships that include diplomats and civil society as well as military researchers, and the security, medical and development communities".

Caroline Schmutte, Bill and Melinda Gates Foundation¹

Introduction

The international security community has a growing stake in preparing for and preventing global health crises. Events like the 2014 Ebola outbreak, the 2016 Zika pandemic and the 2010 Haiti cholera outbreak have highlighted how easily diseases can spread around the globe, harming diverse populations, depressing economies and generating significant geopolitical instability. Furthermore, militaries and security organizations are now routinely called upon to respond to multifaceted public health disasters triggered by a complex interplay of environmental, economic and political factors. Emerging technologies that enable the production of new human-made biothreats are likely to add to this complexity in future. In conflict-affected states it is increasingly clear that functioning health systems are an important prerequisite to peace, and the consequences of destroying health systems during armed conflicts will affect other sectors, too. This is evident when examining the cholera outbreak in Yemen beginning in 2017, which was a consequence of the armed conflict and exacerbated by the devastated and fragile health system. From lowering attrition

rates of reconstituted security forces and attracting financial investment to mitigating threats from epidemics, bioterrorism and environmental hazards, well-governed health systems are critical to keeping nations on a trajectory of development and stability.

As the security community's stake in global health security has grown, questions regarding how leading security organizations should prepare for, prevent and respond to global health crises have emerged. This concern was reflected at the 2018 Munich Security Conference, where five side events and roundtables were devoted to topics related to global health, development and security.² This chapter explores why global health has recently emerged as a leading concern for the security agenda and summarizes some of the ongoing debates. It concludes with a set of recommendations on how joint training for international health and security actors may be structured to be effective while addressing some of the concerns about security actors' involvement in global health crisis work.

Security actors in global health crisis prevention and preparedness – Why now?

Several recent trends have combined to fuel interest in the security community's role in global health crises.

In particular, the 2014 Ebola crisis in West Africa marked a turning point. The crisis highlighted how new demographic and global dynamics have rendered humanity more vulnerable to pandemics. Foreign militaries responded to the epidemic in part because of their rapidly deployable logistics capabilities, but also because of the social and political fears the epidemic sparked around the world. Indeed, the social, political and economic disruptions of the Ebola pandemic were far greater than originally anticipated due to the urbanization of the affected population. The globalization of transportation and economies exacerbated the impact of the disease and increased the speed at which it spread. Further, the fear among Western countries that the disease would arrive on their shores

triggered an enormous amount of investment and resource mobilization. While this fear was perhaps exaggerated, the Ebola crisis nonetheless spurred nations and international organizations to form coalitions and initiatives such as the Global Health Security Agenda to assess the epidemiologic preparedness systems of all states that are party to the International Health Regulations. The interest in global health security was mirrored not only in forums such as the Munich Security Conference and the World Health Summit but also by governmental policy-makers, indicating the health sector's relevance to security and foreign affairs.

The second reason why health issues have made it on to the security agenda stems from the international community's growing awareness of the relationship between armed conflict, the destruction of health systems and global health crises. The Ebola pandemic originated in post-conflict states, and quickly overwhelmed fragile health systems that had never fully recovered after periods of civil war.

The pattern of a devastating health crisis in the wake of civil conflict is sadly predictable. Indeed, a landmark study by Ghobarah et al. demonstrated that death and disability rates in conflict-affected countries remained elevated above their pre-conflict baselines for decades after the cessation of hostilities. Remarkably, their analysis showed mortality rates in countries that had experienced an armed conflict during the previous ten years were almost twice as high as during the period of active armed conflict.³ Thus it appears to be more dangerous to be living in a post-conflict state than in one with an active war. The explanation for this phenomenon can be found in the fact that deaths from combat are only the tip of the iceberg, as wars kill many more people indirectly through disruption and destruction of health systems. Former ministers of health in conflict-affected states referred to this as the "crisis carousel".

Awareness of the relationship between health system destruction and armed conflict prompted the NATO Joint Analysis and Lessons Learned Centre and Harvard Medical School to conduct a series of case studies on how security organizations interact with civilian authorities to protect and restore public health systems in fragile conflict and post-conflict environments.⁴ An overarching theme to emerge from these studies, which

were carried out in Afghanistan, Libya, Kosovo and Haiti, was security organizations' difficulties in aligning their health system protection and recovery activities with those of the health sector.

First, no single organization or set of donors was responsible for generating a health sector protection, recovery or reconstruction plan in fragile or conflict-affected societies. As the aforementioned cases illustrate, there is no overarching coordination mechanism or single organization from which the security community can take direction when it comes to supporting health sectors in conflict- and crisis-affected states. One policy-maker participating in the case studies noted that health sector interventions in conflict-affected states remain largely "a pick-up game", *ad hoc* and unplanned.

Second, at the strategic level, security mission planners and strategists sometimes fail to recognize the implications of public health threats for security and stability. Costly efforts to monitor the "threat environment" rarely consider health threats, even in instances when an epidemic, like cholera in Haiti, was destabilizing the country and destroying the credibility of a UN peacebuilding mission.

Third, at the operational level, security actors undertook *ad hoc* health-relevant programming – such as building hospitals or even whole segments of a health system – without aligning them with the country's health sector strategy. This occurred in Afghanistan, where NATO member states' military forces gave hundreds of millions of dollars to Afghanistan's Ministry of Defence to run a health system for Afghan military and police personnel, but the Ministry of Health was unable to receive budget support from these same member states through their development aid agencies.

Fourth, at the tactical level, development and humanitarian groups requested security actor involvement in health activities with little awareness that these activities (such as providing logistics) require careful planning and coordination with health and finance institutions. When the security community engaged in the health sector in the heat of a crisis without prior planning or coordination, both their activities and the health system's outcomes were inefficient at best. At worst, the lack of coordination and planning came at the expense of civilian lives. "We were meeting in the

field for the first time, bringing capabilities that are not interoperable with those of other stakeholders” is a common reflection expressed in after-action reports and lessons-learned documents.

Debates regarding security actors in global health crisis prevention and response

Global health policy-makers and heads of international agencies have expressed concern that the security community’s involvement in global health will lead to a “securitization” or “militarization” of health. They fear that global health will cease to be promoted as a matter of human rights, but instead only as a means to secure borders and safeguard citizens living inside those borders, leaving impoverished peoples in states with high disease burdens to their own fates. Further, they worry that security actor involvement, if not carefully defined and regulated, will result in human rights abuses – enforced quarantines, restrictions of travel, arbitrary detainment – in the name of promoting global health security.⁵

These concerns are informed by an array of experiences. In particular, the discourse that nations have adopted around health promotion as a tool of “soft power” or “smart power”⁶ – and the way this has been implemented in the field, particularly in Afghanistan and Iraq – has reinforced these concerns. For example, the counterinsurgency strategies in Afghanistan and Iraq involved efforts to win civilians’ “hearts and minds” by supplying necessary healthcare services in exchange for loyalty and support for the mission’s cause.⁷

China, for its part, has made extensive use of its military in its national public health emergency response plan. When responding to the Ebola outbreak, China sent approximately 1,200 military and civilian health personnel and provided a biosafety level 3 laboratory and treatment and public health training. This marked a milestone in China’s foreign aid activities,⁸ and correlated with its ambition to leverage this “health diplomacy” to maximum influence and effect.⁹

Other joint civil-military in-country training was conducted in multiple formats and scopes, such as the postgraduate medical education programmes in Afghanistan. Three decades of conflict had resulted in profound disruption of the medical system in Afghanistan; to combat this, the NATO Training Mission (Afghanistan) installed a graduate medical education advisory team to help the Afghan faculty reconstruct modern teaching programmes. Afghanistan's first physician assistants have now graduated.¹⁰

As part of the German Partnership Programme for Excellence in Biological and Health Security, the German Ministry of Foreign Affairs created a joint civil-military biosecurity strengthening programme in the G5 Sahel countries (Burkina Faso, Chad, Mali, Mauritania and Niger)¹¹ to raise risk awareness, develop national response capacity and promote a network of national and international stakeholders.¹²

The International Organization for Migration, in partnership with the WHO, the UK Department for International Development, the College of Medicine and Applied Health Sciences and the Republic of Sierra Leone Armed Forces, addressed the training needs of clinicians and hygienists who were working or will work at Ebola treatment centres that were established after the onset of the 2014 outbreak. The National Ebola Training Academy delivered clinical training modules for more than 5,000 front-line Ebola response workers.¹³ Additionally, the UK Army Medical Services Training Centre developed an innovative online e-learning portal during the Ebola response in Sierra Leone. This provided a lasting legacy and ongoing resource.¹⁴

US Africa Command and the Centre for Disaster and Humanitarian Assistance Medicine, in conjunction with US government agencies and international organizations, conducted a disaster preparedness programme over several years to promote stability and security. Those engagements, including workshops, table-top exercises, strategic planning and developing preparedness and response plans, trained nearly 800 individuals and enhanced partner nations' ability to prepare for and respond to crises.¹⁵

The risk of engaging security and military actors in global health crisis prevention and response deserves serious consideration. Lack of

communication between health providers and security forces during crises has led to missed opportunities, avoidable mistakes and deadly misunderstandings in the field. Further clarification about the nature of foreign state motivations is also necessary. The debate is often presented as binary: states' motivations are either selfish and hegemonic or altruistic and humanitarian. In reality, motivations are complex and shift throughout the course of a response. Indeed, protecting and providing humanitarian aid on the one hand and gaining political and economic influence on the other are part of the daily business of international relations, while the military is just one of many national tools that can be employed in multiple ways.

The last decade has seen Western militaries and global security organizations wrestle with the complexity of multiple objectives. For example, in 2011 NATO's involvement in stabilization and reconstruction missions drove it to adopt what it called a "comprehensive approach" to its missions. Its purpose was to foster political, civilian and military contributions to achieve "long term stability and strengthened governance, local capacity building and the promotion of ownership by the relevant national authorities".¹⁶ By outlining a comprehensive approach, NATO was proactively investigating opportunities to address the core of its mission on the one hand (establishing a safe and secure environment), and on the other hand to support the strengthening of health systems as an essential part of a functioning society. This approach requires a collective effort - not only by development actors but also by the security sector.

This balancing or blending of "strategic and altruistic" approaches can be seen in the evolution of US military doctrine over the last two decades. Calls for the US military to invest further in the application of smart power and global health diplomacy offer this mixed rationale: "enhancing specialist diplomatic [and health advocates'] input on the choice of [military] GHE [global health engagement] interventions, the manner in which they are delivered, as well as their duration, sustainability, and alignment between medical and strategic considerations".¹⁷

Likewise, the global strategy for EU foreign and security policy¹⁸ attempts to think holistically about EU security as it relates to multiple

facets of stability and peacebuilding around the world. It focuses on strengthening the resilience of states and societies by preventing fragile situations from escalating. This concept hinges on a multifaceted approach to reform processes, including combating corruption, improving the judiciary and ensuring access to education and health. These shall be achieved through a strong and constant investment addressing the long-term root causes of poverty. In that sense, the concept of resilience is part of the EU's comprehensive approach towards conflict and crisis management, both of which require good security sector governance.

Finally, resilience and security sector reform today are core elements of any multidimensional UN peacekeeping operation or – similar to the EU comprehensive approach – any UN external activity. Both include a strong preventive aspect and are not palliative or short term; instead, they aim at building the foundations of long-term peace and development.

The case for joint training and education in global health crisis prevention and preparedness

The impacts of global health crises rebound through multiple sectors. They depress economies, increase refugee flows and undermine political orders. These types of multifaceted problems require multisectoral and multiorganizational approaches if lives are to be saved and systems of governance are to be recovered.

Cases examining global responses to health crises demonstrate the lack of understanding and communication among health and security stakeholders and interveners. This leads to lost opportunities, wasted resources and long-term damage to health systems. On this basis alone, it appears imperative to create platforms for joint training wherein specific strategies for addressing global health crises can be explored and tested.

In addition, the valid debate about what goals should be prioritized in responding to global health crises should be informed by the views of global health advocates and stakeholders. By arguing against framing global health as a matter of “security”, health advocates fail to recognize

that global health crises do in fact have security implications. In doing so, they surrender their place at the table of security policy-making.

In the USA, the Department of Health and Human Services was given a seat on the National Security Council during the first Obama administration. This demonstrated the potential positive impact that the involvement of health advocates can have. It was through this appointment that the issue of global health security was raised, and efforts were made to figure out how to help countries finance their International Health Regulations (IHRs) obligations. The result was US support for the multilateral Global Health Security Initiative and Agenda programmes, launched in 2014. Through these programmes, the USA has helped other countries make measurable improvements in capabilities to detect and respond to emerging disease events.¹⁹ While work is still needed to ensure that these programmes continue to adhere to principles of equity, the only way this advocacy can take place is if health stakeholders continue to have a voice in this forum.

Thus not only multidisciplinary tactical and operational-level training programmes are required to improve responses to global health crises, but courses at strategic and policy-making levels as well.

In response to this need, several academies have moved to create training opportunities and consortia to facilitate cross-disciplinary interaction. The Global Health Security Alliance (GloHSA) is a new initiative that actively promotes academic networks to engage with Interpol, NATO, the EU and leading military academies and defence universities. In addition, Harvard's Kennedy School of Government, in partnership with its Medical School, is launching a new programme for senior global health and security policy-makers and military leaders on "health system protection and recovery in conflict-affected states".

We should note, however, that there are already many courses offered by governmental and international organizations as well as academia and non-governmental organizations (see Annex 1: "Existing training programmes for health crisis preparedness"). A sound and systematic overview of training modules to highlight and synthesize the best parts would be very useful. However, it is clear that most of these courses are reactive and for people acting in the field, rather than designed to improve

preparedness and disaster risk reduction.

Recommendations for future training modules for health and security actors

The Führungsakademie der Bundeswehr (German Command and Staff College) is exploring a programme that can generate more expertise in joint health and security operations (see Annex 2: “Training objectives of global health and security”). In conjunction with the new joint GloHSA network, a working definition was presented to the World Health Summit in 2017:²⁰

Global Health Security is the collective ability to mitigate health threats that have the potential to destabilize societies, states and regions. The goal of Global Health Security is to establish resilient health systems in order to promote peace and security for all.²¹

This definition is considered the foundation of an educational curriculum stressing the interconnectedness between security and health, and calls for a multisectoral approach. Additionally, the definition focuses on health system resilience as an integral part to the concept of global health security, which is described as a collective responsibility intended to benefit all people equally. Finally, it highlights the importance of global health security as a proactive, anticipatory endeavour that includes *ex ante* threat mitigation and preparedness, and not only *ex post* crisis response.

The elaborated programme is intended to create a common understanding of cross-cutting challenges and facilitate the interaction of expertise across a number of sectors, including security, health, disaster preparedness, humanitarian response, finance, governance, development and foreign policy. The target audience of such a course includes civilians, military personnel, national and international policy-makers and political decision-makers, as well as senior representatives from the health, security, diplomacy, development and private sectors. In several sessions, participants will develop a common understanding of the “pathology” of a

disrupted health system in fragile and conflict-affected states, study the associated threats for global health and, most importantly, learn how to “treat” or manage them. Furthermore, participants will be taught to apply different options of how to address global health threats by using whole-of-government approaches.

To build on this momentum, it is recommended to create a joint multinational (global) health security academic cluster to prepare long-term academic educational programmes for global health security (e.g. master’s degree/diploma) and support research and analysis based on collected lessons identified for UN agencies and other supranational institutions. The academic cluster should aim to adapt and promote timely new joint training modules for policy-makers and political decision-makers, and advise technical and clinical senior subject-matter experts and stakeholders from civil society and the private sector, as well as practitioners and trainers taking part in training-of-trainers programmes.

Furthermore, an independent *lessons-learned system* should be in place to inform national and international health and security organizations and stakeholders such as the WHO, the World Bank, the UN and the EU about multilateral military-to-military health security engagement activities.

In conclusion, global health security is a shared responsibility that requires a comprehensive multisectoral and multinational approach. To that end, the roadmap in Table 21.1 is put forward as means to improve preparedness in global health security.

Table 21.1: Roadmap to raise global health crisis preparedness

- Academic institutions should reach out to governmental agencies, as well as health and security organizations, to create a joint global health security board of subject-matter experts in each country to provide guidance and accountability for national and multinational comprehensive approaches.
- These national joint global health security boards should develop joint frameworks, concepts and principles for national and multinational health, humanitarian, development and security organizations.
- National and multinational security organizations (such as NATO and the UN) should be encouraged and supported to continue their efforts in developing doctrinal and strategic framework documents for joint civil-military medical capabilities specifically designed to support the leading role of the civilian actor.
- Government bodies and non-governmental organizations should identify and assess capacity and capability gaps, and determine where the security sector could support or should develop resources to assist global health security efforts based on agreed frameworks and guidelines.
- Governments should ensure an efficient joint multinational and multisectoral coordination mechanism.

Annex 1: Existing training programmes for health crisis preparedness

This annex gives a non-exhaustive mapping of existing training opportunities that combine global health and security aspects.

Executive programmes

- *Executive Programme for Global Health Leadership.* Offered by the London School of Hygiene and Tropical Medicine and conducted with Chatham House, the Global Health Centre at the Graduate Institute of International and Development Studies, Geneva, and the University of Cape Town. The ten-month programme offers experienced health professionals the opportunity to develop personal leadership, negotiation and diplomacy skills that will help them to achieve ambitious cross-sector health goals in multisector contexts. The programme includes three one-week residential phases in London, Geneva and Cape Town.²²
- *Global Health and Security: An Integrated Approach to Protecting Threatened Health Systems.* Co-organized by the Harvard Kennedy School and Harvard Medical School, and offered for the first time in December 2018. The one-week on-campus course focuses on multisectoral approaches to protecting and recovering health systems in conflict-affected states. It is designed for senior-level military planners, security policy-makers and advisers, critical health system personnel and international health agency decision-makers.²³

Civil-military courses at military academic institutions

- *Global Health Strategies for Security.* A graduate-level certificate course offered by the Uniformed Services University's Center for Global Health Engagement in Washington, DC. This two-week on-campus course is designed to develop an understanding of the civil and military considerations at the nexus of global health and security. It aims to enhance competency in order to develop whole-of-government strategies and programmes to strengthen health systems and counter transnational health threats. The course is developed for US and international military health system leaders and civilian partners, representatives of academic institutions and health personnel from non-governmental organizations with an interest in global health and security.²⁴
- *Military Medical Support in the Humanitarian Arena.* A NATO-certified one-week course at the Bundeswehr Command and Staff College in Hamburg, designed to develop an understanding of the humanitarian and military operational principles. The focus is on planning military contributions to support individual health infrastructures or access to health infrastructures in natural disaster response or complex emergencies. The course complements the UN Humanitarian Civil-Military Coordination programme (below). A new course for the Kofi Annan International Peacekeeping Training Centre in conjunction with UN stakeholders (Medical Service Division/Department of Peace Operations) has recently been developed, offering a platform for discussions of "controversial" issues and aiming to improve the interaction between military and civilian mid-career personnel meeting in humanitarian settings.²⁵

Courses at civilian organizations

- *Health Emergencies in Large Populations.* A two-week course organized by the International Federation for the Red Cross in partnership with academic institutions, the WHO and national Red Cross and Red Crescent societies. It focuses on provision of humanitarian assistance during disasters, armed conflicts and other complex crises.²⁶
- *Global Health with Conflict and Security.* One of four pathways that students of the global health MSc programme at King's College London can choose, it focuses on security and healthcare in low- and middle-income countries. The global health MSc degree is a one-year master's programme supported by the Conflict & Health Research Group.²⁷

Online courses

- *Massive Open Online Course on Violence against Healthcare (ICRC Health Care in Danger).* Offered by the University of Geneva. The Health Care in Danger initiative aims to establish practical measures and recommendations that can be implemented on the ground by policy-makers, humanitarian organizations and health professionals. The course covers topics such as ethics, rights and responsibilities of health and pre-hospital personnel, issues related to international law and humanitarian law, international human rights, caregivers and patient safety as well as the role of communities to address and reduce violence against healthcare.²⁸
- *Health Security in the Context of the IHRs.* A WHO online on-the-job training course for everyone interested in global health security. The course aims to strengthen critical human resources engaged to set up and manage systems for securing global public health under the IHR implementation framework, and develop communication capacities for efficient international collaboration.²⁹
- *UN Humanitarian Civil-Military Coordination.* An online learning course hosted at the US Institute of Peace Global Campus. It is designed for practitioners, experts and relevant resources to provide a well-rounded and interactive approach to learning, applying the course handbook. Participants test their knowledge and critical thinking skills in virtual scenarios.³⁰
- *Humanitarian Response to Conflict and Disaster.* A self-paced online course from the Harvard Humanitarian Initiative and HarvardX that "seeks to prepare learners to recognize and analyze emerging challenges in the humanitarian field. The course explores the ethical and professional principles that [should] guide humanitarian responses to conflicts and disasters."³¹
- *Public Health in Humanitarian Crises.* Provided by Johns Hopkins University Center for Humanitarian Health, the course is designed to teach "how public health concepts and skills can be applied to disasters" by understanding the public health issues that affect populations troubled by both natural and man-made disasters.³²

Annex 2: Training objectives of global health and security training

Training programmes and courses on global health security should fulfil the following requirements.

- Create supranational and supra-institutional cooperation to facilitate multisectoral interaction, working relationships and networks in line with a profound understanding of the concepts of security sector governance, security sector reform and resilience.
- Promote a sound understanding of health and security concepts and their respective toolboxes to influence policy and political commitment.
- Develop capacity-building programmes to strengthen health systems in conflict-affected states using joint health and security actors.
- Address the linkage between human and animal health and security, and the need for better diagnosis of health problems arising from animals.
- Cover the main concepts of national, international and human security.
- Explain the main concepts of health systems and public and global health.
- Provide understanding of various global instruments such as the IHRs and the Sendai Framework for Disaster Risk Reduction.
- Facilitate the use of the main tools to analyse disrupted health systems.
- Provide the necessary toolkit to assess threats to global health security.
- Provide tools to promote good governance and determine the root causes of bad governance.
- Address the importance of using the existing health infrastructure for surveillance and to diagnose and treat vectors of contagious diseases in different areas.
- Address such threats with a whole-of-government approach.
- Provide understanding of risks and benefits of the use or misuse of health as a tool for diplomacy and peacebuilding.
- Provide understanding of and facilitate the use of early-warning systems.
- Provide understanding of risk factors for global health in rapidly changing environments, such as:
 - infectious diseases spread in epidemics and pandemics
 - re-emerging or newly emerging infectious diseases spread in epidemics and pandemics
 - antibiotic resistance development
 - impact of non-communicable diseases
 - climate change and associated restrictions on access to safe water and food, as well as emerging environmental conditions for unknown pathogens
 - migration as a driver of shifting social structures and overburdening local health systems
 - information and data security
 - deterioration of state structures, and especially corruption
 - the impact of violent conflicts – destruction of health systems (logistics, infrastructure, staff) and limited access in the face of increased demands.

Notes

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PART VII

Conclusion

Preparing for the Next Crisis: Future Health Crisis Challenges and Recommendations for the Security Sector

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Overview

This chapter summarizes the main findings of the contributions presented in this volume, and offers some general conclusions. Together, the chapters examine national and international responses to the Ebola outbreak, with a focus on the role of the security sector in supporting national and international health providers working in West Africa, the role of security institutions in the countries affected by the outbreak, the role of international military support missions and responses by regional and global organizations. The ultimate objective is to generate lessons and recommendations that will help ensure better preparedness for future health crises.

Main findings

The prevention and management of health crises are necessary to maintain security, stability and peace in and beyond affected countries. National security sectors can make significant contributions to the early detection of, response to and mitigation of such crises. To facilitate this, security sector actors must be adequately trained, mandated and integrated into a well-coordinated cross-sectoral response, typically under civilian command and control. Security sectors that operate according to good governance principles and are fully integrated in *whole-of-government*

disaster preparedness mechanisms will be prepared to cooperate with local, national and regional security and health providers. Ongoing security sector reform (SSR) efforts must be adjusted to incorporate the specific challenges posed by potential health crises, and institutional frameworks of the security sector must be adapted to allow effective contributions to prevent or alleviate these crises. It is crucial to have a *national coordination mechanism* in place, for instance in the form of a national health security council. To ensure preparedness, early and continued joint *multiagency training activities* must be carried out, including *simulations and scenario building* that help to clarify how the different sectors should best cooperate in the case of a health crisis. *Intersectoral training of health and security professionals* must take place at national and international levels to establish and practise lines of authority and responsibility; improve communication among sectors and with affected communities; and develop a shared understanding of terminology to facilitate cooperation during a crisis.

Health crisis management

Much can be learned from the experiences of those countries that were most affected by the Ebola epidemic in 2014. Sierra Leone was effectively brought to a standstill by the outbreak: schools shut, private and public investment fell dramatically and unemployment increased. In the outbreak, Sierra Leone experienced 8,704 cumulative confirmed cases and 3,589 cumulative confirmed deaths. These figures illustrate that this was the largest and most sustained Ebola virus disease (EVD) outbreak to date. Regarding the national responses to the epidemic, lessons can be drawn from the problems encountered in Sierra Leone. Deep distrust of government and health officials fuelled misconceptions about the government's intention in its response to the outbreak. This led many communities to believe that the Ebola outbreak was fabricated by government officials seeking to make financial gains. Furthermore, the government's sensitization campaigns contained contradictory messages that effectively deterred people from seeking help at hospitals. The healthcare system was already in a poor state as a result of the lengthy

civil war: many hospitals did not meet World Health Organization (WHO) standards and lacked the equipment and laboratories necessary for Ebola testing, and healthcare professionals were not adequately trained in infection prevention and control (IPC). There were large discrepancies in the quality of care between public and private facilities. The focus on EVD caused other diseases to be neglected, and many patients died of non-communicable diseases because they feared going to the hospitals treating Ebola patients. Initially, Sierra Leone's security forces were neither prepared nor equipped to help manage the outbreak. Adequate equipment was lacking, and problems arose protecting human rights and providing community security in such a sensitive humanitarian context. Still, as the crisis continued the Sierra Leone Police (SLP), Republic of Sierra Leone Armed Forces (RSLAF) and Office of National Security were widely praised for their involvement in confronting the epidemic. The SLP and RSLAF were tasked with de-escalating riots, restricting unnecessary and unwanted border crossings and reinforcing districts to prevent potential public disorder. Senior SLP staff assisted the National Ebola Response Centre (NERC) and District Ebola Response Centres (DERCs), conducted searches of premises and assisted in the management of those who succumbed to Ebola. The SLP and RSLAF protected burial teams from attacks and managed the deployment of safety teams that reorganized the collection of bodies. SLP and RSLAF engineers also assisted the UK military contingent in the construction of a treatment centre at Kerry Town. Notably, the SLP was instrumental in addressing misinformation through various forms of communication. For instance, the SLP conducted education and awareness-raising campaigns in cities and rural areas; sensitized members of transport and trade unions; acted as a liaison between citizens and the government; enhanced the government's capacity to monitor situations in the Mano River Union (MRU) countries; and highlighted the importance of prevention efforts, such as hygiene measures. The RSLAF supported the SLP by staffing checkpoints and deploying guards for quarantined houses across entire districts. But despite these important contributions by security forces, significant shortcomings were observed: attempts to close borders were often unsuccessful due to their porous nature; health systems lacked

preventive measures and did not meet adequate health standards; medical teams responded late and in several cases misdiagnosed Ebola; monitoring systems were lacking; and overuse of chlorine (as a disinfectant) was the cause of many deaths. Moreover, the deployment of security personnel in quarantine homes did not consider the importance of assuring a gender balance among these personnel. However, the contributions of the SLP and RSLAF were overall seen as indispensable in managing and ending the Ebola outbreak.

Guinea was initially similarly unsuccessful in managing the epidemic due to a dysfunctional healthcare system, poor road infrastructure and community distrust of government officials. The outbreak created fear, panic and uncertainty, leading to large-scale community resistance that proved to be a significant barrier to efforts to curb the epidemic. The negative effects of misinformation were further aggravated by the high rate of illiteracy among the population. Such community resistance raises questions about the role of the security sector in health crises.

Security sector involvement in Guinea proved useful in overcoming obstacles to international assistance. These included, among others, the lack of community awareness and the delay in the construction of transit and treatment centres. However, many patients suffering from other diseases did not visit public hospitals due to fear of infection. Here, the security sector contributed significantly through its assistance with the construction of treatment centres for Ebola patients, which reduced the fear of infection in public hospitals. The security sector can contribute to more effective health crisis management by enforcing quarantine measures, providing border policing, restricting the movement of people in and out of infected areas and providing assistance to civilian healthcare providers.

The Ebola outbreak in Nigeria was comparatively short-lived because the country had mechanisms in place that allowed a swift government response. Once the first case of EVD was diagnosed at a hospital in Lagos, the government rapidly established the Ebola Emergency Operations Centre (EEOC), made up of different working groups. A “point of entry” (POE) group, for instance, was tasked with screening all passengers for history of contact, fever and other symptoms. Preventive methods proved to be highly

successful. These included rapid scale-up of community sensitization and training of health workers on IPC, which in turn greatly increased their willingness to treat Ebola patients. Several Nigerian military officers with medical or public health backgrounds participated in the EEOC's response and offered assistance in planning, contact tracing, logistics, supervision, organizing screening and secondary evaluation of travellers at POEs. The experiences in Nigeria further highlighted that adequate preparedness is crucial, rapid action coordinated through a command or emergency operations centre is vital and contact tracing is critically important. The latter requires human resources, logistics and finance, all of which must be in place and could be procured with assistance from the private sector. Similarly, good clinical care reduces misconceptions, improves confidence in the government and allows an outbreak to be contained much faster.

Border security and integrated border management

The Ebola outbreak demonstrated that threats to public health security represent major threats to national and subregional security across the MRU region. Special efforts in border policing are needed to contain the spread of infectious diseases. Through coordination between national and border security efforts, prevention can be improved, preparedness assured and, if an outbreak cannot be prevented, the spread of the disease can be contained. In Sierra Leone, security sector institutions lacked capacity for collaborating in detecting, surveilling, tracking and responding to health crises. High mobility and frequent border crossings posed significant challenges to border policing and complicated the tracking and monitoring of cross-border transmission of EVD. The crisis highlighted that border policing measures must be instituted early on during a health crisis to mitigate the threat, ideally in collaboration with neighbouring countries to increase the efficacy of such measures. Weak border policing structures allowed Ebola to spread rapidly from borderlands to urban areas. Furthermore, joint efforts between border police, other security sector actors, health workers and humanitarian agencies must be enhanced. In this context it is crucial to disseminate and then follow MRU policy documents,

given that these outline security protocols and thus increase awareness, identify appropriate roles for all sectors involved and streamline efforts across countries in the same region.

The limits of border management arrangements became all too obvious during the EVD crisis, when the virus spread rapidly from Guinea to Liberia and Sierra Leone, on to Nigeria, Senegal and Mali, and then reached France, Spain and the USA. The responses of border police in numerous countries highlighted the widespread lack of compliance with the International Health Regulations (IHRs). Many countries, including Senegal, Guinea-Bissau and Cameroon, closed the borders they shared with the affected countries. In addition, unaffected and far-away countries such as Canada and Australia imposed travel bans on flights to and from the affected countries, in violation of the IHRs. It became evident that to contain the spread of the disease by controlling access to the national territory, the relevant security sector actors must be involved. Affected countries in the Ebola outbreak drew on customs agencies, border police, regular police and intelligence services to assist with border management. For instance, control measures and isolation rooms were installed at the borders of Guinea and Guinea-Bissau. In Mauritania, security forces assisted with registering arriving passengers, directing suspected cases to the appropriate health services and securing the surveillance posts. Despite concerns about a further spread of EVD, the WHO strongly advised against closing borders during the outbreak. In line with this recommendation, Mali refrained from closing its borders, relying instead on preventive measures and information campaigns for citizens. This was designed to prevent the adverse effects of border closures on formal economies. In sum, borders should remain open during health crises, with security sector actors assisting at border crossings to mitigate the spread of the disease.

Integrated border management (IBM) is a crucial tool for coordination and cooperation between different stakeholders. Originally a European concept, IBM is vital in preventing and countering the cross-border spread of communicable diseases. IBM may provide analytical data regarding the spread of infectious diseases at policy and operational levels. Procedural and technical arrangements, as well as trust, must be in place to allow

data sharing. The Ebola crisis showed that the collective ability to counter occurring threats and decrease transmission of infectious diseases must be enhanced.

International involvement

The Ebola epidemic triggered a *large-scale response from the international community*, with support ranging from financial or material aid to other types of assistance. The European Mobile Laboratory (EMLab), as part of the Global Outbreak Alert and Response Network, was deployed in rural Guinea. Within EMLab, public health and security issues related to chemical, biological, radiological and nuclear (CBRN) threats are linked. For instance, scientists from Spiez Laboratory attended specific training sessions prior to the Ebola outbreak, and could then apply the lessons from the training to the emergency situation caused by EVD. The laboratory carried out neutralization tests at biosafety level 4 conditions, which means that numerous samples of serum collected from vaccinated persons in Switzerland, Kenya and Gabon were subjected to a live Ebola virus. The laboratory also participated in the diagnosis of patient samples collected from military personnel suspected of having contracted H1N1 during the pandemic in 2009. The Swiss Armed Forces were involved in this task to assist with the unusually large caseload. Spiez Laboratory's activities highlight that public health and CBRN are inherently interrelated, and a response to a biological event will be very similar regardless of natural or deliberate origins. Epidemics and pandemics need to be met with holistic responses by public health and CBRN responders. Research centres that work on such responses in collaboration with relevant government ministries have an important role to play during public health emergencies.

The health sectors in Guinea, Liberia and Sierra Leone were overwhelmed and unable to cope with the Ebola outbreak, due to a lack of medical personnel, insufficient beds in Ebola treatment units (ETUs), difficulty in identifying cases and the slowness of the overall response. As a result, national governments authorized the deployment of national and international armed forces to help curb the epidemic. The UK, the USA

and many other countries supplied military assistance in response to the call of Médecins Sans Frontières (MSF) to deploy security assets to the area. British forces were deployed in Sierra Leone and the US military was deployed in Liberia. In general, the RSLAF, British forces and the US military were indispensable in curbing the epidemic. Their roles included provision of security for health workers; surveillance and contact tracing; constructing and staffing ETUs; collecting samples; enforcing travel restrictions, curfews and quarantines; managing safe burial teams; providing mobility support; and developing policies, training and command structures. Armed forces also made substantial contributions in coordination, planning and decision-making, social mobilization, training and logistics. All these engagements highlighted the need to improve preparatory training of the military in the use of personal protective equipment (PPE) and the coordination between the armed forces and civilian actors (international and national non-governmental organizations - NGOs). For future health crises, military forces must build capacities that include dedicated units trained for health disasters, and develop memoranda of understanding with government agencies in advance to facilitate smooth coordination.

The British military contribution in Sierra Leone was a critical factor in eliminating Ebola in the country. The approach of the British forces was highly effective and may provide a baseline for future emergency humanitarian operations. However, it should be noted that the lessons of British involvement might not apply to other such situations. The British military was already present in the country and well respected by the population - two important advantages. British military forces maintained high readiness, and the Army Logistic Brigade Headquarters included engineers, medics, logisticians, communicators, intelligence personnel and helicopters ready to be deployed at any time. While the capacity of deployable military hospitals was limited, the clinical capacity of the British forces benefited from pre-deployment preparation: hospitals were thus ready to receive and treat patients as soon as they were deployed. For future emergencies it is vital to increase the capacity of deployable military hospitals, optimizing them for treatment of infectious diseases and training medical personnel in chemical and biological protection. The

British military intervention was led by the UK Department for International Development and focused primarily on institutional support, training, military engineering, medical, mobile and logistics support, evacuation and transport. While civilian organizations and the government were in charge of the overall response, the military was often able to respond more quickly to developing situations given its information services and resources. The military's standardized approaches to assessing, communicating and executing plans were more efficient than those of its civilian counterparts, following standard military planning. The British forces further contributed to the training of local healthcare workers, for instance through developing the Ebola Training Academy that built on the existing infrastructure of an MSF-run training facility. But despite all these positive experiences, the British military was also criticized for the slow pace in constructing ETUs and a perceived risk aversion in the face of the deadly EVD.

As part of the cooperation between international bodies and NGOs, France assumed a leadership role alongside the Guinean government in coordinating a response and actively cooperated with countries in the MRU region on health issues. It was one of the first countries to respond to the epidemic by providing expertise, fact-finding missions and supporting the French and Guinean Red Cross in medical and prevention missions. France allocated €160 million for the initial response and €150 million for the reconstruction phase. During the response it was found that it was most effective to fund NGOs from the global North, as they were able to deploy very quickly. France assisted in medical care, training/protection of health workers, and providing assistance to communities. In February 2015 France implemented a transition plan in coordination with local partners to enable the Guinean government to implement an autonomous and long-term strategy for combating Ebola. ETUs were concentrated in areas where the virus was still active and were closed down in other areas. Training in prevention, infection control and treatment was made available to a wider audience. Emergency response structures were put in place to allow the reconstruction of a prevention system in Guinea and neighbouring countries. Hospital hygiene capacities were further improved. France's activities in Guinea highlight the importance of preparing crisis management systems

in advance that are compatible with health-related crises and aim at rapid deployment. Such systems should exist at the international level and involve actors such as the UN, the WHO and the European Union (EU). In addition, a process must be in place to allow a mandate to be given to the actor that has the financial and human resources required for the response. In future, preparation should incorporate all aspects of crisis management, such as regulatory aspects and the provisions of the IHRs. Protocols targeting communicable diseases must contain a regional component that includes protocols for border protection and control measures. Lastly, medical, sociological and anthropological research should be scaled up between crisis periods to create a pool of capable staff who are able to respond effectively in health emergency situations.

The armed forces fulfil well-defined roles in situations of armed conflict, but they can also assist with the provision of medical services. This is evident in Switzerland, where the armed forces have traditionally been involved in providing medical and emergency services. Coordinated Medical Services (CMS) was created by the Swiss government to enhance cooperation in the medical field. The Surgeon General of the Swiss Armed Forces has been put in charge of CMS and is therefore military and civilian. CMS is tasked with developing and evaluating scenarios to plan potential medical responses, which has involved the design of vaccination centres and allowed the armed forces to support the work of the national healthcare system. Agreements have been put in place to facilitate a rapid response in case of an emergency. This was put to the test during the H1N1 pandemic, which highlighted the importance of scenario analysis. Determining the players, interactions and dependencies of each possible crisis scenario, as well as the necessary memoranda of understanding and rules of engagement, is crucial to avoid time-consuming negotiations and enable rapid deployment in emergency situations. The pandemic further reinforced the importance of organizing responses in such a way that individual support provided by different actors is complementary. During the Ebola crisis it became evident that such scenario building did not take place at the international level. As a result, the process and negotiations necessary for the launch of an international response were time-consuming. It was further apparent that

armed forces often include well-trained medical services and well-equipped logistical structures, which are indispensable in post-conflict countries with dangerous conditions, and where the international community may be unable to provide assistance, whether military or logistical.

The EU considered the Ebola crisis a humanitarian emergency in 2014, and thus its response was humanitarian in nature. It joined the initial emergency response in autumn 2014, and subsequently engaged in the recovery efforts from late 2015 onwards. Notably, the EU response was perceived as a positive example of a comprehensive and coordinated approach. Within the broader international response, the EU subordinated itself to the UN's overall leadership and coordination. The EU provided crucial humanitarian support, supplying essential equipment; sending experts and staff to assist with training, treatment and detection; providing transport; and using security forces to assist with protection and delivery. It also engaged in more political activities, such as actively promoting caution and monitoring at border crossings, but it strongly opposed border closures. The EU channelled its funds through organizations on the ground, such as MSF, Save the Children, the World Food Programme and others. During the response EU member states cooperated pragmatically to address the Ebola threat using existing mechanisms and institutions; for instance, member states' in-kind assistance was run through the EU Emergency Response and Coordination Centre. The European Commission, the European External Action Service and delegations on the ground coordinated through the EU Ebola Task Force, which also liaised at the international level with the UN Mission for Ebola Emergency Response (UNMEER). While, as noted above, the EU's response was initiated from a humanitarian rather than a security perspective, the Ebola crisis clearly blurred the lines between the humanitarian and security paradigms.

The Ebola crisis showed that the African Union (AU) has vastly improved its response to conflicts and humanitarian crises. The AU Support to Ebola Outbreak in West Africa (ASEOWA) mission was deployed in September 2014 and tasked with contributing to ongoing national and international efforts to contain the spread of the disease. The mission provided technical, political and financial support and assisted in coordination

of the field response, humanitarian assistance efforts and awareness-raising and sensitization campaigns. In addition, the West African Health Organization (WAHO) deployed its health workers alongside ASEOWA medical and military personnel. ASEOWA collaborated successfully with the national coordination centres in the affected countries, as well as with other international organizations, the Economic Community of West African States (ECOWAS) and humanitarian agencies on the ground. The positive impact of the response may also be attributed to the intensive induction training that the ASEOWA team received from the WHO, MSF and the US Centers for Disease Control prior to deployment. The military component of the mission successfully provided operational and logistical support. The ASEOWA team worked on IPC in health centres and schools, but encountered difficulties in the response. While deployment plans were well coordinated, deployment itself was delayed – as were international responses. Initial challenges included resource mobilization, logistics, accommodation and transport. As funds became available, however, the ASEOWA mission operated smoothly. It offered an opportunity to prepare better for future health crises: prior joint training was critical to saving the lives of ASEOWA health workers, and ASEOWA experienced no fatalities during its work in Guinea, Liberia and Sierra Leone.

The security sector was crucial in facilitating a well-coordinated mission that drew on the comparative advantages of different stakeholders. Indeed, a multistakeholder approach is recommended to ensure efficient and productive collaboration between health and security sector actors. Nonetheless, better preparedness, strong early-warning systems and response mechanisms tailored to health emergencies must be in place. In addition, joint training and simulation exercises between the health and security sectors are crucial and will further facilitate the drafting of standard operating procedures (SOPs) and concepts of operations (CONOPS), which must be in place prior to future crises to ensure a rapid and effective joint response.

The outbreak highlighted the need for ECOWAS to develop its capacities to confront threats to regional security and stability and strengthen resilience among its member states. As the West African region is likely

to be threatened by future outbreaks of infectious diseases, it is crucial to build and maintain appropriate surveillance, prevention and response capabilities. Health security preparedness must be promoted and included as a regional responsibility. ECOWAS and the ECOWAS Standby Force (ESF), mandated to support humanitarian responses through emergency services, transportation, contingency planning, stockpiling of equipment, information management, training and other tasks, faced significant shortcomings that came to light during the outbreak. Indeed, the ESF could not be deployed at the start of the epidemic in 2014, as it was not yet fully operational. While WAHO within ECOWAS was crucial for surveillance and responding to clinical challenges of the epidemic, numerous factors stifled ECOWAS's ability to respond effectively to EVD. These included weak health infrastructures and humanitarian mechanisms in the affected countries, all of which were least-developed countries and/or heavily indebted poor countries. ECOWAS states need to strengthen their capacities in the health, security and humanitarian sectors, ideally by promoting mutually reinforcing doctrines, policies and operations. In future, intelligence agencies should include public health data in national security planning and draw policy-makers' attention to the need for corresponding security budgets. Security sector actors should be involved from the outset in health crisis responses. For instance, they can assist with delivering humanitarian aid, providing transportation and coordinating service delivery. The required training and capacities must be made available. ECOWAS itself should develop a standby arrangement for epidemic responses, establish a civil-military doctrine for the ESF and place greater emphasis on effective social organization. Emergency education should be used to build resilient communities using a whole-of-government and whole-of-society approach. On this point, it is recommended that a permanent cadre of professional personnel is tasked with community mobilization. Education and civic leadership are crucial in facilitating effective social organization, which in turn mitigates potential health crises and facilitates improved coordination and responses to future health crises.

The *Mano River Union* (MRU) was engaged in a subregional and collective response to the outbreak. Like many other responses, it materialized

after much delay. This highlighted specifically the poor national health systems in the region. Nevertheless, the MRU Secretariat made important contributions. For instance, it facilitated higher-level intergovernmental technical, policy and decision-making meetings that contributed to the development of more coherent subregional approaches. It also developed the Post-Ebola Recovery Advocacy Programme (2015–2017), which aimed at harmonizing approaches to infectious disease threats. The MRU further successfully leveraged partnerships that have enhanced collaboration with the AU, African Development Bank, ECOWAS and UNMEER. Joint meetings have enhanced the ability of these organizations to formulate coherent policies and SOPs. During the course of the MRU intervention, several lessons emerged. For instance, quick and detailed understanding of the meaning of an epidemic/pandemic virus and its transmission and implications for humans is crucial. Further, a timely decision-making process that recognizes the severity of the threat is vital to trigger multiagency responses and coordination mechanisms for regional cooperation. Given that EVD initially affected three MRU member states, the MRU should have worked more towards a harmonized approach across the three countries and have implemented an integrated MRU approach. The MRU peace and security architecture must be strengthened. This includes improved governance, health capacities and security sectors of its member states. Information sharing and democratic decision-making processes are essential in regional and indeed international cooperation. During the Ebola crisis, only the health sector received international advisory support; in future, such support should be provided to all sectors involved in the response to improve trust and cooperation. Improvement of road networks and health infrastructure across the region is crucial to facilitate future emergency responses. In addition, mapping the comparative advantages and disadvantages of health and security sector institutions may be used to develop joint training exercises. Similarly, training and capacity building for health and security actors should be standardized across the region. If the MRU is to play a more effective role in mitigating and responding to future crises, more funding and advisory support are required to strengthen national health systems and build up a regional health security advisory

support capacity.

The *International Organization for Migration* (IOM), given its long experience of responding to health and infectious disease outbreaks, assisted with the EVD response by working with military forces in affected countries, with foreign military contingents and with border security and immigration authorities. The IOM's involvement was vital given that the dynamics of human mobility greatly influence the spread of infectious diseases. Trade, employment, education, culture and accessing healthcare remain important determinants of mobility dynamics. During the outbreak the organization collaborated with foreign military contingents in the construction of ETUs, which were operated by IOM medical staff. They collaborated with border security and immigration officials regarding the implementation of the health, border and mobility management framework. The IOM also engaged in training and capacity building of authorities involved in the response. Several lessons emerged from the IOM's activities during the epidemic. Early collaboration between humanitarian and security actors in designing ETUs is important, and may require additional funding. Health screenings at airports were not popular with the local population, thus military and police contributed to ensuring compliance. Importantly, real-time mapping technologies were used to identify all staff accessing the airport and to verify SOPs developed at other POEs. The IOM trained military and police in using flow monitoring point methodologies in screening passengers, to reinforce respect for the safety and dignity of all passengers. It was found that guidelines are needed to coordinate civil-military cooperation. While the Oslo Guidelines provide a good starting point, they are not sufficiently tailored to complex health emergencies. Mapping human mobility was determined as crucial in allowing health authorities to execute targeted prevention, detection and response efforts. With regard to human mobility, the IHRs should incorporate the Siracusa Principles to allow temporary suspension of the right of free movement in line with human rights norms. The IOM reiterated during the crisis that foreign military assistance should only be used as a last resort. Overall, a joint humanitarian and security interagency working group would be invaluable in establishing guidelines and clarifying the

roles of the actors in the emergency response. Training exercises must involve real-life simulations with differing dynamics and capacities in various contexts. The IHR core capacities must be enhanced and global health security threats addressed, and intersectoral action and cross-border coordination are imperative.

Concluding remarks and recommendations

This volume aims to analyse the involvement of security sector actors during the Ebola crisis, the cooperation between health and security sectors, and the most important lessons from the international response. To improve response to future global health crises, several issues emerged from the chapters contributed to this volume.

Before a health crisis states must improve their preparedness for coordination and execution of a successful emergency response. In West Africa the need for improved infrastructure (including roads to improve accessibility and health facilities such as laboratories and hospitals) and strengthened national health systems is clear. This must involve training health professionals in IPC. To allow early detection of and early response to a global health crisis, effective use of early-warning systems is important. It is also vital for intelligence services to draw on public health data to inform policy-makers and guarantee a larger security budget. Sharing information between stakeholders and states is essential to ensure the accuracy of warning systems. In essence, preparedness requires compliance with the IHRs. To facilitate cooperation between humanitarian and security, or civilian and military, actors, guidelines and frameworks must be in place prior to an outbreak. These must include SOPs and CONOPs. Guidelines for civil-military cooperation could draw on the existing Oslo Guidelines, but guidance should be specifically tailored to health crises. Lastly, training, capacity building and real-life simulations of potential scenarios are indispensable for ensuring an effective response to any contingency. Health workers and security sector personnel must be trained both on how to carry out their duties in the context of an infectious disease outbreak

(e.g. trained in PPE, IPC, etc.) and also on civil-military cooperation. In this regard, joint training and simulations could map out the advantages and disadvantages of each actor, which need to be clearer to indicate potential roles in a health crisis. Cross-sectoral cooperation is therefore important in anticipation of an emerging health crisis.

During a health crisis the speed of the response is crucial. This became clear during the Ebola epidemic. The speed of response will depend on the rapid availability of sufficient funding, as well as health workers and security personnel trained for cross-sectoral cooperation in health crises. The involvement of security sector personnel is indispensable. Intelligence services may assist with early-warning systems, data gathering and contact tracing. The police and armed forces can assist with sensitization campaigns, quarantines, ensuring public order and, most importantly, the logistical aspects of humanitarian and health efforts. However, foreign military assistance must only be used as a measure of last resort, and security actors must remain subordinate to civilian and humanitarian actors at all times. In the context of cross-border infectious diseases, border security plays perhaps the most instrumental role. Here, regional cooperation is of vital importance. Harmonizing approaches across borders with regard to guidelines, screening, data sharing and other aspects is essential to curbing the spread of infectious diseases.

After a health crisis, post-crisis reconstruction of infrastructure and health systems is needed to ensure preparedness for future threats. Research in the medical, sociological and anthropological fields must be carried out between crisis periods to create a pool of experts who are able to respond in health emergencies. Most importantly, the lessons learned during the crisis in all aspects, including civil-military cooperation, information sharing, border management, regional cooperation and capacities, must be integrated into training, early-warning systems, guidelines and frameworks that govern health crisis responses and regional organizations.

The Ebola outbreak was devastating, and resulted in significant casualties across West Africa. The virus has a relatively low rate of transmission: one Ebola-infected individual only infects one or two people, while one person with measles can infect 12-18 people. The fact that Ebola

was so devastating despite this low transmission rate highlights severe deficiencies in health systems and the international emergency response. Infectious disease outbreaks are not isolated; rather they affect and threaten every single state. In our increasingly globalized world, the threat of global infectious disease outbreaks looms large. Zoonotic diseases pose a particular threat. Cooperation between the health and security sectors is indispensable during global health crises. The necessary steps must be taken to improve health systems and facilitate cross-sectoral cooperation to ensure a quicker and more effective response to a future global health threat – which may well be more deadly than Ebola.

Finally, a number of recommendations for more meaningful and effective security sector involvement in health crises can be highlighted, based on observations made in the contributions to this volume.

General recommendations for preparedness

- Building core competencies needs to be an ongoing effort for both health and security sectors. Emphasis should be placed on recognizing changes in patterns of behaviour and mobility flows that can signal risks.
 - Security sector components should engage in periodically organized simulation exercises, to improve coordination and cooperation between and within the components.
 - SSR should strengthen the individual security sector components for involvement in health crises, while ensuring the highest standards of efficiency, impartiality, accountability and transparency.
 - Research should be undertaken by security sector components on the impact of health crises on their own roles and responsibilities, and related national security issues, to prepare for possible outbreaks.
- National armed forces, both in the countries affected and those offering assistance, must be trained for their potential involvement in pandemic outbreak control.
 - Armed forces must be ready to assist as soon as an outbreak occurs, be mobile and well equipped, and have the ability to concentrate materiel and resources where they are needed and for what is needed.

- The armed forces should be on stand-by to respond to, deter and de-escalate violence where an outbreak threatens the stability of communities.
- Alongside epidemiologists, military officials should take part in regular forecasting briefings, because coordination and synchronization of early preparedness assures adequate readiness and response capacity.
- Necessary guidelines, including SOPs, must be regularly updated and disseminated.
- Armed forces must receive training in crisis management and health-related cross-sectoral matters, such as basic medical and public health concepts.
- Medical equipment must be field-capable and suitable to responding to the specific disease outbreak, and users must be trained in the necessary technical skills.
- Police forces must be adequately trained to participate in responses to health crises, which will include interoperable collaboration with the health sector, international actors and other security sector components, such as the armed forces.
 - Police and other security sector components must prepare for future health crises by stockpiling sufficient amounts of PPE and training on how to use it in case of emergencies.
 - Training on how to handle crowd management situations, which are likely to occur during health crises, and the limits on the use of force must be provided to ensure that the actions of police and other security sector actors do not threaten the credibility of their participation in the response.

General recommendations to ensure subsidiarity of the security sector

- When the challenges go beyond traditional security tasks, non-civilian security institutions' involvement must be subsidiary to the civilian actors directly responsible.
- The armed forces must fully understand and respect their own subsidiary role under civilian leadership of health crisis management.
 - Subsidiarity should not mean the delayed involvement of the armed forces. Early involvement of the armed forces complies with subsidiarity and is crucial.
 - The mandate of domestic armed forces as a coordinating or

- support role must be decided on a case-by-case basis.
- Interoperability and compatibility of armed forces with other security sector components of the coordination mechanism must be ensured. Local communities must be informed of the different actors in the command-and-control structures, and those in charge of support functions.
- Police forces must understand and respect their subsidiary role under civilian leadership in health crisis management.

General recommendations for national and international coordination

- At the level of national governments, a single coordination mechanism should be established to coordinate multiactor and multisectoral responses to health crises.
- A national interagency health security council and a dedicated monitoring and situation room are recommended. These must remain under civilian control and serve all actors involved on the ground, including NGOs, private sector organizations and representatives of the international community.
 - All actors participating in the response (NGOs, private sector, international organizations, health and security actors) need to be fully briefed and ready to move with preventive and/or response measures once political decisions are made.
 - Tasks should be allocated based on the capabilities and competitive advantages in health crisis management of all actors involved in the response.
 - It should be ensured that different actors in the same country do not work in isolation or at cross-purposes with each other by encouraging exchange of ideas, experiences and best practices.
- Coordination of efforts across borders is important with regard to reducing cross-border spread of an infectious disease.
 - Governments should coordinate regulations on border control to reduce cross-border movements effectively.
 - Advance preparation and testing of response structures are critical, to clarify when to escalate levels of response and which roles are played by different actors.
 - Such mechanisms must be established before the emergence of a health crisis.
- Coordinating bodies at national levels should have the necessary

powers vested in them to coordinate nationally owned responses to crises.

General recommendations for information sharing

- Free flow of information is essential for security sector actors, e.g. intelligence services and border management.
 - Language barriers must be addressed to allow regional information sharing.
 - An early-warning system could collate the streamlined data contributed by different countries.
- For IBM, regional information sharing is particularly important. The European Commission's Schengen Information System may be used as a model database for other regions.
- The information flow between national authorities and remote communities should be improved to allow local concerns to be included in national policies.

General recommendations for exit strategies

- Exit strategies must be in place for armed forces, as well as local, national and other stakeholders involved in the response, to ensure efficient hand-over of joint activities.
- Lessons learned from the Ebola response should be integrated into training and doctrine for future missions.

Specific recommendations for foreign military assistance

- Standardized status of forces and status of mission agreements provide valuable mechanisms by which a wide range of issues can be negotiated and resolved.
 - Prior to deployment, the political, economic and social history of each event should be carefully scrutinized to determine whether the deployed troops will be received with good will or hostility by the local communities.
 - The role of foreign militaries must be carefully defined, with specified mandates, divisions of labour and an exit strategy.

- Domestic and foreign armed forces must be subordinate to civilian leadership.
 - The UK contribution highlighted the need for increased capacities of deployable hospitals, optimized for treatment of infectious diseases, and training in chemical and biological protection for military medical personnel.
 - The armed forces can play important roles in the construction of treatment units and helping improve poor infrastructure to facilitate the overall response.
 - Drawing on previous involvement in other relief operations, there are other roles the armed forces could have fulfilled: guidance with the chain of command in the response, assistance with communications and participation in data collection and response centres. Further key areas include transportation and building infrastructure such as geospatial mapping capabilities, fuel depots, etc.

Specific recommendations for intelligence services, police, border management and local security actors

- To facilitate intelligence gathering, stigmatization of those infected must be addressed. During the Ebola crisis, for instance, this led to many cases of EVD being unreported in Sierra Leone.
 - Collaboration between intelligence services and civilian health authorities is crucial to allow accurate information on national security and facilitate threat estimate planning.
 - Gathered intelligence must be accessible to the relevant stakeholders involved in the response, such as hospitals and border officials.
 - Data collection and formatting should be streamlined across neighbouring states and other actors, to facilitate the exchange of information among different stakeholders.
 - An early-warning system for health crises, which is immediately updated with obtained streamlined data, should be established. This could be based on the EU Early Warning and Response System.
- Through community policing, police forces can contribute to the dissemination of information, and thereby sensitize the population to the dangers of a health threat such as an infectious disease outbreak.

- In this regard, the specific needs of vulnerable populations, such as children, pregnant women, the elderly and people with disabilities, must be taken into account. There must be gender balance in the deployment of security personnel, which is important during searches of premises where men are prohibited from entering private homes for religious reasons.
- Coordination among different police units within a country is essential. This also applies to information sharing across units.
- Collaboration between police and armed forces could be improved at the strategic and operational levels. Establishing a joint police-armed forces unit responsible for health crises could combine the comparative advantage of both sectors while avoiding duplication of efforts.
- IBM requires cooperation of border police, customs services, intelligence services and medical and veterinary components. This must be scaled up.
 - More attention needs to be given to how to manage sea borders and when and where it might be appropriate to restrict movements.
 - Border guards should be adequately equipped (e.g. with PPE) to allow them to play an important role in helping to understand patterns of border movements, as well as identifying and isolating infected individuals.
 - Training and capacity building are necessary for IBM and multiagency risk analyses. Basic training for border guards must include modules on global health security threats.
 - Close collaboration is needed between different ministries and with the airline industry with regard to effective airport IBM.
 - Border closures must be carefully considered, given that they can create a chain of events leading from health to economic and from economic to political crisis. It can further hinder the delivery of humanitarian aid and fuel corruption.
- Local security actors are important in building a bottom-up approach to health security grounded in local realities, especially where the state is decentralized.
 - Such a bottom-up approach may allow easier cooperation between health and security actors. Local chiefs may be able to establish relations across borders more easily, and thereby contribute to the flow of information. Political space must be created to allow their involvement.
 - While there are no reliable data on the involvement of private

military and security companies during the response, their role is entirely conceivable.

Specific recommendations for international organizations, regional organizations and mechanisms

- The UN Office for the Coordination of Humanitarian Affairs legal frameworks, such as those on military and civil defence assets and the Oslo Guidelines, must be revisited to provide guidance for countering complex health emergencies.
 - A permanent crisis committee should be created to coordinate disaster and crisis response at continental, regional or subregional level.
- The WHO may play an important role in the short-term financing of emergency health missions. It should strengthen its role as an international health regulation body. Its IHRs could serve as an instrument to collect health-related data.
 - The WHO could strengthen its capacity for outbreak response by setting up a centre for health emergency preparedness and response, as suggested by the Academy of Medicine.
- The AU should work on improving preparedness to deploy personnel more rapidly during any future health security crisis.
 - The work of the African Centres for Disease Control and Prevention established in 2016-2017 should be supported in a sustainable manner.
- ECOWAS should establish a subregional centre for training and research to address disasters and emergencies, thereby contributing to improved capacities for upcoming health crises.
- The MRU could more proactively promote a platform of cooperation and coordination among its member states, for instance in information sharing, training, provision of logistics and transportation, etc.
- The Global Health Security Agenda is a useful mechanism that must be strengthened to contribute to improved capacities in the health and security sectors, better coordination between sectors and improved identification of major global health threats.
- Warning mechanisms and standardized status of forces agreements must be improved.
 - “First entry” agreements covering issues such as strategies,

funding, human resources and sharing of responsibilities should be fully pre-negotiated and signed to allow rapid deployment when an epidemic breaks out.

- Scenario analysis should be carried out to determine possible contributions by different stakeholders and facilitate a complete response.
- A multistakeholder approach under the “do no harm” principle should be used to guarantee collaboration between different international governmental organizations. This may require partial and temporary ceding of sovereignty, which may pose a challenge.
 - Stronger emphasis on local and rural communities is recommended. Building local capacities is especially important, to avoid a capacity void once the international experts have left after an intervention.
- Emergency procedures should be upgraded in a way that allows them to be sustainable, easily implemented and suitable for the context in which they are applied.
 - A pool of trained experts and professionals should be set up to allow quick mobilization.
 - Health emergency training should be a standard feature in peacekeeping operations training.

Specific recommendations for national governments

- Donor aid must be effectively managed to prevent misuse of funds and ensure allocation to those in greatest need.
- National governments should engage in pre-crisis and preparedness measures, practising emergency responses. Emergency responses should be triggered by an early-warning system and organized by a central coordination body.
- National and regional strategies for health crisis responses must be in place and activated immediately, rather than waiting for local responses to fail.
- Public healthcare systems must be strengthened substantially, and retention packages put in place to retain highly qualified health personnel. Healthcare systems must meet international standards.
- National governments should aim to achieve the Sustainable Development Goals (SDGs), particularly SDG 3. In line with this, national governments should adopt country plans aligned with the

objectives of the SDGs.

- National governments must invest in infrastructure and improve road transport networks connecting remote, vulnerable populations with local hubs.
- National governments should ensure that the strengthening of recovery and health systems occurs continuously throughout political cycles.

Specific recommendations for societal actors

- The media should refrain from spreading rumours and engage in fact checking before disseminating information.
 - Components of the security sector are encouraged to support journalists in their task of disseminating accurate information by offering intelligence and protection.
 - The most important technologies providing access to news in the affected countries must be considered, to allow information to be widely disseminated.
 - The media have an important role to play in covering and analysing the actions of government and security sector components, thereby contributing to accountability.
- International and national NGOs and civil society organizations are encouraged to engage in capacity building with regard to infection control, and build up sufficient stocks of PPE for use in health emergencies.
- Research institutions and think-tanks are encouraged to share research results actively and publish information with those involved in the health disaster response.
 - Building local capacity in West Africa in this regard, and conducting cross-country assessments, would fill a gap in the region.
 - Think-tanks can build bridges between the health and security communities, advance debates on their roles and cooperation, and examine the health dividends of effective and accountable security provision.

Specific recommendations for cross-sectoral cooperation: Inclusiveness and institutional and legal frameworks

- Societal actors must be included in the response. For instance, traditional healers, among others, should be included to contribute local knowledge to the decision-making process during a health security crisis.
- An accountability mechanism should be established for security sector actors involved in health crises, and include representatives from civil society, academia and independent experts in the relevant areas, to assess global responses to major public health emergencies.
- There need to be mechanisms to encourage early declaration and ensure that support is provided quickly and in a targeted way.
- Mechanisms such as the World Bank Pandemic Emergency Financing Facility and the AU African Risk Capacity agency should be able to release funds rapidly in health emergencies.
- Legal frameworks must be revised to reflect the role of security institutions in health crises. The Oslo Guidelines are a good framework for military involvement in international crises, but a framework must cover all components of the security sector and be adaptable to different contexts and countries.
- The IHRs could be reformulated to include the Siracusa Principles and allow temporary restrictions on the right to free movement, which could be highly useful during infectious disease outbreaks.
- National legislation should be adapted so that countries adhere to international frameworks, such as the IHRs.
- Internal doctrines and manuals of security institutions should be adapted to these international frameworks.

Specific recommendations for SSR

- SSR should include capacity building for managing health crises and interagency cooperation inside and outside the sector. This is important to build trust among civilian actors.
- National security policies and their implementation strategies must reflect the risk and impact of potential health threats and the contributions the security sector can make to mitigating them.
- National reform processes should be shared at a regional level.

- SSR must address gender issues to ensure a gender-sensitive security sector and facilitate cooperation with the health sector, which traditionally has a large share of women.
- Health topics must be mainstreamed in SSR activities. Missions must be broadened to meet the requirements specific to major health security crises to ensure an efficient response.

Epilogue

Lessons from Ebola in the Time of COVID-19: An Urgent Wake-up Call for the Security Sector

Floris de Klerk Walters, Albrecht Schnabel and Sabeena Bali

Introduction

In an earlier publication of the research that informed this volume, the authors argued that “The Ebola crisis has been a wake-up call to take health crises more seriously and invest now in efforts to prepare and collaborate – and get ready for possibly significantly worse crises to come.”¹ And it did not take long for another, and worse, health crisis to emerge. The coronavirus pandemic that started in 2019 has spread to every corner of the globe, infecting and affecting populations and bringing global commerce and trade almost to a standstill, testing and challenging the authority and legitimacy of national and international health, security and political institutions alike, and showing all too clearly how relevant the lessons learned from the Ebola virus disease (EVD) crisis remain.

The first cases of individuals suffering from an unexplained pneumonia-like disease appeared in China’s Hubei province in December 2019, followed within weeks by the then-largest quarantine in human history, affecting over 60 million people. The disease, later renamed coronavirus disease 2019 (COVID-19), is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Although the containment measures in Hubei were largely effective and curbed the spread of the virus in China, further hotspots soon emerged, such as those in South Korea, Italy and Iran. The virus spread from Iran, to which virtually all cases in Iraq, Syria, Jordan, Pakistan and India in February and March 2020 were traced back. Within weeks COVID-19 turned into a global pandemic with millions of cases

and several hundred thousand fatalities.² Billions of people across the entire globe were put under lockdown regimes, and the global economy experienced an unprecedented downturn as national economies ground to a halt.

While the COVID-19 pandemic unfolded and began to affect an increasing number of countries, security sector actors became ever more prominent in the global effort to deal with the pandemic. They came from the full spectrum of state and non-state security forces, from gangs in Brazilian *favelas* to the People's Liberation Army in China. Security actors in every region of the world saw their work affected by COVID-19. Their involvement ranged from border guards in Mauritania to crisis management teams in Greenland, and from the intelligence services of Israel to indigenous community leaders in Malaysia.

There are similarities between the security challenges faced during COVID-19's initial outbreak and those faced during previous infectious disease epidemics, ranging from the need for effective cross-border contact tracing to different law enforcement practices during large-scale quarantines. The severity of the COVID-19 pandemic can be at least partially explained by the fact that many of the recommendations and lessons that should have been learned from previous health crises, such as the 2002-2004 SARS outbreak and the various EVD outbreaks, have not been heeded. Where they have, for example in parts of East Asia in response to earlier SARS outbreaks, the COVID-19 outbreak has been less severe as the crisis has been managed quicker, more effectively and more professionally. Different countries across the world are drawing the conclusion that previous lessons have not been acted upon. The United States is a notable example:³ much criticism has been focused on the decision to disband the National Security Council (NSC) directorate responsible for pandemic responses after the 2014-2015 Ebola crisis.⁴ Despite all post-SARS improvements, China made some fundamentally similar mistakes as those made during the 2002-2004 SARS crisis - for example the hesitation of provincial authorities to act independently when the central government failed to act in time to prevent a larger outbreak.⁵ The Dutch cabinet was criticized for ignoring multiple reports based on the EVD

outbreaks advising the development of international pandemic strategies,⁶ and European Commissioner for Crisis Management Janez Lenarčič has admitted that there were critical gaps in the readiness of European Union (EU) countries. Many countries did not even maintain statistics on crucial medical equipment and emergency supplies, for instance, which in turn meant that the EU and the European Centre for Disease Prevention and Control did not know the state of play.⁷ Very few argued that the dawn of a new global health crisis came unexpectedly, while fewer still argued that the world was prepared for such crises.

The experience with the COVID-19 pandemic points to the continued relevance of the experiences and lessons from the EVD outbreaks, and what was learned back then about the roles of security sectors in the context of health security. The remainder of this text highlights parallels between lessons from EVD and the COVID-19 situations, first by focusing on several general clusters of lessons learned from the EVD crisis, and then by brief examination of lessons for specific security actors and an adaptation of the lessons learned from the EVD crisis in the emerging COVID-19 context.

Lack of preparedness

The lack of sufficiently developed core competencies to deal with health crises across health and security sectors has been one of the most striking elements of both the EVD crisis and the COVID-19 pandemic. In past decades many voiced concerns about the lack of global preparedness in dealing with pandemics, despite the experience with multiple near-misses in recent years (e.g. SARS, EVD and Middle East respiratory syndrome coronavirus – MERS).⁸ During the COVID-19 pandemic, critical discussions about preparedness hit headlines across the world, some examples being Bangladesh,⁹ Brazil,¹⁰ Canada,¹¹ China,¹² Indonesia¹³, Iran,¹⁴, Iraq,¹⁵ Libya,¹⁶ Papua New Guinea,¹⁷ Sudan,¹⁸ the United Kingdom,¹⁹ the United States²⁰ and Zimbabwe.²¹ Although health crises usually lead to critical questions about preparedness, many concerns relate to the availability of medical equipment and research funding, and the political decisions and priority

setting made in the aftermath of health crises. Initial outrage and calls for improved preparedness were all too quickly taken over by a return to normality and the delusion that future health crises can again be effectively countered by *ad hoc* and improvised emergency responses. This has prompted suggestions for an international organization to bolster pandemic preparedness.²²

There are noticeable differences in preparation between countries that have experienced recent health crises and those that have not. The lessons learned from SARS and MERS are an important reason why several governments in East and Southeast Asia were better prepared to deal with COVID-19.²³ There are also some signs that in various (West) African capitals lessons from EVD have been learned, and many African states are now better prepared than in the past.²⁴ Often-cited examples of decent COVID-19 preparedness are Japan, Singapore and especially South Korea and Taiwan.²⁵ In a framework of well-functioning and strong civilian control, South Korea's and Taiwan's security forces successfully fulfilled important roles during the outbreak. This was partly due to the existence of well-suited standard operating procedures (SOPs) developed as responses to previous health crises.²⁶ Both countries are now considered as authorities in handling COVID-19.

The contrast with countries that had not previously experienced serious health crises is striking. France sold off a stockpile of 2 billion protective masks after the H1N1 epidemic in 2009 in favour of a just-in-time strategy that relied heavily on production and delivery capacities abroad.²⁷ Warnings about the risks of such a strategy were largely ignored, even though the strain on commercial supply chains for crucial healthcare items during the 2014 EVD outbreak was carefully examined and subsequently presented as a key health security lesson.²⁸ Still, just-in-time strategies, although discredited during the 2014 EVD outbreak, continued to be commonplace. In the USA, for instance, this policy caused severe shortages of basic and inexpensive medical equipment – a problem the Homeland Security Council had already warned of a decade earlier.²⁹ Lessons learned during a crisis are often too quickly discarded and do not translate into better preparedness for the next crisis. Global funding for a

SARS vaccine dried up very quickly once the 2002–2004 SARS outbreak came under control. In retrospect the development of a SARS vaccine would have created a much better starting point for developing a vaccine for COVID-19 (also known as SARS-CoV-2).³⁰

Unfortunately, the list of unheeded warnings and lessons is lengthy. Following previous health crises and emergencies, there have been many recommendations to improve preparedness for disease outbreaks, including by national armed forces and associated research institutes. As the country with the highest total number of COVID-19 cases worldwide at the time of writing, the United States is an example of this. An extensive report prepared by the Infectious Diseases and Countermeasures Division at the US Defense Intelligence Agency explicitly incorporates insights from, among others, the 2014 EVD outbreak to warn of new outbreaks of viruses and shortages or urgently needed “ventilators, devices, [and] personal protective equipment such as face masks and gloves”.³¹ The US Navy seemingly acted on lessons learned by revising its guidelines on the response to pandemic influenza and other infectious diseases in 2018.³² Fast-forwarding to the COVID-19 outbreak, the extent to which these guidelines and recommendations were translated into actual preparedness becomes disappointingly clear: severe shortages of ventilators and face masks, and the controversy around the handling of an outbreak on an American aircraft carrier, show that the US Navy was not properly prepared to meet a new pandemic.³³

Challenges for civilian management and oversight

A crucial component of security sector governance, including during health crises, is the civilian management and oversight of security forces. Subsidiarity, or military deference to civilian leadership, is a cornerstone of effective and people-driven governance in situations of domestic natural disaster or health crises. However, during the COVID-19 pandemic there have been many challenges to civilian leadership across the world. In Southeast Asia, for example, where the history of civilian political control

over the armed forces is often relatively recent,³⁴ civilian and military authorities compete for the upper hand in handling health crises, including COVID-19. For instance, Philippines President Duterte has repeatedly threatened military (and police) imposition of martial law.³⁵ Military backgrounds prevail among the inner circle of Indonesian President Joko Widodo, and especially the Tatmadaw in Myanmar and the military in Thailand seem ever-present in leading or competing with responses by civilian government agencies.³⁶

Elsewhere there has been criticism of militarization during health crises, especially when civilian management is being challenged. The Sri Lankan military, for instance, was put in charge of the COVID-19 response and elections have been postponed: the absence of parliamentary oversight increases concerns about human rights violations by the police and military.³⁷ There are similar challenges in Brazil, where President Bolsonaro appointed an active-duty major general as interim health minister after the resignation of his predecessor in May 2020, along with 13 other military appointments in the Health Ministry.³⁸ President Bolsonaro also joined a rally of people protesting COVID-19 measures, and called for a return to a military dictatorship.³⁹ In Israel, three cities have appointed former military officers to lead the coronavirus response, drawing criticism from other military officers alleging that these appointments compromise the civilian lines of responsibility in these municipalities.⁴⁰ Some analysts have criticized the rhetoric of several G7 leaders (including UK Prime Minister Boris Johnson, French President Emmanuel Macron, Italian Prime Minister Giuseppe Conte and US President Donald Trump) as overly militarized.⁴¹

There are worries about civilian and democratic oversight and control of the armed forces in Latin America beyond the example of Brazil, as it is a region that has long struggled with military juntas and undue military influence in government.⁴² The armed forces across the region became heavily involved in the pandemic response, including taking on a vast array of tasks usually handled by civilian state and non-state agencies, such as border control, enforcement of quarantine and healthcare measures (for instance using drones), medical supply production, food distribution, decontamination and assisting in public health policy planning. Aside from

making the armed forces highly visible in the public sphere, specific risks are associated with the exemption of security personnel from prosecution for abuse, such as laws exempting military and police from criminal responsibility being passed in Peru.⁴³ Other countries where the role of the military has been growing are El Salvador, Venezuela and Bolivia.⁴⁴

Efforts by democratic institutions and their oversight roles suffered setbacks in many countries as they were side-lined by political leaders, ministries and security institutions insisting on moving quickly to respond to the evolving pandemic, without being held up by lengthy debates or oversight processes. With little preparation in place to respond quickly and effectively to the debate, many governments instead improvised and put pandemic response measures in place without consulting parliaments or other oversight agencies. It has become difficult for parliaments worldwide to continue their daily business under pandemic restrictions, such as the inability to meet physically combined with rules and customs demanding minimum presences for quorums.⁴⁵ One of the most dramatic curtailments of civilian oversight institutions took place in Hungary, where Prime Minister Viktor Orban introduced emergency powers that temporarily allowed rule by decree.

Various democracy and protest movements that began before the outbreak of COVID-19 fizzled out as a result of restrictions on the right of assembly and fears about spreading infections, such as in Iran, Algeria, Lebanon and Chile. At the same time, large-scale protests still took place in the United States and Europe against (among other issues) police violence and racism. The balancing of public health considerations and civil rights, including the right to protest, remained an important challenge for policy-makers.⁴⁶

Problems with national and international response coordination

Effective preparedness for health crises requires well-developed coordination mechanisms for state and non-state actors' cooperation in crisis response. Calls for improved coordination mechanisms have followed

each previous health crisis, including in the aftermath of the 2014–2015 Ebola outbreak – see many of the suggestions presented in the various chapters of this volume. And yet again the coordination of public health measures (as well as of all-of-government responses, including cooperation with security forces) at the national and international levels has been one of the most criticized aspects of the response to COVID-19. This has led to some discussions on the role of decentralized systems, as there have been severe tensions between national and subnational authorities, as well as among subnational authorities.⁴⁷ There was much publicity of the tension between the instructions from Brazilian President Bolsonaro on the one hand, who opposed far-reaching pandemic mitigation measures (and called them “a crime”) and, on the other hand, those promulgated at the level of states, medical associations, health ministers, state governors and mayors of affected megacities.⁴⁸ Similar dynamics characterized the political debate in the United States, where President Donald Trump claimed “total authority” over the pandemic response and lashed out at “Democrat [Party] Governors” who pursued different strategies based on the specific dynamics of the pandemic in their states.⁴⁹ President Trump went as far as encouraging protests against governors in states with healthcare restrictions that he did not agree with, calling for their “liberation”.⁵⁰ In response, US state governors formed pacts to coordinate healthcare and pandemic response measures under shared approaches, often following political party lines.⁵¹ Italy and Spain also saw severe tensions between regional and national authorities (and political leaders) concerning specific response measures (e.g. criticism of nationwide school closures in Italy and regional challenges to the Spanish central government’s legal authority to declare a state of emergency across the entire country).⁵² Similar clashes over response measures arose between the constituent countries of the UK, and between the various Belgian communities.⁵³

In contrast, in Germany and Switzerland, for instance, federal and state governments managed to find unity in diversity when it came to their various pandemic responses. Despite some unavoidable tensions between federal authorities and their *Länder* (Germany) and cantons (Switzerland), policy-making has been relatively harmonious and overall very effective.

Individual provinces and regions in some non-federal systems were also influential in the response to the pandemic, such as in the case of Veneto in Italy.⁵⁴ And while centralized approaches, as in France, have garnered praise, they have also been criticized for stifling local initiative among other problems.⁵⁵

International collaboration proved equally controversial, and difficult at times. Mounting criticism of the perceived lack of political independence and transparency of the World Health Organization (WHO) led to the USA deciding to withdraw its funding in mid-April 2020.⁵⁶ Although there was widespread global criticism of the decision, other leaders (notably in Australia, Brazil and Japan) still voiced their doubts over the WHO's political neutrality, and many European governments also ignored or criticized WHO public policy recommendations.⁵⁷ Within Europe frictions appeared between EU and Eurozone member states, especially on economic cooperation but also on unilateral medical equipment export bans.⁵⁸ Export bans on medical equipment (some collective, in the case of the EU) had large-scale consequences for countries dependent on imports for this equipment. Similar dynamics are expected when the first successful vaccines are developed, produced and marketed.

Confusing, false and uncoordinated information

Closely related to the coordination of national and international pandemic responses, exchange of information has been among the most critical issues of the COVID-19 response. Recommendations about transparency and the free flow of information emerging from previous health crises have largely not been heeded, and information flows became a politically sensitive topic internationally as well as within many states. The vital roles of transparency and effective communication from the highest political levels have been stressed as key lessons in the management of COVID-19.⁵⁹ Challenges to information management became an important concern and gave rise to the term “infodemic”, used by WHO Director-General Adhanom Ghebreyesus among others.⁶⁰

Censorship and control of information by security agencies were widespread, with notable examples being China, Iran and Iraq, among many others.⁶¹ At the same time China was complimented by the WHO (and initially also by some of the most vocal later critics of its handling of the crisis, including the US president) for its active cooperation, which in turn led to questions about the WHO's political independence (as noted above) and the reliability of the information shared. Similar criticism has been directed at other governments, notably the United States, following its confidential classification of top-level discussions on the virus.⁶² In some cases governments imposed censorship restrictions on publishing medical research, with some research topics (e.g. the origins of COVID-19) requiring authorization by the central government, handed down propaganda and censorship directives to media outlets, and increased online and offline censorship efforts.⁶³ The transparent approach of South Korea and Taiwan has been widely appreciated and acclaimed as a key advantage in containing their respective outbreaks.

The European Commission⁶⁴ and the US Department of State⁶⁵ have stated that the Russian and Chinese governments have been supporting COVID-19 disinformation campaigns. Some studies seem to confirm active Russian disinformation policies.⁶⁶ Pieces by Chinese state media such as the *Global Times* and China Central Television imply US government cover-ups and complicity in the pandemic outbreak.⁶⁷ The Chinese government allegedly fuelled disinformation campaigns in Argentina, Italy, Serbia, Taiwan and the United States, among other countries.⁶⁸ The Chinese government has also attacked voices criticizing its initial outbreak response, both at home and abroad.⁶⁹ Russian President Vladimir Putin in turn has stated that Russia is targeted by fake news on coronavirus from abroad.⁷⁰

However, some early research suggests that COVID-19 disinformation is easier for the public to identify than misinformation.⁷¹ There are a wide variety of sources and types of misinformation, ranging from widespread circulation of withdrawn academic articles to the use of exaggerated data estimates.⁷² One of the most important factors in the spread of misinformation has been social media.⁷³ Several social media companies (e.g. Facebook and Twitter) have responded with promises to combat

this, such as by removing tweets that deny the effectiveness of COVID-19 measures.⁷⁴ The extent to which these companies have lived up to such promises is contested.⁷⁵ Instances of fake news circulating on social media, including instant text messaging services, have been widely reported. Many governments took measures to counter misinformation, while reassuring and educating the public through regular public service announcements and daily press briefings. For instance, Taiwan's simple health messaging, daily briefings and accurate and transparent information sharing have been credited by public health experts as important factors in its relatively successful management of the outbreak, resulting in one of the lowest numbers of infections and deaths per capita globally despite its close links to the initial outbreak in China.⁷⁶

Immediately after the initial COVID-19 outbreak in Wuhan, China, there were concerns about the accuracy of existing data on COVID-19 cases, particularly the data from China.⁷⁷ After initial hesitation, regional organizations like ASEAN (Association of Southeast Asian Nations) and the EU started facilitating information and data sharing on regional platforms.⁷⁸ The African Union and the Economic Community of West African States (ECOWAS) assisted in increasing test capacity and supported tracking data on COVID-19 cases across the continent.⁷⁹ Beyond case numbers, many questions about the virus and the viral disease remained open and have led to contradictory statements. As of late June 2020, months into the pandemic, medical and virology experts across the globe are faced with fundamental questions about the virus, and have offered sometimes unclear, confusing and contradictory guidance while still searching for evidence-based answers. Reliable and updated information is crucial for health workers, the public and decision-makers alike.

Contradictory and confusing statements were reported on the use of ibuprofen,⁸⁰ as both WHO experts and France's Ministry of Health published warnings, while at the same time different experts criticized the lack of research and evidence and others challenged the claims altogether. Similar discussions arose around certain protective measures, such as the use of face masks and the merits of using the anti-malaria drug hydroxychloroquine.⁸¹ The discussion on the utility of face masks was

particularly confusing. While the WHO and numerous centres of disease control and health ministries (including in Germany, the USA and France) claimed that masks were counterproductive and would increase the risk of infection, mandatory face-mask regulations were implemented in over 50 countries, including for instance Argentina, Ethiopia, Israel, Lebanon, Morocco, Poland, Uganda and Vietnam.⁸² As the pandemic unfolded and more was learned about the utility of certain preventive and protective measures, masks were seen to enhance the protective value of social distancing, and many of those who were initially opposed to face-mask requirements started promoting them as an effective measure to slow down the spread of the virus.⁸³ Simple messaging and communication strategies were impossible in a context characterized by confusion, contradiction and disagreement about which measures are most suitable to prevent, mitigate and ward off the pandemic.

Responses by the police

Police services were deployed as part of governments' pandemic responses across the world, most notably to help enforce measures taken to prevent the spread of the virus. However, their roles differed widely across countries. For instance, while police powers were temporarily expanded in the United Kingdom (e.g. to instruct individuals to go home, and arrest or fine those who refuse to comply),⁸⁴ Japan's police were consciously not given similar powers to enforce restrictions with punitive measures.⁸⁵ Special COVID-19 police task forces were created in many countries, such as Sri Lanka⁸⁶ and Senegal,⁸⁷ while in France 100,000 officers were deployed to enforce the lockdown measures.⁸⁸

Many police services were not well equipped to deal with infectious diseases. Police services in countries such as Belgium,⁸⁹ the United States (specifically New York),⁹⁰ Papua New Guinea,⁹¹ Afghanistan⁹² and Kenya⁹³ struggled with shortages in protective gear, slowing down and limiting the quality of their operational responses. Many police officers became infected themselves or had to be quarantined after they had been exposed

to infected colleagues or members of the public.⁹⁴ Police departments in Northern Ireland and the Netherlands publicly called for support in dealing with detainees who were spitting and coughing at officers while claiming to be infected with COVID-19.⁹⁵ Dutch officers started using spit guards to protect themselves.⁹⁶

Beyond protective equipment, many police services did not have procedures and standards in place for law enforcement practices. Patterns of criminality changed considerably with the rise of COVID-19 and changes in societal behaviour. Notable challenges included a sharp rise in cybercrime, as well as counterfeit medical equipment and scamming schemes.⁹⁷ In March 2020 Interpol issued international guidelines for law enforcement as a response to COVID-19.⁹⁸

Community policing has been widely accepted as an important component of police services' COVID-19 responses.⁹⁹ Normal practices within a community-policing framework (such as occasionally partaking in community activities and the police's direct social engagement with community members) had to be changed in line with pandemic response measures.¹⁰⁰ Various police services asked for more leeway in pursuing minor offences to minimize social contact and exposure to the virus. Police officers also found innovative ways to engage communities in a positive manner while sticking to social-distancing measures. Examples include police officers singing for dancing crowds on balconies in Panama City,¹⁰¹ and officers singing for locked-down Spanish children on the Balearic Islands.¹⁰²

At the same time, during the lockdown periods imposed by governments across the globe excessive police violence was reported in several countries. Curfew enforcement in Kenya left a 13-year-old bystander dead on his parents' balcony; in Punjab (India) and Paraguay some individuals accused of breaking lockdown rules were reportedly forced to carry out punitive exercises, while in the Philippines people were locked in dog cages for similar offences.¹⁰³ Security forces (not limited to police) reportedly used punitive exercises and pushed back demonstrations against lockdown measures or breaches of curfews with rubber bullets, tear gas and whips in places such as South Africa, Zimbabwe, Kenya, Uganda, Senegal and

Nigeria.¹⁰⁴ Police clashes with demonstrators against coronavirus measures also occurred in Chile,¹⁰⁵ Israel,¹⁰⁶ Nepal¹⁰⁷ and various European countries. There was widespread use of sticks by Indian police authorities to beat those not adhering to lockdown measures, as well as forcing people to crawl back home.¹⁰⁸ Police in the Philippines were ordered to shoot anyone who “caused commotion”.¹⁰⁹ Less extreme cases saw hundreds of people being fined in Israel for walking further than 100 metres from their homes, UK police monitoring people on remote hiking paths with drones and Australian police threatening individuals drinking coffee alone in public spaces with fines and up to six months in jail for undertaking non-essential activities.¹¹⁰

Responses by local security actors, community leaders and non-state security actors

COVID-19 has evolved into a worldwide pandemic, affecting communities of every size, type and culture, and of every geographic and economic background. Non-state security actors were engaged in many aspects of the pandemic responses.

Numerous armed non-state actors have joined the effort to stem the virus. Rival gangs in the townships of Cape Town reportedly cooperated with local agencies to provide food,¹¹¹ and gangs enforced quarantine measures in the *favelas* of Rio de Janeiro.¹¹² At the same time, Mexican and South African authorities have criticized aid efforts by gangs and instead called on them to end the violence they inflict on their communities.¹¹³ Hezbollah in Lebanon, the Afghan Taliban, Hamas in the Gaza Strip and Libyan rebel forces have all implemented pandemic measures and/or provided healthcare and pandemic information to populations under their control.¹¹⁴ For example, ISIS (Islamic State of Iraq and Syria) advised against travelling to Europe, and published healthcare infographics in its weekly newsletter.¹¹⁵

Other non-state actors became involved in the pandemic response, including indigenous communities. For instance, leaders of indigenous tribes in South America decided to cut tourism and go into lockdown,¹¹⁶ and in Malaysia such communities decided to block access roads to villages and seek refuge in the forests.¹¹⁷ First Nation leaders in Canada proclaimed a state of emergency and asked the federal government for financial help,¹¹⁸ with similar pleas from indigenous leaders to several governments in the Amazon Basin.¹¹⁹ Non-indigenous community leaders have also been involved in the response to COVID-19. In the Senegalese-Gambian border region, over 1,500 community leaders were engaged in keeping order and managing migration flows.¹²⁰ Community leaders in Kenya and Haiti were at the forefront of their respective countries' efforts to stem the disease outbreak.¹²¹ Community activism in response to the pandemic ranged from Indonesia to Europe, and from Indian civil society initiatives to those in Cuba.

Religious leaders at global, national and community levels headed efforts to promote protective responses and provide information on protective measures and behaviours. In the United Arab Emirates (UAE) a *fatwa* in support of complying with government healthcare measures during Ramadan was issued by the Fatwa Council.¹²² The Russian Orthodox Church adopted new guidelines in accordance with government recommendations on religious services,¹²³ the Dalai Lama expressed support for the crisis measures taken by the Indian government¹²⁴ and Pope Francis called upon a global audience to pray in support of leaders needing to take extraordinary measures.¹²⁵ Aside from top-down support, there was broad bottom-up support for pandemic responses, including Augustinian nuns making masks, the streaming of religious services by church communities around the globe, and mask-wearing and social-distancing measures taken by religious communities ranging from Buddhist monks to Orthodox Jews.¹²⁶ But there have also been tensions between governments and religious communities over protective measures and social-distancing requirements that rendered physical religious gatherings and services impossible, for instance in the cases of ultra-Orthodox Jewish communities in Israel¹²⁷ as well as across the border in Palestine,¹²⁸ Christian Orthodox

communities in Ukraine¹²⁹ and various religious communities in the United States.¹³⁰ Religious gatherings proved to be catalysts for the spread of the virus in several countries.¹³¹

Responses by national armed forces

Military forces across the globe are involved in efforts to manage and stop the spread of COVID-19, with varying levels of preparation and effectiveness. They are involved in disinfection campaigns, the setting up and enforcement of quarantine camps, logistics, medical research and healthcare provision. The provision of medical facilities ranged from US Navy hospital ships in New York City to the deployment of field hospitals in Alsace and Madrid. China sent over 10,000 soldiers to Wuhan, and its People's Liberation Army ran a large makeshift hospital. Navy ships of European countries were deployed in support of healthcare systems in overseas territories, including vessels from France,¹³² the UK¹³³ and the Netherlands.¹³⁴ At the beginning of the outbreak militaries received infected individuals in military bases (such as in Canada, Italy and Indonesia), but as the pandemic worsened this practice was mostly abandoned. Armed forces have provided immediate logistical assistance: logistical teams have been called upon to deliver medical equipment in Indonesia, India, Switzerland and the UAE, and to transport patients in Italy and Germany.

There has been some controversy about the extent to which the military could protect its own service members. A call by the captain of an aircraft carrier from the United States to help protect its service members from further infections led to his dismissal, while cases of infection increased and a fatality was reported by mid-April.¹³⁵ Similar clusters of infection existed on other US ships, and also on a French aircraft carrier, leading to criticism about its lack of preparedness.¹³⁶ Thousands of soldiers were put in quarantine in China and Israel during the outbreak.¹³⁷ In Egypt, two generals died in an outbreak that infected many other senior military officials.¹³⁸

Intelligence services, data gathering and surveillance

Intelligence services have been involved in the pandemic response with contact tracing, gathering data on the spread of the virus globally, collecting information on countries' responses (and non-responses) and sometimes offering direct help in acquiring medical equipment. One of the most prominent examples is Mossad in Israel.¹³⁹ Along with contact tracing, Israeli intelligence was involved in manufacturing technology and medical equipment. Mossad collaborated directly with hospitals and other relevant stakeholders, and obtained medical equipment based on indicated requirements. Other intelligence services have been criticized for their inaction: the pan-African intelligence capacity has been criticized for inertia,¹⁴⁰ and the performance of US intelligence services has been called the "worst intelligence failure in US history".¹⁴¹ The relative unpreparedness of some intelligence services, including in the UK, has been highlighted.¹⁴² Intelligence services of Russia, China, the United States and Israel have also engaged in research and attempts to collect better information and data on the spread and containment of the virus.¹⁴³ Domestically, intelligence services focus on contact tracing; more controversially, they use their information networks abroad to gather information faster than official publications, or to acquire medical and protective equipment.

Some intelligence services' approach to collecting data by using the latest surveillance technology has been highlighted and debated. Although the use of surveillance technology has been hailed for its success in tracing and containing the virus in places like Singapore,¹⁴⁴ South Korea¹⁴⁵ and Taiwan,¹⁴⁶ there has been criticism of the extent to which surveillance can infringe on civil liberties.¹⁴⁷ Especially strict surveillance measures were put in place in China, and plans to retain the measures after the pandemic sparked domestic controversy and criticism from abroad.¹⁴⁸ Examples of surveillance include the use of robots and artificial intelligence, facial recognition CCTV and temperature scanners to detect cases of infection and improve the effectiveness of contact tracing. Many countries across the globe are (considering) using apps or mobile technology to improve contact tracing, including for instance Australia, France, India and South

Korea, but concerns about privacy infringements associated with these apps are widespread and may prevent securing the critical mass of users required for the proper functioning of reliable and useful contact tracing. The Organisation for Economic Co-operation and Development has released guidelines for policy-makers to ensure surveillance data governance is proportional, transparent, accountable and time-limited.¹⁴⁹

Lessons from the EVD crisis for COVID-19 and beyond

As pointed out in this volume and at the beginning of this chapter, the lessons from the 2014–2015 Ebola outbreak must inform necessary steps to improve health systems and facilitate cross-sectoral cooperation to ensure a quicker and more effective response to a future global health threat – which may well be more deadly than Ebola. Unfortunately, it did not take long for such a new health threat to emerge: the COVID-19 pandemic would prove to be an even more devastating crisis, affecting every corner of the globe, with human, societal, economic and political consequences far exceeding those of the Ebola outbreak. The Ebola outbreak and the COVID-19 pandemic were both devastating. While the EVD crisis was geographically largely limited to the West African region, COVID-19 became a truly global pandemic. Infectious disease outbreaks are rarely isolated; rather they affect and threaten every single state. As especially COVID-19 has shown that in our increasingly globalized world the threat of global infectious disease outbreaks looms large. Cooperation between the health and security sectors is indispensable during global health crises.

Many of the recommendations that emanated from the EVD crisis still hold true and are in dire need of follow-up, including recommendations for more meaningful and effective security sector involvement in health crises. *Before a health crisis*, states must improve their preparedness for coordination and execution of a successful emergency response. Cross-sectoral cooperation is important in anticipation of an emerging health crisis. *During a health crisis*, the speed of the response is crucial. The speed will depend on the rapid availability of sufficient funding and of health

workers and security personnel trained for cross-sectoral cooperation in health crises. The involvement of security sector personnel is indispensable. *After a health crisis*, post-crisis reconstruction of infrastructure and health systems is needed to ensure preparedness for future threats. Lessons learned during the crisis in all aspects, including civil-military cooperation, information sharing, border management and regional cooperation and capacities, must be integrated into training, early-warning systems, guidelines and frameworks that govern health crisis responses and regional organizations.

The following build on – and reiterate – the recommendations developed by the authors of this book following an analysis of the security and health sectors' roles in the 2014–2015 Ebola outbreak, with a focus on those lessons that are further accentuated by the recent experience with COVID-19.

General recommendations for preparedness

- Building core competencies needs to be an ongoing effort for both health and security sectors. Emphasis should be placed on recognizing changes in patterns of behaviour and mobility flows that can signal risks.
 - Security sector components should engage in periodically organized simulation exercises, to improve coordination and cooperation between and within the components.
 - Security sector reform (SSR) should strengthen the individual security sector components in preparation for involvement in health crises, while ensuring the highest standards of efficiency, impartiality, accountability and transparency.
 - Research should be undertaken by security sector components on the impact of COVID-19 on their own roles and responsibilities, and related national security issues, to prepare for possible outbreaks.
- National armed forces, in both the countries affected and those offering assistance, must be trained for their potential involvement in pandemic outbreak control.
 - Armed forces must be ready to assist as soon as an outbreak occurs, be mobile and well equipped, and have the ability to concentrate materials and resources where they are needed

- and for what is needed.
- Alongside epidemiologists, military officials should take part in regular forecasting briefings, because coordination and synchronization of early preparedness assure adequate readiness and response capacity.
- Necessary guidelines, including SOPs, must be regularly updated and disseminated.
- Armed forces must receive training in crisis management and health-related cross-sectoral matters, such as basic medical and public health concepts.
- Medical equipment must be field-capable and suitable to respond to the specific disease outbreak, and users must be trained in the necessary technical skills.
- Police services must be adequately trained to participate in responses to health crises, including interoperable collaboration with the health sector, international actors and other security sector components, such as the armed forces.
 - Police and other security sector components must prepare for future health crises by stockpiling sufficient amounts of personal protective equipment (PPE) and being trained on how to use it in case of emergencies.
 - Training on how to handle crowd management situations, which are likely to occur during health crises, and the limits on the use of force must be provided to ensure that the actions of police and other security sector members do not threaten human rights and the credibility of their participation in the response.

General recommendations to ensure subsidiarity of the security sector

- When the challenges go beyond traditional security tasks, non-civilian security institutions' involvement must be subsidiary to the civilian actors directly responsible.
- The armed forces must fully understand and respect their own subsidiary role under civilian leadership of health crisis management.
 - The armed forces should be on stand-by to support the police – under the police's command and control – to respond to, deter and de-escalate violence where an outbreak threatens the stability of communities.

- Subsidiarity should not mean the delayed involvement of the armed forces. Early involvement of the armed forces complies with subsidiarity and is crucial.
- The mandate of domestic armed forces in a coordinating or support role must be decided on a case-by-case basis.
- Interoperability and compatibility of armed forces with other security sector components of the coordination mechanism must be ensured. Local communities must be informed of the different actors in the command-and-control structures and those in charge of support functions.
- Police forces must understand and respect their subsidiary role under civilian leadership in health crisis management.
- An exit strategy for security forces' involvement should either be prepared in advance or tailored to the situation, but decided at an early stage of their involvement.

General recommendations for national and international coordination

- At the level of national, regional (district) and municipal governments, a single coordination mechanism should be established to coordinate multiactor and multisectoral responses to health crises.
- A national interagency health security council and a dedicated monitoring and situation room are recommended. These must remain under civilian control and serve all actors involved on the ground, including non-governmental organizations (NGOs), private sector organizations and representatives of the international community.
 - All actors participating in the response (NGOs, the private sector, international organizations and health and security actors) need to be fully briefed and ready to move with preventive and/or response measures once political decisions are made.
 - Tasks should be allocated based on the capabilities and competitive advantages in health crisis management of all actors involved in the response.
 - There is a need to ensure that different actors in the same country do not work in isolation or at cross-purposes with each other by encouraging exchange of ideas, experiences and best practices.

- Coordination of efforts across borders is important with regard to reducing cross-border spread of an infectious disease.
 - Governments should coordinate regulations on border control to reduce cross-border movements effectively.
 - Advance preparation and testing of response structures are critical, to clarify when to escalate levels of response and which roles are played by different actors.
 - Such mechanisms must be established before the emergence of a health crisis.
- Coordinating bodies at national levels should have the necessary powers vested in them to exercise their coordinating roles.

General recommendations for information sharing

- Free flow of information is essential for security sector actors, e.g. intelligence services and border management.
 - Language barriers must be addressed to allow regional information sharing.
 - An early-warning system could collate the streamlined data contributed by different countries.
- For integrated border management (IBM), regional information sharing is particularly important. The European Commission's Schengen Information System may be used as a model database for other regions.
- The information flow between national authorities and remote communities should be improved to allow local concerns to be included in national policies.

Specific recommendations for intelligence services, police, border management and local security actors

- Collaboration between intelligence services and civilian health authorities is crucial to allow accurate information on national security and facilitate threat estimate planning.
 - Gathered intelligence must be accessible to the relevant stakeholders involved in the response, such as hospitals and border officials.
 - Data collection and formatting should be streamlined across

neighbouring states and other actors to facilitate exchange of information among different stakeholders.

- Early-warning systems for health crises, immediately updated with obtained streamlined data, should be established at national and regional levels.
- To facilitate meaningful intelligence gathering, stigmatization of those infected – and thus intelligence gathering manipulated by prejudice – must be avoided.
- Through community policing, police forces can contribute to the dissemination of information, and thereby sensitize the population to the dangers of a health threat such as an infectious disease outbreak.
 - In this regard, the specific needs of vulnerable populations, such as children, pregnant women, the elderly and people with disabilities, must be taken into account. There must be gender balance in the deployment of security personnel, which is important for example when taking temperatures or other acts involving people's bodies, depending on cultural/religious sensitivities.
 - Coordination among different police units within a country is essential. This also applies to information sharing across units.
 - Collaboration between police and armed forces could be improved at the strategic and operational levels. Establishing a joint police-armed forces unit responsible for health crises could combine the comparative advantage of both sectors while avoiding duplication of efforts.
- IBM requires cooperation of border police, customs services, intelligence services and medical and veterinary components. This must be scaled up.
 - More attention needs to be given to how to manage sea borders and epidemics on vessels in international waters.
 - Border guards should be adequately equipped (e.g. with PPE).
 - Training and capacity building are necessary for IBM and multiagency risk analyses. Basic training for border guards must include modules on global health security threats.
 - Close collaboration is needed between different ministries and with the airline industry with regard to effective airport IBM.
 - International collaboration is needed to manage the health risks of infections spreading quickly in an environment of

increasingly rapid cross-border movement.

- Border closures must be carefully considered, given that they can create a chain of events leading from health to economic and from economic to political crisis. It can further hinder the delivery of humanitarian aid and fuel corruption.
- Local security actors are important in building a bottom-up approach to health security grounded in local realities, especially where the state is decentralized.
 - Such a bottom-up approach may allow easier cooperation between health and security actors. Local community leaders may be able to establish relations across borders more easily, and thereby contribute to the flow of information. Political space must be created to allow their involvement.
 - Close cooperation should also be facilitated between state-run security providers, health actors and private security companies. The latter are often used to help in local law enforcement issues related to COVID-19, such as temperature checks and enforcing social distancing.

Specific recommendations for international organizations and regional organizations and mechanisms

- The legal frameworks of the UN Office for the Coordination of Humanitarian Affairs, such as those on military and civil defence assets and the Oslo Guidelines, must be revisited to provide guidance for countering complex health emergencies.
 - A permanent crisis committee should be created to coordinate disaster and crisis response at continental, regional and subregional levels.
- The WHO may play an important role in the short-term financing of emergency health missions. It should strengthen its role as an international health regulation body. Its International Health Regulations (IHRs) could serve as an instrument to collect health-related data.
- Regional organizations should work on improving preparedness to deploy health and security specialists more rapidly to areas affected by health crisis outbreaks.
 - The work of regional centres for disease control should be supported in a sustainable manner.

- The Global Health Security Agenda is a useful mechanism that must be strengthened to contribute to improved capacities in health and security sectors, better coordination between sectors and improved identification of major global health threats.
- Warning mechanisms and standardized status of forces agreements must be improved.
 - “First entry” agreements covering issues such as strategies, funding, human resources and sharing of responsibilities should be fully pre-negotiated and signed to allow rapid deployment when an epidemic breaks out.
- Scenario analyses should be carried out to determine possible contributions by different stakeholders and facilitate a complete response.
- A multistakeholder approach under the “do no harm” principle should be used to guarantee collaboration between different international governmental organizations. This may require partial and/or temporary ceding of sovereignty, which may pose a challenge.
 - Stronger emphasis on local and rural communities is recommended. Building local capacities is especially important, to allow access to rural places, avoid delays in the arrival of resources and prevent a capacity void once international experts have left after an intervention.
- Emergency procedures should be upgraded in a way that allows them to be sustainable, easily implemented and suitable for the context in which they are applied.
 - A pool of trained experts and professionals should be set up to allow quick mobilization.
 - Health emergency training should be a standard feature in peacekeeping operations training.

Specific recommendations for national governments

- National governments should engage in pre-crisis and preparedness measures, practising emergency responses. Emergency responses should be triggered by an early-warning system and organized by a central coordination body.
- National and regional strategies for health crisis responses must be in place and activated immediately, rather than waiting to see

whether or not local responses need assistance.

- Public healthcare systems must be strengthened substantially, and retention packages put in place to retain highly qualified health personnel. Healthcare systems must meet international standards.
- National governments should aim to achieve the Sustainable Development Goals (SDGs), particularly SDG 3 (ensure healthy lives and promote well-being for all at all ages). In line with this, national governments should adopt country plans aligned with the objectives of the SDGs.
- National governments must invest in infrastructure and improve road transport networks connecting remote, vulnerable populations with local hubs.
- National governments should ensure that the strengthening of recovery and health systems occurs continuously throughout political cycles.
- International donor/development aid must be effectively managed to prevent misuse of funds and ensure allocation to those in greatest need.

Specific recommendations for legal frameworks, parliaments and independent oversight mechanisms

- Health emergency legal frameworks, and corresponding legislation to ensure that they can be enforced, are necessary.
- Parliamentary oversight committees must be strengthened and capacities must be improved, especially on the nexus between defence and health security matters.
- Independent oversight bodies, such as human rights commissions, police complaints bodies, intelligence oversight bodies and defence ombuds institutions, need to be strengthened, as they fulfil important roles in providing complaints mechanisms for affected individuals and exercising control over security institutions.

Specific recommendations for societal actors

- Regional, national and global news journalists play an important role in providing critical information. They need to be trained on reporting and handling emergency situations, and on responsible

journalism.

- Media representatives should be engaged and represented in shaping and implementing health crisis responses through community measures, outreach activities and regular communications with civilian and military actors involved in health crisis management.
- The media – as well as social media companies – should refrain from spreading rumours and false information, and instead engage in fact checking before disseminating information. At the same time, press freedom and the rights of journalists should be carefully protected, especially during crises when their oversight function becomes even more important.
 - Components of the security sector are encouraged to support journalists in their task of disseminating accurate information by offering intelligence and protection.
 - The media have an important role to play in covering and analysing the actions of government and security sector components, thereby contributing to accountability.
- International and national NGOs and civil society organizations are encouraged to engage in capacity building with regard to infection control, and to build up sufficient stocks of PPE for use in health emergencies.
- Research institutions and think-tanks are encouraged to share research results actively and publish information with those involved in the health disaster response.
 - Think-tanks can build bridges between the health and security communities, advance debates on their roles and cooperation, and examine the health dividends of effective and accountable security provision.

Recommendations for cross-sectoral cooperation: Inclusiveness and institutional and legal frameworks

- Societal actors must be included in the response. For instance, traditional healers and religious leaders, among others, should be included to contribute local knowledge to the decision-making process during a health security crisis.
- An accountability mechanism should be established for security sector actors involved in health crises, and include representatives

from civil society, academia and independent experts in the relevant areas, to assess global responses to major public health emergencies.

- There need to be mechanisms to encourage early declaration and ensure that support is provided quickly and in a targeted way.
- Mechanisms such as the World Bank Pandemic Emergency Financing Facility and regional counterparts should be able to release funds rapidly in health emergencies.
- Legal frameworks must be revised to reflect the role of security institutions in health crises. The Oslo Guidelines are a good framework for military involvement in international crises, but a framework must cover all components of the security sector and be adaptable to different contexts and countries.
- National legislation should be adapted so that countries adhere to international frameworks, such as the IHRs.
- Internal doctrines and manuals of security institutions should be adapted to these international frameworks.

Recommendations for SSR

- SSR should include capacity building for managing health crises and interagency cooperation inside and outside the sector. This is important to build trust among civilian actors.
- National security policies and their implementation strategies must reflect the risk and impact of potential health threats and the contributions the security sector can make to mitigating them.
- National reform processes should be shared and reflected upon at a regional level.
- SSR must address gender issues to ensure a gender-sensitive security sector and facilitate cooperation with the health sector, which traditionally has a large share of women.
- Health topics must be mainstreamed in SSR activities, which in turn need to be broadened to meet the requirements specific to major health security crises to ensure an efficient response.

Numerous lessons from the EVD crisis should have been – and still could be – learned for future health crises, now building on the rich experience gained from worldwide responses to the COVID-19 pandemic. Many lessons

on appropriate preparedness and response by crisis responders, including from the health and security sectors, must be revisited and implemented.

This chapter offers a brief overview of some the recurring challenges and lessons covered by the analysis of the role of security sectors involved in the EVD response – and their significance during the COVID-19 pandemic. The lessons of the EVD outbreak in West Africa remain relevant and need to inform global, regional and national efforts at preparing for future crises. The response to the COVID-19 pandemic has been a case in point, and will add further experiences and lessons that need to inform better organized and coordinated response measures to health crises. In the months and years to come, the lessons learned from the EVD crisis must be updated and supplemented with those of the COVID-19 pandemic – which, at the time of writing, was still raging in many parts of the world.

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In addition to the tragic loss of many lives, the outbreak of Ebola virus disease (EVD) in 2014–2015 in West Africa had serious implications for human security and development. It heightened concern about political stability in countries that have been affected by civil war. Initial attempts to contain the epidemic were delayed and disorganized. Fears of further infection spillover across and beyond the countries concerned, and indeed beyond the African continent, showed the need for more effective approaches both to prevent and to manage future global health crises.

The ability to prevent future health crises is critical in avoiding human suffering, maintaining security and stability, and enabling societies to stay on a positive path towards development and good governance. A country's security sector, along with regional and global security providers, can play an invaluable role in the prevention and management of health crises if properly prepared, mandated and integrated into multiagency mitigation strategies.

The contributors to this volume analyse the Ebola crisis and the security sector's role in West Africa; the roles played by security institutions in affected countries, by international military support missions and by regional and global organizations; and opportunities for cooperation between health and security sectors. They conclude with recommended measures for decision-makers at local, national, regional and international levels to optimize security institutions' contributions towards preventing and managing health crises, as well as an assessment of parallels between lessons from Ebola and the emerging COVID-19 pandemic.

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