

# JOINT EXTERNAL EVALUATION OF IHR CORE CAPACITIES

of the

## FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

Mission report:  
March 2016



World Health  
Organization



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## Executive summary

This evaluation was a joint exercise between a team of experts from the Federal Democratic Republic of Ethiopia (Ethiopia) and an external team of experts, using the World Health Organization (WHO) International Health Regulation (IHR) (2005), joint external evaluation (JEE) tool. The multisectoral team of experts and advisors (representing international organizations including the WHO, the World Bank and the Food and Agriculture Organization (FAO) of the United Nations) participated in a week long evaluation from 29 February 2016 through 4 March 2016 in Addis Ababa, Ethiopia. At the time of the mission, the Government of Ethiopia (GoE) had already completed a self-assessment using the JEE tool. The results of this assessment, including host country self-assessed scores for the 19 JEE technical areas, were then presented to the JEE team. The JEE team and the country team participated in a facilitated discussion to jointly assess Ethiopia's current strengths, areas which need strengthening and priority actions; scores were developed through a process of consensus. JEE scores, supporting information and specific recommendations for priority actions are provided under each technical area in this report.

The Ethiopian Ministry of Health (MoH) volunteered to conduct a JEE to: (i) establish a strong Public Health Emergency Management (PHEM) system (that was tested during the Ebola outbreak) to be better prepared for future disease outbreaks; (ii) spearhead the implementation of WHO IHR to be a model for all of Africa and understand the country's strengths and weaknesses; and (iii) embed PHEM in its five-year Health Sector Transformation Plan<sup>1</sup>. The GoE assembled various relevant sectors to conduct this external evaluation, but was unable to bring together different ministries and sectors at all levels of government to collaborate as a routine business.

The GoE representative presented the strategic Health Sector Transformation Plan which began implementation in 2015. The five-year plan incorporates four major transformational agendas including: (i) establishment and implementation of the PHEM programme; (ii) information transformation; (iii) quality and equity; and (iv) the Health 20 Plan. The presentations included a review of GoE's self-assessment across the JEE indicators. The week long discussions included in-depth reviews of each JEE indicator facilitated by a member of the JEE team with robust discussions between GoE officials and the JEE team. Consensus scores and up to five priority areas for action were decided for each technical area. The entire team presented the results of the evaluation and observations of Ethiopia's health security preparedness to the Federal Minister of Health, Dr Kesetebirhan Admasu at MoH in Addis Ababa on 4 March 2016.

<sup>1</sup> <http://www.moh.gov.et/documents/26765/0/Health+Sector+Transformation+Plan/5542a23a-9bc7-46a2-8c1f-8b32c2603208?version=1.0>



# Findings from the JEE

## Overarching issues and priority actions

Over the course of the week's discussions, both the MoH and the Ministry of Livestock and Fisheries (MoLF) made clear their strong political will to strengthen Ethiopia's public health and animal health systems, both to promote global health security and to meet obligations under IHR (2005). The GoE is considering at least three recurring major themes that emerged as overarching issues.

**Multisectoral engagement:** Opportunity exists for significantly enhancing multisectoral collaboration, information exchange and cross-disciplinary exchanges between the ministries overseeing the health and health security of humans, animals and food. The planned establishment of a National Public Health Security Council is noteworthy as a mechanism for collaboration among the relevant ministries at the federal level. Mechanisms should also be established or enhanced to promote systematic policy and technical collaboration between human (public) health, animal health and other relevant sectors, at all levels of government.

**Enhancing surveillance:** Ethiopia is committed to establishing surveillance systems for a number of critical diseases in the human and animal health sectors, and systems for detecting antimicrobial-resistant microbes, adulterated food and counterfeit medicines with the goal to provide early warning of potential threats to human and animal health, and monitoring of priority diseases. These systems can be greatly enhanced across all levels of government, especially at the Woreda level, by integrating surveillance efforts across human and animal health sectors, and focusing efforts to improve data quality, information management and use.

**Enhancing laboratory capacity and workforce:** Ethiopia's national laboratory capacity in both the animal and public health sectors is strong, but opportunities exist to greatly enhance the ability of the GoE to prevent and detect human and animal disease outbreaks by further investing in laboratory capabilities and capacity, especially at subnational levels. Strengthening laboratory resources and training personnel along with enhanced biosecurity and biosafety measures will benefit the country's surveillance systems, increase communication between relevant sectors and promote better health.

## Ethiopia scores

Capacities	Indicators	Score
<b>National legislation, policy and financing</b>	P.1.1 Legislation, laws, regulations, administrative requirements, policies or other government instruments in place are sufficient for implementation of IHR (2005)	4
	P.1.2 The State can demonstrate that it has adjusted and aligned its domestic legislation, policies and administrative arrangements to enable compliance with IHR (2005)	4
<b>IHR coordination, communication and advocacy</b>	P.2.1 A functional mechanism is established for the coordination and integration of relevant sectors in the implementation of IHR	3
<b>Antimicrobial resistance</b>	P.3.1 Antimicrobial resistance detection	3
	P.3.2 Surveillance of infections caused by antimicrobial-resistant pathogens	2
	P.3.3 Health care-associated infection (HCAI) prevention and control programmes	2
	P.3.4 Antimicrobial stewardship activities	2
<b>Zoonotic diseases</b>	P.4.1 Surveillance systems are in place for priority zoonotic diseases/pathogens	4
	P.4.2 Veterinary or animal health workforce	3
	P.4.3 Mechanisms for responding to infectious and potential zoonotic diseases are established and functional	2
<b>Food safety</b>	P.5.1 Mechanisms for multisectoral collaboration are established to ensure rapid response to food safety emergencies and outbreaks of food-borne diseases	2
<b>Biosafety and biosecurity</b>	P.6.1 Whole-of-government biosafety and biosecurity system is in place for human, animal and agriculture facilities	2
	P.6.2 Biosafety and biosecurity training and practices	2
<b>Immunization</b>	P.7.1 Vaccine coverage (measles) as part of national programme	3
	P.7.2 National vaccine access and delivery	4
<b>National laboratory system</b>	D.1.1 Laboratory testing for detection of priority diseases	4
	D.1.2 Specimen referral and transport system	3
	D.1.3 Effective modern point-of-care and laboratory-based diagnostics	3
	D.1.4 Laboratory quality system	2
<b>Real-time surveillance</b>	D.2.1 Indicator- and event-based surveillance systems	3
	D.2.2 Interoperable, interconnected, electronic real-time reporting system	2
	D.2.3 Integration and analysis of surveillance data	3
	D.2.4 Syndromic surveillance systems	4
<b>Reporting</b>	D.3.1 System for efficient reporting to FAO, OIE and WHO	3
	D.3.2 Reporting network and protocols in country	2
<b>Workforce development</b>	D.4.1 Human resources are available to implement IHR core capacity requirements	3
	D.4.2 FETP <sup>2</sup> or other applied epidemiology training programme is in place	4
	D.4.3 Workforce strategy	3

<sup>2</sup> FETP: field epidemiology training programme

<b>Preparedness</b>	R.1.1 National multi-hazard public health emergency preparedness and response plan is developed and implemented	3
	R.1.2 Priority public health risks and resources are mapped and utilized	2
<b>Emergency response operations</b>	R.2.1 Capacity to activate emergency operations	2
	R.2.2 EOC operating procedures and plans	1
	R.2.3 Emergency operations programme	2
	R.2.4 Case management procedures are implemented for IHR relevant hazards	2
<b>Linking public health and security authorities</b>	R.3.1 Public health and security authorities (e.g. law enforcement, border control, customs) are linked during a suspect or confirmed biological event	2
<b>Medical countermeasures and personnel deployment</b>	R.4.1 System is in place for sending and receiving medical countermeasures during a public health emergency	4
	R.4.2 System is in place for sending and receiving health personnel during a public health emergency	2
<b>Risk communication</b>	R.5.1 Risk communication systems (plans, mechanisms, etc.)	3
	R.5.2 Internal and partner communication and coordination	3
	R.5.3 Public communication	4
	R.5.4 Communication engagement with affected communities	3
	R.5.5 Dynamic listening and rumour management	3
<b>Points of entry</b>	PoE.1 Routine capacities are established at points of entry	2
	PoE.2 Effective public health response at points of entry	2
<b>Chemical events</b>	CE.1 Mechanisms are established and functioning for detecting and responding to chemical events or emergencies	1
	CE.2 Enabling environment is in place for management of chemical events	1
<b>Radiation emergencies</b>	RE.1 Mechanisms are established and functioning for detecting and responding to radiological and nuclear emergencies	3
	RE.2 Enabling environment is in place for management of radiation emergencies	1

# PREVENT

## National legislation, policy and financing

### Introduction

The International Health Regulations (IHR) (2005) provide obligations and rights for States Parties. In some States Parties, implementation of the IHR (2005) may require new or modified legislation. Even if a new or revised legislation may not be specifically required, states may still choose to revise some regulations or other instruments in order to facilitate IHR implementation and maintenance in a more effective manner. Implementing legislation could serve to institutionalize and strengthen the role of IHR (2005) and operations within the State Party. It can also facilitate coordination among the different entities involved in their implementation. See detailed guidance on IHR (2005) implementation in national legislation at [http://www.who.int/ihr/legal\\_issues/legislation/en/index.html](http://www.who.int/ihr/legal_issues/legislation/en/index.html). In addition, policies that identify national structures and responsibilities as well as the allocation of adequate financial resources are also important.

### Target

*Adequate legal framework for States Parties to support and enable the implementation of all their obligations, and rights to comply with and implement the IHR (2005). New or modified legislation in some States Parties for implementation of the IHR (2005). Where new or revised legislation may not be specifically required under the State Party's legal system, States may revise some legislation, regulations or other instruments in order to facilitate their implementation and maintenance in a more efficient, effective or beneficial manner. States Parties ensure provision of adequate funding for IHR implementation through the national budget or other mechanism.*

### Ethiopia level of capabilities

GoE has the legal framework to support and enable the implementation of country obligations and rights to comply with and implement the IHR. GoE has passed legislation and regulations, which govern public health surveillance, emergency preparedness, sharing of information to the public, stakeholders and partners, investigation and response to public health emergencies and consequently address the implementation of IHR (2005). Examples of existing legislative instruments include: the Ethiopian Public Health Institute (EPHI) Regulation 301/2013<sup>3</sup> establishing the EPHI as the entity responsible for the IHR implementation; the Ethiopian Food, Medicine and Health Care Administration and Control Authority (EFMHACA) Proclamation 661/2009,<sup>4</sup> Regulation 189/2010<sup>5</sup> and Regulation 299/2013;<sup>6</sup> and Radiation Protection Proclamation 571/2008.

### Recommendations for priority actions

- Establish a National Public Health Security Council at the Prime Minister's Office to coordinate multisectoral activities for IHR (2005) implementation.
- Review and incorporate into national legislation all relevant components that will facilitate the implementation of the countries' rights and obligations of the IHR.

<sup>3</sup> <http://www.ephil.gov.et/index.php/2014-04-09-13-52-44/fact-sheet>

<sup>4</sup> [http://www.fmhaca.gov.et/Documents/Proclamation\\_661.pdf](http://www.fmhaca.gov.et/Documents/Proclamation_661.pdf)

<sup>5</sup> <http://www.fmhaca.gov.et/documents/Negarith.pdf>

<sup>6</sup> [http://www.fmhaca.gov.et/documents/Food\\_Medicine\\_and\\_Healthcare\\_Administration\\_and\\_Control\\_Councils\\_of\\_Ministers\\_Regulation\\_No\\_299\\_2013.pdf](http://www.fmhaca.gov.et/documents/Food_Medicine_and_Healthcare_Administration_and_Control_Councils_of_Ministers_Regulation_No_299_2013.pdf)

- Adopt additional policies within the National Health Sector Plan to facilitate the core and expanded functions of the national IHR focal point.

## Indicators and scores

### P.1.1 Legislation, laws, regulations, administrative requirements, policies or other government instruments in place are sufficient for implementation of IHR (2005) – Score 4

#### Strengths/best practices

- The following laws and regulations constitute the main authorities for implementing IHR across the different sectors: Ethiopian Health Policy (1993); EPHI Council of Minister's Regulation (301/2013);<sup>7</sup> Radiation Protection Proclamation (571/2008); EFMHACA Proclamation (661/2009); and EFMHACA Council of Minister's Regulation (299/2013); and the Ethiopian Constitution.<sup>8</sup>
- A memorandum of understanding between Kenya and Ethiopia addresses security, access to health services, education and transportation.
- Other cross-border agreements have been signed with countries, the Regional Economic Community and the Intergovernmental Authority on Development in the Greater Horn of Africa region.
- An assessment of the various legislation, administrative procedures and instruments has been carried out and implementation is ongoing.

#### Areas which need strengthening and challenges

- Reviewing and incorporating into national legislation all relevant components that will facilitate the implementation of the countries' rights and obligations of the IHR.
- Adopting additional policies within the National Health Sector Plan to facilitate the core and expanded functions of the national IHR focal point.

### P.1.2 The State can demonstrate that it has adjusted and aligned its domestic legislation, policies and administrative arrangements to enable compliance with the IHR (2005) – Score 4

#### Strengths/best practices

- National assessments of the available legislation and regulations to implement IHR core capacities were completed prior to the establishment of the EPHI and repeated in July 2015. A legislative assessment was done in 2012.
- An independent assessment was conducted by the WHO Regional Office for Africa as part of the overall IHR assessment.

#### Areas which need strengthening and challenges

- Multisectoral collaboration for the implementation of IHR is generally weak (e.g. for chemical events).
- A review of all key protocols, standards, guidelines and standard operating procedures (SOPs) is needed for the implementation of IHR obligations in the country across all relevant sectors, and to develop/reinforce these, as appropriate.

<sup>7</sup> [http://www.ephi.gov.et/images/pdf/ephi\\_regulation.pdf](http://www.ephi.gov.et/images/pdf/ephi_regulation.pdf)

<sup>8</sup> [http://www.eueom.eu/files/dmfile/ethiopian-constitution-1994\\_en.pdf](http://www.eueom.eu/files/dmfile/ethiopian-constitution-1994_en.pdf)

### ***Relevant documentation***

- Ethiopian Health Policy 1993
- Ethiopian Public Health Institute Regulation No. 301/2013
- EFMHACA Proclamation No. 661/2009
- EFMHACA Regulation No. 299/2013
- EFMHACA Regulation No. 189/2010
- Radiation Protection Proclamation No. 571/2008
- Public Health Emergency Management Guidelines 2012



# IHR coordination, communication and advocacy

## Introduction

The effective implementation of the IHR requires multisectoral/multidisciplinary approaches through national partnerships for efficient and alert response systems. Coordination of nationwide resources, including the designation of a national IHR focal point, which is a national centre for IHR communications, is a key requisite for IHR implementation.

### Target

*Multisectoral/multidisciplinary approaches through national partnerships that allow efficient, alert and responsive systems for effective implementation of the IHR (2005). Coordinate nationwide resources, including sustainable functioning of a national IHR focal point – a national centre for IHR (2005) communications which is a key requisite for IHR (2005) implementation – that is accessible at all times. States Parties provide WHO with contact details of national IHR focal points, continuously update and annually confirm them.*

## Ethiopia level of capabilities

The MoH has established a structure to coordinate IHR at the national level and identified potential partners and stakeholders to support its implementation. A Public Health Emergency Task Force whose role is “to coordinate key stakeholders working on early warning, emergency preparedness, prevention, detection, response and rehabilitation of major public health emergencies in Ethiopia and ensure adequate management of health and nutrition emergencies” and technical working groups have been established with clear terms of reference to support IHR implementation. However, despite the efforts, multisectoral collaboration with other relevant ministries is not fully functional. Mechanisms to improve systematic exchange of information need to be strengthened.

## Recommendations for priority actions

- Establish mechanisms for regular information sharing between line ministries. This will include finalizing the memorandums of understanding prepared by the MoH.
- Conduct regular assessment of IHR implementation in all sectors.
- Strengthen advocacy for IHR implementation to all relevant partners in Ethiopia.

## Indicators and scores

### **P.2.1 A functional mechanism is established for the coordination and integration of relevant sectors in the implementation of IHR – Score 3**

#### **Strengths/best practices**

- Coordination mechanisms are established at the national level and include a Public Health Emergency Management Task Force and technical working groups.
- Terms of reference for the technical working groups have been clearly defined and action plans prepared; the terms of reference identify responsible agencies for each IHR hazard.
- There is informal exchange of information between line ministries, but primarily through personal contacts.

### ***Areas which need strengthening and challenges***

- There should be increased advocacy and awareness of IHR implementation across sectors, with specific policies and SOPs for IHR implementation.
- Multisectoral coordination between human and animal health and other sectors is not well functioning and should be systematically strengthened and used, not only during emergencies.
- There is no system for exchange of information between sectors, as reporting to other ministries is not mandatory. Any information is shared based on request. No formal communication mechanism has been established to regularly share information between line ministries.

### ***Relevant documentation***

- Terms of reference for IHR technical working groups
- Terms of reference for Public Health Emergency Task Force
- Terms of reference for Disaster Risk Management Technical Working Group

# Antimicrobial resistance

## Introduction

Bacteria and other microbes evolve in response to their environment and inevitably develop mechanisms to resist being killed by antimicrobial agents. For many decades, the problem was manageable as the growth of resistance was slow and the pharmaceutical industry continued to create new antibiotics.

Over the past decade, however, this problem has become a crisis. Antimicrobial resistance is evolving at an alarming rate and is outpacing the development of new countermeasures capable of thwarting infections in humans. This situation threatens patient care, economic growth, public health, agriculture, economic security and national security.

### Target

*Support work coordinated by FAO, OIE and WHO to develop an integrated global package of activities to combat antimicrobial resistance, spanning human, animal, agricultural, food and environmental aspects (i.e. a One Health approach). Each country has: (i) its own national comprehensive plan to combat antimicrobial resistance; (ii) strengthened surveillance and laboratory capacity at the national and international levels following international standards developed as per the framework of the Global Action Plan; and (iii) improved conservation of existing treatments and collaboration to support the sustainable development of new antibiotics, alternative treatments, preventive measures and rapid point-of-care diagnostics, including systems to preserve new antibiotics.*

## Ethiopia level of capabilities

Ethiopia produced their National Action Plan for Antimicrobial Resistance in 2009 followed by an update in 2015 – the National Strategic Framework for Prevention and Containment of Antimicrobial Resistance. A multisectoral advisory committee (including MoH, MoLF and others) was convened to revise the plan to align with the Global Action Plan on Antimicrobial Resistance. However, currently, there is suboptimal stewardship in human and animal health sectors and little overall awareness in the country of the importance of controlling and preventing antimicrobial resistance, especially within the animal health and production sectors. There is no sharing of information regarding antimicrobial resistance. There is also no coordination or collaboration between public health, animal health or other sectors in planning, implementation, detection, surveillance and response related to antimicrobial resistance.

## Recommendations for priority actions

- Strengthen antimicrobial resistance surveillance systems within animal health and public health sectors.
- Increase antimicrobial resistance laboratory capacity within animal health and public health sectors.
- Increase antimicrobial resistance infection prevention and control within animal health and public health sectors.
- Ensure intersectoral collaboration and continuous stakeholder communication and behavioural change within animal health and public health sectors.
- Implement an antimicrobial resistance stewardship programme within animal health and public health sectors.

## Indicators and scores

### P.1.1 Antimicrobial resistance detection – Score 3

#### *Strengths/best practices*

- Both the animal and public health sectors have antimicrobial resistance testing capacity.
- There is ongoing culture and sensitivity testing for more than eight human pathogens throughout the country based on WHO recommendations.
- The National Animal Health Diagnostic and Investigation Center (NAHDIC) is testing some clinical samples, especially for resistance to Streptococcus and Staphylococcus in milk samples and for Salmonella in poultry.

#### *Areas which need strengthening and challenges*

- Testing is currently for clinical samples only.

### P.1.2 Surveillance of infections caused by antimicrobial-resistant pathogens – Score 2

#### *Strengths/best practices*

- The three first hospital sentinel sites for public health antimicrobial resistance surveillance are ready to start and the next sites have been identified. These sites currently are doing testing but not in the context of a sentinel surveillance system.

#### *Areas which need strengthening and challenges*

- There are no functioning sentinel sites for public health antimicrobial resistance surveillance.
- There are no antimicrobial resistance sentinel surveillance sites in the animal health sector.

### P.1.3 Health care-associated infection (HCAI) prevention and control programmes – Score 2

#### *Strengths/best practices*

- There is a public health HCAI plan.

#### *Areas which need strengthening and challenges*

- Not all facilities are implementing HCAI programmes.
- There are no formal plans in place in the animal health sector or systematic implementation of biosecurity and hygiene measures in farms.
- Guidelines are being developed to improve rational use of antimicrobial medicines in animals.

### P.1.4 Antimicrobial stewardship activities – Score 2

#### *Strengths/best practices*

- One human health facility has implemented an antibiotic stewardship programme.
- There is legislation governing the use of antimicrobials in humans (e.g. prescriptions).
- There is no local manufacture of antimicrobial agents for animals or control of imports that allows for usage levels to be estimated.
- There are tight controls on safety, quality, efficacy and potency of antibiotics entering the country for animal health.

### ***Areas which need strengthening and challenges***

- Only one in 300 hospitals has implemented antibiotic stewardship programmes/actions.
- Legislation governing the use of antimicrobial medicines in humans is not implemented/enforced and these medicines are available over the counter.
- There is currently no legal requirement for prescription of antimicrobial medicines in animals and antibiotics are not used based on principles of "rational use". As there is little susceptibility testing in animals, mostly broad spectrum antibiotics are used.
- Antibiotics are used for growth promotion in chicken, beef and dairy production.

### ***Relevant documentation***

- National strategic framework for prevention and containment of antimicrobial resistance. Food, Medicine and Health care Administration and Control Authority of Ethiopia

# Zoonotic diseases

## Introduction

Zoonotic diseases are communicable diseases that can spread between animals and humans. These diseases are caused by viruses, bacteria, parasites and fungi carried by animals, insects or inanimate vectors that aid in their transmission. Approximately 75% of recently emerging infectious diseases affecting humans is of animal origin; and approximately 60% of all human pathogens are zoonotic.

### Target

*Adopted measured behaviours, policies and/or practices that minimize the transmission of zoonotic diseases from animals into human populations.*

### Ethiopia level of capabilities

Certain zoonotic diseases – rabies and anthrax – have big impacts on animal and public health in Ethiopia. There is strong political will from MoH to improve the public health system (especially in the context of effectively implementing IHR), and from the MoLF to strengthen the animal health system. Although both health systems are relatively strong with good capacity, especially diagnostic laboratories, surveillance and response, there is need for further strengthening. Communication and collaboration between the animal health and public health sectors is very weak and occurs only on an ad hoc basis. There are no formal or legal linkages, structures or policies for working together or with other sectors, such as wildlife and food.

### Recommendations for priority actions

- Establish, with legislative support, a national mechanism or coordinating body responsible for routine communication and collaboration (including priority setting, policy setting, regulatory guideline development, information sharing, supporting joint training and educational programmes, and risk assessment) between animal health, public health and other relevant sectors.
- Establish an integrated human health and animal health surveillance and response system for routine and emergency zoonotic events and strengthen joint prevention and control capacity for zoonotic diseases, including other agencies (e.g. wildlife) as needed, to act at community, national and regional levels.
- Build and link veterinary and public health laboratory capacity to identify and verify priority zoonotic diseases.
- Build mass health education campaigns on priority zoonotic diseases and improve awareness for working with the “One Health” approach.

### Indicators and scores

#### **P.4.1 Surveillance systems are in place for priority zoonotic diseases/pathogens – Score 4\***

\*Caveat: There is no or only very limited ad hoc interaction between the sectors.

#### **Strengths/best practices**

- Surveillance systems for five or more zoonotic diseases are in place for both humans and animals.

- Joint public health/animal health priority zoonotic diseases – rabies, anthrax, brucellosis, leptospirosis, and echinococcosis – were agreed upon during joint public health/animal health discussions held in September 2015.

#### *Areas which need strengthening and challenges*

- There is no linkage between public health and animal health surveillance systems and no mechanisms or structures for sharing of zoonotic diseases information.
- There is no linkage between public health and animal health diagnostic laboratory systems and no mechanisms for sharing specimens between public health and animal health laboratories.

### **P.4.2 Veterinary or animal health workforce – Score 3**

#### *Strengths/best practices*

- There are a few veterinarians working in the MoH and there is good engagement at the national level.
- Veterinarians are included in the country FETP.
- There is sufficient animal health workforce capacity to support public health at the national level, once coordination mechanisms are in place.
- The veterinary workforce and all veterinary capacities have been evaluated in an World Organisation for Animal Health (OIE) Performance of Veterinary Services (PVS) evaluation and an OIE PVS gap analysis; this information is available to the GoE.

#### *Areas which need strengthening and challenges*

- No training programme is offered to public health staff in controlling zoonotic diseases originating from animal populations.
- There is insufficient engagement of the veterinary sector with public health at the subnational level and in the field.

### **P.4.3 Mechanisms for responding to infectious and potential zoonotic diseases are established and functional – Score 2**

#### *Strengths/best practices*

- Both the animal health and public health sectors separately respond to zoonotic disease events.
- Contingency and preparedness and/or response plans, including mechanisms for communication and joint response (for Rift Valley fever (2009), avian influenza (2006), and pandemic influenza (2010)) exist, and the animal health and public health sectors have worked together for these diseases. For Ebola, animal health and public health came together to share laboratory capacity using the facilities at the NAHDIC.

#### *Areas which need strengthening and challenges*

- There is no strategy, plan or mechanism for establishing multidisciplinary interagency response teams in the event of a suspected zoonotic disease outbreak.
- Diseases in animals are often not reported by farmers/owners to community health workers or veterinarians. Reporting is required for early detection and response. There is no plan to encourage reporting of animal diseases or address factors which might prevent farmers/owners from reporting.

### **Relevant documentation**

- Epidemiological Bulletin. Volume 2; Number 6, 2016 (EPI, PHEM)
- Zoonotic diseases for intersectoral engagement in Ethiopia, 2015 (US CDC, EPI and Ministry of Agriculture)
- Agricultural sample survey report on livestock and livestock characteristics (private peasant holdings), Statistical Bulletin 570, 2013 (Federal Democratic Republic of Ethiopia Central Statistics Agency)
- Ethiopia field epidemiology training program information bulletin, 2012 (MoH)
- PVS gap analysis report, Ethiopia, 2012 (OIE)
- Public health emergency management, 2012 (Ethiopian Health and Nutrition Research Institute, PHEM)
- PVS evaluation report, Ethiopia, 2011 (OIE)
- Pandemic Influenza Preparedness and Response Plan, 2010 (MoH)
- Rift Valley Fever Contingency and Preparedness Plan for Ethiopia, 2008 (Ministry of Agriculture)
- Policy for highly pathogenic avian influenza surveillance, 2006 (Ethiopian Health and Nutrition Research Institute)



# Food safety

## Introduction

Food- and water-borne diarrhoeal diseases are leading causes of illness and death, particularly in less developed countries. The rapid globalization of food production and trade has increased the potential likelihood of international incidents involving contaminated food. The identification of the source of an outbreak and its containment is critical for control. Risk management capacity with regard to control throughout the food chain continuum must be developed. If epidemiological analysis identifies food as the source of an event, based on a risk assessment, suitable risk management options that ensure the prevention of human cases (or further cases) need to be put in place.

### Target

*Surveillance and response capacity among States Parties for food- and water-borne disease risks or events by strengthening effective communication and collaboration among the sectors responsible for food safety, and safe water and sanitation.*

## Ethiopia level of capabilities

The GoE is in the process of updating and modernizing the country's food safety, animal and plant health systems. This ongoing and evolving modernization process is, in part, attributed to the nation's fast-paced, export-oriented economic growth, which has spurred a rising number of retail and wholesale food outlets, restaurants and food manufacturers, especially in and around the capital city, Addis Ababa. The GoE has subsequently taken steps to regulate these establishments to ensure that the food they produce, distribute or sell is safe and wholesome. The JEE team was briefed on the legal authorities of the GoE which define the food safety mechanisms.

Ethiopia's food safety regulatory system is authorized and mandated in Parliamentary Proclamation – Ethiopian Food, Medicine, and Healthcare Administration and Control Authority Proclamation No. 661/2009.<sup>9</sup> This legislation helped legal authorities to consolidate the pre-existing food regulatory system with the aim to better protect the public from health risks emerging out of unsafe and poor quality food. In particular, the Proclamation authorizes the setting of standards and regulations for locally produced and imported foods, in areas of production, promotion, storage, packaging and labeling, distribution and laboratory testing.

In a subsequent Parliamentary Proclamation – Ethiopian Food, Medicine and Healthcare Administration and Control Authority Regulation No. 189/2010<sup>10</sup> – the EFMHACA was established under the purview of the MoH, as the competent authority responsible for setting and enforcing food safety standards and regulations. Under this proclamation, food is defined as "any raw, semi-processed or processed substance for commercial purpose or to be served for the public in any way intended for human consumption that includes water and other drinks, chewing gum, supplementary food and any substance, which has been used in the manufacture, preparation or treatment of food.

"EFMHACA was given further statutory authority to enforce and implement food safety and quality regulations as defined in the Food Medicine and Healthcare Administration and Control Councils of Ministers Regulation No 299/2013.<sup>11</sup> This legislation states that food must be wholesome and produced

<sup>9</sup> [http://www.fmhaca.gov.et/Documents/Proclamation\\_661.pdf](http://www.fmhaca.gov.et/Documents/Proclamation_661.pdf)

<sup>10</sup> [http://cc.bingj.com/cache.aspx?q=Ethiopia+Regulation+189%2f2010&d=5056586797090918&mkt=en-US&setlang=en-US&w=d-JFKIRBQMz7eDW\\_bP1wPD3VlqkErFpN](http://cc.bingj.com/cache.aspx?q=Ethiopia+Regulation+189%2f2010&d=5056586797090918&mkt=en-US&setlang=en-US&w=d-JFKIRBQMz7eDW_bP1wPD3VlqkErFpN)

<sup>11</sup> [http://cc.bingj.com/cache.aspx?q=Ethiopia+Regulation+299%2f2013+&d=4751626963584931&mkt=en-US&setlang=en-US&w=oQtO\\_AQTQ61wji7-ADNug-\\_hbmWfjMw4](http://cc.bingj.com/cache.aspx?q=Ethiopia+Regulation+299%2f2013+&d=4751626963584931&mkt=en-US&setlang=en-US&w=oQtO_AQTQ61wji7-ADNug-_hbmWfjMw4)

in accordance with the relevant safety and quality requirements. Imported products failing to meet these standards will be returned to the country of origin or destroyed at the point of entry. This regulation also provides broadly defined requirements dealing with food storage, handling and transportation, and prohibits counterfeiting and adulteration.

## Recommendations for priority actions

- Enhance relevant multisectoral collaboration and information sharing among the political, policy and regulatory entities involved in food safety. The team strongly endorses the establishment of a multidisciplinary team to strengthen preparedness and response efforts associated with food outbreaks proposed by the EPHI.
- Enhance robust coordination at the technical level for a rapid multisectoral operational response to detect and respond to food-borne outbreaks. Exercises could be used to test new capabilities.
- Enhance laboratory capacity to diagnose microbiological and chemical agents in all relevant ministries involved in food production, importation and distribution.

## Indicators and scores

### P.5.1 Mechanisms for multisectoral collaboration are established to ensure rapid response to food safety emergencies and outbreaks of food-borne diseases – Score 2

#### *Strengths/best practices*

- Strong regulatory system.

#### *Areas which need strengthening and challenges*

- Good intersectoral coordination with at least four agencies involved in food safety: (i) import/export aspects in the Ministry of Trade (the Codex Alimentarius focal point); (ii) licensing of food products in the Food Registration and Licensing Directorate (under the FMHACA; conducts some investigations and testing) (the INFOSAN focal point); (iii) outbreak response within EPHI; and (iv) animal production and meat inspection in the abattoirs within the MoLF.
- Food-borne disease outbreaks are rarely detected, reported or investigated, and seldom traced back to identify the source of the contagion. Daddi Jima Wayessa, Deputy Director General, EPHI is working to establish a team (associated with food outbreaks) with diagnostic capabilities (microbiological and chemical) at the EPHI.

#### *Relevant documentation*

- Proclamation 661/2009<sup>12</sup>
- Regulation 189/2010<sup>13</sup>
- Regulation 299/2013<sup>14</sup>
- Food directives<sup>15</sup>

<sup>12</sup> [http://www.fmhaca.gov.et/Documents/Proclamation\\_661.pdf](http://www.fmhaca.gov.et/Documents/Proclamation_661.pdf)

<sup>13</sup> ([http://cc.bingj.com/cache.aspx?q=Ethiopia+Regulation+189%2f2010&d=5056586797090918&mkt=en-US&setlang=en-US&w=d-JFKIRBQMz7eDW\\_bP1wPD3VlqkErFpN](http://cc.bingj.com/cache.aspx?q=Ethiopia+Regulation+189%2f2010&d=5056586797090918&mkt=en-US&setlang=en-US&w=d-JFKIRBQMz7eDW_bP1wPD3VlqkErFpN))

<sup>14</sup> [http://cc.bingj.com/cache.aspx?q=Ethiopia+Regulation+299%2f2013+&d=4751626963584931&mkt=en-US&setlang=en-US&w=oQtO\\_AQTQ61wyi7-ADNug\\_hbmWfjMW4](http://cc.bingj.com/cache.aspx?q=Ethiopia+Regulation+299%2f2013+&d=4751626963584931&mkt=en-US&setlang=en-US&w=oQtO_AQTQ61wyi7-ADNug_hbmWfjMW4)

<sup>15</sup> <http://www.fmhaca.gov.et/standardsdirectivesguidelines.html>

# Biosafety and biosecurity

## Introduction

It is vital to work with pathogens in the laboratory to ensure that the global community possesses a robust set of tools – such as drugs, diagnostics, and vaccines – to counter the ever-evolving threat of infectious diseases.

Research with infectious agents is critical for the development and availability of public health and medical tools that are needed to detect, diagnose, recognize and respond to outbreaks of infectious diseases of both natural and deliberate origin. At the same time, the expansion of infrastructure and resources dedicated to work with infectious agents have raised concerns regarding the need to ensure proper biosafety and biosecurity to protect researchers and the community. Biosecurity is important in order to secure infectious agents against those who would deliberately misuse them to harm people, animals, plants or the environment.

### Target

*A whole-of-government national biosafety and biosecurity system with especially dangerous pathogens identified, held, secured and monitored in a minimal number of facilities according to best practices; biological risk management training and educational outreach conducted to promote a shared culture of responsibility, reduce dual-use risks, mitigate biological proliferation and deliberate use threats, and ensure safe transfer of biological agents; and country-specific biosafety and biosecurity legislation, laboratory licensing and pathogen control measures in place as appropriate.*

## Ethiopia level of capabilities

Biosafety and biosecurity of laboratories is critical to protect the health and safety of laboratory workers, their families and the community. Ethiopia has a national laboratory system in place for both animal health and public health, and a regulation relating to biosafety in laboratories. Currently, biosecurity lacks national regulation and is limited in its implementation.

## Recommendations for priority actions

- Finalize and implement national biosafety and biosecurity legislation.
- Establish a multisectoral national biosafety and biosecurity team to enhance collaboration, information sharing about biosafety and biosecurity best practices, and to develop and implement biosafety and biosecurity policies and guidelines at all levels throughout the country including private sector laboratories.
- Identify, by each ministry, agents/pathogens of concern and facilities housing those agents to develop regulations, which would be implemented to safeguard the people, agents, and facilities working with dangerous pathogens.

## Indicators and scores

### P.6.1 Whole-of-government biosafety and biosecurity system is in place for human, animal and agriculture facilities – Score 2

#### *Strengths/best practices*

- Regulation for biosafety is in place – Health safety guidelines for public health in Ethiopia, June 2010.
- The MoH and MoLF have initiated collaboration since the Ebola outbreak to test suspect samples.
- The GoE requires all laboratories to be registered. Part of the registration requires compliance with aspects of biosafety.

#### *Areas which need strengthening and challenges*

- Regulations that will cover all of the existing gaps in biosafety and address biosecurity need to be developed.
- Biosafety and biosecurity regulations should include aspects of physical security, inventory control and personnel reliability.
- Laboratories with dangerous pathogens and toxins should be registered with the GoE.

### P.6.2 Biosafety and biosecurity training and practices – Score 2

#### *Strengths/best practices*

- Biosafety training is offered by the MoH and NAHDIC for federal and regional laboratories.
- Biosafety training is also provided as a part of medical school education.
- Biosafety training, including training for clinicians, was provided during the Ebola outbreak in preparation for potentially positive cases.
- Licensing by EFMHACA – 110 laboratories are currently being prepared for certification under ISO 151189.

#### *Areas which need strengthening and challenges*

- No specific agents have been identified for human and agricultural pathogens of concern.
- Facilities housing dangerous pathogens and toxins should be identified.
- Specific legislation for biosafety and biosecurity at country level does not exist. The GoE plans to develop such legislation.
- There is a need to identify a biological weapons convention focal point.
- Development and implementation of facility biosafety and biosecurity training and SOPs.

#### *Relevant documentation*

- Health safety guidelines for public health in Ethiopia, June 2010. Biosafety Training of Trainers Agenda
- Master plan for the public health laboratory system in Ethiopia, Second Edition, 2003-2013
- The second strategic plan, EPHI, June 2015

# Immunization

## Introduction

Immunizations are estimated to prevent more than two million deaths a year globally. Immunization is one of the most successful global health interventions and cost-effective ways to save lives and prevent disease.

### Target

*A national vaccine delivery system – with nationwide reach, effective distributions, access for marginalized populations, adequate cold chain and ongoing quality control – that is able to respond to new disease threats.*

## Ethiopia level of capabilities

Routine immunization using six antigens was launched in 1980 for children below two years of age with the objective of increasing annual vaccine coverage by 10%. Vaccines are administered on a voluntary basis. Currently the Expanded Program on Immunization (EPI) targets tuberculosis, polio, measles, diphtheria, pertussis, tetanus, pneumococcal pneumonia, rotavirus diarrhoea, pneumonia, meningitis due to haemophilus influenza type b, and hepatitis due to hepatitis B virus. Plans are in place to add additional targets into the routine immunization schedule for children less than one year of age. In particular, meningococcal disease and yellow fever have been recognized as significant national public health problems and are targeted for immunization during 2016–2020. Ethiopia has a national vaccination action plan, which is aligned with the WHO Global Vaccine Action Plan.

Based on the latest coverage survey (2014), the vaccine coverage of measles-containing vaccine (MCV1) and diphtheria, pertussis and tetanus (DPT-3/Penta 3) were estimated to be 84% and 87%, respectively. There is discrepancy between the country's official estimates and the WHO/UNICEF estimates, the latter estimating lower coverage. However, both estimates indicate an increasing trend in coverage over time, which is encouraging.

Ethiopia has a nationwide vaccine delivery system (maintaining cold chain) in most districts and a functional vaccine procurement system. The Pharmaceutical Fund and Supply Agency (PFSA) has the national mandate for vaccine storage and delivery.

*Note:* The indicators of this technical area focus on human health. Animal health is not extensively covered and thus not taken into account in scoring. However, the national plan does take into account rabies immunization in humans.

## Recommendations for priority actions

- Address the shortcomings in vaccine delivery strategies (cold chain management) and human resource capacity (staff attrition and turn over).
- Strengthen data quality management, archiving and analysis at all administrative levels for improved evidence-based decision-making.
- Enhance immunization in specific poorly performing regions/zones through education/communication campaigns.

## Indicators and scores

### P.4.1 Vaccine coverage (measles) as part of national programme – Score 3

#### *Strengths/best practices*

- There is strong national leadership and coordination.
- There is strong partnership in immunization activities within country and global partners.
- There is frequent reporting of vaccine coverage estimates and increasing trend in coverage estimates.
- There are quarterly review meetings to assess EPI and surveillance performance.

#### *Areas which need strengthening and challenges*

- Strategies for improving vaccine coverage in low-coverage regions and hard-to-reach populations are crucial, the major concern being consistently low EPI coverage in pastoralist regions.
- Immunization and surveillance data quality, archiving and analysis including increasing the number of laboratories capable of diagnosing vaccine-preventable diseases (such as measles) and linking surveillance systems throughout the country.

### P.4.2 National vaccine access and delivery – Score 4

#### *Strengths/best practices*

- Vaccine storage and transport capacities are widespread.
- There is co-financing for New and Under-utilized Vaccines Implementation (NUVI) and full funding for the traditional ones.

#### *Areas which need strengthening and challenges*

- Human resource capacity and training.
- Utilization of new technologies and innovations to improve cold chain and vaccine management.

#### *Relevant documentation*

- Strengthening routine immunization in Ethiopia, WHO report; 2014.
- Ethiopia National Expanded Programme on Immunization, Comprehensive Multi Year Plan, 2011-2015 and 2016-2020.

# DETECT

## National laboratory system

### Introduction

Public health laboratories provide essential services including disease and outbreak detection, emergency response, environmental monitoring and disease surveillance. State and local public health laboratories can serve as a focal point for a national system, through their core functions for human, veterinary and food safety including disease prevention, control and surveillance; integrated data management; reference and specialized testing; laboratory oversight; emergency response; public health research; training and education; and partnerships and communication.

### Target

*Real-time biosurveillance with a national laboratory system and effective modern point-of-care and laboratory-based diagnostics.*

### Ethiopia level of capabilities

Ethiopia's national laboratory capacity is strong, but opportunities exist to greatly enhance its ability to prevent and detect human and animal disease outbreaks by further investing in laboratory capabilities and capacity, especially at the peripheral levels. Strengthening laboratory resources and trained personnel along with enhanced biosecurity and biosafety measures will benefit the country's surveillance systems, increase communication between relevant sectors and promote better health.

### Recommendations for priority actions

- Ensure the quality of all delivery services, particularly laboratory services.
- Organize capacity building of laboratories for public health emergencies, including biosecurity and biosafety aspects.
- Organize subject matter expert training/workshops for specific diseases (such as HIV).

### Indicators and scores

#### D.1.1 Laboratory testing for detection of priority diseases – Score 4

##### Strengths/best practices

- National laboratory system is capable of detecting six of the 10 core tests identified by IHR (2005) (HIV, tuberculosis, polio, influenza, Salmonella and Plasmodium).
- Areas which need strengthening and challenges
- The remaining four core tests need to be identified based on the major national public health concerns of the country.
- Equipment management needs to be enhanced.
- Procurement and supply chain management needs strengthening.
- Mechanisms to ensure high turnover of trained staff.

### D.1.2 Specimen referral and transport system – Score 3

#### *Strengths/best practices*

- Laboratory referral linkage is implemented.
- Specimen transportation mechanism exists for only HIV through courier contracts supported by the MoH.

#### *Areas which need strengthening and challenges*

- There is no mechanism in place for surveillance of disease outbreaks or other routine diseases.
- There is no linkage with an international laboratory network.
- Data sharing on zoonotic diseases between human health and animal health sectors is poor.

### D.1.3 Effective modern point-of-care and laboratory-based diagnostics – Score 3

#### *Strengths/best practices*

- All health facilities are linked to the next level health facility in a tier system.
- Tier-specific diagnostic testing strategies exist.
- Proficient in classical diagnostic techniques including bacteriology, serology and polymerase chain reaction in selected laboratories.
- Using point-of-care diagnostics for priority diseases such as HIV and tuberculosis.

#### *Areas which need strengthening and challenges*

- Tier-specific diagnostic testing strategies need to be fully implemented.

### D.1.4 Laboratory quality system – Score 2

#### *Strengths/best practices*

- One laboratory is certified by WHO and other laboratories are being prepared for ISO 15189 and 17025 accreditation.
- Laboratory quality management system (QMS) is being implemented in most health facilities.
- Existing External Quality Assessment exists for all the six core tests.
- System of licensing of health laboratories is in place.
- A laboratory master plan exists.

#### *Areas which need strengthening and challenges*

- Biosecurity and biosafety within the national laboratory system is weak.
- Weak support for QMS at some management levels.
- QMS implementation considered as an additional activity in some facilities.

#### *Relevant documentation*

- Master plan for the public health laboratory system in Ethiopia, second edition (2009–2013)
- Weak support for QMS at some management levels, first edition, June 2010



# Real-time surveillance

## Introduction

The purpose of real-time surveillance is to advance the safety, security and resilience of the nation by leading an integrated biosurveillance effort that facilitates early warning and situational awareness of biological events.

### Target

*Strengthened foundational indicator- and event-based surveillance systems that are able to detect events of significance for public health, animal health and health security; improved communication and collaboration across sectors and between subnational, national and international levels of authority regarding surveillance of events of public health significance; improved country and intermediate level regional capacity to analyse and link data from and between strengthened, real-time surveillance systems, including interoperable, interconnected electronic reporting systems. This would include epidemiologic, clinical, laboratory, environmental testing, product safety and quality and bioinformatics data; and advancement in fulfilling the core capacity requirements for surveillance in accordance with the IHR and OIE standards.*

## Ethiopia level of capabilities

Ethiopia has well developed structures for disease surveillance and early detection of pathogens of public health importance.

In the public health sector, indicator-based surveillance system is robust with 21 diseases (including severe acute malnutrition and maternal death) being reported immediately or weekly from the health facility to the district (Woreda), zonal, regional and national levels. Standard case definitions are available at all health facilities and community case definitions are available at health posts for use by health extension workers. Weekly reporting rates exceed 85% for most regions except Afar, Gambella and Addis Ababa city. Reporting is still paper-based at the health facility level with telephone calls, fax and emails being used between the district and zonal levels. At the zonal level, surveillance data are entered into a database and reported to regional and state levels through email and then to national level. Plans to transition from paper-based reporting to electronic reporting in the near future are at an advanced stage. Event-based surveillance and syndromic surveillance systems are present and functional, but in uneven capacities.

In the animal health sector, a surveillance system is in place where animal diseases are reported on a paper-based system monthly. The MoLF is piloting a mobile apparatus-based Animal Disease Notification and Investigation System (ADNIS) for 19 diseases prioritized for immediate reporting. The monthly paper-based reporting system is also to be replaced by a web-based reporting system. Paper reports from Kebele (sub-district) and Woreda will be entered into a computer at the regional veterinary laboratories and the data will be subsequently sent electronically to MoLF. Currently the paper-based reporting rate is about 40% with 19 diseases prioritized for reporting.

Public health and animal health surveillance systems operate in silos and are not interconnected or interoperable. There is no formal mechanism for aligning system implementation or sharing of surveillance information between sectors. The communication is personal, need-based and irregular. Two zoonotic diseases (rabies and anthrax) are reported in both systems.

## Recommendations for priority actions

- Finalize testing and evaluation of the electronic health reporting systems from all sectors and gradually transition from paper-based to full-time electronic reporting.
- Roll out standardized training on indicator-based surveillance and event-based surveillance to health facility personnel, health extension workers and the Health Development Army (HDA).
- Establish mechanisms to share surveillance information among the relevant line ministries, e.g. finalize the draft memorandum of understanding, organize scheduled meetings between sectors and link surveillance systems between sectors.
- Scale up community-based surveillance to all regions in the country and standardize it through training and provision of reporting tools.

## Indicators and scores

### D.2.1 Indicator- and event-based surveillance systems – Score 3

#### *Strengths/best practices*

##### **Public health sector**

- Indicator-based surveillance system is in place with 21 diseases reported weekly; 14 of which are reported immediately.
- Facility and community case definitions are available at all subnational levels.
- Rumour logbook is available at all levels to register and verify rumours from the community.
- Toll-free telephone lines (8335 and 8665) are available for reporting of any health event.
- Trained surveillance focal persons are available at all reporting sites.
- Reporting rates are high, exceeding 85% for most regions, except Afar, Gambella and Addis Ababa city.
- Integrated refresher training for health extension workers are conducted once a year.

##### **Animal health sector**

- Case definitions for the 19 priority animal diseases for ADNIS are in place and distributed to subnational levels.
- Disease-specific guidelines are available for a number of notifiable diseases including rabies and Rift Valley fever.
- Officers reporting through the ADNIS have been trained as per requirement.

#### *Areas which need strengthening and challenges*

##### **Public health**

- Event-based surveillance system is in place, but not fully functional.
- Surveillance system provides an early warning system but it is not strong at the community and health facility levels.
- The majority of health workers and community extension workers have not been trained on disease or syndromic surveillance.

### **Animal health**

- Reporting rates in the animal health sector are low at about 40%.
- Over 90% of reports are based on clinical diagnosis (as is usual in animal health surveillance).

### **D.2.2 Interoperable, interconnected, electronic real-time reporting system – Score 2**

#### **Strengths/best practices**

- Both the public health and animal health sectors have databases for surveillance data at the national level.
- The MoH in collaboration with Tulane University and other partners has developed software for electronic reporting that is now being tested for compatibility.
- The MoLF in collaboration with partners is developing a mobile platform and electronic software for reporting.

#### **Areas which need strengthening and challenges**

- The reporting systems are not interconnected and interoperable.
- A memorandum of understanding between the public health sector and the animal health sector has been developed, but not yet signed by the two parties.
- There is neither linkage nor data sharing between the public health and animal health surveillance systems and other sectors like the Ethiopian Wildlife Conservation Authority (EWCA) and with the Food, Medicine and Health Care Administration and Control Authority of Ethiopia (FMHACA) for food safety risk assessment data.
- No mechanisms (e.g. One Health, zoonotic diseases office, staff, or logistics) exist to bridge the gaps observed in coordination of various stakeholders at human, animal and environmental health interface at all levels.

### **D.2.3 Integration and analysis of surveillance data – Score 3**

#### **Strengths/best practices**

- At the national and regional levels, there is adequate capacity for data analysis. Feedback is shared weekly through bulletins in the public health sector and monthly for the animal health sector. Both sectors have immediate feedback mechanisms through telephone calls and emails.
- Computers are available at the district level and some health facilities for analysis of surveillance data.
- Supporting supervision and review meetings are conducted often to improve data quality.

#### **Areas which need strengthening and challenges**

- In the public health sector, surveillance focal persons of most health facilities have no computers or share one computer with the Health Management Information System (HMIS) unit. Data analysis at these levels is low.
- Data validation or data quality audits are not done regularly and should be conducted often to ensure that data being reported are accurate.

## D.2.4 Syndromic surveillance systems – Score 4

### *Strengths/best practices*

- At least five syndromic surveillances (acute febrile illness, acute flaccid paralysis, febrile rash cases, influenza-like illness, severe acute respiratory infection) are reported to the lowest level of the public health system and more than 10 are reported in the animal surveillance system.
- Laboratory-based surveillance is in place for some syndromes, such as influenza-like illness and fever and rash (measles).
- There are ongoing pilot projects in different regions in the country to implement and expand community-based surveillance in both public health and animal health sectors.

### *Areas which need strengthening and challenges*

- Syndromic surveillance is not standardized and formalized in both public health and animal health sectors.
- Training of community level health workforce is minimal in both sectors.
- Case definitions of animal diseases for the community level need to be prepared and communicated.
- Laboratory-based surveillance using rapid test kits should be deployed at the community level if possible in both public health and animal health sectors.

### *Relevant documentation*

- Disease control guidelines (cholera, yellow fever, dengue fever, MERS-CoV, malaria, measles, influenza, meningitis, acute flaccid paralysis, neonatal tetanus)
- Public Health Emergency Management guidelines for Ethiopia, 2012
- Public Health Emergency management supervisory checklist
- Public Health Emergency Management Weekly Epidemiological Bulletin
- IDSR technical guidelines
- Animal health reporting guideline
- IDSR evaluation report, 2012
- IHR core capacity assessment report
- Technical report on Electronic Health Management Information System (eHMIs), 2013
- PVS evaluation report, Ethiopia, May 2011

# Reporting

## Introduction

Health threats at the human–animal–ecosystem interface have increased over the past decades, as pathogens continue to evolve and adapt to new hosts and environments, imposing a burden on human and animal health systems. Collaborative multidisciplinary reporting on the health of humans, animals and ecosystems reduces the risk of diseases at the interfaces between them.

### Target

*Timely and accurate disease reporting according to WHO requirements and consistent coordination with FAO and OIE.*

## Ethiopia level of capabilities

Ethiopia has designated focal points located at the EPHI for WHO IHR and the MoLF for OIE World Animal Health Information Database (WAHID). Legislation has been passed and training carried out to allow full IHR (2005) implementation. The country has demonstrated on a number of occasions its ability to identify a potential public health emergency of international concern (PHEIC) and file a report to WHO within the expected timing. However, the information sharing mechanisms between ministries at the national level and between the different levels within the MoH and MoLF are not optimal and should be strengthened.

## Recommendations for priority actions

- Establish formal communication mechanisms between line ministries, followed by exercises to test their effectiveness.
- Establish protocols, processes and regulations governing reporting, and processes for multisectoral coordination in response to a potential PHEIC to WHO, and for notifiable animal health events to OIE.
- Establish a documentation system to file reports to WHO and OIE within 24 hours, including a reporting system from lower levels to the national level.

## Indicators and scores

### D.3.1 System for efficient reporting to FAO, OIE and WHO – Score 3

#### Strengths/best practices

- National focal points have been identified for WHO (EPHI) and OIE (MoLV). No reporting to FAO is required for any country.
- Training on IHR has been conducted at national and regional levels.
- Information is exchanged between line ministries on an ad hoc basis.
- A list of ministries that the focal points represent is available.

#### Areas which need strengthening and challenges

- Information exchange mechanisms between line ministries are not formalized.

### D.3.2 Reporting network and protocols in country – Score 2

#### *Strengths/best practices*

- Legislation has been passed for IHR implementation and reporting a PHEIC to the WHO and on notifiable animal health events to OIE (FMHACA proclamation in 2010 and regulation in 2013, EPHI regulation in 2013).
- The National Public Health Emergency Management guidelines (April 2012) include SOPs for reporting a PHEIC.
- Ability to report to WHO within 24 hours of a potential PHEIC at the national level (e.g. influenza, polio, Ebola; the last event was Ebola) and capability to report notifiable animal health events to OIE within 24 hours of detection.
- A National Public Health Counsel is being developed, which will have all relevant sectors/ministries, including MoLF and Ministry of Wildlife.
- Protocols and processes for multisectoral coordination in reporting are established.

#### *Areas which need strengthening and challenges*

- Information/reporting from subnational level to national level is not available within 24 hours.
- Veterinary, drug and animal feed administration should be involved in the National Task Force Working Group.
- Established protocols and processes for multisectoral coordination in reporting are not operational yet.

#### *Relevant documentation*

- Terms of reference for National Task Force Working Group

# Workforce development

## Introduction

Workforce development is important in order to develop a sustainable public health system over time by developing and maintaining a highly qualified public health workforce with appropriate technical training, scientific skills and subject-matter expertise.

### Target

*States Parties with skilled and competent health personnel for sustainable and functional public health surveillance and response at all levels of the health system and the effective implementation of the IHR (2005).*

## Ethiopia level of capabilities

Field epidemiology capacity of Ethiopia is adequate even though the number of personnel is lower than the requirement (WHO target) and there is heterogeneity among different regions. The public health epidemiology workforce focuses especially on communicable diseases. The Ethiopian Field Epidemiology Training Programme (EFETP) was started in 2009. Eight universities and 41 field bases have enrolled 118 EFETP residents as of September 2015. Up to 90 graduates work in ministries or agencies operating in Ethiopia, with an attrition rate of 14%, but they often hold key positions in the Ethiopian health system and specifically in the MoH PHEM. Furthermore, all regional health bureaus and zonal health bureaus have EFETP graduates (100 residents are enrolled currently).

The eight universities and 41 field bases provide advanced training courses on public health under the supervision of MoH (EPHI) and the GoE, which supports the expansion of the programme with the aim of reaching the target of one epidemiologist per 250 000 population. There is a strong international collaboration in the area of public health training with US Centers for Disease Control and Prevention (US CDC) through the Ethiopian CDC. Epidemiologists (postdoctoral), veterinarians (field epidemiology and postdoctoral), doctors (field epidemiology and postdoctoral) and other professionals (e.g. pharmacists, nurses, laboratory workers), including those recruited from the Armed Forces, are involved in the workforce development strategy.

## Recommendations for priority actions

- Develop and implement a comprehensive workforce development strategy as a key component to sustain best practices of public health services for health security. The implementation of basic level training at subnational levels (district and below) would strengthen the capacity to prevent, detect and respond to any events or threats.
- Ensure that the workforce strategy takes into account the needs of human and animal health (One Health approach). A workforce gap assessment (in particular for animal health and wildlife sectors) would be useful to define training programmes and resource allocation.
- Expand EFETP to include a laboratory track, to complement the good implementation level of the current EFETP.

## Indicators and scores

### D.4.1 Human resources are available to implement IHR core capacity requirements – Score 3

#### *Strengths/best practices*

- There is strong political commitment from the GoE, MoH, Ethiopian CDC, African Field Epidemiology Network, President's Emergency Plan for AIDS Relief and Global Health Security Agenda (GHSA).
- Financial mechanisms to ensure funding for graduate positions are in place.
- There is a regular communication mechanism and a surveillance reporting system (daily and weekly reporting system) that ensures regular communication among Ethiopian epidemiologists from Woreda to zonal level, from zonal level to regional level, and from regional level to MoH and PHEM.
- WHO acts as mentor/advisor.
- A standard reporting mechanism is established between the different health governance levels during outbreaks.
- Plans to hire resident advisors are in place to guarantee continuous improvement in training processes and ensuring quality when graduates increase.

#### *Areas which need strengthening and challenges*

- Higher numbers of epidemiologists are required at Woreda/zonal levels.
- To improve workforce capacity across the country, all districts should recruit at least one EFETP resident to achieve "one epidemiologist/250 000 population" at the state level, aiming to gradually increase the current situation (83 EFETP graduates per 93 million; almost one epidemiologist per million population at the national level). It is necessary to support specific training to increase the number of epidemiologists.
- The career development path for graduates can be better defined.

### D.4.2 FETP or other applied epidemiology training programme is in place – Score 4

#### *Strengths/best practices*

- Basic and Advanced EFETPs are available, including a Masters of Public Health focused on infectious disease field work and other fields of sub-specializations. Veterinarians and varied human health professionals participate in these public health courses.
- There is strong international commitment for EFETPs in Ethiopia.
- Advanced EFETP has been running for five years and has trained more than 100 epidemiologists from different backgrounds (medical doctors, veterinarians, biologists, etc.).
- EFETP has a database of fellows that can facilitate follow up evaluation.

#### *Areas which need strengthening and challenges*

- Basic EFETP has been implemented two to three times at the district level but it needs to be enhanced. Additional resources are necessary to support this programme.
- Even with a database of EFETP fellows, there is a gap in exact tracking of fellows.



### D.4.3 Workforce strategy – Score 3

#### *Strengths/best practices*

- Up to 90 EFETP graduates actually work in government ministries or agencies operating in Ethiopia.
- EFETP fellows go back to their states/regions after their graduation where they are asked to serve four years in the public health workforce.
- There is an annual review of the workforce strategy.
- Different efforts, such as short-term training programmes, international conference participation etc., are in place to retain the public health workforce.

#### *Areas which need strengthening and challenges*

- Tracking of and reporting on the workforce strategy and its impact on the public health system could be implemented to facilitate the identification of obtained results or gaps.
- The attrition rate is 14%; it would be useful to support a more structured enlarged mentorship process and put in place a defined incentives programme for workforce specialists.
- An accountability process should be defined in order to involve training processes for all varied stakeholders in an integrated manner.
- SOPs should be regulated by development of internal and integrated policies, procedures and protocols.
- It could be useful to define long-term goals for overall workforce development strategy.

#### *Relevant documentation*

- Ethiopian Field Epidemiology and Laboratory Training Programme (EFELTP) surveillance – training – intervention
- Organization structure of the EFELTP
- EFELTP operation manual

# RESPOND

## Preparedness

### Introduction

The effective implementation of the IHR (2005) requires multisectoral/multidisciplinary approaches through national partnerships for effective alert and response systems. Coordination of nationwide resources, including the sustainable functioning of a national IHR focal point, which is a national centre for IHR (2005) communications, is a key requisite for IHR (2005) implementation. The national IHR focal points should be accessible at all times to communicate with the WHO IHR regional contact points and with all relevant sectors and other stakeholders in the country. States Parties should provide WHO with contact details of national IHR focal points, continuously update and annually confirm them.

#### Target

*Development and maintenance of national, intermediate (district) and local/primary level public health emergency response plans for relevant biological, chemical, radiological and nuclear hazards. This covers mapping of potential hazards, identification and maintenance of available resources, including national stockpiles and the capacity to support operations at the intermediate and local/primary levels during a public health emergency.*

### Ethiopia level of capabilities

Ethiopia adopted a national policy and strategy on disaster risk management (DRM) in 2013. It includes general directions and major implementation strategies, including on a decentralized DRM system, early warning and risk assessment, information management and capacity building. The Disaster Risk Management Strategic Programme and Investment Framework (DRM-SPIF)<sup>16</sup> is a tool that has been developed to facilitate the effective implementation of the national DRM policy. A DRM-SPIF Steering Committee and several task forces were also established to support in operationalizing the DRM policy and the DRM-SPIF, including through the development of guidelines and operational documents. In accordance with the policy and SPIF, a multisectoral Emergency Preparedness and Response Plan (EPRP) is developed on a yearly basis and all line ministries are required to prepare their own EPRPs. In addition, a Humanitarian Requirements Document, which is updated every year with the support of international partners, captures the humanitarian needs in the country, including for the health sector.

In the health sector, the five-year Health Sector Transformation Plan developed in 2015 integrated a strong component on health risks and emergencies management. The EPHI also has a five-year Strategic Planning Management (SPM) programme that includes public health emergency management activities like preparedness, early warning and response. EPHI has developed and regularly updated disease-specific emergency preparedness and response plans for Ebola, cholera, measles, meningitis or MERS-CoV based on disease risk assessments.

### Recommendations for priority actions

- Conduct a National Vulnerability Risk Assessment (VRAM) or risk mapping of major public health hazards at national, regional and district levels.

<sup>16</sup> [http://www.dppc.gov.et/downloadable/Documentation/DRM\\_SPIF\\_2014\\_-\\_Final.pdf](http://www.dppc.gov.et/downloadable/Documentation/DRM_SPIF_2014_-_Final.pdf)

- Develop a generic and comprehensive EPRP at national level based on identified risk. The generic EPRP would integrate specific-disease EPRPs as annexes.
- Monitor and document the implementation of the EPRP at national level.
- Strengthen multisectoral preparedness teams at zonal and district levels with clear roles, responsibilities and budget.
- Develop preparedness and contingency plans at district level based on identified risks.

## Indicators and scores

### R.1.1 National multi-hazard public health emergency preparedness and response plan is developed and implemented – Score 3

#### *Strengths/best practices*

- The new Health Sector Transformation Plan (2015-2020) which guides the public health strategy for the next five years includes a strong component on health risks and emergencies management.
- Disease-specific preparedness and response plans (Ebola, measles, meningitis, pandemic influenza, MERS, etc.) are available and regularly updated by the EPHI.
- The Humanitarian Requirements Document and EPRP are updated every year with the support of partners and include a health component.
- Domestic budget is allocated every year for emergency response both at national and regional levels.
- Any outbreaks are reported to the WHO country office within 24 hours.
- Stockpiles are available for specific priority diseases (measles, meningitis, acute watery diarrhoea) at regional level.
- The country has a training programme for epidemiologists (EFETP supported by US CDC) and has built capacity over the past few years.
- Priority zoonotic diseases have been identified and are being monitored in a collaborative manner.

#### *Areas which need strengthening and challenges*

- There is no generic EPRP available at the MoH to address all public health risks identified in Ethiopia.
- Budget allocations at lower levels are mainly for response activities, and not for preparedness.
- Coordination to achieve the One Health agenda should be strengthened.
- Collaboration with other sectors beyond the veterinary and agricultural sectors should be strengthened.

### R.1.2 Priority public health risks and resources are mapped and utilized – Score 2

#### *Strengths/best practices*

- Risk assessments have been conducted at national level for specific priority diseases.
- A disaster risk-profiling framework based on hazards, vulnerability and capacity has been developed to assess risks at district level.

### *Areas which need strengthening and challenges*

- A comprehensive risk mapping has not been conducted at national level for all hazards.
- Mapping of resources is in process but not yet fully finalized.
- An electronic system linking districts, regions and headquarters should be established. Currently, health workers use private phones to contact and report to the respective office (mainly district health office) whenever there is a suspect case for immediate notification.

### *Relevant documentation*

- Health Sector Transformation Plan 2015-2020
- National Policy and Strategy on Disaster Risk Management 2013
- Disaster Risk Management Strategic Programme and Investment Framework 2014
- Humanitarian Requirements Document 2016
- Public Health Emergency Management Guidelines 2012
- Emergency Preparedness and Response Plan 2012
- MERS Preparedness and Emergency Response Plan 2014
- National Ebola Virus Disease Outbreak Preparedness and Response Plan 2014
- Plan of Action for Meningococcal Meningitis Outbreak 2013
- Response Plan for Measles Outbreak 2013
- Pandemic Influenza Preparedness and Response Plan 2010
- Meningitis Preparedness and Response Plan 2016

# Emergency response operations

## Introduction

A public health emergency operations centre is a central location for coordinating operational information and resources for strategic management of public health emergencies and emergency exercises. Emergency operations centres provide communication and information tools and services, and a management system during a response to an emergency or emergency exercise. They also provide other essential functions to support decision-making and implementation, coordination and collaboration.

### Target

*Country with public health emergency operations centre (EOC) functioning according to minimum common standards; maintaining trained, functioning, multisectoral rapid response teams and “real-time” biosurveillance laboratory networks and information systems; as well as trained EOC staff capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency.*

## Ethiopia level of capabilities

Improving health emergency and risk management is the second top priority in the Health Sector Transformation Plan 2015-2020. The MoH and EPHI are committed to develop a functioning Public Health Emergency Operation Center (PHEOC) for more effective health emergency response.

The current EOC is a room with an area of 30 square meters, facilitated with desks, computers, internet/network and landline desk phones, two hotlines and a plasma screen. The EOC is not networked to other operational centres and offices. There is a meeting room near the EOC, capable of hosting up to 30 persons for meetings. The meeting room has an LCD projector for displaying information but it is not networked with the EOC. The EOC is in the PHEM, under the leadership of a Deputy Director General of EPHI. The information technology team of EPHI maintains the information and communications technology of the EOC. There is no dedicated staff to manage or maintain the EOC.

PHEM staff members are motivated to support EOC functions. During Ebola virus disease preparedness and response, the EOC was activated to collect information, analyse and disseminate it to relevant experts in the EPHI and authorities in the MoH. The biggest challenge was coordination of operations and information.

With the end of Ebola virus disease, the continued role of the EOC has not been defined. The incident management system and EOC plans and procedures are not in place yet. There are no regular PHEOC training and exercise programmes.

## Recommendations for priority actions

- Establish legal authority for public health emergency management and developing PHEOC; develop “concept of operations” that describe the incident management structure, roles and responsibilities of the involved sectors.
- Develop a national implementing plan for functioning of the PHEOC, including PHEOC plans and procedures that define its mission/objectives, functions and roles, organizational structure fitting its functional roles, function model and staffing level, for both peace time and emergency; develop training and exercises programmes to train staff and test PHEOC plans and procedures.

- Further develop PHEOC infrastructure and information system (human resources, hardware, software, operational dataset, data sources, data management, information sharing platform and information products) to improve the availability, accessibility, quality, timeliness and usefulness of emergency operations information.

## Indicators and scores

### R.2.1 Capacity to activate emergency operations – Score 2\*

\* Caveat: some higher level capacities were achieved during Ebola virus disease preparedness and response

#### *Strengths/best practices*

- National Public Health Emergency Management Guidelines (April 2012) describes the triggers for the activation of the PHEOC.
- IHR focal point is available 24 hours/7 days for communication and reporting on events.
- Staff members of the PHEM are mostly epidemiologists and assigned to EOC by default during an emergency. Some of them were trained by EFETP, and some were trained by the US CDC on basic emergency management, Incident Management System (IMS) and EOC. They can be assigned to EOC during an emergency response.
- During Ebola virus disease preparedness phase, EOC leadership was appointed, incident management structure was established, and 24/7 hotlines were maintained.

#### *Areas which need strengthening and challenges*

- No PHEOC plans and procedures exist to define the levels of PHEOC activation.
- No designated person exists to manage the EOC and its hotlines.
- Staff have not yet been identified for 24/7 service coverage to support EOC functions except that a team has been put in place for the Ebola virus disease preparedness.

### R.2.2 EOC operating procedures and plans – Score 1

#### *Strengths/best practices*

- Established multisectoral and multidisciplinary committee for health emergency response at national, regional and zone levels.
- Emergency Preparedness and Response Plan is in place at national and regional levels, in which multisector coordination is addressed. The National Public Health Emergency Management Guidelines<sup>17</sup> (April 2012) include a section that details the activities that need to be carried out at all administrative levels in case of a public health emergency.
- The national surveillance system is accessible to staff in the EPHI. Currently, event information is collected through email and telephone from all regions. The staff assigned to follow the outbreak situation are responsible for drafting the situation report. Situation reports are shared to decision makers on a daily basis and with partners on a weekly basis.

<sup>17</sup> <http://www.ephi.gov.et/images/guidelines/phem-guideline-final.pdf>

### *Areas which need strengthening and challenges*

- Incident management system for health emergency management is not defined. PHEOC plans and procedures need to be developed and tested to ensure that EOC can perform core functions.
- Staff need to have advanced training on emergency response and PHEOC plans and procedures.
- The EOC is not linked with other offices or systems. There is no designated software and process to manage EOC data. Further development of communications technology and information system is needed.

### **R.2.3 Emergency operations programme – Score 2**

#### *Strengths/best practices*

- A tabletop exercise on Ebola virus disease was conducted in November 2014.
- Exercises have been conducted in the context of Ebola virus disease preparedness and avian influenza at the airport.
- Laboratory capacities have been tested when a suspect case of Ebola was detected.

#### *Areas which need strengthening and challenges*

- The exercises conducted have not fully addressed the coordination aspects of the response.
- There is no specific training programme for PHEOC staff and no regular exercises to test PHEOC plans, procedures and response capabilities.

### **R.2.4 Case management procedures are implemented for IHR relevant hazards – Score 2**

#### *Strengths/best practices*

- Case management guidelines for more than 10 priority epidemic-prone diseases are available (cholera, measles, Ebola, etc.).
- Case management guidelines have been disseminated to health workers at all levels.

#### *Areas which need strengthening and challenges*

- Case management guidelines are not available for chemical and nuclear hazards.
- Guidelines need to take an all-hazards approach and case management needs to be integrated into the incident management system.

#### *Relevant documentation*

- National Public Health Emergency Management (PHEM) Guideline
- Health Emergency Preparedness and Response Plan (EPRP)
- Ebola Preparedness and Response Plan
- Sample situation report, data forms
- Floor map of EOC
- Sample case management guidelines

# Linking public health and security authorities

## Introduction

Public health emergencies pose special challenges for law enforcement, whether the threat is manmade (e.g. the anthrax terrorist attacks) or naturally occurring (e.g. flu pandemics). In a public health emergency, law enforcement will need to quickly coordinate its response with public health and medical officials.

### Target

*Country conducts a rapid, multisectoral response in case of a biological event of suspected or confirmed deliberate origin, including the capacity to link public health and law enforcement, and to provide and/or request effective and timely international assistance, such as to investigate alleged use events.*

## Ethiopia level of capabilities

- No presentation was given by the Ethiopian authorities, and no security authorities were present for the discussion.
- From other discussions, it appears that public health links with the security sector only at points of entry.

## Recommendations for priority actions

- Establish legal agreements between ministries responsible for public health, animal health and security authorities for outbreak investigation.
- Establish mechanisms for information sharing between ministries responsible for public health, animal health and security authorities at national and local levels.

## Indicators and scores

**R.3.1 Public health and security authorities (e.g. law enforcement, border control, customs) are linked during a suspect or confirmed biological event – Score 2\* (with caveat\*)**

### Strengths/best practices

- Memorandums of understanding are being prepared.
- Guidelines and SOPs are established at points of entry with identified points of contact and triggers between public health, animal health and security authorities.
- Public health and law enforcement will be a part of the Public Health Security Council once established (has been agreed to by the Health Minister).

### Areas which need strengthening and challenges

- Although they have working day-to-day relationships, memorandums of understanding among agencies have not been prepared or signed.



# Medical countermeasures and personnel deployment

## Introduction

Medical countermeasures are vital to national security and protect nations from potentially catastrophic infectious disease threats. Investments in medical countermeasures create opportunities to improve overall public health. In addition, it is important to have trained personnel who can be deployed in case of a public health emergency for response.

### Target

*National framework for transferring (sending and receiving) medical countermeasures, and public health and medical personnel from international partners during public health emergencies.*

## Ethiopia level of capabilities

MoH does not have an independent national countermeasures plan, but these are incorporated in the Epidemic Preparedness and Response Plan. A national stockpile of medical countermeasures is maintained by the EPHI and the Pharmaceuticals Fund and Supply Agency (PFSA), which serve as first points in case of emergency. PFSA procures drugs and supplies based on an emergency preparedness plan. There are several other stockpiles distributed around the country.

For sending and receiving countermeasures from an international source, cross-border agreements and regional agreements are in place.

For international deployment of human resources, both from and into Ethiopia, guidelines are under development.

## Recommendations for priority actions

- Identify existing collaborations, any gaps, and where necessary, finalize and exercise plans, guidelines and relevant agreements for sending and receiving medical countermeasures during a public health emergency.
- Elevate the PFSA to the EPHI for national-level coordination and mobilization of the medical countermeasures supply chain pre- and post-public health emergency.
- Establish rapid procurement and rapid (overnight) delivery mechanisms for medical countermeasures needed during a public health emergency.
- Finalize and exercise plans, guidelines and relevant agreements for sending and receiving health personnel during a public health emergency.

## Indicators and scores

### R.4.1 System is in place for sending and receiving medical countermeasures during a public health emergency – Score 4

#### *Strengths/best practices*

- National stockpile system is laid out in National Epidemic Response Plan and has proved to be effective during real events (e.g. Ebola virus disease event).

#### *Areas which need strengthening and challenges*

- No formal system is in place for sending or receiving medical countermeasures from outside Ethiopia.
- No formal regional or international medical countermeasures sharing or distributing agreements are in place, although GoE had previous experience in requesting support during cholera, H1N1 and polio outbreaks.
- No specific EPHI storage facilities exist for bulk items (partners' facilities are currently used). PFSA needs to be elevated to the national level with stronger inventory control.
- No overnight delivery mechanisms are in place.

### R.4.2 System is in place for sending and receiving health personnel during a public health emergency – Score 2

#### *Strengths/best practices*

- Guidelines are being developed.

#### *Areas which need strengthening and challenges*

- No system in place for sending and receiving health personnel during a public health emergency. GoE wants to assist other nations should they need Ethiopia's help. The GoE did support the Ebola containment effort by sending health care workers to West Africa.
- Guidelines, once finalized, should be tested for effectiveness.

#### *Relevant documentation*

- National Epidemic Response Plan (the section relevant to countermeasures)

# Risk communication

## Introduction

Risk communications should be a multilevel and multifaceted process, which aims at helping stakeholders define risks, identify hazards, assess vulnerabilities and promote community resilience, thereby promoting the capacity to cope with an unfolding public health emergency. An essential part of risk communication is the dissemination of information to the public about health risks and events, such as disease outbreaks. For any communication about risk caused by a specific event to be effective, the social, religious, cultural, political and economic aspects associated with the event should be taken into account, including the voice of the affected population.

Communications of this kind promote the establishment of appropriate prevention and control action through community-based interventions at individual, family and community levels. Disseminating the information through appropriate channels is essential. Communication partners and stakeholders in the country need to be identified, and functional coordination and communication mechanisms should be established. In addition, the timely release of information and transparency in decision-making are essential for building trust between authorities, populations and partners. Emergency communications plans should be tested and updated as needed.

### Target

*State Parties use multilevel and multifaceted risk communication capacity. Real-time exchange of information, advice and opinions between experts and officials or people who face a threat or hazard (health or economic or social wellbeing) to their survival, so that informed decisions can be made to mitigate the effects of the threat or hazard and protective and preventive action can be taken. This includes a mix of communication and engagement strategies, such as media and social media communications, mass awareness campaigns, health promotion, social mobilization, stakeholder engagement and community engagement.*

## Ethiopia level of capabilities

Risk communication capacity exists in the public health sector within the MoH and the EPHI. Communication strategies are diverse and include communication through traditional media (television, radio, press), social media and community engagement. Engagement with communities is developed through disease prevention and health promotion directorates at national and regional levels, while at the Kebele level it is done through health care extension workers. Main strategies to reach out to local communities include communication materials in local languages, school programmes, and radio broadcast which can reach most rural communities. Due to the low literacy rate, other methods should be further developed, such as mobile phone communication and health promotion through religious and community leaders. During the health facility visit, information, education and communication materials for various diseases and risks were available and distributed.

## Recommendations for priority actions

- Strengthen multi-hazard communication mechanisms among different sectors.
- Enhance a strong system for listening to and managing rumours.
- Maximize utilization of different media and mechanisms such as mobile phone services, television, radio, magazines, social media and religious organizations.

- Establish a monitoring and evaluation system for the implementation of communication strategies founded on baseline information.

## Indicators and scores

### R.5.1 Risk communication systems (plans, mechanisms, etc.) – Score 3\*

\* Caveat: the communications system has already been tested in real time during an actual emergency (Ebola), but the collaborative aspects are weak.

#### *Strengths/best practices*

- Dedicated units/directorates have been established at the MoH and EPHI levels with trained staff and technical advisors.
- Risk communication is included in emergency preparedness and response plans. Activities, budget, responsible bodies and partners are identified in these plans.
- Communication strategies (including establishment of a communication committee and collaboration with other agencies) have been tested in real time during the Ebola outbreak and other emergencies.

#### *Areas which need strengthening and challenges*

- Coordination with other sectors at all levels of government in the area of social mobilization and risk communication can be strengthened.
- Consider expanding the communication team to include other disciplines to strengthen risk communication.

### R.5.2 Internal and partner communication and coordination – Score 3

#### *Strengths/best practices*

- Stakeholders for communication are well identified in the different emergency preparedness and response plans, and roles and responsibilities are defined.
- Various partners are identified, and provide support on implementation of risk communication strategies.

#### *Areas which need strengthening and challenges*

- Mechanisms to coordinate communication with the private sector, civil societies and other stakeholders from other sectors, before, during and after emergencies/outbreaks.

### R.5.3 Public communication – Score 4

#### *Strengths/best practices*

- Spokespersons are identified at MoH (Director of Public Relation and Communication) and EPHI (Head of Public Health Relations).
- Staff in charge of communication are regularly trained by the government communication affairs office on communication material preparation and how to communicate.
- Communication materials are regularly developed and translated into several local languages.
- Coverage of mobile phone network is high and one or two mobile devices are available in every household.

- Press releases have been developed and press conferences were given during the Ebola outbreak.
- Health Development Army and health extension workers are able to cover the whole country.
- Risk communication materials for various hazards, risks and events are developed in different languages.

#### *Areas which need strengthening and challenges*

- Coordination with other sectors in the area of social mobilization and risk communication can be strengthened, especially in reaching out to the community.
- Use of mobile phones for reaching out to the community/public through short message text (SMS) alerts can be effective and efficient but messaging must be done carefully to avoid panicking the population.

### **R.5.4 Communication engagement with affected communities – Score 3**

#### *Strengths/best practices*

- Disease prevention and health promotion directorates at MoH and regional levels are in charge of risk communication and can best target local populations and disseminate materials to local communities.
- At sub-national levels, dedicated staff are undertaking social mobilization and health promotion activities – at Woreda level by the disease prevention and health promotion office and at Kebele level by health extension workers and the Health Development Army.

#### *Areas which need strengthening and challenges*

- Methods to reach out to communities can be further developed; examples include messaging by mobile phones and engagement of community/religious leaders and the private sector.

### **R.5.5 Dynamic listening and rumour management – Score 3**

#### *Strengths/best practices*

- A dynamic system is in place to listen to and manage rumours. The method includes searching for media articles on the Internet (in alignment with media monitoring for event-based surveillance). On a number of occasions when rumours were heard within the public, they were subsequently responded to effectively from the highest level of the MoH.

#### *Areas which need strengthening and challenges*

- The system for listening to and managing rumours is not yet structured.
- Monitoring and evaluation of the implementation risk communication strategies can be strengthened, which can also assist in rumour management.

#### *Relevant documentation*

- Presentations made on 5 March 2016
- Preparedness and Response Plan for meningococcal meningitis in Ethiopia
- National Ebola Virus Disease Outbreak Preparedness and Response Plan
- News reports, footages of press releases, use of social media
- Various information, education and communication materials in different Languages
- Leaflets and flyers provided by EPHI and collected during health centre visit
- Draft report of health facility visit

# OTHER IHR-RELATED HAZARDS AND POINTS OF ENTRY

## Points of entry

### Introduction

All core capacities and potential hazards apply to “points of entry” and thus enable the effective application of health measures to prevent international spread of diseases. States Parties are required to maintain core capacities at designated international airports and ports (and where justified for public health reasons, a State Party may designate ground crossings), which will implement specific public health measures required to manage a variety of public health risks.

### Target

*States Parties designate and maintain core capacities at international airports and ports (and where justified for public health reasons, a State Party may designate ground crossings) that implement specific public health measures required to manage a variety of public health risks.*

### Ethiopia level of capabilities

Ethiopia has 18 points of entry – six airports and nine ground crossings – under the control of GoE through six branch offices. It borders with six other countries: Eritrea, Federal Republic of Somalia, Republic of Djibouti, Republic of Kenya, Republic of South Sudan and Republic of Sudan.

Legislation to enforce IHR (2005) into points of entry is in place. The structure to coordinate the IHR that was established by the MoH supports IHR implementation at points of entry as a local level operation.

At points of entry, stakeholders are well identified and already collaborating both during routine times and in response to PHEIC, as demonstrated by the Ebola preparedness plans at airports. However, some core capacities and intersectoral coordination need to be improved.

### Recommendations for priority actions

- Enhance security at points of entry for enhancing IHR core capacity (e.g. equipping with cutting edge technologies not just for points of entry but to include other elements within the Epidemic Preparedness and Response Plan and to enhance communication with the EOC/EPHI).
- Strengthen intersectoral collaboration between public health and security authorities at points of entry and at different governmental levels for enhancing security at points of entry, i.e. regional and national levels.
- Enhance awareness and strengthen communications with border communities to enhance cross-border security.

## Indicators and scores

### POE.1 Routine capacities are established at points of entry – Score 2

#### *Strengths/best practices*

- The EFMHACA regulates and assures passenger, animal and goods controls.
- Points of entry have dedicated facility for sick passengers and can screen for public health-relevant diseases.
- Points of entry have equipment and personnel to transport sick travelers.
- Points of entry carry out routine inspections and communicate problems to EPHI either directly (Addis Ababa airport) or through the regional level (other points of entry).
- Designated airports have a vector control programme.
- Animal inspection and quarantine capabilities are available at all points of entry. National Quarantine Inspection Certification Officers are located at every point of entry; they check the certificate from the Ministry of Agriculture of the country of origin.

#### *Areas which need strengthening and challenges*

- Regulating movement of people, animals and goods through ground crossings in border areas that share similar language and culture is very difficult
- Coordination and collaboration are required both between the different levels of the public health sector – national, regional and local (points of entry) – and with other stakeholders.
- There is a lack of sufficient resources to adequately staff points of entry.
- Not all points of entry meet WHO IHR Core Capacity definitions (Annex 1-B).

### POE.2 Effective public health response at points of entry – Score 2\*

\* Caveat: capacity for assessing and quarantining both suspected travelers and animals does not exist evenly across all points of entry (such as ground crossings).

#### *Strengths/best practices*

- Public Health Emergency Response Contingency Plan (PHERCP) is addressed in the Health Sector Transformation Plan.
- Port coordination committee includes other stakeholders – immigration, customs, airlines, airport authority, law enforcement (i.e. security, animal health) – and is functional.
- Points of entry have facilities for assessing and quarantining both suspected travelers and animals.
- A contingency plan (requested) for Ebola, states that should a suspect passenger be identified, there are transport plans to local hospitals trained to handle a potentially infected person. All persons from the three Ebola affected nations were screened. There is an isolation facility at the airport. Two ambulances were designated at the airport and ground crossings. The contingency plan, which could serve as a preparedness plan, was tested by people with fever showing up on flights and an exercise at Addis Ababa airport.

#### *Areas which need strengthening and challenges*

- PHERCP does not include conveyances.

#### *Relevant documentation*

- Proclamation 661/2009

# Chemical events

## Introduction

Timely detection and effective response of potential chemical risks and/or events require collaboration with other sectors responsible for chemical safety, industries, transportation and safe disposal. This would entail that State Parties need to have surveillance and response capacity to manage chemical risk or events and effective communication and collaboration among the sectors responsible for safety.

### Target

*States Parties with surveillance and response capacity for chemical risks or events. This requires effective communication and collaboration among the sectors responsible for chemical safety, industries, transportation and safe disposal.*

### Ethiopia level of capabilities

The MoH, MoLV, and Ethiopian Environmental Protection Authority contribute to various aspects of surveillance and response capacity for potential chemical events. However, there is limited coordination mechanism in place for chemical risk assessments, profiling and response to potential events. Each sector is responding based on the perceived risk and the events that occur. The EPHI plans to establish a dedicated unit to handle chemical events. The country does not have a poison control centre.

### Recommendations for priority actions

- Establish a coordination mechanism for systematic information sharing between the sectors involved in surveillance and response to chemicals events.
- Develop policy and guidelines for surveillance and response to chemical risks and events.
- Develop capacities for surveillance and response to chemical risks and events.

### Indicators and scores

#### **CE.1 Mechanisms are established and functioning for detecting and responding to chemical events or emergencies – Score 1**

#### *Strengths/best practices*

- Various ministries have the capacity to monitor and respond to various chemical threats across the country.
  - MoLV handles the regulation and monitoring of insecticides, pesticides and other toxins.
  - Ethiopian Environmental Protection Authority helps monitor chemical threats and contamination of the environment.
  - MoH handles chemical events that affect human health. It is restructuring its EPHI and there is a plan for dedicated units for chemical events.



- Some of the health facilities at the central level have laboratory capacity for detection of chemical agents and have demonstrated response capacity in the past (i.e. alkaloid poisoning).

#### *Areas which need strengthening and challenges*

- Establishment of a focal unit for chemical events as per the restructuring plan of EPHI.
- Strengthening of capacity for surveillance and response to chemical events with risk profiling of potential chemical agents.
- Development of guidelines and SOPs to detect and respond to chemical events.

### **CE.2 Enabling environment is in place for management of chemical events – Score 1**

#### *Strengths/best practices*

- Various ministries and sectors have capacity for ad hoc response to chemical events.

#### *Areas which need strengthening and challenges*

- Need to establish a coordination mechanism for systematic information sharing between the sectors involved in chemicals and surveillance.
- Develop policy and guidelines for surveillance and response to chemical risks and events.
- Establishment of poison centres.

#### *Relevant documentation*

- None

# Radiation emergencies

## Introduction

To counter radiological and nuclear emergencies, timely detection and an effective response towards potential radiological and nuclear hazards/events/emergencies are required in collaboration with sectors responsible for radiation emergency management.

### Target

*States Parties with surveillance and response capacity for radiological and nuclear hazards/events/emergencies. This requires effective communication and collaboration among the sectors responsible for radiological and nuclear emergency management.*

## Ethiopia level of capabilities

A draft National Radiological Emergency Plan has been completed under the leadership of the Ethiopian Radiation Protection Authority (ERPA). There is no nuclear power plant but nuclear techniques used human health, agriculture, animal health, research, hydrology, mining and industry are major causes of radionuclear emergencies. This includes exposure to radiotherapy nuclides, natural nuclear sources, accidents with radiation transportation, and reagents. Radionuclear materials in Ethiopia belong to category 3. Under a radiation emergency, timely and coordinated response are the key, and the plan lays out the relevant agencies (ERPA, fire brigade, police, MoH, customs office, Ministry of Environment, Ethiopian Red Cross) and defines their roles and responsibilities. According to the plan, MoH is responsible for providing medical care to victims, medical advice on the use of radioactive materials, and monitoring of long-term health impacts. The scope of this plan depends on the amount of radioactive material involved, its potential impacts on the population, and the size of affected area. A map of the distribution of potential nuclear hazards is available. The plan also includes the control and coordination of information, regarding the condition on site and off site. The plan is to be exercised regularly and is in place for the International Atomic Energy Agency focal point.

## Recommendations for priority actions

- Systematically exchange information between ERPA and national IHR focal point about urgent radiological events and potential risks that may constitute a public health radiological incident of concern.
- Review the communication mechanism among ERPA, medical service department of MoH, and national IHR focal point, and improve so that the national IHR focal point is involved in radiation emergency response.
- Review NREP and legislation expected to be revised in the near future, with more active involvement of the national IHR focal point and incorporate national focal point surveillance function and response plan for major nuclear events.

## Indicators and scores

### RE.1 Mechanisms are established and functioning for detecting and responding to radiological and nuclear emergencies – Score 3

#### *Strengths/best practices*

- Guidelines and SOPs are developed, evaluated and updated for management of emergencies.

#### *Areas which need strengthening and challenges*

- A closer communication and coordination between ERPA and national IHR focal point is desirable.

### RE.2 Enabling environment is in place for management of radiation emergencies – Score 1

#### *Strengths/best practices*

- ERPA and the medical devices department of MoH would score this as 5. They have focal points, coordination and communication mechanisms that have proven to be effective by real events and drill.
- National IHR focal point can offer human surveillance function to the plan, which is currently missing.

#### *Areas which need strengthening and challenges*

- Communication and coordination mechanisms among ERPA, medical device department and national focal point should be revised and established.

#### *Relevant documentation*

- Draft National Radiological Emergency Plan

# Appendix 1: JEE background

## Mission place and time

Addis Ababa, Ethiopia; 29 February to 4 March 2016

## Mission team members: Experts and advisers

Experts are nominated by and represent individual countries; advisers represent international organizations and nongovernmental organizations.

- Karen Sliter, USA, Department of Agriculture (Team Lead)
- Paolo Parente, Italy, Ministry of Health (Co-Lead)
- Issa Mukumbi, Uganda, Ministry of Health (Co-lead)
- Susan Weekly, USA, Department of Defence
- Athman Mwatondo, Kenya, Ministry of Health
- Larry Kerr, USA, Department of Health and Human Services
- Jussi Sane, Finland, National Institute for Health and Welfare (THL)
- Stella Chungong, WHO Headquarters (WHO Team Lead)
- Maria João Martins, WHO Portugal
- Soatiana Rajatonirina, WHO AFRO
- Mohamed Sheriff, WHO AFRO
- Elizabeth Mumford, WHO Headquarters
- Mika Kawano, WHO Headquarters
- Jian LI, WHO Headquarters
- Nirmal Kandel, WHO Headquarters
- Margot Nauleau, WHO Headquarters
- Patrick Osewe, World Bank
- Yvonne Nkrumah, World Bank
- Tom Mabururu, World Bank
- Sam Okuthe, FAO

## Objective

To assess Ethiopia's capacities and capabilities relevant for the 19 technical areas of the JEE tool in order to provide baseline data to support Ethiopia's efforts to reform and improve its public health security, and to meet its obligations under the WHO IHR (2005).

## Preparation and implementation of the mission

- Ethiopia requested an evaluation as part of its commitment to IHR implementation.
- Ethiopia completed a self-assessment using the JEE tool.
- The Ethiopia evaluation was the second to use the JEE tool.
- The Ethiopia team's goals for the evaluation were to receive feedback on its public health and emergency response systems, identify gaps and prioritize areas for future investment.

## Limitations and assumptions

- The evaluation was conducted in one week, which limited the amount and depth of information that could be discussed between the evaluation team and the host country participants.
- It is assumed that the results of this evaluation would be publically available.
- The evaluation was based on information provided through the self-assessment document, presentations from Ethiopian participants during the mission, and direct conversation and discussions with staff from a variety of Ethiopian agencies.
- The evaluation is not an audit and information provided by Ethiopia was not independently verified. Information was discussed and an evaluation rating was mutually agreed to by Ethiopia and the JEE team. This is a peer-to-peer review.

## Key participants and institutions from Ethiopia

### *Ethiopia lead representative:*

Daddi Jima Wayessa, Deputy Director General, Ethiopian Public Health Institute (EPHI)

### *Participating institutions:*

- Ethiopian Public Health Institute (EPHI)
  - Deputy Director General
  - Center for Public Health Emergency Management (PHEM)
  - Zoonotic Diseases Research Team
  - EPHI Laboratories
- Ethiopian Ministry of Health
  - Minister of Health
  - Immunization Technical Advisor
- Ethiopian Ministry of Livestock and Fisheries (MoLF)
- National Animal Health Diagnostic and Investigation Center (NAHDIC)
- Shiromeda Health Center Addis Ababa
- Ethiopian Food, Medicine and Healthcare Administration and Control Authority (EFMHACA)
- Ethiopian Field Epidemiology and Laboratory Training Programme (EFELTP)
- Program Director

- Ethiopian Radiation Protection Authority (ERPA)
- Pharmaceuticals Fund and Supply Agency (PFSA)

### *Supporting documentation*

#### **Documents:**

- Global Health Security Agenda (GHSA) External Country Assessment. Karen Sliter, Ethiopia AMR Containment in Ethiopia. Food, Medicine and Healthcare Administration and Control Authority
- Current Status of EFELTP and Technical Area Questions on Work Force Development for GHSA Internal Assessment. Tatek Bogale, EFELTP Program Director
- Ethiopian Health System Overview, Abyot Bekele, Ethiopian Public Health Institute Center for Public Health Emergency Management
- Real Time Surveillance in Ethiopia, Abyot Bekele, Ethiopian Public Health Institute Center for Public Health Emergency Management
- Zoonotic Disease, Abraham Haile, EPHI, Zoonotic Diseases Research Team Emergency Operation Center (EOC), Abraham Lilay, Public Health Emergency Management, EPHI
- Food safety Regulation and its challenges, Ethiopian Food, Medicine & Healthcare Administration & Control Authority (FMHACA)
- Global Health Security Agenda (GHSA) Internal Assessment Report Immunization
- Biosafety and Biosecurity, Global Health Security Agenda Assessment –Ethiopia, ADISU KEBEDE, EPHI
- National Laboratory System, ADISU KEBEDE EPHI
- AMR Containment in Ethiopia, Food, Medicine and Healthcare Administration and Control Authority
- Medical Countermeasures (MCM) and Personnel Deployment, Fikirte Girma, EPHI, Public Health Emergency Management
- Global Health Security Agenda Internal Assessment Preparedness, Abraham Lilay
- National Legislation, Policy and Financing, EPHI
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- Emergencies, Mengistu Balcha
- Risk Communication, EPHI
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- Health Sector Transformation Plan (HSTP), Ministry of Health
- Master plan for the public health laboratory system in Ethiopia, second edition, 2009-2013, Ethiopian Health and Nutrition Research MoH,
- Health and Safety Guidelines for Public Health Laboratories in Ethiopia, 1st Edition, Ethiopian Health and Nutrition Research Institute MoH
- Training of Trainers on Laboratory Safety–Training Agenda
- Major Activities of 2008 EFY to Strengthen Emergency Operations Center, EPHI
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- Food Supplement Directive, Ethiopian Food, Medicine And Healthcare Administration And Control Authority
- Infant Formula and Follow-up Formula Directive, Ethiopian Food, Medicine and Health Care Administration and Control Authority
- A Proclamation to Provide for Food, Medicine and Health Care Administration and Control, Federal Negarit Gazeta
- Council of Ministers Regulation to establish the Ethiopian food medicine and health care Administration and control authority
- National Guideline for Acute Flaccid Paralysis Surveillance, MoH and WHO Highly Pathogenic Avian Influenza (HPAI)
- Surveillance among Human Populations, Interim–Guideline, MoH
- Dengue-Guideline on Diagnosis, Treatment, Prevention and Control, Ethiopian Health and Nutrition Research Institute
- EBOLA Viral Disease, Interim Guideline, Ethiopian Health and Nutrition Research Institute
- Human Rabies Surveillance and Outbreak Management Guideline, Ethiopian Health and Nutrition Research Institute
- Ethiopian Influenza Sentinel Surveillance Implementation Guideline, Ethiopian Health and Nutrition Research Institute
- National Guideline on Meningococcal Meningitis Surveillance and Outbreak Management, 1st edition, Ethiopian Health and Nutrition Research Institute
- Interim Guideline Prevention and Control of Middle East Respiratory Syndrome Coronavirus (MERS-CoV), EPHI
- Guideline on Cholera Outbreak Management, Ethiopian Health and Nutrition Research Institute
- Guideline on Measles Surveillance and Outbreak Management, 3rd Edition, Ethiopian Health and Nutrition Research Institute
- Rift Valley Fever Surveillance
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- Guideline on Neonatal Tetanus, 3rd edition, 2012
- Public Health Emergency Management (PHEM) Guidelines for Ethiopia, Ethiopian Health and Nutrition Research Institute, Public Health Management Centre, 2012
- Protocol for the Management of Severe Acute Malnutrition, MoH, 2007
- Roadmap for Expansion of Vaccination Centers for International Travellers in Ethiopia, Public Health Emergency Management Centre, EPHI, 2015
- Yellow Fever Surveillance and Outbreak Management Guideline, EPHI, 2014
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