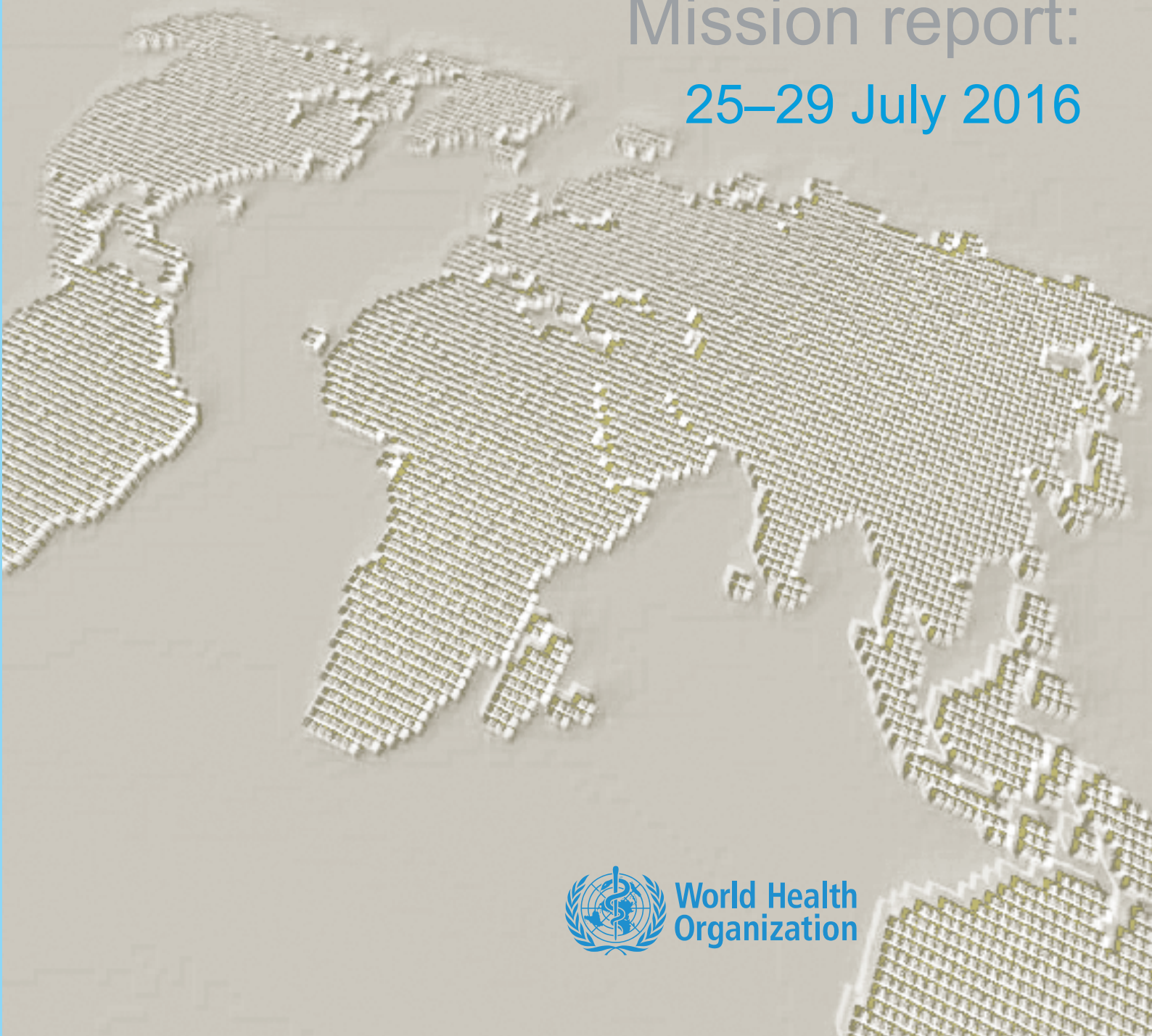
JOINT EXTERNAL EVALUATION OF IHR CORE CAPACITIES

of the

LEBANESE REPUBLIC

Mission report:

25–29 July 2016



World Health Organization

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WHO/WHE/CPI/2017.2

Suggested citation. Joint External Evaluation of IHR Core Capacities of the Lebanese Republic. Geneva: World Health Organization; 2016. Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at http://apps.who.int/iris.

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Design and layout by Jean-Claude Fattier

Printed by the WHO Document Production Services, Geneva, Switzerland

ACKNOWLEDGEMENTS

The WHO JEE Secretariat would like to acknowledge the following, whose support and commitment to the principles of the International Health Regulations (2005) have ensured a successful outcome to this JEE mission:

- The Government and national experts of Lebanon for their support of, and work in, preparing for the JEE mission.
- The governments of Egypt, Finland, Morocco, Pakistan, and the United Kingdom for providing technical experts for the peer review process.
- The Food and Agriculture Organization of the United Nations (FAO), the World Organisation for Animal Health (OIE), and Medecins sans Frontieres for their contribution of experts and expertise.
- The governments of Germany and Finland for their financial support to this mission.
- The following WHO entities: Country Office of Lebanon, WHO Office for the Eastern Mediterranean, WHO HQ Country Health Emergency Preparedness and IHR Department, WHO HQ Infectious Hazard Management Department.
- Global Health Security Agenda Initiative for their collaboration and support.

Contents

Abbreviations

AMR	antimicrobial resistance
AMS	antimicrobial stewardship
AUBMC	American University of Beirut Medical Center
BSL	biosafety level
CBRN	chemical, biological, radiological and nuclear
CPHL	Central Public Health Laboratory
EBS	event-based surveillance
ECDC	European Centre for Disease Prevention and Control
EOC	Emergency Operations Centre
EMPHNET	Eastern Mediterranean Public Health Network
EMS	event management system
EPI	Expanded Programme for Immunization
EQA	external quality assessment
ESU	Epidemiologic Surveillance Unit (of the MoPH)
FAO	Food and Agriculture Organization of the United Nations
FETP	Field Epidemiology Training Programme
GOARN	Global Outbreak Alert and Response Network
HAZMAT	hazardous materials
HCAI	healthcare-associated infection
HIV	human immunodeficiency virus
IAEA	International Atomic Energy Agency
IBS	indicator-based surveillance
IHR	International Health Regulations (2005)
IMS	Incident Management System
INFOSAN	International Food Safety Authorities Network
ISO	International Organization for Standardization
IPC	infection prevention and control
IRI	Industrial Research Institute
IT	information technology
JEE	Joint External Evaluation
LAEC	Lebanese Atomic Energy Commission
LARI	Lebanese Agricultural Research Institute
MCM	medical countermeasures
MediPIET	Mediterranean Programme of Intervention Epidemiology Training
MERS-CoV	Middle East Respiratory Syndrome Coronavirus
MoA	Ministry of Agriculture
MoE	Ministry of Environment
MoPH	Ministry of Public Health

NGO	nongovernmental organization
NFP	National Focal Point
OIE	World Organisation for Animal Health
PCR	polymerase chain reaction
PHEIC	public health emergency of international concern
PoE	point of entry
SOP	standard operating procedure
ToR	terms of reference
UNICEF	United Nations Children's Fund
USJ	University St Joseph
VPD	vaccine preventable disease
WHO	World Health Organization

Executive summary – Findings from the Joint External Evaluation

The assessment of the Lebanese Republic by national and external experts was conducted on 25–29 July 2016 in Beirut, Lebanon using the World Health Organization (WHO) International Health Regulations (IHR; 2005) Joint External Evaluation (JEE) tool. The JEE, comprising 19 technical areas, allows countries to identify the most urgent needs within their health security system, to prioritize opportunities for enhanced preparedness, detection and response capacity-building, and to set national priorities and allocate resources based on the findings.

A multisectoral team of experts from relevant international organizations and peer countries participated in the assessment. The Government had completed a self-assessment and self-scores for the technical areas using the JEE tool, the results of which were presented to the External Assessment Team. This team and host country experts met to identify and agree together on Lebanon's strengths, areas for improvement, priority actions, and scores for the 19 technical areas. The results and recommendations of the mission are summarized below.

Three cross-cutting needs emerged as important for improved preparedness and response: systems/structures for adequate coordination of information sharing, rapid response, and multisectoral engagement; representation of the private sector, which has an important role in providing services related to IHR capacity; and IHR-related human resource capacity at different levels of administration.

Establishment of systems/structures: Lebanon has made significant progress towards building effective multisectoral collaboration and coordination. However, existing informal and ad hoc networks could be significantly strengthened by implementing a comprehensive legislative framework and formalizing the roles and responsibilities of stakeholders for the early detection, investigation and response to public health events.

National coordination: Lebanon has high-quality facilities and a skilled workforce. Resources from the private sector and resources are valuable, although the Government should ensure clear national coordination, with approved legislation, policies and plans.

Human resources: Public sector human resources are insufficient at many levels to manage IHR-related tasks. The Ministry of Public Health is seeking to recruit new technical staff. A formal public health workforce strategy should be considered, along with international support to develop the country's public sector human resources.

Lebanon has developed a national framework law for IHR which awaits approval by Parliament. Once the new law and sectoral legislation are enacted, implementing legislation including policies and guidance should be prepared.

The IHR National Focal Point (NFP) is the Directorate of Preventive Medicine at the MoPH, with the Director General of Public Health serving as the primary IHR NFP. The national IHR multisectoral committee headed by Minster of Public Health includes 11 high level representatives from the relevant sectors.

Increasing efforts to fight antimicrobial resistance (AMR) is a key recommendation of the mission. The official national AMR plan should be finalized and aligned with the WHO Global Action Plan on AMR. An animal health laboratory responsible for AMR testing in the Ministry of Agriculture should also be established.

A national multisectoral strategy for preparedness and response to zoonoses as well as formal coordination and information sharing mechanisms that involve all stakeholders should be developed and implemented.

Lebanon has high-quality laboratories able to conduct diagnostic tests for IHR priority diseases. However, a central public health laboratory and a well-defined national laboratory network should be established for animal and human health to improve national coordination and ensure important reference functions to other laboratories. To achieve sufficient population-level vaccination coverage, all non- and under-vaccinated populations should be identified, and adequate and equitable access to EPI services ensured, particularly among displaced populations. The surveillance system should be strengthened by simplifying secure electronic reporting mechanisms.

Lebanon should consider developing a national workforce strategy that includes recruiting, training and retaining qualified staff for public health at the central and peripheral levels. The country should also consider developing its own national advanced Field Epidemiology Training Programme.

A comprehensive national plan for emergency response involving all stakeholders is needed. The national Emergency Operations Centre (EOC) is adequate but needs to be fully operationalized and tested during a real-life event. In addition to coordinating the response to public health events of potential international concern, the EOC can be used as a platform for regular information sharing and risk assessments of such events. The public and animal health systems within the Government have access to law enforcement agencies to assist with a health event or hazard through the Chemical, Biological, Radiological and Nuclear Committee or the Supreme Commission for Relief. The MoPH would be involved in the response to events of relevance to health. However, standard operating procedures for accelerated coordination are not in place.

The communication plan for crisis management at the national level is coordinated by the Office of the Prime Minster. The MoPH has recently established a website and other media channels, but should urgently strengthen the Public Relations and Health Education Department, responsible for health-related communication for IHR.

Lebanon has designated all points of entry (PoE) for implementation of IHR capacities. While adequate medical services exist at the main PoE, mechanisms to ensure basic necessities such as safe food and water are lacking, as is a multisectoral public health contingency plan for each PoE.

A national strategic plan for chemicals needs to be developed as part of the National Emergency Preparedness Plan. The plan should also reflect workforce and financial resources, surge capacity and the ability to respond to all priority public health emergencies. A National Poison Control Centre should also be designated and resourced. National policies and strategies for radiation emergencies are available and authorities responsible for nuclear and radiation events have a designated focal point for coordination and communication with the IHR NFP. However, there is inadequate coordination with stakeholders from all relevant sectors. Medical facilities to treat contaminated individuals or victims of radiation emergencies need to be improved.

In summary, Lebanon has demonstrated strong commitment to global health security and the core capacities required by IHR. It has developed its response to public health emergencies through contingency plans for specific hazards, some of which have been tested in real-life global alerts such as Ebola and pandemic influenza. National crisis management is coordinated by the Office of the Prime Minister; and Government coordination is ensured through a special interministerial Committee for Emergency and Disaster Management.

Introduction

The assessment of the Lebanese Republic by national and external experts was conducted on 25–29 July 2016 in Beirut, Lebanon using the World Health Organization (WHO) International Health Regulations (IHR; 2005) Joint External Evaluation (JEE) tool. The JEE, comprising 19 technical areas, allows countries to identify the most urgent needs within their health security system, to prioritize opportunities for enhanced preparedness, detection and response capacity-building, and to set national priorities and allocate resources based on the findings.

A multisectoral team of experts from WHO, the World Organisation for Animal Health (OIE), the Food and Agriculture Organization of the United Nations (FAO), Doctors without Borders (MSF) and peer countries, including Finland and the United Kingdom, participated in the assessment. The Government had completed a prior self-assessment using the JEE tool the results of which, including self-assessed scores for the 19 IHR and Global Health Security Agenda technical areas, were presented to the External Assessment Team. This team and host country experts then participated in a facilitated discussion and a collaborative process to identify and agree together on Lebanon's current strengths, areas that need strengthening, and scores for the 19 technical areas. The results of these discussions, along with supporting information and recommendations for priority actions, are provided under each technical area section of this report. A description of the evaluation methodology, country self-assessments, and the terms of reference of the mission can be found in the appendices.

Lebanon has demonstrated strong commitment to global health security and the core national capacities required by the IHR. Lebanon is the fourth country in the WHO Eastern Mediterranean Region and the tenth country globally to volunteer and complete the JEE process. It has developed its response to public health emergencies through different contingency plans for specific epidemic and pandemic hazards as well as a National Disaster Management Plan that includes radionuclear emergencies. Some of the plans have been tested in real-life situations such as Ebola preparedness, the response to H5N1 avian influenza, Middle East respiratory syndrome coronavirus (MERS-CoV), and other global alerts including severe acute respiratory syndrome (SARS) coordination and pandemic influenza resource mobilization. National crisis management is coordinated by the Office of the Prime Minister through the Supreme Commission for Relief. Government coordination is ensured through a special interministerial Committee for Emergency and Disaster Management.

The timing of this JEE is pertinent considering the current situation in the Syrian Arab Republic and the high number of displaced persons arriving and residing in Lebanon. Most of these live among the Lebanese population rather than in specific camps, which poses additional challenges for surveillance and the provision of health services. In recent years, the county's health-care system has shown remarkable resilience in providing necessary services to the displaced population. Polio cases in the Syrian Arab Republic during 2013–2014 resulted in several mass vaccination campaigns in Lebanon and at points of entry (PoE), mainly at Al Masnaa ground crossing. This prevented the further spread of polio to neighbouring countries. Surveillance of infectious diseases with epidemic potential, and effective prevention and rapid outbreak response at the different administrative levels, remain a high priority for Lebanese national health security.

Major cross-cutting themes

During the review of the 19 technical areas, three cross-cutting needs emerged as important for improved preparedness and response: 1) to ensure that systems/structures provide adequate coordination of information sharing and rapid response, as well as full multisectoral engagement; 2) to engage and ensure adequate representation of the private sector, which has an important role in providing services related

to national IHR capacity; and 3) to increase IHR-related human resource capacity at different levels of administration.

Regarding the establishment of systems/structures, Lebanon has done significant work to build effective multisectoral collaboration and coordination. However, existing informal collaboration and ad hoc networks could be significantly strengthened by implementing a comprehensive legislative framework and formalizing the roles and responsibilities of different stakeholders for the early detection, investigation and response to public health events of different origins.

National coordination of public and private sector resources to strengthen Lebanon's IHR capacity

Lebanon has high-quality health-care and laboratory facilities as well as a skilled technical workforce. The availability of private sector resources is advantageous, especially in areas where public sector capacity is limited. However, in terms of national IHR capacity, the major role of private and nongovernmental service providers may lead to difficulties in contractual and sustainability issues. The Government should ensure clear national coordination, with approved legislation, policies and plans. Expanding the National IHR Multisectoral Committee to include the private and nongovernmental sectors would enhance coordination to fulfil the IHR requirements.

Human resources for national IHR capacity at all sectors and levels of administration.

Public sector human resources are currently insufficient at national, district, and in many cases facility level to manage all IHR-related tasks. The Ministry of Public Health (MoPH) made a formal request to the Civil Servant Board in 2016 to recruit new technical staff. In addition, Lebanon should consider developing a formal public health workforce strategy with recruitment, training and retention policies. Moreover, international organizations and donors should consider increasing their support to develop the country's public sector human resources.

The findings of the mission on the 19 technical areas are detailed in the relevant sections, a summary of which is provided below. In addition, an overview of the scores on the technical areas is provided in the next Section.

Lebanon has developed a national framework law for the IHR which awaits approval by Parliament. Once the new law and sectoral legislation are enacted, implementing legislation including policies and guidance should be prepared, including designation of IHR focal staff in each relevant ministry.

The IHR National Focal Point (NFP) is the Directorate of Preventive Medicine at the MoPH; the Director General of Public Health serves as the primary IHR NFP. The National IHR Multisectoral Committee headed by the Minster of Public Health includes 11 high level representatives from relevant sectors. WHO and FAO are advisor members in the national IHR and the IHR technical committees.

Increasing efforts to combat antimicrobial resistance (AMR) is one of the key recommendations of this mission. A draft proposal (2015) for the official national AMR plan should be finalized, approved and implemented as soon as possible. The plan should be fully aligned with the 2015 WHO Global Action Plan on AMR, and include plans for prevention and control of health-care associated infections (HCAI) as well as antimicrobial stewardship restricting antibiotic use without prescription, both in the human and animal sectors. In addition, an animal health laboratory responsible for AMR testing for the Ministry of Agriculture (MoA) should be established.

A rapid, effective response to zoonotic diseases and food safety hazards requires extensive multisectoral collaboration and information management. A national multisectoral strategy for preparedness and

response to zoonoses as well as formal coordination and information sharing mechanisms that involve all stakeholders should be developed and implemented.

Lebanon has high-quality laboratories that are able to conduct diagnostic tests for IHR priority diseases. However, there is currently no central public health laboratory (CPHL), which is essential to improve preparedness and response, to set standards and regulations for laboratory quality and biosafety, and to ensure adequate monitoring and upgrades. A CPHL and a well-defined national laboratory network for both animal and human health would improve national coordination and ensure important reference functions to other laboratories. From the biosecurity point of view, each relevant ministry should have an up-to-date listing of laboratory facilities at public, private and academic sectors that work with agents and pathogens of concern.

Lebanon is still reporting outbreaks of vaccine preventable diseases such as measles, mumps and rubella. To ensure sufficient population-level vaccination coverage, additional efforts need to be made to identify all non- and under-vaccinated populations, and to ensure adequate and equitable access to EPI services. This is particularly important among communities with displaced populations. In addition, the surveillance system should be strengthened by simplifying reporting mechanisms and by using a secure electronic system that is interoperable, interconnected, and that operates in real-time.

A workforce strategy is imperative for countries to build a qualified and sustainable public health workforce. Therefore Lebanon should consider developing such a strategy that includes plans for recruiting, training and retaining qualified staff for the public health workforce at the central and peripheral levels. Despite being part of the Mediterranean Programme of Intervention Epidemiology Training network, Lebanon should also consider developing its own national advanced two-year Field Epidemiology Training Programme (FETP) for MoPH and MoA staff.

Lebanon has demonstrated its capacity to respond to public health emergencies through contingency plans for specific epidemic and pandemic hazards. However, a comprehensive national plan involving all stakeholders is still lacking. While some hospitals have emergency response procedures, they are not part of the country's overall public health emergency response mechanism. The national Emergency Operations Centre (EOC) is functional and adequately equipped, but needs to be fully operationalized and tested during a real-life event. The EOC should also serve as a platform for the regular sharing of information and risk assessments of public health events of national and international concern.

The public and animal health systems within the Government are able to request the support of law enforcement agencies to manage a health event or hazard through the Chemical, Biological, Radiological and Nuclear (CBRN) Committee or the Supreme Commission for Relief. National security would also engage the support of the MoPH or other sectors in the response to events that might have health components. However, generic protocols to accelerate the coordination needed for a prompt and appropriate response are not in place.

A national communication plan for crisis management exists, and the MoPH has established electronic communications mechanisms. However, dedicated resources are urgently needed to carry out routine risk communication, including crucial engagement with populations at community level.

Lebanon has designated all PoE in the country for implementation of IHR capacities, and access to medical services exists at the main points. However, mechanisms to ensure a safe environment at these PoE, e.g. safe food and water, air quality and vector surveillance and control, are not in place. A multisectoral public health contingency plan for each PoE should also be established.

Lebanon's capacity to detect and respond to different types of chemical events is currently limited. A strategic plan, including a national chemical profile with standard operating procedures (SOP) for multisectoral collaboration, should be developed as part of the National Emergency Preparedness Plan. The plan should

reflect workforce and financial resources, surge capacity and the ability to expand its response to all priority public health emergencies. A National Poison Control Centre should also be designated and adequately resourced.

National policies and strategies exist for the detection, assessment, and response to radiation emergencies and authorities responsible for nuclear and radiation events have a designated focal point for coordination with the IHR NFP. However, there is inadequate coordination with all relevant stakeholders in the health, environment, emergency services and reference laboratories. Also, medical facilities for treating contaminated individuals or victims of radiation emergencies with adequate resources and well trained personnel are not readily available.

In conclusion, the External Evaluation Team acknowledges that most IHR requirements are in place in Lebanon, but notes a general need to formalize structures and test and share national policies and plans for many areas. Multisectoral collaboration, effectively coordinated by the Government authorities, should be strengthened. Lebanon's commitment to conduct annual self-evaluations using the JEE tool, together with an external JEE every 3–5 years, will further facilitate the implementation of national planning to prevent, detect and rapidly respond to public health threats whether occurring naturally, or due to deliberate or accidental events.

Further, the External Evaluation Team recognizes that Lebanon can play a leading role in supporting other countries in the region to build their health security capacity, especially through the high-quality hospitals and academic institutions. Through active participation in the JEE process, Lebanon also provides a valuable example of best practices in improving health security. The priority actions identified through the JEE process, once implemented, support other international processes such as the Sendai Framework for Disaster Risk Reduction, WHO's emergency response reform and the restructuring of IHR monitoring, the OIE Performance of Veterinary Services, and the response to international evaluations of the Ebola response.

The External Assessment Team extends its warmest regards to the Lebanese national health authorities for their support and openness in the conduct of the mission, which truly reflects the spirit of the WHO Eastern Mediterranean Regional Committee Resolution EMRC 62.3 of independence and transparency.

Lebanon scores

Note on scoring of technical areas of the Joint External Evaluation tool

The Joint External Evaluation (JEE) process is a peer-to-peer review. In completing the self-evaluation, the first step is that host countries provide information on their capabilities based on the indicators and technical questions included in the JEE tool.The host country may suggest a score at this time or during the on-site consultation with the external team. The entire external evaluation – in particular the discussions around the score, the strengths, the areas that need strengthening, and the priority actions – should be collaborative, with external evaluation team members and host country experts seeking agreement.

Should there be significant or irreconcilable disagreement between the external team members and the host country experts, or among the external or the host country experts, the External Evaluation Team Lead will decide on the final score and this will be noted in the final report along with the justification for each party's position.

Scores

Capacities	Indicators	Score
National legislation, policy and financing	P.1.1 Legislation, laws, regulations, administrative requirements, policies or other government instruments in place are sufficient for implementation of IHR	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 the IHR	4
IHR coordination, communication and advocacy	P.2.1 A functional mechanism is established for the coordination and integration of relevant sectors in the implementation of IHR	3
Antimicrobial resistance	P.3.1 Antimicrobial resistance (AMR) detection	2
	P.3.2 Surveillance of infections caused by AMR pathogens	2
	P.3.3 Health-care associated infection prevention and control programmes	1
	P.3.4 Antimicrobial stewardship activities	1
Zoonotic diseases	P.4.1 Surveillance systems in place for priority zoonotic diseases/pathogens	4
	P.4.2 Veterinary or animal health workforce	3
	P.4.3 Mechanisms for responding to zoonoses and potential zoonoses are established and functional	3
Food safety	P.5.1 Mechanisms are established and functioning for detecting and responding to foodborne disease and food contamination	2
Biosafety and biosecurity	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
Immunization	P.7.1 Vaccine coverage (measles) as part of national programme	4
	P.7.2 National vaccine access and delivery	4
National laboratory system	D.1.1 Laboratory testing for detection of priority diseases	4
	D.1.2 Specimen referral and transport system	4
	D.1.3 Effective modern point-of-care and laboratory-based diagnostics	3
	D.1.4 Laboratory quality system	3

Real-time surveillance	D.2.1 Indicator- and event-based surveillance systems	4
	D.2.2 Interoperable, interconnected, electronic real-time reporting system	2
	D.2.3 Analysis of surveillance data	4
	D.2.4 Syndromic surveillance systems	4
Reporting	D.3.1 System for efficient reporting to WHO, FAO and OIE	3
	D.3.2 Reporting network and protocols in country	2
Workforce development	D.4.1 Human resources are available to implement IHR core capacity requirements	2
	D.4.2 Field Epidemiology Training Programme or other applied epidemiology training programme in place	2
	D.4.3 Workforce strategy	1
Preparedness	R.1.1 Multi-hazard National Public Health Emergency Preparedness and Response Plan is developed and implemented	2
	R.1.2 Priority public health risks and resources are mapped and utilized	2
Emergency response operations	R.2.1 Capacity to activate emergency operations	2
	R.2.2 Emergency Operations Centre operating procedures and plans	2
	R.2.3 Emergency operations programme	1
	R.2.4 Case management procedures are implemented for IHR relevant hazards	3
Linking public health and security authorities	R.3.1 Public health and security authorities, (e.g. law enforcement, border control, customs) are linked during a suspect or confirmed biological event	4
Medical countermeasures and personnel deployment	R.4.1 System is in place for sending and receiving medical countermeasures during a public health emergency	2
	R.4.2 System is in place for sending and receiving health personnel during a public health emergency	5
Risk communication	R.5.1 Risk communication systems (plans, mechanisms, etc.)	2
	R.5.2 Internal and partner communication and coordination	2
	R.5.3 Public communication	3
	R.5.4 Communication engagement with affected communities	1
	R.5.5 Dynamic listening and rumour management	3
Points of entry (PoE)	PoE.1 Routine capacities are established at PoE	3
	PoE.2 Effective public health response at points of entry	2
Chemical events	CE.1 Mechanisms are established and functioning for detecting and responding to chemical events or emergencies	2
	CE.2 Enabling environment is in place for management of chemical events	4
Radiation emergencies	RE.1 Mechanisms are established and functioning for detecting and responding to radiological and nuclear emergencies	2
	RE.2 Enabling environment is in place for management of radiation emergencies	4

PREVENT

National legislation, policy and financing

Introduction

The 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 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). In addition, policies which identify national structures and responsibilities as well as the allocation of adequate financial resources are also important.

Target

States Parties should have an adequate legal framework to support and enable the implementation of all of their obligations and rights to comply with and implement the IHR (2005). In some States Parties, implementation of the IHR (2005) may require new or modified legislation. Even where new or revised legislation may not be specifically required under the State Party's legal system, States may still choose to revise some legislation, regulations or other instruments in order to facilitate their implementation and maintenance in a more efficient, effective or beneficial manner.

State parties should ensure provision of adequate funding for IHR implementation through national budget or other mechanism.

Lebanon level of capabilities

The term "legislation" is used generally in this document to refer to the broad range of legal, administrative or other governmental instruments that may be available for Lebanon to implement the IHR (2005). These instruments are not limited to those adopted by Parliament such as regulations, standards, ordinances, notifications, and other documents under the Lebanese legal system, which include policies and interministerial or interprovincial protocols or standard operating procedures.

Lebanon is a parliamentary democratic republic with a substantial legal and regulatory framework to support and enable the implementation of IHR. It has a highly developed private health sector that performs a number of important IHR functions, including in the area of reporting (see section on Reporting below). The legal system provides numerous legal and normative instruments that do not need to be approved by Parliament, such as ministerial circulars that allow Lebanon to perform the necessary IHR functions.

Lebanon is highly committed to implementing the IHR, including in the area of national legislation. Indeed, while States Parties are not explicitly required to adopt new legislation, Lebanon took it upon itself to conduct an in-depth legislative assessment which the MoPH commissioned from a national law firm. Moreover, the assessment was conducted using WHO guidance on IHR Implementation in national legislation. This assessment resulted in the drafting of a Framework Law for IHR implementation and corresponding sectoral laws through a process involving other relevant sectors. The draft laws were

reviewed and discussed during the JEE mission, including in plenary with the Hyam G. Mallat Law Firm, with the assistance of an informal translator and in consultation with key personnel at the MoPH. A letter addressed to the Council of Ministers was prepared attaching the draft laws and explaining the process followed for their development.

Recommendations for priority actions

- Conduct periodic reviews of existing legislation for IHR implementation.
- Obtain signature of the Minister of Public Health on the transmittal/explanatory letter to the Council of Ministers to accompany the draft Framework Law.
- Submit for adoption by Parliament the Framework and sectoral laws.
- Once the new laws are enacted, draft and adopt implementing legislation to put them into effect, including designation of IHR focal staff in each relevant ministry.
- Continue to raise awareness about IHR implementation in all sectors, including in relation to the rights and obligations of Lebanon since 2007.

Indicators and scores

P.1.1 Legislation, laws, regulations, administrative requirements, policies or other government instruments in place are sufficient for implementation of IHR

Score 4: Demonstrated capacity. Lebanon has successfully performed the key mandatory IHR functions within the existing legal framework.

Strengths/best practices

- Lebanon is committed to implementing the IHR. There is a high level of awareness at the MoPH in relation to IHR obligations and rights.
- A substantial legal framework exists for most technical areas, and IHR functions are performed through the adoption of a variety of legal and normative instruments, including joint and individual ministerial circulars.
- Lebanon has a specific legal department within the MoPH and legal advisors in most relevant ministries. These advisers, however, deal mainly with health-related litigation and do not play a technical role, which is assumed by the Department of Medical Professions with the support of external national legal expertise from the Hyam G. Mallat Law Firm.

Areas that need strengthening/challenges

- There is a substantial turnover of staff in a number of IHR-related governmental sectors resulting in a continual loss of awareness about IHR implementation, including in relation to IHR rights and obligations.
- Although the MoPH has successfully coordinated the drafting of the Framework Law and sectoral laws on IHR implementation, national legal expertise to develop implementing legislation for the new laws is lacking.

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: Demonstrated capacity. Although not explicitly required under the IHR, Lebanon has undertaken to adopt new IHR-specific legislation to ensure full and efficient implementation of the regulations.

Strengths/best practices

- With the support of national legal expertise, Lebanon carried out an assessment of existing legislation in line with WHO Guidance on IHR implementation of national legislation.
- Following the above assessment, a Framework Law and sectoral laws were drafted within the MoPH which were shared with relevant sectors for their comment.
- A letter to the Council of Ministers with the consolidated draft Framework and sectoral laws was prepared for signature by the Minister of Public Health.
- Lebanon has established a national and a technical committee for IHR implementation and a Chemical, Biological, Radiological and Nuclear (CBRN) Committee.

Areas that need strengthening/challenges

- Since the MoPH has limited capacity to carry out reviews of existing legislation for IHR implementation, external national legal expertise was used to conduct a legislative assessment in 2009. Ensuring a sustained and adequate legal framework for IHR implementation through periodic reviews of legislation is important.
- The adoption by Parliament of the new Framework Law and sectoral laws is a challenge given the current political instability in the country.

Relevant documentation

- International Health Regulations (2005), World Health Organization, 3rd edition.
- Joint External Evaluation Tool, International Health Regulations (2005), 2016.
- Assessment of IHR implementation in national legislation by Hyam G. Mallat Law Firm, 2009.
- Draft framework law (2013) and sectoral laws (2015) for IHR implementation prepared by the Ministry of Public Health in collaboration with Hyam G. Mallat Law Firm.
- Draft transmittal and explanatory letter from the Minister of Public Health to the Council of Ministers in respect of the draft Framework and sectoral laws for IHR implementation (pending signature), prepared in close collaboration with the Department of Medical Professions, Ministry of Public Health.
- The Lebanese Constitution (promulgated 23 May 1926 with its amendment 1995).
- The National Accord Document – The TAEF Agreement.

IHR coordination, communication and advocacy

Target

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 (NFP), which is a national centre for IHR (2005) communications, is a key requisite for IHR (2005) implementation. The NFP 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 NFPs, continuously update and annually confirm them.

Lebanon level of capabilities

The IHR NFP is within the Directorate of Preventive Medicine, and the Director General of Public Health serves as the primary NFP. The IHR NFP includes several personnel to guarantee 24/7 accessibility including the heads of the departments of Preventive Medicine and Communicable Disease, and Epidemiology Surveillance at the MoPH. The contact information of the IHR NFP representatives is continuously updated and annually confirmed to WHO. The roles and responsibilities of the IHR NFP are also identified and implemented.

The IHR Law has been developed and reviewed but not yet endorsed. Articles refer to the establishment of an IHR multisectoral committee and an IHR technical committee. To facilitate the implementation of IHR, ministerial decrees have been issued by the Council of Ministers on the establishment of the aforementioned committees. The national IHR multisectoral committee is headed by the Minister of Public Health and includes high level representation from 11 relevant sectors. WHO and FAO are advisory members to the Committee. The IHR technical committee is headed by the Director of Preventive Medicine and includes 17 members from sectors relevant to IHR implementation. According to the decrees, these committees are to meet regularly to follow the implementation of IHR and produce regular reports; however these tasks are not fully implemented due to the shortage of personnel in the governmental sector and the high workload of existing personnel.

Informal communication and coordination between stakeholders and with the IHR NFP seems strong, particularly during an emergency public health event, although no formal SOPs exist. Coordination and communication among the relevant sectors, particularly the public health, animal, and food sectors, and with PoEs (mainly Beirut International Airport) have been tested through real-life disease events, i.e. H5N1, MERS-CoV and Ebola. Several drills and simulation exercises were conducted to enhance preparedness and multisectoral coordination. In addition, a real chemical event that took place in Lebanon tested the functionality of coordination and communications among the relevant sectors.

The IHR NFP receives and shares information internally, given the senior position and involvement in other coordination mechanisms such as the CBRN and the National Supreme Commission for Relief. Information on public health events of potential international concern is shared during these committee meetings. Information exchange between animal health and human health surveillance units, laboratories, and other relevant sectors regarding potential zoonotic risks and urgent zoonotic events is in place but is neither routine nor conducted in a timely manner.

Insufficient awareness about IHR was observed among the relevant sectors due to the turnover of personnel and insufficient advocacy of activities about IHR and its implementation for newcomers.

Recommendations for priority actions

Given Lebanon's second request for a JEE evaluation, it is highly recommended that the country:

- convenes regular meetings of the IHR multisectoral committee and IHR technical committee to follow up on the development of IHR capacities,
- develops yearly reports on IHR implementation and shares these reports with all sectors including with the Council of Ministers, as per the ministerial decree;
- reviews existing SOPs and develops generic procedures for coordination and sharing of information between the IHR NFP and focal points in other sectors;
- establishes an information technology (IT) platform accessible to relevant sectors at different administrative levels to report and share information on public health events occurring in the country;
- enhances awareness of IHR through:
    - advocacy activities targeting different audiences to ensure commitment, particularly among the non-health sector
    - expanded membership in the IHR multisectoral and technical committees to include nongovernmental sectors and advisory members from OIE and the International Atomic Energy Agency (IAEA)
    - evaluating the functionality of the IHR NFP
    - a national plan of action to accelerate implementation of IHR capacities with allocated budget to sectors relevant to the implementation of IHR capacities.

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: Developed capacity. An IHR multisectoral committee is in place by ministerial decree. Multisectoral and multidisciplinary coordination and communication mechanisms are tested through real exercises, although no action plan to incorporate lessons learnt from such mechanisms exists. Updates on the status of IHR implementation are neither developed nor shared with the different stakeholders.

Strengths/best practices

- An IHR NFP is designated at national level and includes personnel to guarantee 24/7 accessibility with defined terms of reference (ToR).
- An IHR multisectoral committee is in place by ministerial decree, headed by the Minister of Public Health, including high level representation and defined ToR. An IHR technical committee is also in place with defined ToR.
- A mechanism for coordination exists between different sectors to facilitate the response to potential public health events through the CBRN Committee and the national Supreme Commission for Relief.
- Multisectoral coordination has been tested through real events that occurred in the country, i.e. H5N1, MERS-CoV, suspected Ebola cases, and a chemical event.

Areas that need strengthening/challenges

- The IHR multisectoral committee does not meet regularly and does not include nongovernmental sectors relevant to IHR implementation. Hence, a mechanism to monitor the implementation and sustainability of IHR capacities is not in place and updates of IHR implementation are not being shared with other relevant sectors.

- There is insufficient awareness of IHR and its implementation among stakeholders, particularly among decision-makers of non-health sectors.
- A national plan of action to enhance the implementation of IHR in Lebanon should be developed.

Relevant documentation

- Draft IHR Law and draft IHR sectors' law.
- Ministerial decree on the establishment of IHR multisectoral committee.
- Ministerial decree on the establishment of IHR technical committee.
- 2009 progress report on IHR national preparation.

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. The evolution of antimicrobial resistance (AMR) is occurring 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 being coordinated by WHO, FAO, and OIE to develop an integrated and global package of activities to combat antimicrobial resistance, spanning human, animal, agricultural, food and environmental aspects (i.e. a one-health approach), including: a) Each country has its own national comprehensive plan to combat antimicrobial resistance; b) Strengthen surveillance and laboratory capacity at the national and international level following agreed international standards developed in the framework of the Global Action Plan, considering existing standards and; c) 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.

Lebanon level of capabilities

A national multidisciplinary and multisectoral committee to combat AMR has been established, which includes experts in infectious diseases, microbiology, pharmacy, paediatrics, and veterinary medicine, as well as representatives from the MoPH, MoA, and the WHO Country Office. In 2015 this committee drafted a national AMR plan, which needs to be finalized and officially approved.

National data on bacterial susceptibility patterns in humans have been analysed over the past decade in tertiary care centres. These data are being used by experts in the national AMR committee with a view to developing standard treatment guidelines as part of a national antimicrobial stewardship (AMS) programme.

Designated human laboratories in the country have capacity to detect (using Clinical and Laboratory Standards Institute breakpoints) and report all seven priority AMR pathogens listed by WHO (*Escherichia coli, Klebsiella pneumoniae, Staphylococcus aureus, Streptococcus pneumoniae, Salmonella spp., Shigella spp., and Neisseria gonorrhoeae*) plus *Mycobacterium tuberculosis*. Ongoing surveillance of AMR pathogens and HCAIs is conducted in some health-care facilities, but no standardized protocol is followed for surveillance. At the country level, the quality of human laboratory testing is a concern, as no external quality assessment (EQA) programme exists for all laboratories at all levels. The American University Hospital is a referral laboratory for human AMR pathogens and since it is part of the AMR committee, it assists the MoPH by working with 33 major health-care facilities in the country to identify methods used for AMR testing. The Mérieux laboratory at the University St Joseph (USJ) has been designated a national reference laboratory for AMR but has not yet received specimens because surveillance for AMR has not officially started.

There is some national capacity for AMR testing for isolates from animals, especially from poultry, currently done in the context of outbreaks in humans. No systematic AMR surveillance exists in animal populations,

although t a time-limited AMR surveillance project was carried out at the Lebanese Agricultural Research Institute (LARI) food microbiology laboratory in collaboration with the American University of Beirut Medical Center (AUBMC) and the WHO Advisory Group on Integrated Surveillance of Antimicrobial Resistance; other research is ongoing.

While Lebanon has no national infection prevention and control (IPC) plan or unit within the MoPH, IPC is integrated in national hospital accreditation. Some IPC programmes, such as at tertiary care centres, are quite advanced and the country has many highly trained infectious disease and infection control specialists, mostly in the academic and private sectors. Immunization for hepatitis B and rubella is mandatory for all health-care staff. SOPs are in place for infectious diseases with epidemic potential. At Rafik Hariri University Hospital, a ward is designated for suspected or confirmed Ebola patients. Lebanon does not offer extensive training courses for postgraduate or masters diplomas in IPC. Short IPC trainings are provided by the MoPH and tertiary hospitals

Antibiotics are easy to acquire without prescription in Lebanon, although a law – upheld in 2015 – regulates their administration. A pilot study showed that 42% of the population buying antibiotics in pharmacies in Beirut and its suburbs used them without prescription. In animals, antibiotics are also still used illegally without prescription, including for growth promotion. Despite licensing and control of imports of antibiotics for use in animals, there is significant smuggling, particularly from neighbouring countries.

Recommendations for priority actions

- Identify an animal health laboratory to be responsible for AMR testing for the MoA, and build its testing capacity.
- Further develop and finalize the AMR draft proposal (2015) as an official national AMR plan ensuring alignment with the 2015 Global Action Plan on AMR, and include a national plan to prevent and control HCAIs.
- Implement AMR surveillance in humans and animals.

Indicators and scores

P.3.1 Antimicrobial resistance detection

Score 2: Limited capacity. Although designated laboratories in the country have the capacity to detect and report all seven priority AMR pathogens listed by WHO, at national level the quality of human laboratory testing is a concern. There is minimal AMR testing in the animal health sector.

Strengths/best practices

- A national multidisciplinary, multisectoral committee for AMR has been established and a national AMR plan has been drafted.
- Designated human laboratories are able to detect and report all seven priority AMR pathogens listed by WHO.
- Lebanon has endorsed the 2015 OIE resolution for AMR.

Areas that need strengthening/challenges

- The national AMR plan is still a draft proposal, is not comprehensive, and lacks working groups with identified people to cover the specific technical areas.
- There is limited diagnostic capacity for AMR in the MoA.
- Most human laboratories in the country are only assessed through hospital accreditation, which is insufficient to ensure quality.

- Though a national reference laboratory was designated for AMR, Lebanon has no CPHL. In the absence of such a laboratory, the AMR national reference laboratory at USJ needs to have clear ToR be empowered to implement its role at national level.

P.3.2 Surveillance of infections caused by AMR pathogens

Score 2: Limited capacity. A national plan for surveillance of infections caused by AMR pathogens exists and is to be updated in three years' time. Surveillance of infections caused by priority AMR pathogens is yet to be implemented. There is no routine AMR surveillance in animals or food.

Strengths/best practices

- Information on AMR pathogens in Lebanon is available through a scientific publication.
- Routine surveillance is conducted in some designated human laboratories.
- There is routine surveillance for some AMR-relevant pathogens in animals.

Areas that need strengthening/challenges

- While surveillance of infections in humans caused by priority AMR pathogens is part of the national AMR plan, it has not yet been implemented.
- There is no systematic surveillance for AMR in animal populations.

P.3.3 Healthcare associated infection prevention and control programmes

Score 1: No capacity. There is no national plan to prevent and control HCAIs, and the country offers no postgraduate or masters trainings in IPC.

Strengths/best practices

Lebanon's capacity exceeds the HCAI prevention and control programme score of one in the following ways:

- The country has designated health-care facilities with high standards for HCAI prevention and control.
- Hospital accreditation requires IPC standards.
- Hepatitis B and rubella immunization is mandatory for all health-care staff.
- Rafik Hariri University Hospital has isolation capacity for two Ebola patients.

Areas that need strengthening/challenges

- There is no national IPC plan to standardize and monitor HCAI prevention and control programmes at national level (currently the draft proposal for the national AMR plan includes components of IPC).
- There are no programmes for regular IPC training.
- There is no unit within the MoPH for IPC similar to those in other countries in the region.

P.3.4 Antimicrobial stewardship activities

Score 1: No capacity. There is no national plan on AMS and, despite legislation, antibiotics are easy to purchase without prescription for use in animals and humans.

Strengths/best practices

Lebanon's capacity exceeds the AMS activities score of one in the following ways:

- There are laws in place requiring prescription for antibiotic use in humans and animals.

- Designated health-care facilities have implemented AMS activities.
- Four antibiotic treatment guidelines for common infectious conditions have been drafted by the national AMR committee, although these are yet to be implemented.
- Antibiotic use in animals could be estimated using import records and manufacturing reports.

Areas that need strengthening/challenges

- There is no national AMS plan (the draft proposal includes components of AMS).
- Laws restricting antibiotic use without prescription, in the human and animal sector, are not strictly enforced.
- Antibiotics are available illegally for use in animals, and are sometimes used illegally for growth promotion.
- Smuggling of antibiotics into Lebanon still exists for use in animals, affecting the ability to control their use and to estimate the amount of antibiotics used in animals.
- The OIE antibiotic use survey has not yet been completed by Lebanon.

Relevant documentation

- Draft national AMR plan Lebanon 2015.
- JEE self-assessment.
- Araj GF et al. A reflection on bacterial resistance to antimicrobial agents at a major tertiary care centre in Lebanon over a decade. J Med Liban 2012; 60(3):125–135.
- WHO AMR Mission Summary Report 4-7 March 2013.
- Legislation antibiotic prescription in the human and animal sectors.

Zoonotic diseases

Introduction

Zoonotic diseases are communicable diseases and microbes spreading between animals and humans. These diseases are caused by bacteria, viruses, parasites, and fungi that are carried by animals and insect or inanimate vectors may be needed to transfer the microbe. Approximately 75% of recently emerging infectious diseases affecting humans is of animal origin; 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.

Lebanon level of capabilities

The MoA has a good understanding of the national animal production system via farm mapping, and conducts routine active and passive disease surveillance and monitoring for key animal diseases (e.g. foot and mouth disease) and zoonotic diseases (e.g. brucellosis, avian influenza). There is limited capacity for wildlife disease monitoring. Animal vaccination programmes for rabies in pet dogs and brucellosis are in place. The first case of rabies in Lebanon was recently confirmed in a cow. An OIE Performance of Veterinary Services evaluation and a gap analysis have been completed (documents not available to the team).

Five priority zoonoses have been agreed by the MoPH and the MoA, namely brucellosis, glanders, rabies, salmonellosis, and zoonotic influenza. Additional zoonoses of national concern include anthrax, Rift Valley fever, and zoonotic tuberculosis (*M. bovis*). For some priority zoonotic diseases, the two sectors have joint preparedness and response plans, surveillance systems, and specific joint committees that meet regularly. The recent 2016 outbreak of H5N1 avian influenza in poultry was effectively managed and contained through a cross-sector response between the ministries, with support from the Prime Minister's Office.

The MoPH and MoA have rapid, effective ad hoc communication and collaboration, and documents and information are shared upon request. While formal disease-specific collaboration exists, there has not been a formalized generic mechanism for routine collaboration since the dissolution in 2009 of the Standing Committee for Zoonotic Diseases. Neither is there an overall multisectoral plan or strategy for preparedness, surveillance, detection, assessment, and response to zoonotic diseases. Rapid national and international reporting of zoonotic diseases is done through line ministries, but there is no standard mechanism for routine interministerial communication.

The Veterinary School at the Lebanese University Faculty of Agricultural Engineering and Veterinary Medicine sees approximately 20 veterinarians graduates per year. There is a lack of trained professional staff employed by the MoA, with fewer than 15 veterinarians at the central level. Overall, there are insufficient human resources in the governmental animal health sector, especially for epidemiology, both at the central and regional level. Although Lebanese veterinarians are not currently included in the regional Mediterranean Programme of Intervention Epidemiology Training (MediPIET), development of shorter training courses to include veterinarians is being considered.

Recommendations for priority actions

- Establish and implement a standard mechanism for regular coordination and data sharing related to zoonotic diseases between MoPH and MoA, to include other relevant stakeholders as needed, and work towards establishing a joint IT platform for information sharing.
- Develop a generic, multisectoral strategy to address zoonotic diseases of epidemic potential.
- Strengthen epidemiological capacity in the MoA, including national and subnational surveillance, by increasing the number and technical competence of its personnel.
- Strengthen animal health diagnostics capacity through laboratory twinning programmes.

Indicators and scores

P.4.1 Surveillance systems in place for priority zoonotic diseases/pathogens

Score 4: Demonstrated capacity. There is ongoing surveillance for the five priority zoonotic diseases agreed between the MoA and MoPH.

Strengths/best practices

- The MoPH and MoA have agreed five priority zoonotic diseases.
- Surveillance systems to detect all five priority zoonoses are in place in both the MoPH and MoA, including joint planning and analysis for these diseases.
- Some surveillance is in place for other zoonotic diseases in either/both the MoA and MoPH.

Areas that need strengthening/challenges

- Communication and collaboration between MoA and MoPH occurs on an ad hoc basis for planning, implementing, assessing surveillance for non-priority zoonotic diseases and for zoonoses.
- There is limited animal health laboratory capacity and no mechanism for routine information sharing between MoA and MoPH laboratories.
- The MoA has insufficient epidemiology capacity.
- No information is available on diseases in wildlife.

P.4.2 Veterinary or animal health workforce

Score 3: Developed capacity. Adequate animal health capacity exists at the national, and some subnational levels.

Strengths/best practices

- The Veterinary School in Lebanon sees some 20 veterinarians graduate per year.
- Additional training is available to public health staff working on zoonoses.

Areas that need strengthening/challenges

- Gaps remain in human resource capacity for animal health at the central level, and for public health in some subnational areas.
- Lebanese veterinarians are not included in the MediPIET training.

P.4.3 Mechanisms for responding to zoonoses and potential zoonoses are established and functional

Score 3: Developed capacity. There are jointly prepared, multisectoral preparedness and response plans for some zoonotic diseases; however there are no formal mechanisms for communication among the sectors.

Strengths/best practices

- In serious outbreaks of priority zoonotic disease (with or without human cases), there has been a rapid, effective, coordinated, multisectoral response supported by the Prime Minister, including MoPH, MoA, and other relevant governmental and private stakeholders, with appropriate reporting to relevant international organizations (e.g. the 2016 H5N1 avian influenza event).

Areas that need strengthening/challenges

- There is no overall multisectoral preparedness and response plan for zoonoses, thus no standard collaborative mechanisms for systematically responding to most zoonotic events.
- The departments responsible for wildlife health have not been included in the plans.
- The baseline number of zoonotic events of potential national and international concern annually is not known.

Relevant documentation

- Preparedness Plan for Early Detection and Prevention of Zoonotic and Non-zoonotic Diseases in Lebanon (draft), 2009.
- Preparedness Plan for Early Detection and Prevention of Notifiable Avian Influenza in Lebanon, 2009.
- Joint MoPH and MoA ministerial decree for monitoring the usage and distribution of veterinary medicine, vaccine and disinfectant (1/484) (in Arabic).
- Agriculture ministerial decree for registration of poultry slaughterhouses (1/552 of 19 June 2012) (in Arabic).
- Agriculture ministerial decree for establishment and registration of livestock slaughterhouses (1/949 of 26 October 2011) (in Arabic).
- OIE notification, H5N1 event in poultry, 2016 (from Internet).
- PowerPoint presentation: "H5 – Lebanon case".

Food safety

Introduction

Food and waterborne 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

State parties should have surveillance and response capacity for food and water borne diseases' risk or events. It requires effective communication and collaboration among the sectors responsible for food safety and safe water and sanitation.

Lebanon level of capabilities

Food safety events are frequently identified and responded to by the MoPH. The Government is in the process of developing and updating the national food safety system, in which four ministries are currently involved: Public Health; Agriculture, Tourism; and Industry. Lebanon is a member of the International Food Safety Authorities Network (INFOSAN), with an identified focal point. The lead agency for food safety is the MoPH, which started a national food safety campaign in 2014 to minimize the risk factors for food safety events and outbreaks. Standard sample collection protocols, guidelines and kits for routine inspection of all types of food establishments were developed by MoPH and are used by inspectors during regular active monitoring of licensed/registered operations. However, there is increasing number of non-licensed operations. An electronic database to record all food establishments operating nationwide is in development at MoPH.

In addition to active monitoring by the MoPH, the MoA conducts regular inspections within animal production systems. Mechanisms for notification and case investigation for any food safety event are in place within MoPH, including identification of the immediate source of the outbreak: However there is insufficient communication and collaboration with other ministries for response and risk reduction along the food chain. Overlaps and contradictions exist in the roles and responsibilities of the relevant ministries responsible for food safety; and alignment and clarity for response, including risk management and communications, is needed. There is no direct supervision from veterinary services on food processing plants or livestock/poultry slaughterhouses, which are under the supervision of the Ministry of Industry and the municipalities, respectively.

Recommendations for priority actions

- Strengthen and formalize the existing cross-sectoral, interdepartmental mechanism for coordination and collaboration between all food safety stakeholders, and use this mechanism to:
  - develop a national food safety strategy and plan based on the existing food law;
  - clarify standards, processes, roles, and responsibilities of each stakeholder throughout the food chain;
  - ensure communication among agencies during food safety events;

- support the establishment of a national database on food establishments to be available to all stakeholders;
- institutionalize the current food safety campaign at the MoPH;
- build capacity for food product traceability and recall of those that pose a risk to public health.

- Enhance the skills of food safety inspectors with continuous training.
- Support the diagnostic capability of laboratories dedicated to food safety.

Indicators and scores

P.5.1 Mechanisms are established and functioning for detecting and responding to foodborne disease and food contamination

Score 2: Limited capacity. A mechanism to detect foodborne diseases is in place at MoPH. Staff from relevant sectors investigate notifications, but have limited capacity to respond. Infrastructure to ensure safety of food products and establishments, including inspectors and laboratories, exists but requires sustainable linkages for collaboration, communication and information sharing between public health, veterinary services and key labs.

Strengths/best practices

- There is a functioning food safety system in the country with routine inspections, a guideline for investigation of foodborne diseases, and adequate laboratory capacity.
- A cross-sector food safety committee has focal points from most of the relevant stakeholders (e.g. the human and animal health sectors, surveillance and response staff, and key laboratories).

Areas that need strengthening/challenges

- The multiple ministries involved in food safety leads to confusion in roles and responsibilities.
- Limited operational links exist among public health inspectors and response staff, food safety, animal health and laboratories.
- A national food safety policy/strategy is lacking.
- There is no capacity for animal or plant food product traceability.
- Capacity to recall a food product is limited.
- There is no foodborne management and response system, especially for food processing plants (e.g. hazard analysis and critical control points or ISO certifications).
- Public awareness about food safety, foodborne diseases, and precautionary actions is low.

Relevant documentation

- Food safety law No. 71, 1983 (in Arabic).
- Standard Operating Procedure for surveillance of food poisoning.
- Food safety measures that need to be addressed in food establishments (in Arabic).
- Food sampling, inspection and investigation forms (in Arabic).
- Circular No. 81 on the guidelines of food safety surveillance, 2001 (in Arabic).

Biosafety and biosecurity

Introduction

Working with pathogens in the laboratory is vital to ensuring that the global community possess 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 disease 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 is in place, ensuring that especially dangerous pathogens are identified, held, secured and monitored in a minimal number of facilities according to best practices; biological risk management training and educational outreach are 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 are in place as appropriate

Lebanon level of capabilities

Lebanon has high-quality animal health and public health laboratories, such as Rafik Hariri University Hospital, Lebanese Agricultural Research Institute (LARI), Industrial Research Institute (IRI), Saint Joseph University (USJ), Saint Georges Hospital, and the AUBMC medical laboratory. The human health laboratories have extensive biosafety policies including relevant SOPs, guidelines and safety manuals. The IRI and the Food Safety Laboratory at LARI are ISO 17025-certified, and the AUBMC medical Laboratory, accredited by the College of American Pathologists (CAP), serves as a referral lab for tuberculosis culture and subtyping of Salmonella and Shigella infective bacteria. The Ministry of Defence has designated the only existing biosafety level 3 (BSL-3) facility at USJ as a referral laboratory. At some facilities such as USJ and Saint Georges Hospital, biosecurity concepts are implemented comprehensively including the control of the entrance of security guards, code access doors for manipulations and storage rooms as well as an inventory of samples and pathogens.

Licensing for human medical laboratories by the MoPH is mandatory for both public and private laboratories. However, laboratories throughout the country are not centrally listed and those working with dangerous pathogens and toxins are not registered with the Government. Research laboratories at academic institutions are not currently licensed by the MoPH. The Health Laboratory Mapping Tool is currently under development and could be used to map the laboratories and collect information on their capacities. Although biosafety and biosecurity elements are part of the licensing process, no formal supervision is carried out by the national authorities following licensure to ensure ongoing compliance with requirements. In addition, biosafety and biosecurity legislation is not fully comprehensive and needs to be developed further.

A waste management system is well established by the MoE but is limited to human medical laboratories. At LARI, post-autoclaving waste enters the regular city waste management system.

In-house biosafety training is offered by major human health laboratories and academic institutions on biosafety and biosecurity and training certificates are offered by two private universities. However, there is no formal follow-up on the level and quality of staff training, and national standards for biosafety and biosecurity training need to be developed.

Recommendations for priority actions

- Map all laboratories and identify agents and pathogen of concern for all ministries and facilities, and those housing identified agents and pathogens.
- Define and establish a multisectoral National Biosafety and Biosecurity Team to coordinate, develop and implement national biosafety and biosecurity policies and guidelines at all levels.
- Assess biosafety and biosecurity threats to Lebanon and develop plans to address these risks at all levels.
- Establish a national training programme in biosafety and biosecurity for all animal and human health laboratories.

Indicators and scores

P.6.1 Whole-of-Government biosafety and biosecurity system is in place for human, animal, and agriculture facilities

Score 2: Limited capacity. Lebanon is currently developing a comprehensive biosafety and biosecurity system.

Strengths/best practices

- Laboratory biosafety manuals, SOPs, good laboratory practice guidelines, fire drills and personal protective equipment are in place in all human health laboratories.
- Waste management systems including SOPs and disposal in all human health facilities visited are available and well implemented.
- Licensing for human medical laboratories by the MoPH is mandatory for both public and private laboratories, and part of this authorization requires compliance with aspects of biosafety.
- Biosecurity concepts have been fully adopted in some human health laboratories visited, e.g. entrance to the facilities is controlled, alarms systems are in place, code access doors are installed for manipulation and storage rooms and inventory of samples and pathogens.

Areas that need strengthening/challenges

- Not all laboratories in the country and in each ministry and facility have been mapped, nor is sufficient information on the laboratories available in a centralized database/registry.
- Agents and pathogens of concern have not been identified, and there is no inventory by ministries or facilities housing dangerous pathogens and toxins.
- Biosafety and biosecurity legislation does not exist.
- A waste management system for animal health and environmental sector laboratories should be established as soon as possible.

- There is insufficient funding for some facilities for maintenance (e.g. certification of the biological safety cabinet in the medical laboratory at Rafik Hariri University Hospital and maintenance of the negative pressure in the Ebola unit).
- Vaccination of laboratory staff is not mandatory (e.g. for hepatitis or influenza in human laboratories, or rabies at LARI).

P.6.2 Biosafety and biosecurity training and practices

Score 2: Limited capacity. There is in-house training on biosafety at all human health facilities, but more training is needed, including on biosecurity, at all levels to ensure the implementation of standardized protocols at all facilities working with dangerous agents and pathogens, including in animal health laboratories.

Strengths/best practices

- In-house biosafety training for laboratory workers is offered by each facility.
- Biosafety and biosecurity certificates are offered by two universities in Lebanon.

Areas that need strengthening/challenges

- There is no national training programme in biosafety and biosecurity for all laboratories in all sectors.
- Public academic training in biosafety and biosecurity should be made available free of charge to all public professionals to enhance their knowledge and skills.

Relevant documentation

- Guidelines for Licensing Clinical Laboratories.
- Eastern Mediterranean Region Health Laboratory Mapping Tool: Instructions.

Immunization

Introduction

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

Target

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

Lebanon level of capabilities

EPI, a well-established programme since 1987, has shown significant flexibility over the last few years, with its ability to accommodate the influx of over a million Syrian refugees into the country. Its capacity was recently tested when wild polio cases were detected in the Syrian Arab Republic and, with support from the United Nations Children's Fund (UNICEF) and WHO, it conducted multiple campaigns all over the country covering nationals and displaced persons, and achieved very high coverage rates.

The Lebanese EPI currently includes the following vaccines, provided free of charge, in the routine immunization schedule: hepatitis B, polio (inactivated and oral vaccines), diphtheria, *Haemophilus influenzae* type b, pertussis, tetanus, measles, mumps, and rubella; pneumococcal conjugate vaccine (PCV-13) was added to the schedule in 2015. Immunization is mandatory, and close collaboration is in place with the Ministry of Education to ensure immunizations required for preschool entry are met. Work is ongoing to increase awareness among parents about the importance of completing all vaccines recommended by EPI.

The Lebanese EPI provides routine services through a network of 217 primary health care clinics and 650 dispensaries mostly owned by private nongovernmental organizations (NGOs), while the remainder belong to the MoPH and the Ministry of Social Affairs. In addition, more than 1200 paediatricians and a similar number of general practitioners and family doctors vaccinate in their private clinics. The share of the private sector in immunizing the Lebanese population had been estimated at 50%, but this has declined since the influx of refugees and the repetitive outages of many vaccines in the private market over the last few years. In parallel with routine immunization services, many national and subnational immunization days and mass campaigns are organized to move towards the programme's objective of eradicating polio and eliminating measles. The MoPH works closely with the private sector, and has recently established contractual agreements to provide measles and measles/mumps/rubella (MMR) vaccination through the private clinics.

Vaccine coverage data are collected using administrative data from the districts twice a year, in addition to conducting regular monitoring visits and coverage surveys. The country has reported high national coverage rates, i.e. above 90% based on administrative data, although a recent challenge has been the accurate definition of denominators, since refugees/displaced persons in Lebanon are dispersed within the population and have a high mobility based on the availability of employment/services. EPI works closely with its various focal points within mohafazas/qazas (provinces/districts) to get more accurate estimates of the target populations to be vaccinated, both for planning purposes and to estimate coverage rates.

According to WHO estimates, vaccination coverage is lower than the administrative rates, e.g. 79% vs 91% for the first dose of measles-containing vaccine in 2015. A district-level immunization cluster coverage

survey was conducted in June 2016, the results of which will be useful to identify areas with insufficient coverage rates.

The cold chain is monitored regularly through monthly visits, and a cold chain assessment mission was also conducted recently.

With regards to response, suspected cases and outbreaks of measles are reported through the MoPH Epidemiologic Surveillance Unit (ESU) which coordinates closely with EPI. The ESU is in charge of the response for all vaccine preventable diseases (VPDs). Based on the medical centre survey data, between 0–5 measles and 5–15 mumps cases have been detected weekly since the beginning of 2016. In 2014, the incidence of measles was estimated at 4.67 cases per 100 000 persons per year (WHO 2014).

Recommendations for priority actions

- Ensure sufficient resources (in particular staff/surge capacity) to sustain EPI activities especially among displaced populations to prevent outbreaks of VPD.
- Improve population-level vaccination coverage by defining all non- and under-vaccinated populations using appropriate methods such as vaccination and sero-epidemiological surveys.
- Improve cold chain monitoring especially in the private sector.
- Establish a mechanism/national committee for interministerial coordination to support EPI, in particular to improve timeliness and response quality.

Indicators and scores

P.7.1 Vaccine coverage (measles) as part of national programme

Score 4: Demonstrated capacity. Based on administrative data, 90% of the country's 12-month-old population has received at least one dose of measles-containing vaccine. A recent coverage survey may confirm these rates.

Strengths/best practices

- MoPH provides vaccines free of charge to the Lebanese and non-Lebanese populations, and there is strong and active cooperation from the private and NGO sectors in vaccination campaigns.
- Lebanon is able to scale up its activities quickly to cover the large displaced population.
- Regular assessment surveys of vaccination coverage are carried out to respond to the changing denominator due to the high number of displaced and mobile population.
- A national strategy for EPI has been updated and finalized.

Areas that need strengthening/challenges

- Although administrative data show consistently high vaccination coverage, the population level protection against VPDs is uncertain as some non- or under -vaccinated population groups probably exist.
- EPI has limited human resources and is stretched with the current need to cover displaced persons. Significant support is now provided by UNICEF but not for personnel. There is a need to recruit and train additional staff to ensure adequate surge capacity.

P.7.2 National vaccine access and delivery

Score 4: Demonstrated capacity. Vaccine delivery systems are available in over 70% of districts, and there is adequate planning for vaccine procurement, taking into account the estimated additional displaced children that need to be covered.

Strengths/best practices

- Regular monitoring of cold chain capacity is carried out within MoPH supported clinics.
- A centralized vaccine procurement system exists, supported by UNICEF, with no major stock-out situations.

Areas that need strengthening/challenges

- Cold chain monitoring is inadequate, especially in the private sector.
- Depending on the results of the ongoing EPI survey and cold chain assessment, vaccine delivery and outreach services for mobile and displaced persons may need further strengthening.

Relevant documentation

- WHO vaccine preventable diseases monitoring system. 2015 global summary: Lebanon (http://apps.who.int/immunization_monitoring/globalsummary/countries?countrycriteria%5Bcountry%5D%5B%5D=LBN&commit=OK).
- Medical centre surveillance data, 2016.
- WHO estimates for vaccine preventable disease burden: Lebanon.
- Lebanon EPI strategy, 2016.

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.

Veterinary safety in both of animal and food sector is ensured by the ONSSA laboratories, not by the health laboratories.

Target

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

Lebanon level of capabilities

Lebanon's national laboratory capacity is strong, and human resources are highly qualified and well trained. Biosafety and biosecurity systems as well as quality management systems that meet national regulations are well established in facilities such as USJ, Saint Georges Hospital, IRI, and LARI. However the national laboratory system is, to a large extent, disintegrated with each facility working alone. The MoPH has established contractual agreements with main laboratories in the public and private sectors to perform the public health functions of a CPHL. For example, the national influenza and measles laboratories are hosted by Rafik Hariri University Hospital, but none of them are performing viral cell culture, which needs BSL-3 requirements. AUBMC laboratory offers culture for tuberculosis as it complies with BSL-2++ requirements The MoA has two referral laboratories at LARI (certified ISO 17025): a food safety and an animal health laboratory under the direction of the Minister. The animal health laboratory has polymerase chain reaction (PCR) or serology for avian influenza, peste des petits ruminants, blue tongue, rabies, anthrax, and hand, foot and mouth disease. This laboratory is not testing for bovine tuberculosis (M. bovis) and not carrying out viral cell culture. The food laboratory at LARI tests for common foodborne pathogens in food, and the food laboratory at the IRI tests for pathogens and other contaminants in food and water.

The core tests available in Lebanon cover the six IHR-mandatory diseases with adequate detection capacity and SOPs available at the country level, except virus culture for polio. Polio samples are referred to the national polio reference laboratory in Amman, Jordan. Five other core tests (Brucella spp. culture and PCR, Vibrio cholerae culture, H. influenzae type b culture, Listeria monocytogenes culture and hepatitis A serology) have been chosen by Lebanon on the basis of major national public health concern. Various clinics are using point-of-care diagnostics for human immunodeficiency virus (HIV), malaria, and at least one other priority disease (e.g. dengue, hepatitis). A system is in place to transport human specimens to national laboratories throughout the country using dedicated staffing and local courier services. Minimal

quality assurance for hospital-based laboratories is integrated in the national laboratory accreditation and licensing system, although there is no national quality office that oversees quality control and quality assurance following licensure, or coordinates an EQA programme for all laboratories at all levels, including for other sectors.

Recommendations for priority actions

- Establish a national policy for health laboratory services, defining goals and objectives.
- Re-establish the CPHL and establish a well-defined national laboratory network for both animal and human health.
- Develop an EQA programme in Lebanon for all laboratories (particularly for bacteriology and parasitology).
- Initiate a national protocol of inspection and assessment to oversee implementation of the national laboratory standard.
- Allocate more human and financial resources to upgrade and assure the quality of laboratory test results and reports.
- Once a national list of hazardous pathogens has been prepared, assign a "One Public" medical laboratory to store such strains under well-defined biosecurity procedures.
- The SDB can play a role in communicating with private labs and national bodies in the MoPH.

Indicators and scores

D.1.1 Laboratory testing for detection of priority diseases

Score 4: Demonstrated capacity. The national laboratory system is able to conduct more than 5 of the 10 core tests for human health.

Strengths/best practices

- There is laboratory testing capacity for 10 core tests to detect 10 priority human diseases. Specific tests conducted include PCR testing for influenza virus; serology for HIV; microscopy for *M. tuberculosis*; rapid diagnostic testing for Plasmodium spp.; and bacterial culture for *S. enterica* serotype Typhi; Brucella spp. culture and PCR, *V. cholerae* culture, *H. influenzae* type b culture, L. monocytogenes culture and hepatitis A serology. Animal influenza and Brucella testing are available from the animal health laboratory and salmonella testing from the food laboratories.
- Agreements with external reference laboratories ensure further testing is available, such as the agreement with the national polio reference laboratory in Amman, Jordan.
- Laboratories have the required equipment to perform core laboratory tests, and maintenance contracts including preventive maintenance are in place for key equipment in all the main facilities.

Areas that need strengthening/challenges

- There is no national policy for health laboratory services defining goals and objectives.
- Laboratory services for both public and private human health, animal health and the environment function without any linkage, networking, or coordination by a national body.

D.1.2 Specimen referral and transport system

Score 4: Demonstrated capacity. A system is in place to transport specimens to national laboratories from 100% of intermediate level/districts within the country for advanced human health diagnostics.

Strengths/best practices

- A system is in place to transport human specimens to national laboratories from anywhere in the country for advanced diagnostics as well as to outside the country for specialized testing not available in Lebanon.
- Trained staff at surveillance sites for human health and animal health coordinate sample collection in case of emergency and outbreak situations.

Areas that need strengthening/challenges

- National SOPs and guidelines for specimen collection, packaging, and transport are not standardized.

D.1.3 Effective modern point of care and laboratory based diagnostics

Score 3: Developed capacity. Lebanon is proficient in classical diagnostic techniques including bacteriology, serology, and PCR in all referral laboratories in both private and public human health, animal health and environmental laboratories. The country is using HIV and malaria rapid tests in primary health facilities.

Strengths/best practices

- Lebanon is proficient in classical diagnostic techniques including bacteriology, serology and PCR in selected laboratories.

Areas that need strengthening/challenges

- A tier laboratory system with a formalized referral system for human health, animal health and environmental laboratories is not well defined.

D.1.4 Laboratory quality system

Score 3: Developed capacity. A system of licensing of health laboratories under MoPH conforms to national quality standards.

Strengths/best practices

- Two laboratories – IRI and the food safety laboratory at LARI – are certified ISO 17025.
- A licensing process for private and public laboratories exists under the MoPH.

Areas that need strengthening/challenges

- The EQA programme in Lebanon needs to feed down from national reference laboratories to the other laboratories and levels.
- There is insufficient inspection and assessment to oversee implementation of the national laboratory standard.
- There is no national regulatory authority responsible for in vitro diagnostic devices (kits and reagents).
- Specific regulation should be established to clarify the roles and requirements of a laboratory for food and water analyses (microbiology and chemistry tests).

Relevant documentation

- Guideline for laboratory-based surveillance.
- Assessment of the National Health Laboratory System in Lebanon. Beirut, 5–25 May 2016.
- Guidelines for licensing clinical laboratories.

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 sub-national, national and international levels of authority regarding surveillance of events of public health significance; improved country and regional capacity to analyse and link data from and between strengthened, real-time surveillance systems, including interoperable, interconnected electronic reporting systems.This can 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 the OIE standards.

Lebanon level of capabilities

Lebanon has a strong Epidemiological Surveillance Programme at the MoPH. Communicable disease surveillance falls under legislation of 1957. A notifiable disease list comprises 40 diseases/syndromes, and standardized forms are available. This list, prepared in 1996, is reviewed whenever necessary by the National Committee of Communicable Diseases (it was last reviewed in 2014, and a disease added). Of these conditions, 18 have to be reported immediately including any unusual events; the remainder are reported on a weekly basis. Data are generated by all hospitals and health-care units. At least at hospitals, one person is responsible (normally an infection control staff) to review incoming communicable disease cases and send the information using an individual case-based form, normally by fax, to the ESU where the data are entered in the national database. Laboratory information, if available, is also entered. The national database provides automated output on the time, place, and person, including counts and incidence rates. Regular reporting is published on the MoPH website which also offers guidelines and reporting forms.

In parallel, specific surveillance systems include school absences, laboratory surveillance, hospital mortality, intensive care unit acute respiratory infections, and sentinel surveillance for influenza. The event-based surveillance (EBS) system is a new addition and uses community, social media and a hotline to gather information. Community surveillance for acute flaccid paralysis is a good example in this regard. A hotline is also being used by the community to provide outbreak alerts, although most of them relate to foodborne disease events. In the absence of a CPHL, some hospital laboratories are testing different pathogens, while advanced testing of samples is being sent abroad. The Lebanese army provides health-care facilities to around 30 000 active duty personnel and their families and provides information on outbreaks when they cannot be managed by their own staff.

While the central level has a reasonable capacity to assume the requirements of public health, this capacity is very limited at intermediate and peripheral levels. Only three epidemiologists are available for the six provincial levels and none at the 26 districts. Data from facilities come through fax to districts. Depending on the type of surveillance, the information is further passed on by fax or through databases. With the influx of more than 1.5 million refugees, the strain on public health resources has increased and thus requires more human and financial resources.

The ESU in Lebanon is doing more than expected to strengthen the disease surveillance system, although it is severely limited by a shortage of trained field epidemiologists. The JEE team was impressed by the high-quality, detailed documentation available for disease surveillance (e.g. SOPs, guidelines, forms, reports). A multisectoral approach is witnessed by the private sector participation in disease surveillance systems.

Recommendations for priority actions

- Recruit and enhance training in disease surveillance of peripheral-level staff.
- Simplify and integrate reporting mechanisms using a secure electronic system that is interoperable, inter-connected, and real-time.
- Establish a more proactive feedback mechanism to improve completeness and data quality including sharing detailed reports (with comments).
- Accelerate the implementation of EBS, implement an event management system (EMS) and build capacity related to risk assessment of verified alerts.

Indicators and scores

D.2.1 Indicator and event based surveillance systems

Score 4: Demonstrated capacity. Lebanon has a functioning indicator-based surveillance (IBS) system with 40 reportable diseases/syndromes and focal persons at reporting sites. The EBS is relatively new and will require training of all stakeholders.

Strengths/best practices

- The IBS is well established, and the newly established EBS is in place to detect public health threats.
- A standardized form exists for data collection.
- Detailed guidelines and SOPs are available.

Areas that need strengthening/challenges

- The EMS application for timely sharing of alerts is not yet fully implemented.
- The workforce will need training opportunities in both the IBS and EMS systems.

D.2.2 Inter-operable, interconnected, electronic real-time reporting system

Score 2: Limited capacity. Lebanon has multiple disease surveillance systems. However, their integration is in the initial stages and while data input processes being automated, some remain manual.

Strengths/best practices

Public and private laboratories participate in the surveillance system.Areas that need strengthening/ challenges

- Reporting systems are complex and parallel.
- Many conditions/diseases under the surveillance system are beyond regular IBS and even EBS systems.
- Not all data are entered at source.
- Not all MoPH units are linked at central level for real-time surveillance, and MoPH is not fully linked with all hospitals and health facilities.

D.2.3 Analysis of surveillance data

Score 4: Demonstrated capacity. Lebanon has set up a good surveillance system and the ESU team regularly analyses incoming data. Contrary to many countries, all information is available on its website, including updated reports of surveillance data.

Strengths/best practices

- Regular analysis of data is available on the Government website.
- An email list for surveillance reports has been initiated.

Areas that need strengthening/challenges

- Current reports containing pure scientific data should be annotated and explained for a broader audience.
- Training opportunities in disease surveillance should be more readily available for relevant personnel.
- Standard feedback mechanisms for those who collect information should be established.
- Reporting should be systematically shared with the relevant sectors.

D.2.4 Syndromic surveillance systems

Score 4: Demonstrated capacity. Lebanon has a functioning syndromic surveillance system covering many priority diseases.

Strengths/best practices

- Syndromic surveillance is in place for specific priority diseases (e.g. acute flaccid paralysis, severe acute respiratory syndrome, food poisoning).
- There is surveillance for unusual events.

Areas that need strengthening/challenges

- There is no regular system of proactive sharing of surveillance data.
- Peripheral staff do not necessarily understand the significance of their data input.
- Surveillance reports do not target audiences who may be critical for data collection.
- Relevant documentation
- Notifiable communicable disease surveillance guidelines, 2015.
- Notifiable communicable disease reporting form.
- Guidelines for laboratory-based surveillance, 2015.
- Guidelines for intensive care unit-based acute respiratory infection surveillance.
- Guidelines for hospital-based mortality surveillance.
- Guideline for medical centre, dispensary and field medical unit-based surveillance system.
- Measles surveillance guidelines.
- Surveillance reports published by the Ministry of Public Health (www.moph.gov.lb/en/Pages/2/193/epidemiological-surveillance).
- Assessment of the national surveillance system and laboratory capacity in Lebanon (preliminary draft report), 2016.

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.Also, threats related to accidental or deliberate release of chemical, radiological and nuclear agents are of increasing concern. Collaborative multidisciplinary reporting on public health events reduces the risk of diseases and their international spread.

Target

Timely and accurate reporting of public health events according to WHO requirements and consistent coordination with FAO,OIE, IAEA and other relevant international organizations enhances the likelihood of rapid and coordinated response to these public health events, nationally and globally.

Lebanon level of capabilities

The country has designated an IHR NFP, which is operational. The focal points for OIE and INFOSAN are established under the MoA. The IAEA focal point is established under the MoE. The IHR, OIE, INFOSAN and IAEA focal points exchange information related to zoonotic events, foodborne diseases and radiation emergencies, when needed. While this occurs at different administrative levels of the country in practice, it is neither based on written protocols nor supported by an IT platform for the sharing of information. This practice seems to function, although the lack of SOPs affects the timely reporting of public health events.

Assessing the risk of PHEIC comes under the mandate of the CBRN committee. This committee was established to advise on the early detection, assessment and response to chemical, biological, radiological and nuclear events. In addition, a national hazardous materials (HAZMAT) team has been established to assess the risks of public health events of different origins. It is planned to expand the current team of national-level staff to include personnel at different administrative levels.

A ministerial decree has been issued on the use of the decision instrument to support risk assessment and notification of PHEIC, and a system is in place to facilitate the response to PHEIC in a coordinated manner.

Recommendations for priority actions

- Complete established protocols for information exchange on a regular basis between the IHR NFP and FAO, OIE and IAEA contact points.
- Enhance the national capacity for risk assessment of public health events of different origins.
- Expand the scope and functions of the CBRN committee to address environmental hazards in terms of notification, risk assessment and response.
- Ensure sufficient human resources to conduct risk assessments for unknown events.
- Develop SOPs for the joint investigation of public health events among the concerned sectors.
- Conduct simulation exercises to test capacity for early detection, risk assessment and timely (within 24 hours) reporting of events, particularly those related to events of chemical, radiation and unknown origin to WHO through the IHR NFP.

- As far as practicable, provide information to WHO on public health risks occurring in other countries as per IHR Article 9.2.

Indicators and scores

D.4.1 System for efficient reporting to WHO, FAO and OIE

Score 3: Developed capacity. The country has a functioning IHR NFP and FAO, OIE and IAEA focal points. The IHR NFP is represented in different coordination committees and receives all notifications on PHEIC, particularly those related to infectious, zoonotic and foodborne events. However, Lebanon has limited capacity to conduct risk assessments for public health events, including those of unknown origin. Also, notification of potential PHEICs to WHO within the timeframe of 24 hours is not maintained.

Strengths/best practices

- An IHR NFP is defined with links to focal points in FAO, OIE and IAEA with clear ToR.
- National laboratory capacity to confirm some pathogens is available, as well as networking and access to international and reference laboratories for the confirmation of public health events.
- A CBRN Committee that includes representation from relevant sectors is in place with defined ToR, to identify potential PHEIC.
- The country has access to international expertise to assess the risk of public health events of different origins.
- There is strong and direct communication between public health programmes at PoE (e.g. Beirut International Airport) with the MoPH including the IHR NFP to follow up on events detected at the airport.

Areas that need strengthening/challenges

- There are insufficient national human resources to conduct risk assessments of public health events of unknown origin.
- Regular and formal information sharing mechanisms among the IHR, FAO, OIE and IAEA focal points is lacking.
- Limited capacity exists to report PHEICs to WHO within the timeframe of 24 hours.

D.4.2 Reporting network and protocols in country

Score 2: Limited capacity. The country reports potential PHEICs to WHO and OIE for relevant zoonotic diseases. Multisectoral coordination is in place to respond to potential and real PHEICs including at PoEs.

Strengths/best practices

- The IHR NFP is a member of different committees that facilitate sharing and receiving information on public health events occurring in the country.
- Coordination exists among the different stakeholders through national level committees that facilitate discussion and decision-making on public health events occurring in the country or in other countries.
- Transparency is demonstrated by Government information sharing of public health events occurring in the country and of preparedness measures related to public health events of potential importance to the country.
- SOPs for rapid response teams and HAZMAT are defined clearly for specific events, including at PoEs.

Areas that need strengthening/challenges

- The country has no capacity to report potential PHEICs from the Governorate to national level in a timely manner, particularly for events related to non-health sectors.
- More training is required on risk assessment and events to be notified to WHO under IHR (e.g. whether they occur in-country or elsewhere), and the timing of notification, to avoid delay in assessment and reporting.
- Established protocols for the timely reporting of potential PHEIC to WHO and to OIE are not in place; thus the country has no sustainable process for maintaining and improving timely reporting of potential PHEICs.

Relevant documentation

- Ministerial decree on risk assessment and notification of potential PHEIC.
- Terms of reference of CBRN committee and HAZMAT.

Workforce development

Introduction

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

Target

States Parties should have 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).

Lebanon level of capabilities

For the effective implementation of IHR core components, a multisectoral and competent public health workforce must exist. Lebanon has significant public health human resources available from the private sector, including academia, syndicates, and professional orders such as nurses. These human resources from the private sector contribute significantly, and not only provide technical expertise to national technical committees, but also engage in implementation that contributes to research, diagnostics, and surveillance. The availability of private sector public health expertise is particularly advantageous when public sector capacity is unavailable; however, private sector resources pose the problem of continual management of contracts and sustainability.

Multidisciplinary teams and coordination exist at all levels but can be further enhanced, as can cross training between animal and human health.

Currently there is no national FETP in Lebanon. At the regional level, the MoPH is part of MediPIET, an ongoing field epidemiology training programme that accepts two fellows per cohort. Other modes of field epidemiology exist, such as short courses targeting specific diseases for district and provincial levels and surveillance and outbreak investigation.

No formal workforce strategy exists within the MoPH or the MoA. There is no strategy to replace the large number of retiring staff at the MoPH, and poor incentives exist to attract and retain qualified staff. In 2016, a formal request was made to the Civil Servant Board to recruit new technical staff.

Recommendations for priority actions

- Develop a national workforce strategy comprising a plan to recruit and retain qualified staff for the public health workforce at central and peripheral levels, including MoPH, MoA, MoE, and other key stakeholders. Focus needs to be placed on creating incentive packages for the public sector.
- Maintain participation in regional and international applied epidemiology activities.
- Encourage engagement in the MediPIET regional programme and continue conducting on-the-job training and periodic refresher training for existing staff.
- Develop a national advanced two-year FETP for MoPH and MoA staff.
- Explore training programmes specific to professions such as, nurses, veterinarians, and laboratorians.

Indicators and scores

D.4.1 Human resources are available to implement IHR core capacity requirements

Score 2: Limited capacity. The country has multidisciplinary human resource capacity at the national level, but not at the peripheral level. Many personnel go to the private sector leading to weak sustainability, and the quantity of trained field epidemiologists is low.

Strengths/best practices

- The national (central) level has a robust and qualified staff in both animal and human health services (e.g. epidemiologists, veterinarians, clinicians and laboratory specialists or technicians).
- There is good multidisciplinary human resource capacity at the mohafaza level and a qualified cadre of public health field epidemiologists.
- Significant human resources from the private sector can be engaged when capacity is not available from the public sector.

Areas that need strengthening/challenges

- The number of qualified field epidemiologists is low, especially at the peripheral level.
- Engagement of veterinarians and other specific profiles is low, as are their technical capacities.
- Many human resources come from the private sector, and therefore sustainability is weak.

D.4.2 Applied epidemiology training programme in place such as FETP

Score 2: Limited capacity. Although no national FETP exists, regional training is delivered through MediPIET. Short courses on field epidemiology are offered at district and provincial levels, but there is no consistency or follow-up.

Strengths/best practices

- MediPIET provides field epidemiology training at the regional level and has enrolled four fellows (two per cohort) since its existence since 2012. All are MoPH staff, as MoA has not been engaged in this training.
- Agencies such as WHO, the Eastern Mediterranean Public Health Network (EMPHNET), and the European Centre for Disease Prevention and Control (ECDC) provide short courses that focus on specific diseases for district and provincial levels.

Areas that need strengthening/challenges

- Current training for MoPH staff should be extended to include MoA staff, and an advanced two-year FETP programme should be available for staff of both ministries.
- Although the MediPIET programme provides solid field epidemiology training, the rate of graduates is slow.
- Short courses on field epidemiology, such as surveillance and outbreak investigation for district and provincial staff, should entail consistent follow-up.
- Participation in regional and international applied epidemiology activities should be enhanced.

D.4.3 Workforce strategy

Score 1: No capacity. Lebanon needs to develop a workforce strategy to build a qualified and sustainable public health workforce, taking into account the current ageing workforce of the MoPH and their annual contracts.

Strengths/best practices

- In 2016, a proactive formal request was submitted to the Civil Servant Board to recruit new technical staff.
- The Government has reached out to the private sector to ensure that public health needs are met.

Areas that need strengthening/challenges

- A formal workforce development strategy is non-existent.
- Many public health graduates leave Lebanon to work or continue their academic studies abroad. This is due to poor incentives and low salaries for public health staff (the national reform on salaries was suspended).
- MoPH has an ageing staff, 30% of which are technical, with impending retirement and no plans for replacement are in place.
- Most MoPH staff are contracted with annual renewal.

Relevant documentation

- National Health Statistical Report in Lebanon.

RESPONSE

Preparedness

Introduction

Preparedness includes the development and maintenance of national, intermediate and community/primary response level public health emergency response plans for relevant biological, chemical, radiological and nuclear hazards. Other components of preparedness include mapping of potential hazards, the identification and maintenances of available resources, including national stockpiles and the capacity to support operations at the intermediate and community/primary response levels during a public health emergency.

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.

Lebanon level of capabilities

Lebanon has developed a certain level of capacity, as required under the IHR 2005, to enhance public health preparedness and planning for PHEIC. Managing outbreaks of cholera and other diseases such as influenza, and scaling up the capacity for Ebola created the momentum to strengthen capacity for small- to large-scale public health emergencies. Lebanon has developed a baseline national plan for emergency preparedness and response. However, the plan was not based on comprehensive hazard and capacity analysis. All IHR-related hazards were not included in the plan. The plan only alludes to the health sector capacity but does not encompass other sectors (including the private sector) or plans of partners such as the Red Cross Red Crescent. However, national ability to respond at different levels to incidents and events is demonstrated through well-developed contingency plans for diseases such as cholera, Ebola, and MERS-CoV. The plans of MoPH are not linked with those developed by other stakeholders such as the Red Crescent, the FAO, and hospitals, including private ones.

Lebanon needs to review existing plans, update its national profile of threats/hazards, and accordingly develop a comprehensive national public health plan for preparedness and response to potential hazards/threats, including at PoE with SOP to implement the plan. The plan should link to other sector/partner plans including for logistics, workforce and financial resources. It should also reflect surge capacity and the ability to expand its response operations efficiently to all priority PHEIC, when needed.

The national plan should be tested through multisectoral simulation exercises and modified accordingly. Further, through a defined stakeholder analysis process, and given adequate resources, the plan should be reviewed regularly based on a national and international risk profile that is continually reviewed and updated to accommodate emerging threats.

Recommendations for priority actions

- Review existing national and contingency plans to identify the gaps in planning and broaden the spectrum to include all IHR-related hazards.
- Expand the scope of the national plan, linking stakeholder plans to ensure improved coordination, collaboration and communication. Include the private sector with delegated tasks, clear roles, and functions in emergency and disaster management and simulation.
- Conduct a comprehensive stakeholder analysis to assess the most updated information on available resources/capacities in the country's health sector.
- Strengthen and update the existing database with all information of capacities that would provide an evidence-base in planning.
- Identify training needs, training institutions, and standardization of training based on a needs assessment, with the aim of harmonizing the workforce development process.

Indicators and scores

R.1.1 Multi-hazard National Public Health Emergency Preparedness and Response Plan is developed and implemented

Score 2: Limited capacity. The country demonstrates a certain level of capacity, which lacks sustainability, as a comprehensive plan is yet to be developed, shared, and simulated with all stakeholders.

Strengths/best practices

- A national baseline plan exists for public health emergency preparedness including CBRN.
- Contingency plans for Ebola, cholera, pandemic influenza, and polio are in place.
- Other contingency plans have been developed by stakeholders: Red Cross, FAO, and hospitals (e.g. Saint Georges).

Areas that need strengthening/challenges

- A comprehensive national public health emergency response preparedness plan and related SOPs is lacking.
- Not all IHR-related hazards are included.
- No systematic capacity development exists for the workforce.

R.1.2 Priority public health risks and resources are mapped and utilized

Score 2: Limited capacity. National resources have been mapped (logistics, experts, finance, etc.) for a few IHR-relevant hazards and priority risks. A plan for management and distribution of national stockpiles is not in place.

Strengths/best practices

- A reactive public health risk and resource mapping for any international defined risk is done.
- An assessment has been conducted for selective risks such as cholera. For each active selected risk, all available resources to respond at all levels have been mapped and linked to the contingency plan.
- National HAZMAT teams have been developed in selected areas.

Areas that need strengthening/challenges

- No comprehensive stakeholder analysis done has been done to identify the available resources that can be mapped and linked to the emergency response plan.
- Risk assessment and mapping have not been done for all IHR-related hazards.
- There is no comprehensive plan for stockpiling and resource distribution.

Relevant documentation

- Presentation of the current situation by MoPH.
- Presentation by Prime Minister's office.
- Presentation by Red Crescent on Ebola contingency procedures.
- National emergency plan and contingency plans for cholera, Ebola, pandemic influenza, and polio.
- National plan for emergency preparedness and response.
- Lebanon country profile.

Emergency response operations

Introduction

A public health emergency operations center (EOC) is a central location for coordinating operational information and resources for strategic management of public health emergencies and emergency exercises. EOCs 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

Countries will have a public health Emergency Operation Center (EOC) functioning according to minimum common standards; maintaining trained, functioning, multi-sectoral rapid response teams and "real-time" biosurveillance laboratory networks and information systems; and trained EOC staff capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency.

Lebanon level of capabilities

Lebanon has demonstrated its response to public health emergencies through contingency plans for specific epidemic and pandemic hazards. However, although the MoPH has a framework for emergency response, a comprehensive national plan for this – involving all stakeholders, communities and partners, especially the private sector – is lacking. Some hospitals, private and public, do have their own fully integrated and tested emergency procedures, but they are not part of the country's overall public health emergency response mechanism. Lebanon has prepared some risk mapping, mainly for natural disasters and communicable diseases, and resource mapping for health facilities and the workforce. Resources include the stockpiling of personal protective equipment and selective antidotes that need to be improved following a risk assessment.

Lebanon has had a national EOC since 2007. It is a well-structured centre in terms of physical facilities within the Rafik Hariri University Hospital. Information on site revealed that the EOC has never been activated since its inception and is not linked to the country's emergency response mechanism and plans. The EOC has no SOPs or designated technical staff, except IT staff to maintain the technological infrastructure. The EOC has enormous potential in the event of an emergency should it be located/used by the MoPH. The EOC is currently expanding to collect first-hand information from the field and to act as a backup repository.

Another EOC is located at the level of the Prime Minister's Office; It seems that command control and coordination are two major issues in responding to any public health event in Lebanon due to a lack of comprehensive planning and SOPs. Linkages between the two EOCs could strengthen coordination and communication between key stakeholders across sectors. Strengthening EOC capacity at national and subnational levels will further enhance information flow and improve coordination.

Recommendations for priority actions

- Conduct regular reviews and updates of the emergency response plans including hospitals (public/private).
- Develop a communication strategy to share and disseminate the plans among key stakeholders.
- Develop/review SOPs to operationalize the plans at all levels.
- Conduct a simulation involving key stakeholders.

- Expand risk assessments to include all IHR-related hazards.

Indicators and scores

R.2.1 Capacity to activate emergency operations

Score 2: Limited capacity. While EOC IT staff are available, the EOC is not staffed with technical personnel to perform public health emergency response operations.

Strengths/best practices

- The physical structure of the EOC is of a good standard. EOC IT staff are trained and there is a plan to expand EOC functions to collect first-hand information (disease data) with a backup system.

Areas that need strengthening/challenges

- The EOC is not in operation due to lack of SOPs, plans or technical staff to run emergency health responses.
- The team is trained on technological maintenance rather than on public health emergency response.
- The Centre is not linked to the emergency response mechanisms of the country including an Incident Management System (IMS).

R.2.2 Emergency Operations Centre operating procedures and plans

Score 2: Limited capacity. EOC structural facilities are in place but the functionality of EOC in the event of a public health emergency response is yet to be developed through plans and procedures.

Strengths/best practices

- The EOC has the plans/procedures for IT and infrastructure management, which describe the maintenance of the key structural and functional elements for the EOC.

Areas that need strengthening/challenges

- There is a need for standardized SOPs to enhance the functionality of the EOC for public health response.
- A strategic plan to link the EOC to emergency response operations is lacking, as the EOC should be a core attribute to the IMS of the country's health sector emergency response.

R.2.3 Emergency operations programme

Score 1: No capacity. The EOC is not part of any simulation/drill due to the absence of a comprehensive emergency response plan and procedures.

Strengths/best practices

- EOC plans/procedures and its communications system have been proven functional.

Areas that need strengthening/challenges

- The EOC is not part of any emergency response simulation. This very sophisticated structure needs to be technically functional as one of the attributes of IMS to run public health emergency operations.

R.2.4 Case management procedures are implemented for IHR relevant hazards

Score 3: Developed capacity. Case management guidelines for specific (but not all) IHR-related hazards are developed. SOPs supporting the case management further need to be updated based on a real-time simulation.

Strengths/best practices

- Case management guidelines are in place for specific events (e.g. epidemics) including for the management and transport of potentially infectious patients in the community and at PoE.
- The country has the capacity for referral and transport of patients with an infectious disease or contaminated with chemical or radiation hazards, including laboratory samples.

Areas that need strengthening/challenges

- Case management guidelines are not available for all IHR-related hazards based on real-time experience.

Relevant documentation

- Presentation of MoPH, Saint Georges hospital.
- EOC site visit.
- National emergency response framework.
- All existing contingency plans.

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 in order to minimize loss of life, or injury, and for optimal public safety and security.

Target

In the event of a biological, chemical or radiation event of suspected or confirmed deliberate origin, a country will be able to conduct a rapid, multi-sectoral response, including the capacity to link public health and law enforcement, and to provide and/or request effective and timely international assistance, including to investigate alleged use events.

Lebanon level of capabilities

The National Supreme Commission for Relief was established by a ministerial decree to support and coordinate the response to public health events that occur in the country. The Commission includes members at ministerial level and is led by the Prime Minister.

The CBRN Committee was also established by ministerial decree in 2009 with the same objectives. It has high level representatives from the MoPH, MoA, MoE, Ministry of Interior, Ministry of Energy and Water, Civil Defence, the military, national and internal security, customs, Lebanese Agency for Radiation Energy, and the Lebanese Red Crescent Society. Representatives from other sectors are invited to meetings of the CBRN, as needed. The CBRN meets regularly and on an ad hoc basis to share information and take decisions related to events occurring in the country, including public health events. The concerned sectors take the lead in the response to events in coordination with the other sectors.

A mapping of hazards has not been conducted in the country. However, a national plan for emergency preparedness and response is in place, based on existing sector plans. The plan includes the roles and responsibilities of each sector, triggers to activate and deactivate the plan, and SOPs for its implementation. Drill exercises are conducted regularly to test the functionality of the plan. Each governorate is currently developing its own plan, based on the national plan, but tailored to the governorate.

Lebanon has a large expatriate community living in Ebola-affected countries, who periodically returned to Lebanon during the epidemic. An H5N1 influenza outbreak also occurred recently in poultry. These events necessitated multisectoral preparedness and response measures involving both national and international stakeholders. The engagement of national security, internal security and the army was substantial.

Within the structure of the Government, the public and animal health systems at all levels are able to request the support of law enforcement agencies to assist with managing a health event or hazard through the CBRN or the Supreme Commission for Relief. The army, and internal and national security, would liaise with the MoPH and other sectors in the response to events that might have health components.

Generic protocols, e.g. SOPs to accelerate the coordination needed for a prompt and appropriate response to potential events are not in place. However, event-specific SOPs exist including for disease outbreaks, events at PoE and food contamination. Much effort is ongoing to develop generic protocols that can be used for different types of events.

Recommendations for priority actions

- Finalize governorate contingency plans for preparedness and response for public health events.
- Ensure accessibility of plans by personnel responsible for ground operations.
- Initiate the development of SOPs for joint investigation and response between the public health and security sectors.
- Involve the MoPH in current discussions/projects with common border forces in order to control the movement of passengers/goods through unofficial ground crossings.

Indicators and scores

R.3.1 Public health and security authorities (e.g. law enforcement, border control, customs) are linked during a suspected or confirmed biological event

Score 4: Demonstrated capacity. The Supreme Commission for Relief led by the Office of the Prime Minister coordinates the response to major events, including public health events. The Commission acts with full power and authority with high level representation from several sectors with defined ToR. Information sharing between the health and security sectors is based on the risk assessment approach for each event. The sharing of information and the support of the security sector in the response has been tested through real-life exercises.

Strengths/best practices

- A national plan for preparedness and response is in place with defined roles and responsibilities.
- The Supreme Commission of Relief coordinates the response to events of national and international concern, and includes senior level representation from the different sectors.
- The CBRN Committee is used as a platform to share information related to public health events that occur in the country or other countries, although not in a timely manner. CBRN, with the support of the HAZMAT team, assesses risks and identifies the response measures to be implemented by the relevant sectors.
- The national system and structure of the country enables the civil government to call in the security sector to assist in implementing public health measures to respond to public health events. This has been tested though real-life examples, such as during the H5N1 avian influenza and Ebola events.

Areas that need strengthening/challenges

- Formal triggers and SOPs for notification and information sharing are not in place; however, notification and information sharing between the health and security sectors is carried out based on the risk assessment approach for each event. This may delay the timely sharing of information.
- Joint training between the different sectors including law enforcement and security needs further enforcement.

Relevant documentation

- Terms of reference and structure of the Supreme Commission for Relief.
- Terms of reference and structure of the CBRN Committee.
- National plan for preparedness and response to all hazards.
- Terms of reference for the HAZMAT team.

Medical countermeasures and personnel deployment

Introduction

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

Target

A national framework for transferring (sending and receiving) medical countermeasures and public health and medical personnel among international partners during public health emergencies.

Lebanon level of capabilities

Lebanon has demonstrated and tested capacity of the MCM deployment system during public health emergencies in the country in the past. Capacity has also been demonstrated and tested for systems for deployment of health personnel, with documented agreements on the sending and receiving criteria and procedures, particularly as part of the WHO Global Outbreak Alert and Response Network (GOARN).

Multisectoral dynamic procedures that support MCM and personnel deployment have the necessary legal and regulatory processes and functional 'practices' to mobilize and receive medical personnel during emergencies. However, these practices need to be integrated in a comprehensive plan with clear SOPs, including decision-making processes related to sending and receiving MCM during public health emergencies. This plan should be included in the comprehensive multi-hazard multisectoral public health emergency preparedness plan and other contingency plans for specific IHR hazards. It should include flow charts, memoranda of understanding, agreements with organizations, manufacturers or distributors and other stakeholders to deploy personnel and/or MCM and during any priority risk public health emergency.

The country also has a fully functioning warehouse in Beirut. It may be efficient to establish such warehouses in other locations, based on a risk assessment.

Lebanon strong networks with other public health entities in the region including EMPHNET and ECDC.

Recommendations for priority actions

- Develop a MoPH plan, including partners, to mobilize MCM and international public health deployment (sending and receiving).
- Develop SOPs to facilitate national/international deployment.
- Strengthen/incorporate a comprehensive plan and SOPs for the replenishment and distribution of stockpiles.

Indicators and scores

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

Score 2: Limited capacity. Some procedures for mobilizing MCM have been incorporated within the contingency plans of specific hazards, which are tested. However, a well written plan to sustain existing practices is needed.

Strengths/best practices

- Lebanon has demonstrated and tested experience in deploying MCM based on functioning practices.

Areas that need strengthening/challenges

Lebanon has no written comprehensive national plan to support and sustain the existing practices of mobilizing MCM.

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

Score 5: Sustainable capacity. There are memoranda of understanding and procedures to deploy and receive medical personnel in the country.

Strengths/best practices

- Lebanon participates in a regional/international partnership and has formal agreements with GOARN, EMPHNET and ECDC that outline criteria and procedures for sending and receiving health personnel.
- Lebanon participated in an exercise or response within the past year to practice deployment and receipt of health personnel.
- The deployment of personnel procedures are incorporated in the contingency plans of specific hazards such as epidemics.

Areas that need strengthening/challenges

- Existing agreements and/or networks for international response for health staff or expertise do not support the deployment capability of the MoPH, and do not include all relevant partners.
- Existing SOPs to mobilize personnel are not aligned with current policy and practice of national and international partners, which affects the timely deployment of personnel.

Relevant documentation

- Presentation of MoPH.
- Medical countermeasures and health personnel deployment procedure.
- Contingency plans for specific hazards in which the deployment of personnel and medical countermeasures were incorporated.

Risk communication

Introduction

Risk communications should be a multi-level and multi-faceted 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 outbreaks of diseases. 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, as well as 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 the 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 need to be tested and updated as needed.

Target

States Parties should have risk communication capacity which is multi-level and multi-faceted real time exchange of information, advice and opinion between experts and officials or people who face a threat or hazard to their survival, health or economic or social well-being so that they can take informed decisions to mitigate the effects of the threat or hazard and take protective and preventive action. It includes a mix of communication and engagement strategies like media and social media communication, mass awareness campaigns, health promotion, social mobilization, stakeholder engagement and community engagement.

Lebanon level of capabilities

At the national level, a Communication Plan for Crisis Management is coordinated by the Office of the Prime Minister, although the plan needs to be communicated to all stakeholders. Communication occurs on an ad hoc basis, particularly for health emergencies. There is no dedicated department for communication in the MoPH and the Department of Public Relations and Health Education is under the Directorate of Preventive Health Care. The two dedicated staff in the unit, one professional and one support staff, have no dedicated funding and shortages of basic equipment like a photocopier exist. Media communication, including press releases and public announcements, are issued by the advisor to the Minister of Public Health. The designated spokesmen are the Minister or the Director General of Health. A team has been established under the Director General of Health to assume responsibility for the MoPH website and social media accounts, including mobile phone applications. A telephone hotline, initially established to receive complaints related to health services, is now being used for community-based surveillance and to provide health advice. The hotline is operated by the private sector. There is no dedicated team working on communication or health education at the subnational or local levels.

Lebanon has a media law for public causes which allows state bodies, including the MoPH, free access to airing short public service announcements through the nation's television channels.

Recommendations for priority actions

- Institutionalize risk communication by increasing the capacity and coordination of various groups working on health education, media relations and social media, to enable the MoPH to build a core team for risk communication for health emergencies.

- Conduct risk communication training for senior MoPH staff at the central and subnational levels.
- Train media personnel on health reporting and on reporting during health emergencies.

Indicators and scores

R.5.1 Risk communication systems (plans, mechanisms, etc.)

Score 2: Limited capacity. A communication plan for crisis management at the national level exists under the Emergency Response Framework, coordinated by the Office of the Prime Minster. However, this plan has not been widely shared with key stakeholders. Communication for health emergencies occurs on an ad hoc basis. Infrastructure for risk communication exists, but is fragmented and short of staff, equipment, and budget to carry out the necessary activities in a sustained manner.

Strengths/best practices

- Within the MoPH, the Department of Public Relations and Health Education is responsible for routine risk communication, while media relations are the remit of the Communication Advisor to the Minister of Health. The MoPH recently established a website and social media accounts, including Facebook and mobile phone applications in Arabic and English, managed by a team of technicians under the Director General of Health.

Areas that need strengthening/challenges

- Risk communication work is carried out in a fragmented manner by different departments and individuals on an ad hoc basis. There is no designated department or individual responsible for risk communication for health emergencies. The MoPH lacks staff, and only two deal with national-level health promotion campaigns for routine events.
- At the subnational and local level, a major challenge is the lack of a communication or health promotion focal point to implement national policies.
- Although NGOs and the private sector play a key role in health service delivery, they are not involved in health promotion or communication activities of the MoPH.

R.5.2 Internal and partner communication and coordination

Score 2: Limited capacity. Communication coordination for health emergencies is carried out on an ad hoc basis, depending on needs.

Strengths/best practices

- A systematic coordination mechanism could be facilitated by the National Emergency Response Framework under the Office of the Prime Minister, with multiple sectors and stakeholders. Coordination between the animal and human health sectors was demonstrated in the recent H5N1 outbreak where a joint press conference was immediately held following confirmation of the outbreak. This was only possible, however, due to personal relations between the staff responsible. Since there is high staff turnover, a formalized coordination mechanism is essential, including with other ministries and stakeholders who may be involved in risk communication work for health emergencies.

Areas that need strengthening/challenges

- A formal communication coordination mechanism for health emergencies is needed at the national or subnational level.
- Communication within the Prime Minister's Office for national crises should be formally established. The draft communication plan should be shared with all concerned stakeholders.

R.5.3 Public communication

Score 3: Developed capacity. Lebanon's media is governed by a law that obliges them to provide free television time for short public service announcements for public causes. This is one of the main channels used by the MoPH to provide health messages on routine health campaigns and can be leveraged for health emergencies. The communication advisor in the Cabinet of the Health Minister is responsible for media relations; the spokesmen for the MoPH are the Minister or the Director General.

Strengths/best practices

- The MoPH recently launched a website in Arabic and English, a Facebook page and a mobile phone application. A dedicated health hotline is also operated by a private company. These channels are great opportunities for dissemination of information and can be used to obtain feedback on public concerns.

Areas that need strengthening/challenges

- Public communication is carried out in a reactive manner, mainly in response to media or public concern or to a specific situation. The MoPH has strong relations with the media who cover health on a regular basis and this should be leveraged to provide a better understanding on public health issues, especially emergencies.

R.5.4 Communication engagement with affected communities

Score 1: No capacity. Due to limited resources and capacity to deal with communication and health education, activities are carried out mainly at the central level with no arrangement to systematically engage populations at the community level for health emergencies. Advocacy campaigns are carried out for areas of public health such as maternal and child health, and immunization.

Strengths/best practices

- Communication platforms exist with populations at community level for routine public health work.

Areas that need strengthening/challenges

- Communication engagement with populations at community level is crucial and requires dedicated resources.
- Existing platforms for communication with communities should be explored for risk communication for health emergencies. Community health workers could play a critical role in this area of work.

R.5.5 Dynamic listening and rumour management

Score 3: Developed capacity. Communication surveillance occurs through the telephone hotline operated by the private sector. The MoPH receives feedback on a weekly basis from the hotline operating company on public concerns and, at the same time, uses the channel to clarify information and concerns. Discussions on social media are also monitored, albeit on an ad hoc basis.

Strengths/best practices

- In 2015, the Minister of Health held a press conference to address the garbage crisis concerns of a post on the MoPH Facebook page. This received positive feedback from the media and from the public at large.
- The telephone hotline requires dedicated staff and time and, due to shortage of staff in the MoPH, this function is outsourced to the private sector, which provides the MoPH with reports on a regular basis.

Areas that need strengthening/challenges

- Although the MoPH monitors the media and social media and obtains feedback from those who call the hotline, there is no systematic analysis and evaluation of health messages and interventions. For example, a perception survey or knowledge, attitudes and practices (KAP) survey would help to tailor communication to meet the needs and expectations of the public.

Relevant documentation

- SOPs for surveillance and response.
- Country self-assessment.
- WHO Country Cooperation Strategy.
- National Health Information System.

OTHER IHR-RELATED HAZARDS

Points of entry

Introduction

All core capacities and potential hazards management 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 the core capacities at the 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 should designate and maintain the core capacities at the international airports and ports (and where justified for public health reasons, a State Party may designate ground crossings) which implement specific public health measures required to manage a variety of public health risks.

Lebanon level of capabilities

Lebanon lies at the eastern end of the Mediterranean Sea, north of Israel and west of the Syrian Arab Republic. It encompasses 15 civilian PoE: one airport, nine seaports and five ground crossings. Quarantine centres, under the General Directorate of Public Health through the Service of Preventive Medicine, make up the "competent authority". Linkage between the MoPH competent authority and the national surveillance system is functioning, and the former can reach out to the IHR NFP whenever needed.

Yellow fever, as well as quadrivalent meningococcal ACYW-135 vaccine, are administered free of charge at PoEs. Furthermore, all nine civilian seaports are "authorized" to the extent that they can issue Ship Sanitation Control Certificates, Ship Sanitation Control Exemption Certificates, and extension of Ship Sanitation Certificates. The simultaneous designation of all 15 PoE may scatter resources, while narrowing their number would allow an optimization of human resources as well as the technical means and equipment allocated. It would seem customized training for public health staff at PoE would enhance their knowledge of aviation and the maritime environment and improve their skills in relevant areas such infection control and surveillance.

Recommendations for priority actions

- Establish a functioning and sustained vector surveillance plan.
- Reconsider the number of designated PoE according to resource allocation, coupled with enhanced coordination between the competent authority and other relevant stakeholders.
- Implement membership of the competent authority as part of the airport/port committee/EOC.
- Validate the public health emergency contingency plan within the ports/ airports emergency plan.
- Customize training for public health staff in PoE according to their specific needs.

Indicators and scores

PoE.1 Routine capacities are established at PoE

Score 3: Developed capacity. To reach Capacity level 4, Lebanon should establish a functioning programme for the control of vectors and reservoirs in and near PoEs. This programme should include a routine surveillance plan as well as the establishment of an emergency surveillance plan for rapid action.

Strengths/best practices

- An adequate medical service is available, made up of two units, one dedicated to first aid and health care, the other performing epidemiology-related activities, e.g. monitoring potentially imported communicable disease, vaccine administration, conveyance inspection, coffin clearances and food safety.
- The Lebanese Red Cross ensures the transport of ill travellers to appropriate medical facilities.
- All nine civilian seaports are declared "authorized" in compliance with IHR article 20.

Areas that need strengthening/challenges

- The airport/port committees (chaired by the airport/port authority) remain a privileged space for all partners and stakeholders involved directly in related activities to share information and follow day-to-day matters whatever their nature. However, the MoPH competent authority is not a member of these committees.
- The airport/port authority is responsible for the management of liquid and solid waste, potable water quality monitoring and testing, and vector control. However, mechanisms for supervision of these activities by the competent authority are unclear.
- There is no adherence to the Aircraft General Declaration regarding flights from endemic countries.

PoE.2 Effective public health response at points of entry

Score 2: Limited capacity. Besides a public health emergency contingency plan pending validation, facilities exist to assess potentially contaminated/infected travellers and animals either onsite or through liaison with local public health services. Furthermore, there is a reliable system for referral and safe transfer of ill travellers to appropriate medical facilities.

Strengths/best practices

- Ebola SOPs were designed and tested during the 2014–2016 outbreak.
- Thermal devices and conduct of entry and exit screening for arriving and departing travellers is available.
- Personal protective equipment is available for both personnel and travellers.

Areas that need strengthening/challenges

- The EOC, whose mission is to handle any emergency incidents that arise at airports/ports, does not include the competent authority as a permanent and full member.
- The emergency contingency plan has not been finalized or validated by the public health authority or by all relevant stakeholders.
- The emergency contingency plan is not incorporated within the airport/port emergency plan.
- The emergency contingency plan has not been tested by a top-table or full-scale exercise on a regular basis.

Relevant documentation

- WHO/EMRO Ebola virus disease/Preparedness and response assessment mission report, December 2014.
- Ministerial Decree to create the IHR technical committee.
- Ministerial Decision N°65/2012 regarding public health emergencies of international concern.
- National mission assessment for core capacity requirements for designated airports, ports and ground-crossings according to IHR (2005), June 2009.
- IHR authorized ports to issue Ship Sanitation Certificates, www.who.int/ihr/ports_airports/portslanding/en/.

Chemical events

Introduction

Prevention of uncontrolled hazardous chemical events posing a significant threat to public health, service sectors and infrastructure requires timely mobilization of a coordinated multi-agency response. The State parties are therefore required to have surveillance and response capacity for chemical risk or events through effective communication and collaboration among the sectors responsible for chemical safety, industries, transportation and safe disposal including health protection.

Target

States Parties should have surveillance and response capacity for chemical risk or events which requires effective communication and collaboration among the sectors responsible for chemical safety, industries, transportation and safe disposal.

Lebanon level of capabilities

Lebanon has some surveillance and response capacity for chemical risks or events. The emergency preparedness plans established are described in more detail in previous sections of this report. In order to strengthen capacity to detect, respond to, and manage different types of chemical events within in the country, a national strategic plan needs to include a chemical profile and establish a functioning mechanism, with SOPs, for multisectoral collaboration on chemical events that includes all relevant sectors, with sufficient human and financial resources to support capacity development.

Medical capability within the country is available to respond to chemical events. Awareness training has been provided to front line responders (e.g. civil defence, fire fighters, and public health). Training is also provided by other sectors and partners such as the military and the Red Cross. There is a need to build on existing capability to support the detection and response to chemical events and provide regular training for referral hospitals.

Some surveillance systems are in place to detect chemical events. In 2015, cases of unusual illness associated with exposure to chemicals were detected by the MoPH. There is no designated National Poisons Control Centre in Lebanon, although the Toxicology Laboratory at USJ provides a poisons information service 24/7 by telephone to the general public and medical professions. Capacity for surveillance of chemical events should be strengthened and coordination between agencies increased to support the timely and systematic exchange of information.

Lebanon faces a variety of environmental health challenges resulting from years of war and conflict, which have had an adverse impact on its land, air and water quality. These are described in the Health and Environmental Strategy, National Framework 2016–21. Lebanon has ratified a number of international chemical conventions/ agreements, demonstrating a commitment to chemical safety. However, a strong implementation infrastructure is required to manage chemical safety through its life cycle. While some laboratory capacity is available for the analysis of chemical and environmental monitoring on an ad hoc basis, the human and financial resources required to meet the needs for chemical safety are insufficient.

Recommendations for priority actions

- Initiate and develop a national strategic plan for chemicals to include a chemical profile:
  - evaluate chemical hazards, assess risks, and communicate this information to relevant decision-makers;

- develop and implement SOPs to operationalize plans and arrangements;
- conduct simulation exercises, taking account of the different types of chemical events.

- Designate and adequately resource a National Poison Control Centre:
  - promote these capabilities; map surveillance capacity and make it available to all relevant stakeholders;
  - develop a list of antidotes and define a mechanism to secure this resource within the MCM comprehensive plan.
- Identify requirements for technical expertise and workforce training needs.

Indicators and scores

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

Score 2: Limited capacity. Guidelines or manuals on the surveillance, assessment and management of chemical events, intoxications and poisonings are available. However, no national strategic plan or profile for chemicals exists. Some capacity exists within organizations and agencies to detect and respond to chemical events, e.g. at MoPH and USJ. There is scope to build on current capacity to support the timely and systematic exchange of information between key agencies and stakeholders to support the detection and response to chemical events.

Strengths/best practices

- Surveillance is undertaken by MoPH, although the mechanism is not fully documented.
- The toxicology laboratory at USJ provides advice 24/7 to the medical profession and the public on poisoning and intoxications.
- A medical response team has been trained to respond to chemical events and equipped with personal protective equipment. Training is provided by a number of stakeholders.

Areas that need strengthening/challenges

- Surveillance and detection mechanisms for chemical events are not well coordinated.
- There is no National Poison Control Centre. The toxicology laboratory at the USJ, which provides advice on poisoning and intoxications, is inadequately resourced.
- There is no defined list of antidotes, and arrangements to secure this resource are not included in the MCM plan.
- There is insufficient training available for those involved in the detection and response to chemical events.
- There is no national strategic plan for chemicals or a functioning mechanism, with SOPs, to operationalize plans and arrangements for multisectoral collaboration on chemical events.

CE.2 Enabling environment is in place for management of chemical events

Score 4: Demonstrated capacity. National arrangements are in place to respond to public health threats of international concern, and mechanisms to respond to chemical events have been tested through actual events. However, there is no national strategic plan or profile for chemicals.

Strengths/best practices

- Chemical events have been detected and response arrangements tested in real events.
- The CBRN national response plan provides a mechanism for multisectoral collaboration for chemical events.

Areas that need strengthening/challenges

- A national strategic plan for chemicals should be developed, including full technical and financial resources.
- SOPs are needed to operationalize plans and multisectoral collaboration on chemical events.
- Simulation exercises should be conducted to test the response and management of different types of chemical events.

Relevant documentation

- Presentation of the current situation by MoE, MoPH, USJ.
- International conventions and agreements.
- National plan for emergency preparedness and response.
- Health and Environmental Strategy, National Framework 2016–21.
- Site visits to Toxicology Laboratory (USJ); Saint Georges Hospital; EOC.
- Lebanon country profile.

Radiation emergencies

Introduction

State parties should have surveillance and response capacity for radio-nuclear hazards/events/emergencies. It requires effective communication and collaboration among the sectors responsible for radio-nuclear management.

Target

States Parties should have surveillance and response capacity for radio-nuclear hazards/events/emergencies. It requires effective communication and collaboration among the sectors responsible for radio-nuclear management.

Lebanon level of capabilities

The Lebanese Atomic Energy Commission (LAEC), designated in 1996 by Regulatory Decree 15512/2005, is the national regulatory and control authority for all practices dealing with ionizing radiation (import, export, use, decommissioning, safe transport, waste, register, environmental monitoring, issuance of regulations, and cooperation). It carries out scientific examination and assessment of all matters related to ionizing radiation, and issues certificates for authorization. The final authorization is issued by the Minister of Public Health. In addition, LAEC performs safety assessments of medical and industrial radiation facilities, which provide periodic safety reports reviewed at LAEC.

Nuclear and radiological emergency management plans are part of the National Disaster Management Plan and address all radionuclear emergencies. Emergency plans exist for surveillance, laboratory analysis, hazard assessments and conduct of exercises or drills. International standards and guidance are closely followed, but are not regularly evaluated.

Recommendations for priority actions

- Establish adequate legislative and regulatory frameworks for emergency preparedness and response; and revise and regularly update emergency plans.
- Define medical facilities to treat contaminated individuals or victims of radiation emergencies, and ensure facilities have adequate resources.
- Ensure adequate resources for surveillance, laboratory analysis, hazard assessments and the conduct of exercises or drills, and additional human and financial resources to ensure the expansion and increased use of radiation in medical, industrial and other sectors.
- Ensure systematic information exchange between radiological authorities and human health surveillance units on radiological events and risks that may constitute a public health emergency of international concern.
- Coordinate risk assessment, communication, planning, exercising, and monitoring, including coordination during urgent radiological events and potential risks of international concern.

Indicators and scores

RE.1 Mechanisms are established and functioning for detecting and responding to radiological and nuclear emergencies

Score 2: Limited capacity. National policies, strategies or plans to detect, assess, and respond to radiation emergencies are established and monitoring mechanisms exist for radiation emergencies that may constitute a PHEIC, but are not part of the National Disaster Management Plan. International standards for emergency planning are closely followed, but written SOPs that are evaluated and updated for the management of radiation emergencies are yet to be established.

Strengths/best practices

- LAEC oversees all practices dealing with ionizing radiation, including radiation safety, surveillance, preparedness and response, with sufficient human and financial resources.
- LAEC assesses safety and regular monitoring of medical and industrial radiation facilities, has authority to issue and revoke licenses, and set standards and requirements for waste management.
- The national authority responsible for radiological and nuclear events has designated a focal point for coordination and communication with the MoPH and the IHR NFP.

Areas that need strengthening/challenges

- Written SOPs have not been evaluated or updated for the management of radiation emergencies, including risk assessment, reporting, event confirmation and notification, and investigation.
- The emergency plans have not been revised or updated regularly, and adequate resources are not ensured for surveillance, laboratory analysis, hazard assessments, or for conducting exercises or drills.
- No mechanism of systematic information exchange exists between radiological authorities and human health surveillance units about urgent radiological events and potential risks that may constitute a PHEIC.

RE.2 Enabling environment is in place for management of radiation emergencies

Score 4: Demonstrated capacity. National policies exist to detect, assess, and respond to radiation emergencies, and national authorities responsible for nuclear and radiation events have designated a focal point for coordination and communication with the IHR NFP.

Strengths/best practices

- A radiation emergency response plan exists (could be part of the national emergency response plan).
- National policies, strategies or plans for national and international transport of radioactive material, samples and waste management, including those from hospitals and medical services, are established.
- National authorities responsible for radiological and nuclear events have a designated focal point for coordination and communication with the MoPH and/or IHR NFP.

Areas that need strengthening/challenges

- Lists and definitions of medical facilities to treat contaminated individuals or victims of radiation emergencies should be available with adequate resources and well trained personnel.
- A nuclear and radiological emergency management system should be set up and funded with SOPs, clear delineation of roles and responsibilities, public communication, and management of affected populations.

- Coordination needs to be strengthened with stakeholders at national and subnational levels, particularly among relevant sectors like health, environment, emergency services, and reference laboratories.
- There is insufficient allocation of human and financial resources due to expansion of the nuclear power programme and increased use of radiation in medical, industrial, and other sectors.
- Radiation emergency response drills are not carried out regularly, or in response to international requests or notification. Moreover, there is inadequate coordination with relevant stakeholders (national and subnational of relevant sectors such as health, environment, emergency services and reference laboratories).

Relevant documentation

- The IAEA evaluation and certification (findings).
- Reports of exercised and drills.
- Legislations mentioned.
- Nuclear and Radiological Emergency Management System Plan .

Annex 1: Joint External Evaluation background

Mission place and dates

Beirut, Lebanon: 25–29 July 2016.

Mission team members

Taneli Puumalainen, Head, Vaccination Programme, National Institute for Health and Welfare, Helsinki, Finland

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Amal Barakat, Head, Influenza National reference Laboratory, National Institute of Hygiene, Ministry of Health, Rabat, Morocco

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Mohammed Moussif, Head, Public Health Department, Mohammed V International Airport, Casablanca, Morocco

Ahmed Saad, Deputy Team Leader for the Emergency Center for Transboundary Animal Diseases, Food and Agriculture Organization, Rome, Italy

Eirian Ann Thomas, Principal Health Protection Scientist, Centre For Radiation, Chemical and Environmental Hazards, Public Health England, London, United Kingdom

Martine Van Utterbeeck, AMR/IPC Specialist, Doctors Without Borders, Paris, France

Ghazai Yehia, Head, Sub-region for the Middle East, World Organisation for Animal Health, Paris, France

Objectives

- Assess the implementation of IHR public health capacities for surveillance and response to public health events including at points of entry.
- Review all related documents.
- Describe the progress and gaps in implementing the IHR capacities.
- Recommend priority actions to finalize the national plan to achieve and maintain IHR capacities for global health security.

The JEE process

The Joint External Evaluation process is a peer-to-peer review and, as such, is a collaborative effort between host country experts and External Evaluation Team members. The evaluation – discussion on scores, strengths, areas for improvement, and priority actions – is collaborative: full agreement is sought on all aspects of the final report findings and recommendations. In the case of any significant or irreconcilable disagreement between or among the external team and the host country experts, the External Evaluation Team leader will decide the outcome, which will be noted in the final report along with the justification for each party's position.

Preparation and implementation of the mission

- Prior to the visit, teleconferences and email communications took place with the WHO office in Lebanon and the IHR NFP for guidance on self-reporting requirements and responsibilities for the JEE process, and to review the agenda, responsibilities, and logistics.
- The IHR NFP held several meetings with stakeholders to complete the self-evaluation tool and to identify background documents related to the 19 technical areas. These were collected and shared with the JEE team along with the complete JEE tool for review.
- The WHO Office in Lebanon hosted a one-day orientation for JEE experts to orient them on the process, tools, objectives and expected JEE outcomes and to discuss and finalize the agenda of the mission.
- Meetings with the relevant stakeholders and field visits were conducted to validate the collected information and to reach a consensus on the scores and priority actions.
- A debriefing meeting with senior officials and national technical teams involved in the evaluation to present the outcomes of the JEE; best practices and priority actions.

Limitations and assumptions

- The assessment, limited to one week, limited the amount and depth of information that could be managed.
- Background documents were shared on the first day of mission; hence time to review them was not sufficient.
- A national workshop to orient nationals on the JEE process was not conducted. External experts felt that the objectives and expected outcomes of the mission was not clear to most of the stakeholders.
- It is assumed that the results of this assessment will be made publically available.
- The assessment is not an audit and information provided will not be independently verified.

Key host country participants and institutions

JEE national stakeholders

Dr Walid Ammar (Director General, Ministry of Public Health, MOPH)

Dr Riedner (A WHO Representative- WHO CO)

Dr Atika Berry (Head of Preventive medicine Department, International Health Regulations, Focal Point, IHR FP MOPH)

Dr Alissar Rady (Senior National Professional Officer WHO CO, IHR FP)

Mr Antoine Romanos (Head of Medical Professions Department, MOPH)

Mtr Hyam Mallat (Health Expert legislations IHR)

Dr Nada Ghosn (Head of Epidemiological Surveillance Program at MOPH)

Eng Abeer Sirawan (Head of Poultry Department at Ministry of Agriculture, IHR FP MOAg)

Dr Rasha Hamra (Head,of Health Education Department, MOPH)

Dr Dolla Sarkis (Head of Pasteur Merieux laboratory, USJ AMR NC),

Dr Jacque Mokhbat (Professor at Balamand University, Infectious Disease, ID, Antimicrobial Resistance National committee AMR NC)

Dr Georges Araj (Microbiology Professor, American University of Beirut AUB, AMR NC)

Dr Roula Hosni (Infectious Diseases specialist, AMR NC)

Dr Rima Moghniyeh (Infectious Diseases specialist, AMR NC)

Dr Bassel Bazzal (Head of Animal Health Service, MOAG)

Dr Elias Ibrahim (Director of Animal resources Directorate MOAg)

Mrs Solange Matta Saade (Assistant Representative, Food and Agriculture Organization, FAO)

Mr Bruno Minjauw (Resilience and liaison officer FAO)

Dana Abou Reslan (National Food safety expert, MOPH)

Joyce Haddad (Food Safety Campaign Coordinator, MOPH)

Dr Ghassan Matar (Microbiology Professor, AUB Laboratory Research Director)

Dr Mona Beainy (Director of Rafic Hariri University Hospital Laboratory RHUH)

Dr Rita Feghali (Microbiologist at Rafic Hariri University Hospital, RHUH)

Ms Samia Chatila (National expert, laboratory and Quality control)

Dr Christian Haddad (President, Syndicate of Laboratories)

Mr Sezar Akoum (Head of Biomedical Engineer Department and Accreditation Program, MOPH)

Mrs Viviane Sassine (Ministry of Environment)

Dr Hassan Mallah (Head of Quarantine Department at Rafic Hariri Airport)

Mr Jaafar Jabak (Airport Health Team)

Mr Ahmad Itawi (Health Port Team)

Dr Howaida Al Amine (Head of Health Port Team)

Col Pierre el Hajj (Ministry of Interior and Municipalities)

Mrs Randa Hamadeh (Head of Primary Health Care Centers at MOPH)

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Dr Ziad Mansour (Epidemiology National Expert)

Dr Ghassan Issa (National Immunization Committee)

Mr Mohamad Hamandi (General Secretary, Syndicate of Hospitals)

Dr Nuhad Yazbik Doumit (President of Nurses' Order)

Dr Zaki Abboud (President of Veterinary Syndicate)

Ms Carine El Zoghbi (Prime Minister Cabinet, DRR program)

Mr Nabih Jabr (Lebanese Red Cross)

Colonel Henry Ibrahim (Lebanese Army Forces)

Mr Houssam Chammaa (Shock Room)

Mr Firas Shahal (Shock Room)

Mr Michel Efrem(Director of Lebanese Agriculture Research Institute, LARI)

Dr Nadia Khoury (Director of Endocrinology Internal Medicine)

Dr Hayat Azouri (Director of Poison Center at University Saint- Joseph)

Mr Bilal Nsouli (Director of Lebanese Atomic Energy Association)

Dr Nagi Souaiby (Director of Emergency Medical Services Training Center)

Mr George Saad (Coordinator of Emergency Response Training Center, St Goerges Hospital)

Col Elie Deek (General Security)

Dr Abdo Khoury (Emergency Medicine)

Dr Hassan Bsat (Lebanese Atomic Energy Commission, LAEC)

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