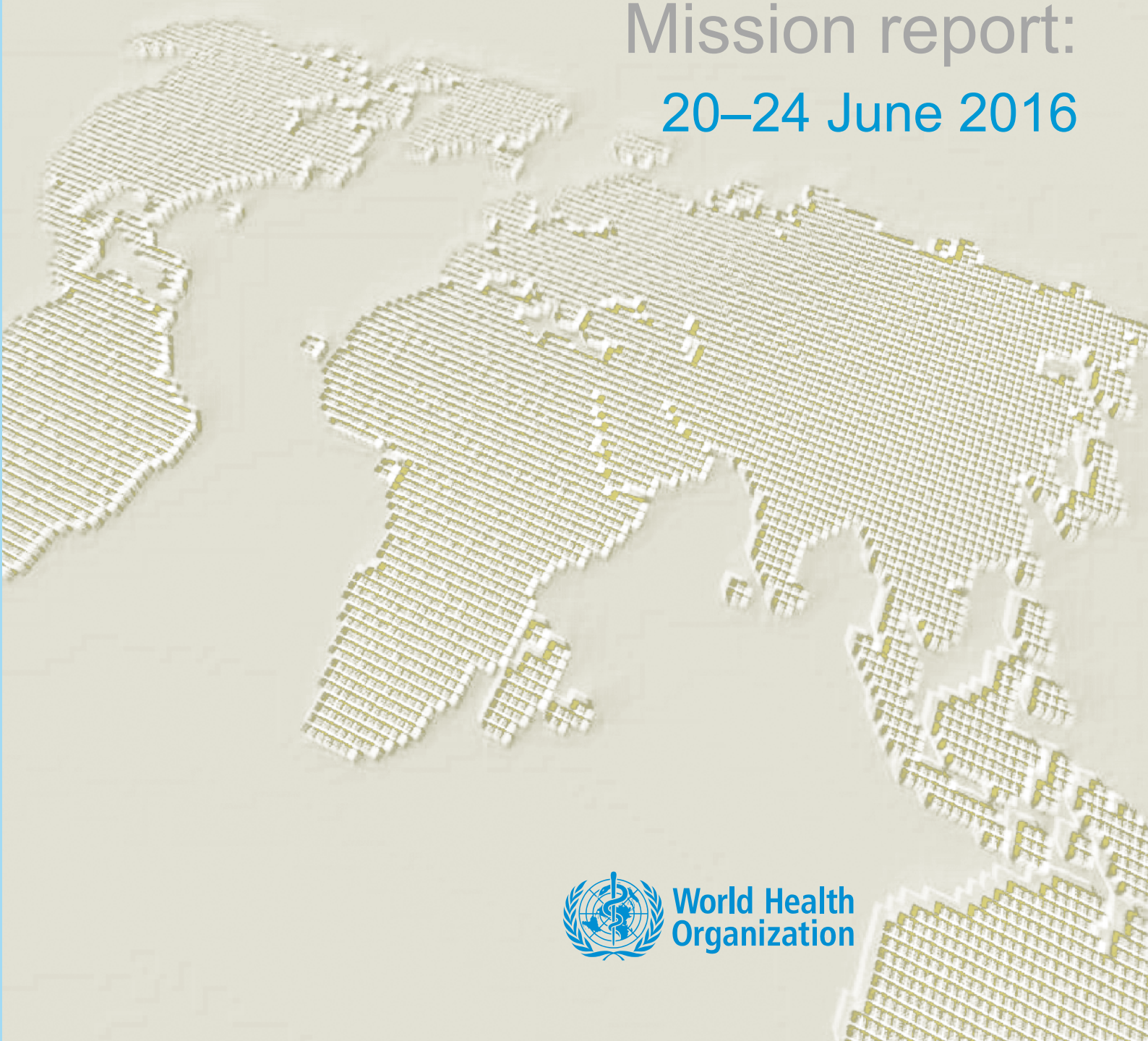
JOINT EXTERNAL EVALUATION OF IHR CORE CAPACITIES

of

THE KINGDOM OF MOROCCO

Mission report:

20–24 June 2016



World Health Organization

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- Global Health Security Agenda Initiative for their collaboration and support.

Contents

Abbreviations

AMR	antimicrobial resistance
CNRP	National Centre of Radiation Protection
DELM	Directorate of Epidemiology and Disease Control
Div Com	Information and Communication Division
EOC	emergency operations centre
FAO	Food and Agriculture Organization of the United Nations
FETP	Field Epidemiology Training Programme
HIV	human immunodeficiency virus
IAEA	International Atomic Energy Agency
IHR	International Health Regulations
INFOSAN	International Food Safety Authority Network
INH	National Institute of Hygiene
JEE	Joint External Evaluation
LEHM	DachverbandLehm e.V. (every four years, the German Association for Building with Earth organises the international LEHM conference in an earth-building region in Germany.
MERS-CoV	Middle East Respiratory Syndrome Coronavirus
MOH	Ministry of Health
NFP	National Focal Point
OIE	World Organisation for Animal Health
ONSSA	National Office for Health Security of Food Products
PCB	polychlorinated biphenyls
PCC	Crisis Coordination Centre
PCP	prefectural or provincial coordination centres
PCR	polymerase chain reaction
PHEIC	Public Health Emergency of International Concern
POP	persistent organic polluant
SOP	standard operating procedures
TB	tuberculosis
WHO	World Health Organization

Introduction

The Joint External Evaluation of the International Health Regulation (2005) Capacities allows countries to identify the most urgent needs within their health security system; to prioritize opportunities for enhanced preparedness, detection and response capacity-building, including setting national priorities and allocating resources based on the findings.

Morocco is the ninth country globally and the third in the WHO Eastern Mediterranean Region to volunteer for a Joint External Evaluation. A multisectoral team of WHO experts participated in the week-long evaluation which took place from 20–24 June 2016 in Rabat. Prior to the mission, the Government of Morocco completed a self-assessment using the JEE tool, the results of which were presented to the External Assessment Team, including self-assessed scores for the 19 JEE technical areas. The External Assessment Team and host country experts then participated in a facilitated and collaborative process to jointly assess Morocco's current strengths, areas that needed strengthening, and priority actions; and to attribute scores for the 19 technical areas. A summary of the results of these discussions are provided under each of the technical area sections of this report.

Morocco's substantive and ongoing commitment to fight the cross-border spread of diseases under the IHR was noted and commended by the JEE external team. This favourable context is the result of decades-long commitment to public health and to social services in general, backed up by a high-level of institutional development.

Executive summary – Findings from the Joint External Evaluation[1]

This Joint External Evaluation (JEE) of the Kingdom of Morocco by country and external experts was conducted using the World Health Organization (WHO) International Health Regulation (IHR) JEE tool. A multisectoral international team consisting of individuals selected on the basis of their recognized technical expertise from a number of countries, and advisors representing international organizations carried out the mission from 20 to 24 June 2016, with interactive technical presentations covering the self-assessment results, joint multisectoral discussions and site visits to laboratories and points of entry. This report describes the recommendations jointly developed for priority actions by the external team and their Moroccan peers covering the 19 technical areas of the IHR as described in the JEE tool.

Morocco has strong IHR capacity, as demonstrated in 2015 by its outstanding and globally recognized response to the Ebola outbreak, and to previous global alerts such as coordination for severe acute respiratory syndrome (SARS), avian and pandemic Influenza resource mobilization.

A summary of the findings of the mission on the 19 technical areas assessed, as per the terms of reference (Annex I) are as follows.

- Morocco has a substantial legal and regulatory framework to support and enable the implementation of IHR including the Royal Decree of 2009 that adopted the IHR, the framework Law No. 34-09 of 2011 and the 2011 Constitution. The country is in the process of building a stronger regulatory system, including improved coordination and communication between all relevant sectors. Expediting the endorsement of the Bill on Public Health is strongly recommended to ensure that all necessary legislation is in place.
- A mechanism to coordinate the response to potential public health emergencies of international concern between the different sectors is in place through the Crisis Coordination Centre (PCC, Poste de coordination Central) at national level and prefectural or provincial coordination centres (PCP, postes de coordination préfectoraux ou provinciaux) at regional level with high-level representation and defined terms of reference. Both entities have clear protocols that engage the police or the army when there is a major disaster. The PCC, in the case of Ebola, proved its functionality and efficiency in terms of coordination and timely communication between the different sectors to put in place the necessary preparedness measures to respond to the potential importation of Ebola cases and prevent the local transmission of the virus.
- Strong institutional oversight and command, however, cannot succeed without the presence of a National IHR Focal Point (IHR NFP) equipped with clear functions and standard operating procedures (SOP) establishing the coordination arrangements with other sector counterparts. Establishing an IHR Multisectoral Committee with defined roles and responsibilities is therefore needed to facilitate and follow up implementation of IHR capacities across sectors in the country. For example, this committee would institute a formal and standardized mechanism for coordination and timely information-sharing related to routine events between the health, animal, agricultural and other sectors, as well as forecasting and rapid escalation of response measures when needed.

[1] This report will be published on the websites of the Ministry of Health of Morocco (www.moh.gov.ma), the World Health Organization (www.who.int), the World Organisation for Animal Health (www.oie.int), the Food and Agriculture Organization of the United Nations (www.fao.org), and the Global Health Security Agenda (ghsagenda.org).

- The laboratory systems in place can conduct at least 5 of the 10 core tests identified by the IHR, and a specimen transportation mechanism exists. The country has access to international laboratories, and international transport regulations are being followed by regularly trained personnel. Morocco is proficient in diagnostic techniques such as bacteriology, serology and polymerase chain reaction (PCR) in selected laboratories. However, an independent unit needs to be established at central level to coordinate laboratory activities and ensure implementation of quality, biosafety and biosecurity management systems in all public and private laboratories. In addition, a national strategic plan and a national laboratory policy, which includes a biosafety and biosecurity policy, needs to be developed to improve the national laboratory capacities.
- Antimicrobial resistance (AMR) is a global concern.The use of antibiotics for animal growth will be banned in Morocco effective July 2017. However, a multisectoral national plan of action to fight AMR is not in place, in spite of overall awareness of the severe risk AMR represents to Morocco and the global community.
- The surveillance system in Morocco addresses national and international health priorities including compliance with IHR. The system is decentralized with a reporting flow from provinces to regions to the Ministry of Health (MOH). Digitalization of the national surveillance system needs to be accelerated, and SOPs implemented. Adequate human and financial resources need to be ensured, and an event-based surveillance system needs to be formalized.
- Morocco has excellent vaccine coverage levels and dedicated training and community engagement activities. The country needs to move towards vaccine stocks and distribution at the regional level to mirror the new political regional restructuring. In addition, the quality assurance programme, and monitoring and evaluation of vaccine coverage need to be reinforced.
- Mapping of hazards has been conducted and is being updated based on emerging hazards and international threats. Event-specific preparedness and response plans are in place. However, a national public health plan for preparedness and response to public health events including at points of entry is not in place. Such a plan needs to be developed with the involvement of all relevant sectors, tested and modified accordingly. The country has a demonstrated and tested capacity to activate public health emergency operations with dedicated trained staff within the standard time and according to standard practices. However, an operation manual for the Emergency Operations Centre needs to be developed and evaluated through simulation exercises. This should include response level scaling and resourcing needs.
- Morocco has conducted a needs assessment at national, regional and local level to identify priorities for human resources development and to ensure that a workforce development action plan is integrated into the new strategy of the MOH. Morocco needs a sustainable training programme in intervention epidemiology that supports sustainable training infrastructures, a national network of trainers/supervisors and the overall capacities in the country.
- A communications division exits under the General Secretariat, MOH, andspecific communication plans have been developed, e.g. for Ebola and influenza pandemics. The risk communication strategy needs to be finalized and an all-hazards national risk communication plan developed.
- A toxicovigilancecentre operating 24/7 is well established. Analytical toxicological capacity exists at the national, but not the regional level. An inter-ministerial commission on chemical events needs to be established. The National Chemicals Management Profile is not regularly updated. An obligatory Global System for Classification and Labelling of Chemicals needs to be developed in all sectors.
- The Morocco Nuclear Regulatory Agency is the designated institute for radiation safety, surveillance, preparedness and response.Human resources are sufficient, and an emergency response plan exists for radiation emergencies. This is part of the National Disaster Management Authority Plan.In addition, a mechanism for the continuous monitoring of consumer products for radiation hazards is in place. SOPs

to detect, investigate and manage radiation emergencies need to be developed, and medical facilities designated to treat individuals contaminated with radiation material with adequate resources and well trained personnel.

- The majority of points of entry (PoE) have functioning contingency measures, although they are not formalized in written plans. Most PoE have links with local health centres and veterinary services for the management of suspected cases. Designated ports have established capacity to issue Ship Sanitation Certificates. Risk assessment of vectors at PoE need to be conducted and necessary plans for vector surveillance and control at need to be developed and implemented.

In conclusion, the External Team recognizes the lead role that Morocco can play in IHR capacity development at regional and global level, and acknowledges that most of the IHR requirements are in place. There is a general need to formalize SOPs and develop plans that are shared, tested and legally endorsed.These plans must ensure multisectorality and follow the decentralized procedures in place. Human resource capacities need to be reinforced, including through regular training and simulation exercises.

The mission wishes to extend its warmest regards to the national health authorities for the 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.

Morocco scores

Note on scoring of technical areas of the Joint External Evaluationtool

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.

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	2
	P.1.2 The state can demonstrate that it has adjusted and aligned its domestic legislation, policies and administrative arrangements to enable compliancewith the IHR (2005)	3
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	4
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	2
	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	4
	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	4
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	5
	P.7.2 National vaccine access and delivery	5
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	4
	D.1.4 Laboratory quality system	3

Real-time surveillance	D.2.1 Indicator- and event-based surveillance systems	3
	D.2.2 Interoperable, interconnected, electronic real-time reporting system	2
	D.2.3 Analysis of surveillance data	3
	D.2.4 Syndromic surveillance systems	3
Reporting	D.3.1 System for efficient reporting to the World Health Organization (WHO), Food and Agriculture Organization (FAO) and World Organisation for Animal Health (OIE)	4
	D.3.2 Reportingnetwork and protocols in country	4
Workforce development	D.4.1 Human resources are available to implement IHR core capacity requirements	4
	D.4.2 Field Epidemiology Training Programme or other applied epidemiology training programme in place	3
	D.4.3 Workforce strategy	4
Preparedness	R.1.1 Multi-hazard National Public Health Emergency Preparedness and Response Plan is developed and implemented	4
	R.1.2 Priority public health risks and resources are mapped and utilized	4
Emergency response operations	R.2.1 Capacity to activate emergency operations	4
	R.2.2 Emergency Operations Centre operating procedures and plans	3
	R.2.3 Emergency operations programme	4
	R.2.4 Case management procedures are implemented for IHR-relevant hazards	5
Linking public health and security authorities	R.3.1 Public health and security authorities, (e.g. law enforcement, border control, customs) are linked duringa suspected 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	5
	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	4
	R.5.3 Public communication	4
	R.5.4 Communication engagement with affected communities	3
	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 PoE	3
Chemical events	CE.1 Mechanisms are established and functioning for detecting and responding to chemical events or emergencies	3
	CE.2 Enabling environment is in place for management of chemical events	2
Radiation emergencies	RE.1 Mechanisms are established and functioning for detecting and responding to radiological and nuclear emergencies	3
	RE.2 Enabling environment is in place for management of radiation emergencies	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.

Morocco 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 available for Morocco to implement the IHR (2005). Such instruments are not limited to those adopted by Parliament and include measures such as regulations, decrees, orders, and other documents under the Moroccan legal system such as Royal Decrees (Dahir).

Morocco has a substantial legal and regulatory framework to support and enable the implementation of IHR. The extensive legal framework includes laws and measures governing the regulation of medicines, health professionals and food safety, among others. For example, Royal Decree No. 1-09-212 of 2009 gives the IHR legal standing in the domestic legal system, and the 2011 Constitution sets access to healthcare and medical insurance as a fundamental right and makes public authorities responsible for granting those rights. Moreover, the Framework Law No. 34-09 of 2011, which provides the basis for the organization of the country's health system, defines the multisectoral dimensions of health protection. This legal framework is an important example of a best practice that other countries may consider to improve IHR coordination and implementation.

However, as is the case in all countries, there will be gaps, overlaps and areas for improvement for the national legal landscape to be sufficiently comprehensive to fulfil IHR requirements. These deficiencies can and should be addressed by one or more legal instruments. Morocco is fully committed to implementing the IHR; the current reform of its health system, the development of a National Health Sector Plan for 2017–2021 and the pending Bill on Public Health are examples of this commitment.

Recommendations for priority actions

- Finalize the Bill on Public Health.
- Schedule and conduct a high-level intersectoral meeting to approve texts to implement the Bill, and promote IHR awareness and commitment.
- Pass national application texts to implement the Public Health Act following enactment.
- Conduct periodic legislative and regulatory assessments to facilitate the effective implementation of IHR.
- Develop guidelines to facilitate functions of the IHR NFP and further enhance coordination of the legal and regulatory frameworks between sectors.

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 2: Limited capacity. Morocco is strongly committed to implement fully the IHR. An assessment of relevant legislation, regulations, administrative requirements and other governmental instruments was carried out in 2011 as per the requirements of IHR. This assessment led to the drafting of the Bill on Public Health. The passing and effective implementation of the Bill will enable Morocco to reach level 3 for this indicator.

Strengths/best practices

- Morocco is committed to implementing the IHR; in addition to this JEE, IHR assessment missions and a legislative assessment have taken place.
- A substantial legal framework exists for most technical areas. Rigorous legislation governs food safety, and the regulation of medicines and health professionals.
- Morocco has a legal department within the MOH and legal advisors in most other relevant ministries. The MOH and the General Secretariat of the Government have comprehensive websites with laws and regulatory measures available to the general public.
- Morocco is reviewing its health system and finalizing the Bill on Public Health with weekly meetings between the legal department of the MOH, the NFP and the General Secretariat.

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 3: Developed capacity. The legislative and regulatory assessment carried out in 2011 identified issues that are being addressed in the Bill on Public Health. Morocco is applying relevant legislation and policies in various sectors involved in the implementation of IHR.

Strengths/best practices

- An assessment of the laws and regulatory measures in all relevant sectors was carried out in 2011. Needed adjustments have been identified and included in the Bill on Public Health.
- Morocco is building a stronger regulatory system that will improve coordination and communication among all relevant sectors. An integrated reporting and surveillance system will also be established with the creation of a National Public Health Agency.

Areas that need strengthening/challenges

- Multisectoral coordination for IHR implementation should be improved.
- Additional policies should be adopted to facilitate the core and expanded functions of the IHR NFP.

Relevant documentation

- A review of public health policy in Morocco and definition of elements of a draft Bill on Public Health within the framework of implementation of the IHR (2005), December 2011. This document includes an in-depth inventory of the laws and regulatory measures in all relevant sectors.
- Framework Law No. 34-09 of 2011.
- 2011 Constitution of the Kingdom of Morocco.
- Royal Decree No. 1-09-212 of 2009.

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.

Morocco level of capabilities

The IHR NFP is the Directorate of Epidemiology and Disease Control (DELM), whose Director is the primaryfocal point. The IHR NFP also includes the head of the surveillance section within the DELM. The contact details of the IHR NFP representatives have been provided to WHO and are continuously updated and annually confirmed. However, the roles and responsibilities of the IHR NFP are not sufficiently identified or implemented.

Standard mechanisms and processes for intersectoral collaboration and communication between the different sectors exist through the Crisis Coordination Centre (PCC) for public health events of potential international concern (but not for routine events). Coordination and communication among the different sectors and with the points of entry (PoE) have been tested and enhanced through real-life incidents. King Mohammed V airport in Casablanca is a main hub for international flights coming from West Africa. During the recent Ebola outbreak, Morocco decided to continue receiving flights from this region. Coordination and communication between relevant sectors and the airport to follow up on suspected Ebola cases – and timely communication between the airport and the IHR NFP – proved functional and efficient both atthis, and other PoE.

Several drills and simulation exercises have been conducted to enhance preparedness and multisectoral coordination with sectors that deal with chemical and radiation events; however, no real-life events have occurred to test their functionality.

An IHR multisectoral committee needs to be established to facilitate the implementation of IHR capacities. The PCC could assume this role, subject to a revision of its terms of reference to include these tasks.

The IHR NFP has the capacity to receive and share information internally, given its senior position and involvement in the PCC. The PCC is headed by the Ministry of Interior and includes members from all sectors relevant to the implementation of IHR capacities. Information on public health events of potential international concern is shared during PCC meetings in a timely manner. Informal information exchange mechanisms exist between animal and human health surveillance units, laboratories, and other relevant sectors regarding potential zoonotic risks and serious zoonotic events. While these mechanisms are not documented, they are followed in practice.

Insufficient awareness about IHR was observed during the national training to prepare for the Joint External Evaluation mission. This can be attributed to the turn over among personnel and the lack of advocacy activities about IHR and their implementation for new comers. It also appeared that the IHR NFP and its functions are not well known to staff at different administrative levels in the relevant sectors.

Recommendations for priority actions

- Establish an IHR multisectoral committee with defined roles and responsibilities.
- Determine and evaluate the functions of the IHR NFP and develop SOPs for coordination with focal points of other sectors.
- Develop quarterly reports on IHR implementation for dissemination to all relevant sectors.
- Conduct advocacy activities targeting different audiences to gain commitment.
- Develop a national plan of action to accelerate implementation of IHR capacities with an allocated budget.

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 4: Demonstrated capacity. An IHR law is in place. Multisectoral and multidisciplinary coordination and communication mechanisms have been tested through real-time exercises. Multisectoral mechanisms for IHR implementation are not in place and updates on the status of IHR implementation are not available.

Strengths/best practices

- An IHR NFP has been designated at national level, with sufficient personnel to guarantee 24/7 accessibility.
- An IHR Law is in place to facilitate implementation of IHR.
- Coordination and communication with different sectors have been tested through real-life response to A(H5N1) in poultry and through preparedness activities put in place to enhance response to the potential importation of Ebola, Middle East respiratory syndrome coronavirus (MERS-CoV) and Zika virus.

Areas that need strengthening/challenges

- The functions, roles and responsibilities of the IHR NFP need to be clearly identified.
- An IHR multisectoral committee needs to be established to monitor the implementation and sustainability of IHR capacities and share updates of IHR implementation with all relevant sectors.
- There is a lack of awareness of IHR and their implementation among stakeholders, including decision-makers in non-health sectors.
- A national plan of action is needed to implement and sustain IHR capacities in Morocco.

Relevant documentation

- DahirNo. 1-09-210, October 2009 – Adoption of IHR.
- Structure and terms of reference of the central and regional crisis coordination centres (PCC and PCP, respectively).

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.

Morocco level of capabilities

Morocco's capacity to address AMR is, like much of the world, lacking. While there is no national plan to address the multisectoral coordination needed to respond properly to this issue, Morocco has many positive approaches that indicate its ability to respond to AMR. Theseinclude several vertical programmes that have laboratory capacity to diagnose AMR and a national protocol to ban the use of antibiotics for the growth of livestock by July 2017.Morocco's commitment to address AMR in the animal health sector and its ability to diagnose and confirm zoonotic AMR is a successful example that can be followed by other countries.WHO has also recently assisted Morocco in the development of a strategic plan. These factors, plus a strong national will to move forward,show that progress is being made.

Recommendations for priority actions

- Establish a national multisectoral coordination organ.
- Develop a multisectoral National Action Plan to combat AMR.
- Designate a National Reference Laboratory for AMR
- Create regional laboratories for human health and strengthen laboratory capacity for animal health.
- Develop a national policy to rationalize the use of antibiotics.

Indicators and scores

P.3.1 Antimicrobial resistance detection

Score 2: Limited capacity. This score reflects a consensus that, while Morocco has the capacity to detect and report on some priority pathogens (score 3), ithas no national plan (score 1).

Strengths/best practices

- Strong vertical programmes exist for certain diseases with AMR monitoring (tuberculosis (TB), gonorrhoea, and certain animal diseases such as salmonellosis).
- A national public health laboratory provides support to vertical programmes, and the national food laboratories are able to test priority pathogens.

Areas that need strengthening/challenges

- A national plan of action urgently needs to be developed.
- There is a need to ensure collaboration between the human and animal health sectors
- A national laboratory should be designated for testing AMR.

P.3.2 Surveillance of infections caused by AMR pathogens

Score 2: Limited capacity. As with the previous score, this reflects that, while Morocco has sentinel sites that conduct surveillance on some priority pathogens (score 3), it has no national plan (score 1).

Strengths/best practices

- Five sentinel sites exist and have been testing for selected human pathogens since 2012.
- A national animal laboratory tests for AMR.
- Testing exists, since 2015, for AMR related to animal production.

Areas that need strengthening/challenges

- A national plan needs to be developed to expand surveillance for AMR.

P.3.3 Health-care associated infection prevention and control programmes

Score 2: Limited capacity. Morocco has a national plan for health care-associated infections. A national strategy, implemented in 2005, is being updated. As with the previous categories for AMR, Morocco is advancing relatively quickly due to its political will and commitment.

Strengths/best practices

- The 2005 national strategy is being updated and improved.
- Regulations are in place to address health care-associated infections.
- A notification tool exists for health care-associated infections.

Areas that need strengthening/challenges

- A national plan needs to be developed, that expands upon the national strategy.

P.3.4 Antimicrobial stewardship activities

Score 1: No capacity. The lack of a national plan is the basis for this score. Given its commitment to ban antibiotics for animal production in 2017 and political commitment to improve human health security, Morocco expects to improve this score.

Strengths/best practices

- As of July 2017, a total ban will be in force on the use of antibiotics to promote animal growth.

Areas that need strengthening/challenges

- A national plan needs to be developed on the use of antibiotics in humans.
- The use of antibiotics in health-care settings should be evaluated.
- Current legislation needs to be enforced, given evidence that it is not followed 100%.

Relevant documentation

- Règlement intérieur des hôpitaux; Arrêté de 2010 (for health care-associated infections).
- Manuel d'hygiène hospitalière 2010 (for health care-associated infections).
- 2016 rapport final de la Consultation pour l'élaboration du plan stratégique national de prévention et de contrôle de la résistance aux antimicrobiens.

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.

Morocco level of capabilities

Several zoonosis of significant public health impact are endemic in Morocco and listed as priority diseases. These include rabies, TB (due to M. bovis), hydatid disease, brucellosis, leishmaniosis, and anthrax. Furthermore, because of its geographical situation, its intense trade activities and its role as regional hub for airlines, Morocco may be affected by imported pathogens through movement of people or animals, especially pathogens endemic in neighbouring countries.

Historical collaboration exists between the Minister of Health and veterinary authorities, which conduct multiple activities in the area of public health such as surveillance in wild and domestic animals, inspection of slaughter houses and various value chains (poultry, livestock), vaccination of animals for major zoonosis (rabies, anthrax, etc.). While this collaboration is efficient and effective at central, intermediate and local levels, coordination of joint activities could be improved. For example, sharing of epidemiological data between the two sectors is effective during outbreaks, but needs to be improved during routine operations.

The national food laboratory (ONSAA) and the Ministry of Health have signed a formal memorandum of understanding and developed joint policies for rabies; similar intersectoral coordination is desired for others zoonoses such as such as TB and brucellosis.

Services are provided in line with the public system, which comprises of the central level, offices in each province, offices at the local level, plus mobile units. This framework ensures the connection of communities and primary health-care units. Laboratories are competent to diagnose major zoonosis (both for human and animal health), although communication within this sector is poor.

Recommendations for priority actions

- Use the momentum of the Law on Public Health and the creation of the associated Public Health Agency as an opportunity to institutionalize collaboration between the main actors, and develop the legal and regulatory environment needed for joint surveillance and response to zoonosis.
- Define a global standard framework to detect and respond to zoonotic diseases and support the development of intersectoral procedures defining roles, responsibilities and expected activities from the different actors. Such procedures should be tested through simulation exercises involving the central and regional Emergency Operation Centres (EOCs).

- Encourage multisectoral contingency plans that go beyond a disease-specific focus, including the Ministry of Health, the National Office for Health Security of Food Products (ONSSA) and the Ministry of Interior.
- Encourage joint training in epidemiology, rapid response, risk management, joint communication and any other functions critical for the management of zoonotic events to facilitate coordination between actors.

Indicators and scores

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

Score 4: Demonstrated capacity. Networks for passive surveillance of zoonoses are well established and cover the entire territory through decentralized structures, provincial services, and mobile brigades. In addition, the veterinary sector uses para-veterinarians and private veterinarians acting under a delegation of authority (mandat sanitaire) for veterinary public health activities, including the surveillance of endemic and emerging diseases. Veterinarian technicians constantly prospect large numbers of livestock markets, souks and slaughterhouses.

Active surveillance programmes are implemented for major zoonotic diseases such as TB, brucellosis, and avian influenza, and could be complemented by new ones for other zoonotic diseases. Entomological surveys or those on wild animals (including stray dogs) are more occasional, e.g. during research projects or targeted programmes.

Reporting zoonotic diseases from the priority list is mandatory. Channels for information flow are known and used, and non-compliance may be punished. However, activities of surveillance are sector-specific and sharing of information between the human and animal health sectors is limited. Improved coordination would enable Morocco to reach level 5 for this indicator.

Strengths/best practices

- The territory has very good coverage.
- Procedures, activities and lines of reporting for surveillance of diseases, including zoonotic diseases, are well known and followed.

Areas that need strengthening/challenges

- Despite good collaboration between the human and animal health services, the exchange of data remains limited. A dedicated platform is being discussed, both for surveillance and laboratory support.

P.4.2 Veterinary or animal health workforce

Score 4: Demonstrated capacity. The core curriculum of veterinary students includes education on the detection and control of endemic or exotic zoonosis diseases. This veterinary school in Rabat (Institut Agronomique et Vétérinaire Hassan II) has about 60 students graduate every year, plus six para-professionals. In 2013, more than 300 veterinarians and 600 animal health technicians were working at the central and provincial levels, or in laboratories and border controls. In addition, more than 600 private veterinarians were contracted for public health and disease control missions.

A programme for continuous education of ONSSA staff and a catalogue of tailored training ensure strengthening of competencies. However, private veterinarians contracted by ONSSA have limited access to such training. Improvement – especially in the control of zoonosis – would allow reaching a score of 5 for this indicator.

Strengths/best practice

- Competent and educated veterinarians working in ONSSA are widely deployed over the country and supervise field technicians for various activities of disease surveillance, control, animal and animal products inspection along the value chain. A significant number of private veterinarians complement these forces. As a result, the workforce can easily be mobilized in case of need.
- Continuous education is part of the quality insurance policies in place in ONSSA, a dedicated unit of which is in charge of training programmes. Private veterinarians can access these on a voluntary basis.

Areas that need strengthening/challenges

- Despite an apparently appropriate number of professionals, that the rapid development of the food production sector occupies an increasing number of veterinarians for specific needs, which may divert attention from surveillance of animal diseases, including zoonosis.
- There is no obligation for private veterinarians to follow continuous education programmes for the surveillance and control of animal diseases, as is the case for their activity in food safety and inspection.

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

Score 3: Developed capacity. Veterinary services have demonstrated their capacity for rapid reaction to the introduction of pathogens and to control and even eradicate several major animal diseases (food and mouth disease, African horse sickness, peste des petits ruminants). These diseases were not zoonotic.

ONSSA has a consistent national plan for the response to major epizooties, which includes a standardized frame, and detailed disease-specific plans, manuals and procedures for the main animal diseases. While covering some important zoonoses such as highly pathogenic avian influenza viruses, this plan is not coordinated with the human health sector. Mechanisms for a multisectoral response to some zoonotic diseases have been described, e.g. for rabies and A(H5N1), or during recent events such as emerging A(H9N2) or anthrax. These mechanisms have proven their efficiency during a crisis, but need to be better structured and formalized.

In conclusion, some of the capacities expected at levels 4 and 5 of the indicator are in place in Morocco, but the absence of a formal mechanism for coordination limits the score to 3.

Strengths/best practices

- Efficient contingency plans exist.
- Mechanisms for intersectoral coordination, developed during the preparation of A(H5N1), have been strengthened through the management of events at central and regional EOCs (PCCs and PCPs) and allow rapid access to emergency funds.

Areas that need strengthening/challenges

- A formalized intersectoral plan is needed to address zoonoses, and define roles, responsibilities and procedures.
- The response to a crisis iscurrently only developed on an adhoc basis.
- There is a need for training on rapid response for multisectoral teams.

Relevant documentation

- Performance on veterinary services report in Morocco, World Organisation for Animal Health, 2013.

- Law No. 25-08 creating the National Office for Food Safety under Dahir No. 1-09-20, 18 February 2009.
- Law No. 28-07 on food safety under Dahir No. 1-10-08, 11 February 2010.
- Dahir Law No. 1-75-292, 19 September 1977, establishing measures to protect domestic animals from communicable diseases.
- National plan against epizootic diseases, ONSSA, 2009

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.

Morocco level of capabilities

Morocco has a functioning safety system regulated under the control of three ministries: MOH Directorate of Epidemiology and Disease Control; Ministry of Agriculture and Fisheries National Office for Food Safety; and the Ministry of Interior General Directorate for Local Authorities through its local offices for hygiene. These departments operate as a team, each according to its mandate at central, regional and local levels. The Ministry of Agriculture oversees mainly production, processing and outlet stores of primary products, food products and feed, while the Ministries of Health and Interior operate mainly in outlet stores (retail market food) and restaurants (collective catering).

The country has a strong legal framework in line with international standards. Law No. 28-07 (2010) on food safety, and its implementing regulations and available SOPs for each sector, covers the improvement and control of food safety at all stages from production to consumption through processing, distribution and trading.

Morocco has qualified human resources including doctors, engineers and technicians for the control of food safety and investigation of food safety events or foodborne disease outbreaks, with continuous education programmes in each sector. Food safety teams at the local level include personnel from the three relevant sectors cited above, which work in close collaboration to investigate all such events and outbreaks.

ONSSA has recently established a risk analysis division that includes several scientific committees working independently from risk managers. The network includes competent laboratories (most of them certified ISO 17025) for diagnosis/detection of food microbiological and chemical contamination and quality control in both sectors of health and agriculture, that coordinate during emergencies. Again, the network would benefit from a routine exchange of information and materials.

Recommendations for priority actions

- Strengthen surveillance mechanisms of collective foodborne diseases, monitoring of food contamination and risk assessment.

- Review and update intersectoral collaboration mechanisms in food safety.
- Improve food safety risk analysis and communication mechanisms among involved stakeholders.

Indicators and scores

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

Score 4: Demonstrated capacity. Mechanisms are in place, and focal points identified in relevant stakeholders (MOH, Ministry of Agriculture and the Ministry of Interior) and their laboratories. Operational links are established between surveillance and response staff, food safety, animal health and laboratories, the ministerial departments operate as a team, each according to its mandate at central, regional and local levels. Personnel in these institutions work together to consider the risks and interventions: the Ministry of Agriculture mainly in production, processing and outlet stores of primary products, food product and feed while the Ministries of Health and Interior operate mainly in outlet stores (retail market food) and restaurants (collective catering). There is still a need for more coordination and rapid exchange of information between stakeholders on risk identification and analysis.

Strengths/best practices

- The legal framework is in line with international standards.
- Procedures are adapted to the different sectors.
- Intersectoral coordination is governed by legal and joint official agreements.
- A good laboratory network is in place.
- Good competencies exist in the staff in charge of food safety in the different sectors.

Areas that need strengthening/challenges

Despite the good collaboration between the three Ministries at central and regional levels, their exchange of data and information remains limited, especially in risk analysis and communication and between laboratories. Therefore, there is a need to:

- review and update intersectoral collaboration mechanisms in food safety;
- formalize SOPs;
- improve food safety risk analysis and communication mechanisms among stakeholders;
- co-organize joint continuous education and training for the staff of the three ministries;
- enable and strengthen environmental capacities and collaboration with consumer protection nongovernmental organizations.

Relevant documentation

- Law No. 28-07 (2010) on food safety and its implementing regulations.

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.

Morocco level of capabilities

Biosafety and biosecurity are related concepts, but not identical. Biosafety refers to the protection of individuals and the environment against exposure to potentially hazardous biological agents. Biosecurity refers to the protection of microbial agents, toxins or research-related information from loss, theft, diversion or intentional misuse. Therefore, biosafety has procedures and practices in place to prevent exposure and occupationally acquired infections, while biosecurity ensures that biological materials and relevant sensitive information remain secure.

Morocco currently has no national biosafety or biosecurity legislation, regulation and guidelines. Laboratories, in general, have an inventory of the pathogens on which they work, and have started evaluating their risks. Nonetheless, there is no national inventory of pathogens and mapping according to their actual storage status. Training in biosafety and biosecurity is being carried out at some institutes, but no systematic national training programmes are available for all laboratories and their staff.

Recommendations for priority actions

- Implement a national biosafety and biosecurity legal framework and guidelines.
- Establish a national laboratory policy including biosafety and biosecurity components.
- Map all laboratories and establish a database of pathogens researched.
- Establish or enhance a national training programme in basic and continuous biosafety and biosecurity, and review competencies on a regular basis.

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. While the ONSSA food safety laboratories have biosafety and biosecurity policies and programmes in place, human health laboratories are only just starting to implement them. The National Institute of Hygiene (INH) laboratories have carried out an inventory and risk assessment, and are currently implementing biosafety policies, which are have been developed in each laboratory. The Pasteur Institute and the virology laboratory at Mohammed V University Hospital are also embarking on this process. All are using modern techniques for diagnostics.

Strengths/best practices

- Tools and resources such as PCR to support diagnostics that preclude culturing dangerous pathogens are in place.
- Two associations of biosafety and biosecurity exist at country level.
- Staff benefit from medical check-ups.
- Staff are trained in the transport of infectious substances (recognized by the International Air Transport Association).

Areas that need strengthening/challenges

- A national biosafety and biosecurity legal framework should be developed and implemented.
- The oversight monitoring of biosafety and biosecurity needs to be improved.
- Up-to-date records and pathogen inventories should be identified in facilities that store or process dangerous pathogens and toxins.

P.6.2 Biosafety and biosecurity training and practices

Score 2. Limited capacity. In general, laboratories train their staff in biosafety, but less so for biosecurity. Food safety and animal health laboratories usually train and assess the competency of their staff, as this is part of the accreditation process for ISO 17025. Human health laboratories are at a different level as they are not yet accredited: INH has been able to set up training in biosafety and biosecurity through international projects. The Pasteur Institute project has not yet started.

Strengths/best practices

- Personnel are trained in public laboratories on the transport of infectious substances according to United Nations regulations.
- Training in biosafety and biosecurity is performed in most laboratories.

Areas that need strengthening/challenges

- A national training programme on biosafety and biosecurity should be developed and implemented.
- A sustained academic training needs to be developed on biosafety and biosecurity for those who work with dangerous pathogens and toxins.
- Further training should be developed for the private sector.

Relevant documentation

- Arrêté de la ministre de la santé n° 2598-10 du 27 ramadan 1431 (7 September 2010) relatif au guide de bonne exécution des analyses de biologie médicale.

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.

Morocco level of capabilities

Morocco has a strong immunization programme that has existed since 1987, close to 30 years. Immunization coverage levels are universally high and vaccine purchases are completely funded by the Moroccan Government; 97% of the population receive their vaccines from the public sector. Coverage levels have been validated in national coverage surveys. There is a system in place to monitor adverse events following immunization (AEFI). There is adequate cold chain and vaccine distribution capacity and no problems of vaccine stock-outs or shortages. A programme exists to access hard-to-reach populations through outreach and campaigns; and guidelines are regularly updated with staff receiving in-service training at all levels of the health system.

Recommendations for priority actions

- Modernize the cold chain: move towards vaccine-specific refrigeration.
- Reinforce the monitoring and evaluation of vaccine coverage.
- Move the country towards vaccine stocks and distribution at the regional level to mirror the new political regional restructuring.
- Reinforce the quality assurance programme.
- Develop a communication and awareness plan on immunization.

Indicators and scores

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

Score 5: Sustainable capacity. An impressive 99% of the country's 12-month-old population has received at least one dose of measles-containing vaccine as demonstrated by administrative data. More than 80% of all sub-national units (districts) are covered.

Strengths/best practices

- Vaccination levels are high with 99% of children having received a first dose of measles-containing vaccine according to administrative coverage and WHO/UNICEF best estimates.
- The immunization budget is fully funded by the Government of Morocco and 97% of the population receive their vaccinations through the public sector.

- Advocacy for immunization is carried out at the highest levels of Moroccan Government and society.
- Vaccine management practices guides are updated regularly.

Areas that need strengthening/challenges

- Acute flaccid paralysis surveillance needs improvement; this should be coupled with overall reinforcement of the monitoring and evaluation of vaccine coverage.

P.7.2 National vaccine access and delivery

Score 5: Sustainable capacity. Vaccine delivery (maintaining cold chain) is available in more than 80% of districts within the country; systems to reach marginalized populations using culturally appropriate practices are in place; vaccine delivery has been tested through a nationwide vaccine campaign; functional procurement and vaccine forecasts have shown no stock-outs.

Strengths/best practices

- Adequate cold chain exists at all levels.
- No vaccine stock-outs have been identified and strong vaccine forecasting is available.
- There is strong demand for vaccination and capacity to carry out large campaigns; a nationwide campaign for measles and rubella vaccinated 11 million inhabitants with excellent social mobilization, community participation and collaboration with nongovernmental organizations.
- Good coverage of marginalized populations has been achieved through fixed and mobile strategies and mini-vaccination campaigns.
- Continuous monitoring of the vaccination programme is carried out by programme facilitators at national and regional level.

Areas that need strengthening/challenges

- The cold chain should be upgraded with a move towards vaccine-specific refrigeration.
- Vaccine stocks and distribution should be strategically placed at the regional level; this will allow for distribution to mirror the new political regional restructuring.

Relevant documentation

- WHO country immunization profile: http://apps.who.int/immunization_monitoring/globalsummary/countries?countrycriteria%5Bcountry%5D%5B%5D=MAR.
- Stratégie secteur santé 2012–2016; Axe 2, Action 35.
- Santé en chiffres 2013 Edition 2014, partie 4.4.
- Manuel du programme PEV.

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.

Morocco level of capabilities

There are several laboratory systems in Morocco, i.e. those linked toclinical public hospitals, LEHM (epidemiology and hygiene), TB, INH, the police force, the royal police, the royal army, veterinary services, food safety, the environment (not well developed), research (universities), medical universities hospitals, transfusion centres, the antipoison centre, Biopharma and Pasteur Institute (stand-alone labs, with a laboratory for the Pasteur Institute in Tangier).

Morocco's national laboratory capacity, in general, is good in the public sector but to improve oversight and national laboratory capacities, and prevent and detect human and animal disease outbreaks, there is a need for better coordination among and between laboratories of the health sector and the animal health sector, both at central level. Greater coordination within the health sector would allow a better review of the diagnostic tests that should be available at each level of the tiered system, standardization of laboratory equipment and supplies, and key considerations to guide equipment maintenance and service contracts. It would also help to identify key elements for a laboratory strategic plan, coordinate human capacity-building activities and to implement quality systems.

Better coordination between the animal and health sectors would lead to enhanced surveillance of zoonotic diseases; it would also be useful for the exchange of experiences to strengthen laboratory capacities and address general common issues in the laboratory sector.

There is no control over laboratories managed by the private sector.

Recommendations for priority actions

- Establish an independent unit at central level with a proper budget line and personnel, in order to coordinate all laboratory activities and ensure that quality, biosafety and biosecurity management systems are implemented in all public and private laboratories. This unit would also be able to coordinate

external quality control needed for all human health laboratories at national level and manage results of these controls in order to gain a good overview of laboratory capacities.

- Establish a national working group with representation from human health, veterinary, food safety, research and environmental laboratories to draft a national laboratory policy, including biosafety and biosecurity, and a national strategic plan to improve national laboratory capacities.
- Implement quality systems in laboratories at the regional and provincial levels and establish a national external quality control system compulsory for all laboratories.
- Establish a control system for laboratories to respect implementation of the national laboratory standards in private and public laboratories.
- Have a specific budget line for laboratory activities within the laboratory systems (sample transport, external quality control, calibration, equipment maintenance, etc.).

Indicators and scores

D.1.1 Laboratory testing for detection of priority diseases

Score 4: Demonstrated capacity. Laboratories throughout the tiered systems have the capacity to diagnose priority diseases in the country. HIV, TB and malaria have laboratory systems in place. Clinical laboratories in hospitals also have a laboratory tiered system in place.

Strengths/best practices

- The laboratory systems in place are capable of detecting at least 5 of the 10 core tests identified by the IHR (HIV, TB, influenza, *Salmonella*, and *Plasmodium*).

Areas that need strengthening/challenges

- Reference laboratories for the priority diseases should be officially designated.

D.1.2 Specimen referral and transport system

Score 4: Demonstrated capacity. HIV, TB and malaria have implemented a system for the transport of specimens when needed. In the same way, they can be transported to referral laboratories in case of emergency.

Strengths/best practices

- Laboratory referral linkage is implemented for a few of the laboratory systems.
- A mechanism to transport specimens exists.
- International transport regulations are being followed, on whichstaff are being trained.

Areas that need strengthening/challenges

- Data sharing between the human and animal health sectors needs to be improved.
- Reference laboratories need to be officially designated.

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

Score 4: Demonstrated capacity. HIV and malaria rapid tests are available at points of care. All laboratories at central level are equipped with modern equipment and use modern diagnostic techniques. During the Ebola threat, the most modern technique was used to avoid as far as possible contamination through the processing of the sample.

Strengths/best practices

- All health facilities of the public sector are linked to the next level of health facility.
- Tier-specific diagnostic testing strategies exist in the public sector.
- Morocco is proficient in classic diagnostic techniques including bacteriology, serology and PCR in selected laboratories.
- Modern diagnostic methods and equipment are used.

Areas that need strengthening/challenges

- Laboratory systems should be reviewed to improve efficiency, and a central coordination installed. Several laboratory systems exist, but national reference laboratories as such have not clearly been defined.

D.1.4 Laboratory Quality System

Score 3: Developed capacity. Licensing measures are only in place in Morocco for private laboratories. Although licensing exists, there are no requirements for a laboratory to comply to any national or international quality standard. No external quality controls are performed on private laboratories.

Strengths/best practices

- Human health laboratories of the public sector are preparing for accreditation to ISO 15189. The animal and veterinary laboratories are accredited ISO 17025. The National Influenza Centre is recognized by WHO, as is the polio laboratory and measles and rubella laboratories in INH.
- The central public sector laboratories participate in international proficiency testing.
- A system of licensing of private health laboratories is in place.

Areas that need strengthening/challenges

- The licensing process needs to be extended to all laboratories in the public and private sectors.
- A national system for quality assurance should be implemented, targeting essentially regional and provincial state laboratories, as private laboratories.
- Conformity to a national quality standard must be required by law and inspected.

Relevant documentation

- Arrêté de la ministre de la santé n° 2598-10 du 27 ramadan 1431 (7 Septembre 2010) relatif au guide de bonne execution des analyses de biologie médicale.
- WHO/EMRO Regional external quality assessment scheme, survey 2016-1: microbiology and bacteriology reports.
- Manuels de prélèvements médicaux et santé environnnement de l'INH.
- Guide de supervision des laboratoires de santé publique de l'INH.

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.

Morocco level of capabilities

Morocco restructured its epidemiologic surveillance system in 1995 with the goal of addressing national and international health priorities, including compliance with IHR. This paralleled a decentralization that instituted a reporting flow from the provincial to regional to central level and back down. Morocco follows the classic approach to surveillance whereby data is collected, analysed and then transformed into information for action. Its strategic vision for health surveillance has evolved and been documented in multi-year plans and national conferences that led to a White Paper in 2013. Real-time surveillance was successfully tested during the West Africa Ebola outbreak, when Morocco had to deal with multiple challenges including assessing risks from the daily flight service from the three heavily affected countries. The existence of several thousand community health agents with the ability to contact the provincial and central level via telephone demonstrated Morocco's commitment to disease surveillance. The challenge now will be to implement the vision by ensuring adequate human and financial resources.

Recommendations for priority actions

- Develop the health surveillance system focusing on indicator-, event-based and syndromic surveillance.
- Accelerate the digitalization of the National Epidemiological Surveillance System and the electronic transmission of data.
- Develop a common and shared data platform.
- Develop and implement SOPs at all levels.
- Formalize the establishment of event-based surveillance.

Indicators and scores

D.2.1 Indicator and event based surveillance systems

Score 3. Developed capacity. Indicator- or event-based surveillance is in place to detect public health threats. Morocco has the capacity to implement this systematically and improve its score.

Strengths/best practices

- There are systems in place to detect public health threats. This is primarily indicator-based surveillance but does include some event-based surveillance.
- Leadership is committed to improve surveillance and implement strategic plans.
- A legal framework is in place for mandatory reporting of nationally notifiable diseases.
- Updated guidelines have been distributed and staff trained on their use.
- A laboratory network linked to surveillance is beingdeveloped.
- A community health volunteer network is available.

Areas that need strengthening/challenges

- Improved integration of the private health sector is needed in disease surveillance and reporting.
- Multisectoral collaboration should be formalized; linkages currently exist with animal health and other sectors but are primarily on an adhoc basis.Therefore SOPs should be drafted and adopted.
- Event-based surveillance should be implemented to achieve the goals of early detection, assessment and response to public health events.

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

Score 2: Limited capacity. Morocco is developing an interoperable, interconnected, electronic real-time reporting system, for public health or veterinary systems.

Strengths/best practices

- An electronic notification system is being established.
- The Ministry of Health is committed to ensure that resources are available.

Areas that need strengthening/challenges

- Digitalization of the National Epidemiological Surveillance System and the electronic transmission of data should be accelerated.
- A common and shared data platform should be established, which should not be limited to human health but accessible for communication with animal and laboratory sectors.

D.2.3 Analysis of surveillance data

Score 3: Developed capacity. Morocco regularly reports data, albeit with some delays; adhoc teams are in place to analyse data.

Strengths/best practices

- Data is routinely analysed and used for evidence-based decision-making.
- Annual reports are produced detailing health indicators.
- Strong capacity exists at central level for analysis.

Areas that need strengthening/challenges

- Reports are occasionally delayed and timeliness should be improved.
- Analysis is often done on an adhoc basis and should become systematic.
- Capacity at provincial and regional level needs strengthening.

D.2.4 Syndromic surveillance systems

Score 3: Developed capacity. Syndromic surveillance is in place for avian influenza and for sexually transmitted diseases. This fulfils the requirements for capacity to detect 1–2 core syndromes.

Strengths/best practices

- A system is in place to detect 1–2 core syndromes.
- A community health volunteer network exists.

Areas that need strengthening/challenges

- Capacity needs to be developed to detect new/emerging diseases.
- Laboratory networks need to be strengthened to confirm new diseases.
- The national health alert system should be expanded.

Relevant documentation

- Stratégies secteur santé 2012-2016.
- Livre blanc pour une nouvelle gouvernance du secteur de la santé (2013).
- Santé en chiffres 2013 Edition 2014.

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.

Morocco level of capabilities

The country has designated an IHR NFP, which is currently operational. The Focal Point for OIE and the International Food Safety Authority Network (INFOSAN) are established under the Ministry of Agriculture and Fisheries (ONSSA). The IAEA focal points are established under the National Centre of Radiation Protection (CNRP) of the Ministry of Health.

The focal points of IHR, OIE, INFOSAN and IAEA exchange information related to zoonotic events, foodborne diseases and radiation emergencies, when needed.This is being done at the different administrative levels of the country by practice, but not based on written protocols, which might risk timely reporting and decision-making.

The infectious and zoonotic events that have occurred in Morocco were reportedby the IHR NFP to WHO in a timely manner in accordance with IHR. Use of the decision instrument, Annex 2 of the IHR, is neither known nor exercised by all relevant sectors. Hence timely risk assessment and reporting of public health events of unknown or of chemical and radiation origin of potential international concern to WHO might be delayed.

The country has a system in place that facilitates the response to public health events in a coordinated manner.

Recommendations for priority actions

- Establish formal protocols/electronic platforms for information exchange between the IHR NFP and FAO, OIE and IAEA contact points.
- Formalize the coordination committee between the animal and human health sectors with defined terms of reference.
- Ensure sufficient human resource capacity to manage risk assessments for unknown events:
  - train and expand the use of the decision instrument (Annex 2 of IHR) to identify potential public health emergencies of international concern;
  - develop SOPs for joint investigations.
- Conduct simulation exercises to test the capacity for early detection, risk assessment and timely reporting of chemical and radiation events to WHO through the IHR NFP.

Indicators and scores

D.3.1 System for efficient reporting to WHO, FAO and OIE

Score 4: Demonstrated capacity. The country has a functioning IHR NFP, and FAO, OIE and IAEA focal points. IHR NFP is represented in the PCC that receives all notifications on public health events of potential national or international concern (PHEIC). Once the country has identifiedsuch a potential event, the IHR NFP is authorized to report it to WHO within 24 hours. The country has access to capacity to conduct risk assessment for public health events including events of unknown origins.

Strengths/best practices

- IHR NFP is defined in the country.
- Focal points for FAO, OIE and IAEA are also available with clear terms of reference.
- National laboratory capacity exists to confirm some pathogens, and networking and access to international and reference laboratories are available to confirm public health events.
- Strong coordination exists among the health, animal, food, chemical and radiation sectors to identify potential public health events of national and international concern related to these sectors.
- The country has access to international expertise to support assessment of the risk of public health events of different origins.
- Strong and direct communication links exist between public health programmes at points of entry with the MOH including the IHR NFP.

Areas that need strengthening/challenges

- National human resources capacity to conduct risk assessments for public health events of unknown origin should be enhanced.
- The broad unfamiliarity withthe decision instrument (Annex 2 of IHR) and its lack of use of to identify potential PHEIC should be addressed.
- More regular and formal information-sharing mechanismsshould be encouraged among IHR, FAO, OIE and IAEA focal points.

D.3.2 Reporting network and protocols in country

Score 4: Demonstrated capacity. Multisectoral coordination is in place to respond to potential and real PHEIC including at points of entry. The IHR NFP is mandated to report to WHO public health events of infectious, zoonotic and foodborne disease in a timely manner. The national focal points of FAO, OIE and IAEA are also mandated to notify their head offices on notifiable events related to their technical area. No significant chemical or radiation event has occurred in the country. Hence, timely reporting to WHO cannot be compared to previously mentioned events, as these events come under the responsibility of different sectors. Mechanisms for information exchange among the different sectors at the national level through the PCC and at the regional level through the PCP are in place but not formally standardized.

Strengths/best practices

- IHR NFP is a member of the PCC, which facilitates sharing and receiving information on public health events occurring in the country.
- IHR NFP has the authority to report public health events of potential PHEIC to WHO, particularly infectious, zoonotic and foodborne diseases in a timely manner.

- Coordination is established with stakeholders through the PCC at the national level, which facilitates discussion among relevant sectors and decision-making on public health events occurring in the country or other countries.
- Coordination is established among stakeholders at the regional level through the PCP and with the national level, which facilitates reporting of public health events.
- Strong transparency is demonstrated by the Government in information-sharing of public health events occurring in the country and of preparedness measures related to public health events of potential importance to the county.
- SOPs for rapid response teams are defined clearly to respond to specific events including at points of entry.

Areas that need strengthening/challenges

- The country has never experienced a real public health event related to chemical or radiation origin; hence the timely reporting of such events to WHO through the IHR NFP might be challenging.
- Documentation of reporting and communication of public health events is not in place; thus the country doesnot have a sustainable process to maintain and improve these capabilities and mechanisms.

Relevant documentation

- Dahir n° 1-09-210, October 2009 - Adoption of IHR.
- Terms of reference of the OIE, FAO and IAEA focal points.
- Terms of reference of the crisis coordination centres (PCC and PCP, respectively).

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).

Morocco level of capabilities

Morocco has conducted a needs assessment mapping at national, regional and local level in order to identify priorities for human resources development. A workforce development action plan is integrated in the new MOH strategy and was presented at the Second Conference on Health Systems. This demonstrates high political engagement for base-level training, as well as ongoing and specific topics training (residency in public health).

Morocco has implemented a national Field Epidemiology Training Programme (FETP) since 2010 (three cohorts) with the financial support of the United States Centers for Disease Control and Prevention, and is a member of regional programmes of field epidemiology such as the Mediterranean Programme for Intervention Epidemiology Training "MediPIET" and EMPHNET. The particularity of the Morocco FETP model for graduate training in public health is based on coursework in university classrooms over a two-year period incorporating fieldwork, and the training results in a Master of Public Health (MPH) qualification.

Recommendations for priority actions

- Establish a sustainable training programme in intervention epidemiology that not only trains individuals at national level, but more broadly supports sustainable training infrastructures, a national network of trainers/supervisors and overall capacities at intermediate and local level. All actors should be included by opening FETP to other subject matter experts such as veterinarians and laboratory technicians. Morocco should increase the size of cohorts to achieve the target of 1 epidemiologist/150000 population by 2020.
- Launch an awareness and training programme for clinicians on IHR, especially on preparedness and response to emerging diseases.

Indicators and scores

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

Score 4: Demonstrated capacity.

Strengths/best practices

- Morocco has a resident training programme in public health and has developed an FETP Advanced Level Training programme with a national focus for epidemiologists, the outcome of which is a Master of Public Health qualification.

Areas that need strengthening/challenges

- The training programmes should be open to other public health personnel involved in IHR capacity implementation, with a focus on specific training programmes targeting clinicians. These programmes should target intermediate and local levels and develop a network of trainers and supervisors in all IHR capacities.

D.4.2 Field Epidemiology Training Program or other applied epidemiology training program in place

Score 3: Developed capacity.

Strengths/best practices

- Morocco developed an FETP Advanced Level Training programme for advanced epidemiologists.

Areas that need strengthening/challenges

- The FETP Advanced Level programme should be open to other public health personnel involved in outbreak detection, public health response, and public health surveillance.
- Morocco should develop an intermediate level training programme for district/regions and a basic level for local health staff; this would comprise limited classroom hours to build capacity to conduct timely outbreak detection, public health response, public health surveillance, planned epidemiologic studies, and public health surveillance analyses and evaluations at regional and local level.

D.4.3 Workforce strategy

Score 3: Developed capacity.

Strengths/best practices

- A National Strategy is developed and revised periodically to consolidate a multidisciplinary workforce with the necessary competence in intervention epidemiology to carry out essential public health functions for prevention and control of communicable diseases and outbreaks of national and cross-border challenges.

Areas that need strengthening/challenges

- Morocco should update its strategy by developing an action plan describing how to integrate other disciplines, and how to organize communication between different disciplines at national level, intermediate level and local levels.

Relevant documentation

- FETP curriculum used in the country.
- Public health workforce strategy.
- Annual reports based on workforce strategy.

RESPOND

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.

Morocco level of capabilities

Morocco is developing a One Health, multi-hazard and multisector comprehensive emergency response plan. The country has national legislation and decrees that regulate preparedness and response to public health events.

Effective national response at different levels to incidents and events is demonstrated by well-developed disease- or event-specific plans (Ebola, A(H1N1), Zika, MERS-CoV etc.) that are built on:

- mapping national and international hazards and threats, and identifying and maintaining all available resources to detect and respond to these threats;
- a process tomobilize resources if the level of threat expands beyond boundaries or escalates;
- a capacity to support operations at the intermediate and local/ primary response levels during a public health emergency.

These plans define stakeholders with clear roles and responsibilities to manage the response operations to each specific event at national, intermediate and local or primary response level. Morocco needs to revisit existing event-specific plans, update its national profile of threats/hazards and accordingly develop a national public health plan for preparedness and response, including at points of entry, with SOPs to implement the plan. The health plan should address logistics, expertise and workforce, procurement and the supply and demand chain for equipment and supplies, and funding response operations. The plan should also reflect surge capacity and the ability to expand its response operations efficientlyto respond to all PHEICs, when needed.

The national plan should be tested by simulation exercises and modified accordingly. Furthermore, through the defined stakeholder process and resources, the plan should be reviewed regularly based on the national and international risk profile to accommodate emerging threats.

Recommendations for priority actions

- Update the map of potential hazards at national and international level, review existing disease/event specific plans and develop a national public health plan for preparedness and response to all hazards including at points of entry. The MOH should take the lead in in the development, approving, testing and the regular updating of the plan.
- Conduct national and sectoral drills to test the functionality of the plan as well as the interoperability of systems; and optimizing the results of the post-drill/ exercise evaluations for plan updating.
- Establish an inventory for chemical, biological, radiological and nuclear-related stockpiles and develop guidelines for its use and mobilization; put in place a mechanism to monitor its use based on updates from risk assessments, experience from actual emergency response operations, and needs of end-users.
- Include the private sector with delegated tasks, clear roles and functions in emergency and disaster management and explore possible provision of technical assistance to the private sector based on its capacity-building needs in the field of public health emergency management (e.g. training, drills, logistic support).

Indicators and scores

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

Score 4: Demonstrated capacity. The preparedness plan documents the necessary procedures, plans or strategy to allocate, reallocate or mobilize resources from national and/or intermediate levels to support all required actions at local response level. The ability to scale up the national and local capacity level of response is also incorporated within these procedures.

Strengths/best practices

- Multisectoral national public health emergency preparedness and response plans have been developed to address selective priority international risks to meet IHR core capacity requirements.
- The country has the capacity to expand disease-specific preparedness measures based on the progress of related events.
- Morocco has documented the necessary procedures for allocation and mobilization of resources from national and/or intermediate levels to support all required actions at local response level.

Areas that need strengthening/challenges

- A comprehensive national public health emergency response preparedness plan and related SOPs is lacking.
- The mapping of hazards is not conducted regularly but based on the development of emerging international threats.

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

Score 4: Demonstrated capacity. National resources have been mapped (logistics, experts, finance etc.) for IHR-relevant hazards and priority risks, and a plan for management and distribution of national stockpiles is in place.

Strengths/best practices

- A reactive public health risk and resources mapping to any international defined risk is done and logged.

- An assessment of active risks, based on IHR recommendations, was conducted at the national, provincial, and district level to identify all potential related 'urgent public health events'. For each selective risk, threat, or event, available resources at all levels for emergency response were mapped and logged.
- Morocco mapped and logged national resources for relevant IHR-related events and hazards, and priority risks were incorporated in plans, with the management and distribution of national stockpiles in place including logistics, experts and workforce, supply and demand, incorporating all stakeholders and finance.
- The country went beyond the IHR-stipulated risks to develop national specific profiles on public health risks and resources: defined stakeholders review the plan including stockpiles (critical stock levels) with a view to responding to priority chemical and radiological events and other emergencies.

Areas that need strengthening/challenges

- The country needs to define the stakeholders and process that can regularly review national risk profiles to mitigate emerging threats.
- An assessment, management, mapping, and allocation of human and financial resources for any risk of national concernis warranted. This includes the ability to prevent, detect and respond to potential events at all levels.
- The health sector also needs to reflect, document and report on this process, and update changes in the plans as needed.

Relevant documentation

- National emergency plan and selective sub-plans and supporting Decrees.
- National health plans and programmes.

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.

Morocco level of capabilities

Morocco has demonstrated and tested its capacity to activate and coordinate public health emergency operations with dedicated trained staff within the set time and structure. It has also demonstrated and tested the functioning of procedures and plans, the incident management structure, functions, public communication, liaison, and concept of operations. The capacity to implement case management procedures for IHR-relevant hazards was also demonstrated.

The country noted that the national EOC, established in 2008, is functioning in line with the following criteria: minimum common standards; maintaining trained, functioning, multisectoral rapid response teams, as well as "real-time" biosurveillance networks; and maintaining information systems and trained EOC staff capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency.

The EOC operates based on procedures to determine when to activate public health emergency operations. Its organization, operation structure and point of contact is defined and available 24/7 to guide the response. EOC procedures operate within a defined incident management structure, whose operations are tested for functionality through exercises, including real-life events. The EOC manages events using case management guidelines that are available for priority epidemic-prone diseases.

Staff are continuously trained on management of different emergencies. EOC plans are in place and supported by all needed resources including public health science and subject-matter expertise, public communications, and access to all partners.

The EOC can be activated within 120 minutes of the identification of a public health emergency to coordinate the response to emergencies.

However, an EOC operations manual and plans are lacking that should reflect:

- the national EOC concept of operations;
- the required system, forms and templates for data collection, reporting, and briefing; and
- the role descriptions, job aids, and SOPs for EOC functional positions.

Recommendations for priority actions

- Develop and evaluate an EOC operations manual covering all requirements, including scaling up for response and resourcing.
- Develop the workforce including multisectoral joint training and exercises.
- Develop a regular evaluation process for the EOC programme and implement a plan for corrective action.
- Conduct biannual or annual simulation exercises to test EOC activation, functions, and SOPs.

Indicators and scores

R.2.1 Capacity to Activate Emergency Operations

Score 4: Demonstrated capacity. Capacity has been tested and demonstrated to be able to activate public health emergency operations with dedicated trained staff within the required structure and timing.

Strengths/best practices

- The EOC operates on procedures that are well developed for priority risk diseases and can coordinate public health emergency operations accordingly. A point of contact is defined and available 24/7 to guide the response operations.
- The EOC team is trained on management of PHEIC and has the capacity to activate response operations within two hours.

Areas that need strengthening/challenges

- Multisectoral joint exercises should be frequently conducted to test EOC activation and functions.

R.2.2 Emergency Operations Center Operating Procedures and Plans

Score 2: Limited capacity. Plans/procedures describe the key structural and operational elements for the EOC basic roles in conducting incident management or command, operations, planning, logistics and finance.

Strengths/best practices

- The EOC has plans and procedures that describe and operate within a defined incident management structure and the key structural and operational elements to conduct operations, planning, logistics and finance.

Areas that need strengthening/challenges

- A manual and SOPs for the functionality of the EOC would enable the Centre to measure, sustain and improve multisectoral operational support resources. This is particularly important given the EOC's role as the central public health incident and disaster management hub, which includes all public health science, public communications, and access to all partner liaisons.
- An EOC response plan needs to be developed that describes the levels of response with resource requirements for each level and procedures for acquiring additional resources.

R.2.3 Emergency Operations Programme

Score 4: Demonstrated capacity. Capacity has been demonstrated and tested to activate and coordinate emergency response within the standard time.

Strengths/best practices

- EOC plans and procedures, and incident management system operations have proved functional through the completion of an actual event where input, throughput, and output operation capabilities were demonstrated, reviewed, and analysed.
- EOC is able to activate a coordinated emergency response or exercise within 120 minutes of the identification of a public health emergency and manage and coordinate a response utilizing operations, logistic and planning functions.

Areas that need strengthening/challenges

- EOC needs to conduct a follow-up evaluation and update and implement an action plan accordingly.

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

Score 4: Demonstrated capacity. Case management, patient referral, and management and transport of potentially infectious patients are implemented according to guidelines.

Strengths/best practices

- The EOC manages event cases using management guidelines that are implemented for priority epidemic-prone diseases and ensures functionality within the EOC implementation process.This includes the transport of potentially infectious patients in the community and at the point of entries.
- The country has the capacity for referral and transport of patients with infectious diseases or those contaminated with chemical or radiation hazards.

Areas that need strengthening/challenges

- Increased efforts are needed to ensure that the EOC is always operated by appropriate staff and resources in its management of relevant IHR-related emergencies.

Relevant documentation

- EOCs facility plan & structure.
- EOCs operating procedure with all supportive plans, sub-plans, Decrees, and Job definitions.

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.

Morocco level of capabilities

The Crisis Coordination Centre (PCC) was established in 1987 by order of King Hassan II to coordinate the response to an invasion of locusts that lasted until 1992. In 2006, the PCC was also responsible for coordinating the response to the avian influenza pandemic and has since been recognized as the body responsible for coordinating the response to all public health events by ministerial decree No. 212 issued on 17 February 2006. Since the A(H1N1) influenza pandemic, the PCC has been responsible for the preparedness activities to enhance the rapid detection and response to the potential importation of Ebola, MERS-CoV and Zika virus infection.

The PCC is led by the General Commander of the Royal Gendarmerie and includes high-level representatives from the Military Health Services, National Security, Civil Defence, Royal Gendarmerie, Water and Electricity Authority and the ministries of Interior, Health, Agriculture, Education, Communication, and Transportation. Representatives from other sectors are invited to meetings of the PCC, when needed.

At the national level, an interministerial crisis management committee has also been established to establish general policies and allocate funding for the response operations to emergencies. In addition, anAdministrative and Financial Committee approves the budget to implement the response operations, and an Institutional Communication Committee coordinates communication and the provision of information to the public and national and international media.

At the regional level, provincial or equivalent offices (PCPs) have been established to coordinate the response to emergencies among the multiple ministries and stakeholders at the regional level. Each of the current 82 PCPs is led by a Governor (Wali) and includes representatives from the MOH, civil defence, airports, ports, customs, Royal Gendarmerie, local government, provincial police, security forces, economic division, and bureau of hygiene.

The terms of reference of the PCC and the PCPs are clearly defined. Members meet 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 is conducted based on emerging/remerging international threats, and potential risks, including disease outbreaks, and their most likely sources in the country. A national plan for emergency preparedness and response is in place and is updated in line with updates of the hazard mapping. The updated plan is shared with the relevant sectors on a confidential basis.

The roles and responsibilities of each sector are identified in this plan. Also, SOPs are in place and accessible to all sectors. Drill exercises are regularly conducted and the plan is reviewed accordingly. Sectoral plans also exit but not as an integral part of the national plan.

Morocco has continued its flights to/from the affected countries during the Ebola outbreak. This has necessitated multisectoral preparedness involving both national and international stakeholders. The engagement of national security, the military and Royal Gendarmerie has been substantial in implementing the preparedness measures. Within the governmental structure, the public and animal health systems at all levels are able to request the support and engagement of law enforcement agencies to manage a health event or hazard through the PCC and PCPs.

Generic protocols, i.e. SOPs to accelerate the coordination needed for a prompt and appropriate response are not in place, but event-specific SOPs are. The specific events include disease outbreaks, events at points of entry, food contamination, chemical and radiation hazards. These all require information sharing, joint investigations, joint risk assessments, coordinated control activities and law enforcement.

Protocols also include terms of engagement with international entities and mechanisms, such as Interpol, United Nations agencies, and the United Nations Secretary General's Mechanism for Investigation of Alleged Use of Chemical and Biological Weapons.

Recommendations for priority actions

- Review and update the national contingency plan and ensure integration of sector-specific emergency preparedness and response plans.
- Ensure access to national and sector-specific plans and joint assessment protocols to all concerned personnel at the different levels of seniority.
- Establish a mechanism for regular sharing of information between the public health and security sectors.
- Review existing SOPs and develop generic SOPs that can be used for different public health events.
- Plan and organize joint training for public health and security personnel at all levels on detection, joint investigations and response to public health events of different origins.

Indicators and scores

R.3.1 Public Health and Security Authorities, (e.g. Law Enforcement, Border Control, Customs) are linked during a suspect or confirmed biological event

Score 5: Sustainable capacity. The PCC by ministerial decree coordinates the response to major public health events. The Committee acts with full power and authority and high-level representation from several sectors with defined terms of reference. There is strong coordination and information sharing among members of the Committee on updates and decision-making. The Committee meets regularly and on an ad hoc basis. Protocols exist between public health and security authorities within the country and have been formally used.

Strengths/best practices

- PCC is in place led by Ministry of Interior with high-level representation, defined terms of reference, well communicated through technology, and regular conduct of meetings; and regular conduct of simulation exercise and drills.
- PCC has clear protocols that engage the police or the army when there is a major hazardous event.
- SOPs to guide the actions of different stakeholders in a highly coordinated multisectoral response to a health emergency are in place for specific public health events.
- The national system and structure of the country enable the civil government to call in the police, security or army to assist.
- Strong coordination and collaboration exist with the media.

Areas that need strengthening/challenges

- Triggers for notification and information sharing are not identified; however, notification and information sharing between the health and security departments are done based on the risk assessment approach for each event. This may delay the timely sharing of information.
- Joint training between different sectors, including law enforcement and security, needs further enforcement.

Relevant documentation

- Terms of reference and structure of the Permanent Emergency Committee.
- Terms of reference and structure of the Supreme Council of Civil Defence.
- National contingency plan.
- Protocols and standard operating procedures for information sharing, investigation and response to the different hazards.

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.

Morocco level of capabilities

The country has multisectoral dynamic procedures that support medical countermeasure and personnel deployment. These procedures have the necessary legal and regulatory processes and logistic plans to allow rapid cross-border deployment and receipt of public health and medical personnel during emergencies. These procedureshave been tested more than four times within the last four years in real national and international public health emergencies.

These procedures need to be integrated into a policy (or plan) that identifies the SOPs and decision-making related to sending and receiving medical countermeasures during public health emergencies. It should document and incorporate all flow charts and/or agreements with organizations, manufacturers, distributors and other stakeholders to deploy personnel and/or medical countermeasures during any priority risk public health emergency. This policy should also be included in the comprehensive multi-hazard multisectoral public health (one health) preparedness plan.

The personnel deployment procedures have proved to be functional during national and international events. Two emergency responsesusing the deployment and receiving procedures for countermeasures and medical personnel were conducted in which these were sent or received by the country. Morocco also participates in a regional/international partnership and has formal agreements with WHO, the International Committee of the Red Cross, and Spain, that outline criteria and procedures for sending and receiving health personnel and medical countermeasures.

Recommendations for priority actions

- Map medical countermeasures and health personnel availability and distribution based on the national risk assessment and response specific or general resources.
- Create an inventory of medical countermeasures and health personnel available based on response need.
- Develop and test emergency policy on medical countermeasure and health personnel deployment and receiving, involving all related stakeholders. The policy should clearly outline a deployment and receiving process flow chart, schedule, timeframe, and logistics.

- Develop agreements and/or a network for international response involving needed medical countermeasures, health staff or expertise that are beneficial for global health security and Morocco.

Indicators and scores

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

Score 5: Sustained capacity. Capacity and capability of the deployment system for sending and receiving medical countermeasures during a public health emergency has been demonstrated and tested.

Strengths/best practices

- Morocco has extensive experience in deploying national medical countermeasures within and across its borders.
- The country participates in a regional/international partnership and has formal agreements with partner countries and international organizations that outline criteria and procedures for sending and receiving medical countermeasures.
- Morocco sent and received medical countermeasures to support the response to Ebola outbreak.

Areas that need strengthening/challenges

- A policy needs to be developed that addresses and documents process SOPs, monitoring, performance measurement, research and development, and sustainability of sending and receiving medical countermeasures during public health emergencies.
- Conducting drills or exercises to send and receive medical countermeasures would be beneficial for learning lessons.

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

Score 5: Sustained capacity. The capacity of the system in place for deployment or receiving health personnel has been demonstrated and tested, with documented agreements that outline the criteria, procedures, and SOPs.

Strengths/best practices

- Morocco's national personnel deployment plan is established and updated.
- Deployment procedures are available that outline the system for sending and receiving health personnel during public health emergencies. These procedures also tested and demonstrated decision-making and protocols for deployment of health personnel from other countries during a public health emergency.
- Morocco participates in a regional/international partnership and has formal agreements with WHO, the International Committee of the Red Cross, and Spain, that outline criteria and procedures for sending and receiving health personnel.
- The country has participated in an exercise within the past year to practice sending and receiving health personnel.

Areas that need strengthening/challenges

- The availability and distribution of health personnel should be mapped based on specific national risks and response needs.

- Updating and upgrading the existing agreements and/or network for international response for needed health staff or expertise should be carried out.
- Drillsor exercise should be conducted to evaluate the SOPs and update the policy on sending and receiving personnel in and out of the country.

Relevant documentation

- Decree for international agreement with Spain.
- Medical countermeasures and health personnel inventory and deployment procedure.
- Mobile hospital deployment procedures.

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.

Morocco level of capabilities

In the last years, Morocco has proactively improved its health communication capacities and organization. A centralized Information and Communication Division (Div Com) was created in 2013 under the General Secretariat of the MOH. The coordination at regional and provincial levels of Information and Communication Regional Units (ICRUs), operational since 2009, has also been recently reorganized by a Circular published in April 2016.

Specific national preparedness and response plans exist for diseases of major public health concern, and include a description of specific risk communication plans (e.g. MERS-COV, Ebola, pandemic influenza and Zika). The Risk Communication Strategy currently being developed defines the next steps to implement collaboration and strengthen capacities in order to establish a complete, multisectoral risk communication system in the country. The draft strategy, provided during the mission, plans to establish a multisectoral, multi-level network of risk communicators. The network should allow for real-time exchange of information, advice and opinion between experts and officials or people who face a hazard or threat to their survival, health or economic or social well-being. In this way they can take informed decisions to mitigate the effects of a threat or hazard and take protective and preventive action.

Further, the Strategy describes several measures to be implemented to strengthen capacities and enhance sharing of information necessary to plan efficient risk communication activities. Implementation of the Strategy will be a great step toward the organization of the national risk communication system aimed at increasing risk awareness to reduce and mitigate the impact of health hazards before, during and after

public health events. The ultimate goal is the development of a National Multi-hazard Risk Communication Plan.

Despite the absence of a specific intersectoral committee dedicated to risk communication, multisectoral and multi-level coordination is well organized by the Crisis Coordination Centre ("Poste de coordination central", PCC), and through several committees that regularly meet to share information, including on risk communication matters. For example the "tripartite committee" is composed of the MOH, Ministry of Agriculture and Ministry of Interior.

Active public communication through several multimedia channels is performed by the Div Com and relayed at the regional level. In addition, partnerships with stakeholders and civil society representatives, including religious leaders, have been established to ensure the dissemination of health messages. Community engagement is addressed at local level through Provincial Communication Officers and health messages are relayed through mobile clinics.

Finally, there is regular collaboration with journalists, and the Div Com tracks rumours through a daily press review and active community management of MOH socialmedia. A toll free telephone line for public health monitoring has also been created.

Recommendations for priority actions

Existing formal and informal tools and mechanisms need to be gathered and formalized in plans, programmes, SOPs and guidelines dedicated to risk communication. This will increase risk awareness and consequently reduce and mitigate the impact of a health hazard before, during and after public health events.Priority actions:

- Finalize the Risk Communication Strategy, including SOPs and guidelines for risk communication best practices.
- Develop a multi-hazard national Risk Communication Plan that includes guidance on risk communication in emergency situations.
- Develop and implement an intersectoral training programme in risk communication.
- Involve communities in the development and testing of risk communication campaign materials.
- Develop a communication activities assessment programme.

Indicators and scores

R.5.1 Risk Communication Systems (plans, mechanisms, etc.)

Score 2: Limited capacity. Despite the existence of several disease-specific national preparedness and response plans and formal government arrangements in Morocco, there is no national multi-hazard emergency risk communication plan in the country, as requested in level 2 of the JEE tool.

Strengths/best practices

- A centralized Information and Communication Division exists within the MOH, with dedicated staff.
- The functions at regional and provincial levels of ICRUs and coordination with the Div Com have recently been reviewed in a Circular, and a training programme for ICRUs is being developed.
- The development of a risk communication strategy is in progress. This is the first in a series of steps to publish a National Multi-hazard Risk Communication Plan.

Areas that need strengthening/challenges

- There is no formal national multi-hazard risk communication plan defining and organizing the national capacities, roles, collaboration and budget necessary for an efficient health sector risk communication system.
- Risk communication stakeholder roles, organization and responsibilities need to be determined within a health sector risk communication plan, taking into account all levels, i.e. national, regional and provincial. This plan should adopt a multi-hazard approach, and address necessary coordination with other sectors on zoonosis and food safety issues, so that messages transmitted to the public by authorities are consistent. The master plan described in the draft risk communication strategy may address this gap.
- Staff dedicated to risk communication should be clearly identified within the MOH so that they may focus on the preparation of risk communication activities, and avoid these being dissolved into reputational management issues or being limited to crisis management.
- Finally, a dedicated budget should be allocated to this area of work in order to ensure support to risk communication activities when there is no health outbreak, as well as after a crisis. Reinforcing risk communication preparedness activities will have benefit of allowing a quicker and more relevant response during times of crises.

R.5.2 Internal and Partner Communication and Coordination

Score 4: Demonstrated capacity. Effective, regular coordination for communication exists with most partners and at most preceding score levels. Several simulation exercises have been organized and the exemplary management of the Ebola situation has demonstrated a high level of coordination in an emergency situation.

Strengths/best practices

- PCC and PCPs coordinate the multiple ministries and stakeholders involved in emergency response, including for communication through a dedicated PCC structure.
- Several multisectoral high-level committees allow good coordination between stakeholders, in particular with the Ministry of Agriculture and the Ministry of Interior to address zoonosis or food safety matters.
- Exchanges within different levels and departments of the MOH are facilitated by an online forum.
- Formal and informal collaboration and partnerships are in place between the MOH and health professional representatives and syndicates, as well as with religious leaders.
- The recent Circular published to organize regional and provincial communication capacities might serve as an opportunity to extend collaboration to communications at regional and provincial level.
- Simulation exercises have been organized for each of the formalized specific response plans.

Areas that need strengthening/challenges

- SOPs and guidelines for risk communication best practices (crisis management, coordination, community engagement, rumour management, etc.) should be developed or updated, and shared within the MOH at all levels (national, regional, provincial) and, if possible, with other sectors.
- The communication regional capacity-building programme (drafted by Div Com) should be implemented.
- A training programme in risk communication should be developed or updated to strengthen the competencies of all stakeholders.

- Partnerships should continue to be developed or updated, and SOPs developed with health-care workers, civil society organizations, the private sector and other non-state actors.
- The multisectoral and multi-level network of risk communicators needs to be implemented as a useful tool to strengthen the collaboration and coordination of stakeholders, including non-public actors and civil society.
- Communication partnerships and collaboration within ministries and with the stakeholders involved must be regularly tested through joint emergency exercises.

R.5.3 Public Communication

Score 4: Demonstrated capacity. The proactive public outreach, based on a mix of platforms (the use of locally relevant technologies and languages, and the continuous engagement of journalists, including through media briefings) allow good and regular coverage of health issues in Morocco.

Strengths/best practices

- The Div Com comprises three services: information and health education, institutional communication, and production of information and communication materials. The existence of several communication plans has led to the production of numerous communication toolkits dedicated to specific risks and specific targets. Referential health advocacy has been developed to help regional level advocacy activities and the development methodology of these plans.
- Efforts to adapt messages to specific targets are made: languages (French, Arabic and Amazigh), vocabulary, behaviours, etc.
- Various multimedia communication channels have been established, including social media handled by a dedicated team, which ensure regular coverage of health issues and risks.
- A large press network has been developed, and is regularly activated through media briefings. In 2011–2013, several meetings were conducted for journalists in some health risk areas. In addition, main spokespersons of the MOH have been trained on how to communicate with the press.
- The existence of ICRUs and informal coordination mechanisms with stakeholders allow wide public communication. In particular, the participation of a communication officer in mobile clinics helps to disseminate health messages to communities.

Areas that need strengthening/challenges

- The messages and tools developed by the MOH and other stakeholders, in particular National Office for Health Security of Food Products (ONSSA) should be coordinated based on a health sector risk communication plan.
- Guidelines on risk communication best practices should be developed and shared in order to avoid confusing messages with reputational management issues.
- Despite the good press network established, the lack of specialized journalists has been identified. The establishment of a training programme on health issues and risk dedicated to journalists would significantly facilitate communication and press engagement during emergencies.
- Further audience research should be conducted to determine preferred and trusted communication channels. In addition, testing procedures of materials by representative target groups should be established. This will help ensure that health recommendations reach target populations in a rapid, efficient and cost-effective manner.
- Evaluation procedures should be formalized to improve future national response efforts. Public communication response products (press releases, transcripts of interviews, website messaging,

response to rumours, social media interactions, etc.) should be logged and tracked alongside the event and other response measures timeline. This would allow for evaluation during after-action reviews.

- Collaboration on public information is essential with ministries and entities (the National Ports Agency, ONSSA, Moroccan Airports Authority, etc.) in charge of points of entry (seaports, airports), laboratories and other sensitive areas in order to be sure to reach sensitive populations such as airport staff, passengers, laboratory technicians, etc.

R.5.4 Communication Engagement with Affected Communities

Score 3: Developed capacity. Some informal and formal community consultation mechanisms are in place (e.g. a hotline, surveys). Stakeholder mapping at local level still needs to be developed and standard practices formalized for involvement of community and key stakeholders in developing information, education communication (IEC) materials.

Strengths/best practices.

- The existence of ICRUs and informal coordination mechanisms with stakeholders at regional and provincial levels allows a basic communication engagement system. In particular, the participation of a communication officer in mobile clinics helps to disseminate health messages to communities. Some community leaders have been identified informally, especially at regional level.
- Some community consultation mechanisms exist such as the hotline dedicated to the health monitoring.
- Training for behaviour change has been conducted for all health system communicators.

Areas that need strengthening/challenges

- A formalized and shared mapping of stakeholders and community leaders at intermediate and local level needs to be established. This should be done in collaboration with other sectors to better ensure that health recommendations can reach target populations in a rapid, efficient and cost-effective manner.
- Standard practice of developing information education communication materials with community and key stakeholders needs to be established.
- Formalized, regular briefing, training and engagement of multisectoral teams involved in social mobilization (including volunteers, community leaders, etc.) need to be established.
- Communities should be involved in simulation exercises in order to test the efficiency and rapidity of mobilization and transfer of information.

R.5.5 Dynamic Listening and Rumour Management

Score 3: Developed capacity. Routine and event-based systems are in place for listening and rumour management with limited or unpredictable influence on the response.

Strengths/best practices

- Active rumour listening is carried out through a daily press review and social media management at national level. A regional press review is currently being organized.
- Identified rumours are addressed by responses in widely disseminated press releases (television, written press, social media, etc.).
- At the MOH, a toll free line dedicated to the health monitoring is in place, and the PCC has established a wide network of civil individual informants throughout the country who are regularly contacted.

Areas that need strengthening/challenges

- Rumour listening should not be limited to press reviews, but extended to community listening and engagement. Multisectoral collaboration and community and partner engagement should enhance the collection of rumours and misperceptions.
- The establishment of guidelines for rumour collection focusing on risk communication would be helpful to avoid focusing on complaints and reputational issues instead of collecting misperceptions and potentially harmful rumours about health recommendations. These rumours could be effectively addressed through coordinated health sector responses.
- Rumours and misinformation can currently be gathered from several sources (toll free lines, partners, civil informers, etc.). However they are not coordinated into decision-making and response actions to be managed at the source of the rumour with evidence based information.

Relevant documentation

- Official bulletin announcing the creation of the Information and Communication Division under the General Secretariat.
- Organizational Chart of the Information and Communication Division and of URCI.
- Circular organizing regional communication.
- Health emergency response plans (e.g. Ebola, Zika, Mers-Cov).
- Risk communication draft strategy, June 2016.
- Communication capacity-building plan for regional teams.
- Agreements with partner organizations.
- Referential health advocacy
- Website: www.sante.gov.ma.
- Programme intidarate.

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.

Morocco level of capabilities

Morocco has seventeen designated points of entry, including eight airports, eight seaports, and one ground crossing. The country has also notified 12 authorized ports along the Atlantic and the Mediterranean coasts. Morocco has significant tourism and trade for which the value of functioning points of entry is acknowledged. In addition, large numbers of non-resident Moroccans seasonally travel to the country from abroad and are assisted throughout their voyage by the Mohammed V Foundation, located within points of entry.

Morocco has officially adopted the IHR through Royal Decree Dahir, within which all provisions for points of entry are included. A coordination structure has therefore been established by the MOH to operationalize the IHR at both local and regional levels.

In Morocco, the Border Health Services represent the national health authority at points of entry responsible for the implementation of the IHR as well as other national regulatory guidelines, such as new measures related to Zika. Their role is supported by national health policy and covers surveillance, risk assessment, and the prevention of importation/exportation of potentially epidemic diseases. The Border Health Services are under the jurisdiction of the MOH.

Competent authorities have been clearly identified at points of entry for both routine and emergency operations, and regular coordination with other sectors was noted (this was also demonstrated in practice during the recent Ebola crisis). Notably, Morocco adhered to both WHO and International Civil Aviation Organization recommendations during the crisis and did not implement restrictive measures on travel and trade with affected countries.

Currently, a new national plan outlining the restructuring of the Border Health Control for 2016–2020 is under discussion.

Exceptional capacity was noted at the port of Tangier Med, in particular for emergency preparedness through extensive exercises and simulation and numerous, specifically adapted contingency plans. The public health emergency plan could be used as an example for other points of entry.

Recommendations for priority actions

- Formalize agreements of cooperation, collaboration, and resource sharing with relevant stakeholders operating within points of entry with specific SOPs and memoranda of understanding. Resources and exemplary models can be found from CAPSCA (collaborative arrangement for the prevention and management of public health events in civil aviation) or PAGNet (ports, airports and ground crossing network).
- Promote PoE-specific emergency plans for all designated points of entry, in particular public health emergency plans. In addition, PoE for vector control plans are also a priority.
- Reinforce surveillance and risk assessment capacities at designated PoE, including continued training and professional development on epidemiological surveillance.
- Develop a continuous training programme for health officers as well as other relevant sectors operating at points of entry.
- Seek official certification from WHO for points of entry.

Indicators and scores

PoE.1 Routine capacities are established at PoE

Score 3: Developed capacity. Overall, good capacity exists across Moroccan points of entry. Specific site visits to the airports of Fes and Marrakesh and the ports of Casablanca and Tangier Med were made during the mission. Discussions and site visits confirmed that routine capacity was largely in place to ensure requirements outlined in IHR Annex 1B. The external assessment team and Moroccan counterparts concluded that although elements of Score 5 were present for this indicator, trained personnel to inspect conveyances at PoE, and capacities for Score 4 of established and routine vector control were not yet present.

Strengths/best practices

- PoEs possess the capacity to provide access to medical services and staff, diagnostic equipment, and transport of suspected cases to appropriate medical centres via different types of specialized ambulances – this was demonstrated during the Ebola crisis.
- Most PoEs have established links with local health centres and veterinary services for the management of suspected cases.
- Trained personnel are available to inspect conveyances.
- Designated ports have established capacity to issue Ship Sanitation Certificates.
- A safe environment for travelling passengers is ensured at PoE, e.g. hygienic washrooms, drinking water, and eating establishments. Health sensitization on public health matters is displayed to the public in French and Arabic.

Areas that need strengthening/challenges

- Cooperative agreements and arrangements specific to a PoE should be formally written and well-disseminated as SOPs and memoranda of understanding to prevent any gaps in functioning due to staff turnover or changes in human resources.
- Disinfection and deratting of conveyances is often performed by a third party through direct supervision; however routine vector control should be established at every designated PoE within 400 m as per routine capacities outlined in IHR Annex 1B. Furthermore, existing measures should be coordinated with other responsible parties, as well as adjacent cities/towns.

- Coordination between PoE and health facilities, laboratories, provincial cells, and the regional public health services should be further strengthened.

PoE.2 Effective Public Health Response at Points of Entry

Score 3: Developed capacity. The external assessment team and Moroccan counterparts agreed that the Score 3 was awarded since written emergency contingency plans are inconsistent across PoE, and therefore not tested and regularly updated. Examples of public health response were enumerated during site visits, and some examples of successful exercises and drills were shared.

Strengths/best practices

- The MOH has a national plan for the management of a PHEIC, in which the roles of each stakeholder are clearly defined.
- The majority of PoEs have contingency measures and key coordinators established in practice, although they are not yet formalized within written plans.
- Specific areas and protocols are reserved for quarantine, as well as for the application of control measures for cargo/conveyances.
- Specialized ambulances from civil protection and mobile quarantine stations exist to respond to suspected highly contagious cases.

Areas that need strengthening/challenges

- PoE-specific plans with a clearly defined and updated lists of contacts should be developed and well-disseminated.
- Exercises and testing of specific/sectoral contingency plans should be carried out periodically during peacetime, and lessons learnt should be documented and disseminated.

Relevant documentation

- Dahir No. 1-09-210, October 2009 – Adoption of IHR.
- Dahir 5 January 1916 – maritime health police.
- L'Arrêté Viziriel du 23-11/1946 –Contrôle Sanitaire aux Frontières terrestres, maritimes et aériennes.
- Ministerial Circular No. 41/DELM/DRC/10 of 6 August 1999 enacting the organization and border health operations.
- Border Health Control Reconstruction Plan.
- Border Health Control Procedures.

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.

Morocco level of capabilities

There are many similarities between chemical events and other IHR relevant hazards; however, they have certain unique aspects that need to be borne in mind when considering the capacities required to meet IHR requirements. As chemicals are ubiquitous, a very broad spectrum may be involved in a chemical event and the whole life cycle needs to be considered. While radiological events are a separate IHR-related hazard, radioactive materials may have important toxic effects due to their chemical components. Air- and waterborne chemicals, involving soil and/or food contamination may be involved, which can have both internal and international/trans-boundary impacts. Chemical events may also involve contamination of pharmaceuticals or exposure to natural toxins. While acute toxic effects are of primary concern, chronic and long-term effects may also need to be considered in terms of capacity to deal with chemical events. Borders may be porous; consequently it may not be easy to define precisely "Points of Entry". Moreover, chemical events of airborne origin may have quite broad entry points. Similar considerations apply for marine, international waterway and off-shore chemical events.

Legislative infrastructure is largely in place to respond to events of chemical origin, and legislation concerning chemical products is also being developed. Pesticides and pharmaceuticals are specifically regulated. There is adequate legislation for the control of toxic chemical waste, but technical capacity for sound management is weak. The country has a chemical safety policy and a national strategy and action plan (2007–2020) has been elaborated. Morocco has ratified the Basel, Rotterdam and Stockholm Conventions, the Paris Convention on chemical weapons, and is progressing towards ratification of the Minamata Convention on Mercury. The country adheres to the Strategic Approach to International Chemicals Management, and is working towards implementation of the Globally Harmonized System of Classification and Labelling of Chemicals. The Amendment to the Basel Convention has been ratified and incorporated into legislation on toxic waste. The International Labour Organization conventions 170 and 174 are not in force. Guides and procedures for sound chemical management have been elaborated, but are only partially implemented. There is good access to international databases (e.g. INTOX; INCHEM; Poisindex; TOXbase; Toxinz). Environmental monitoring of air and water is in place, although surveillance for other media is partial.

An interministerial committee dealing with polychlorinated biphenyls (PCBs) and other specific chemicals is functional, with the potential to expand its competence. A national plan for implementation of the Stockholm Convention on Persistent Organic Pollutants (POPs) is being put in place.

Coordination with other IHR sectors is in place, while mechanisms for consultation concerning chemical events among stakeholders and communication of chemical risks need strengthening. There remains a lack of awareness concerning chemical risks and chemical events, and poor appreciation of the implications of chemical emergencies at decision-making levels in the regions. Further training of human resources in risk communication is desirable.

Good laboratory capacity for identifying chemical risks with SOPs exists at the national level, but remains weak at the peripheral level.

A well-developed national centre for toxicovigilance and pharmacovigilance exists, providing an important component for 24/7 identification and surveillance of chemical risks, particularly acute exposures (with information on over half a million cases of chemical exposures). Capacity for identification and surveillance of chemical risks from chronic exposure, with the potential of becoming chemical events, needs strengthening. Capacity exists for identifying chemical risks associated with contamination of food, although there is a need to strengthen capacity for analysis of clinical toxicological samples.

The health sector cooperates with the emergency services (coordinated through the Ministry of Interior) for preparedness and response to IHR-related chemical events and their notification. Each major industrial installation has its chemical emergency preparedness and response plan for the periphery as well as the interior of the installation; but these plans need regular testing and improvement through simulation exercises.

Recommendations for priority actions

- Establish a legally constituted national interministerial commission on chemical events, with a budgeted programme of work for the purpose of, inter alia:
  - systematic collection and exchange of information on chemical events and their management, with regular analysis of the information with a view to learning from experience;
  - evaluating the risks involved in chemical events, and communicating this to relevant decision-makers for specific action;
  - educating the public and improving the awareness of decision-makers of chemical risks, their identification, minimization and available actions to respond to emergencies, with training and strengthening of human resources;
  - organizing (biennially), simulation exercises to test national and regional capacities to identify and respond to chemical events.
- Update, on a regular basis, the national profile on chemicals management, following the revised Inter-Organization Programme for the Sound Management of Chemicals format.
- Strengthen analytic toxicology laboratory facilities, with the creation of a regional network of accredited laboratories that support diagnosis and patient management of exposed persons and the monitoring of biomarkers of chemical events, including the integrated transport of analytical samples.
- Further develop and implement an obligatory global system for classification and labelling of chemicals in all sectors.

Indicators and scores

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

Score 3: Developed capacity. A surveillance system is in place for chemical events with the identification of poisons and their management, with laboratory capacity for confirmation.

Strengths/best practices

- Guidelines for surveillance and a national poisons centre provide the capacity for this score. However, there is no real-time exchange of information among relevant stakeholders, and the surveillance system for chemical events and their reporting remains inadequate.
- The Poisons Control Centre has an extensive database of over a million cases of chemical exposures, collected 24/7 in real time.

Areas that need strengthening/challenges

- Coordination for surveillance and detection of events needs to be strengthened, despite the existence of several committees (such as on PCBs, persistent organic pollutants, and EIE) and a national Nuclear, Radiological, Biological and Chemical Plan.
- The responsibilities are divided among several sectors with little coordination and insufficient exchange of information.
- Laboratory capacity, qualified human resources and finance remain insufficient.

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

Score 3: Developed capacity. A national policy, action plans and legislation for surveillance, alert and response to chemical events exist.

Strengths/best practices

- Morocco takes part in international chemical networks such as WHO/IPCS/INTOX.
- Some 129 chemical substances are either forbidden or strictly controlled, and pesticide residue limits for food are in place.
- In the case of serious chemical events, financial resources need to be immediately mobilized.
- There are biannual simulation exercises for marine hydrocarbon pollution.

Areas that need strengthening/challenges

- Surveillance and response for chemical events should be strengthened and coordinated, and a national plan for their management implemented.
- Legislation must be extended to cover the whole chemical life cycle and guarantee access to information.
- A comprehensive health plan for chemical incidents, with regular evaluation, should be developed.
- Capacity for health risk evaluation and communication of the risks need strengthening.
- Simulation exercises for chemicals event response should be undertaken biannually.

Relevant documentation

- Revue ToxicologieMaroc, N° 27 - 4ème trimestre 2015 Publication officielle du Centre Anti Poison duMaroc, Ministère de la Santé
- Revue ToxicologieMaroc, N° 23 - 4ème trimestre 2014 Publication officielle du Centre Anti Poison du Maroc, Ministère de la Santé
- Revue ToxicologieMaroc, N° 22 - 4ème trimestre 2013 Publication officielle du Centre Anti Poison du Maroc, Ministère de la Santé
- International Programme on Chemical Safety, guidelines on the prevention of toxic exposure, education and public awareness activities, Published by the World Health Organization in collaboration with the United Nations Environment Programme and the International Labour Organization
- Circulaire: Organisation nationale de la lutte anti-poisons et de pharmacovigilance, Ministère de la Santé, Direction de la réglementation et du control, Division des Affaires Juridiques".

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.

Morocco level of capabilities

Morocco's National Centre of Radiation Protection (CNRP) was designated by Decree No. 2-97-30 on 28 October 1997 for radiation safety, surveillance, preparedness and response with adequate available resources. It assesses the safety of medical and industrial radiation facilities and reviews the safety reports provided by radiation facilities. The nuclear and radiological emergency management system is integrated in the National Disaster Management Authority Plan and addresses all radio-nuclear emergencies. Emergency plans with adequate resources are ensured for surveillance, laboratory analysis, hazard assessments and conduct of exercises or drills. International standards and guidance are closely followed and but not evaluated regularly.

Recommendations for priority actions

- Establish an adequate legislative and regulatory framework for emergency preparedness and response. The executive regulation includes the legal pathway of law enforcement by the regulatory bodies, and regulations on management of nuclear or radiological emergencies.
- Establish a national committee for radiological emergencies with contact points of all authorities connected to any suspected radiological emergency.
- Define a list of medical facilities that can treat contaminated individuals or victims of radiation emergencies, and ensure they have adequate allocated resources.
- Revise and update regularly the emergency plans, and ensure adequate resources are available for surveillance, laboratory analysis, hazard assessments and conduct of exercises or drills.
- Ensure systematic information exchange between radiological competent authorities and human health surveillance units about urgent radiological events and potential risks that may constitute a PHEIC.
- Coordinate risk assessments, risk communication, planning, exercises and monitoring, including those during urgent radiological events and potential risks that may constitute a PHEIC.
- Allocate additional human and financial resources to cover the expansion and increased use of radiation in medical, industrial and other sectors.

Indicators and scores

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

Score 3: Developed capacity. An emergency response plan exists for radiation emergencies as part of the National Disaster Management Authority Plan. In addition, international standards related to emergency planning are closely followed. However, evaluation and updating of SOPs for the management of radiation emergencies, regular revision and updating of the emergency plans, and systematic information exchange between radiological competent authorities and human health surveillance units on urgent radiological events and potential risks that may constitute a PHEIC are limited. Improving these practices would enable Morocco to reach level 5 for this indicator.

Strengths/best practices

- CNRP is a designated institute for radiation safety, surveillance, preparedness and response with adequate available resources.
- CNRP performs safety assessments of medical and industrial radiation facilities, which provide periodic safety reports for review.
- The Nuclear Emergency Management System of the National Disaster Management Authority Plan addresses the management of nuclear and other radiological emergencies.
- CNRP has the authority to assess facilities, issue and revoke licenses, set standards and requirements for waste management and regularly monitor them.
- National authorities responsible for radiological and nuclear events have identified a designated focal point for coordination and communication with the MOH and IHR NFP.

Areas that need strengthening/challenges

- A national committee for radiological emergencies needs to be established.
- Written SOPs should be developed, evaluated and updated for the management of radiation emergencies (including risk assessment, reporting, event confirmation and notification, and investigation).
- The emergency plans should be revised and updated regularly and adequate resources ensured for surveillance, laboratory analysis, hazard assessments and conduct of exercises or drills.
- A mechanism for systematic information exchange between radiological competent authorities and human health surveillance units should be established to cover 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, strategies or plans for the detection, assessment, and response to radiation emergencies are available. National authorities responsible for nuclear and radiation events have a designated focal point for coordination and communication with the IHR NFP. Morocco will reach a Score 5 once medical facilities to treat contaminated individuals or victims of radiation emergencies are available with adequate resources and well trained personnel, as well as a coordination mechanism with relevant stakeholders at national and subnational levels.

Strengths/best practices

- National authorities responsible for radiological and nuclear events have a designated focal point for coordination and communication with the MOH. Communication and coordination between this focal point and the IHR NFP is in place.
- A radiation emergency response plan exists (which could form part of the national emergency response plan), as well as national policies, strategies or plans for national and international transport of radioactive material, samples and waste management including those from hospitals and medical services.
- Coordination with national and subnational levels of all relevant stakeholders and sectors is in place, e.g. among health, environment, emergency services, and reference laboratories.

Areas that need strengthening/challenges

- Designated 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 established with SOPs, clear delineation of roles and responsibilities, public communication, management of affected populations, decontamination, and adequate resources.
- Allocation of additional human and financial resources are required due to expansion of the nuclear power programme and increased use of radiation in medical, industrial and other sectors.

Relevant documentation

- The IAEA evaluation and certification (findings).
- Reports of exercises and drills.
- Legislation.
- Nuclear and Radiological Emergency Management System Plan.

Annex 1: Joint External Evaluation Background

Mission place and dates

Rabat, Morocco: 20–24 June 2016

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Mahmoud Orabi, Veterinarian, International Services, Animal and Plant Health Inspection Services, United States Department of Agriculture, Egypt

Joanna Zwetyenga, Laboratory Biosafety and Biosecurity Specialist and Quality Management Systems, France

Khalid Abu Hamaid, Consultant on Emergency Medicine, Pre-Hospital Care, Mass Gathering and Disaster Management, Ministry of Health, Saudi Arabia

Kleio Stoidou, Public Health Legal Advisor, Greece

Objectives

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

The Joint External Evaluation process

The Joint External Evaluation process is a peer-to-peer review. As such, it is a collaborative effort between host country experts and External Evaluation Team members. The entire external evaluation, including discussions around the scores, the strengths, the areas that need strengthening, best practices, challenges and the priority actions should be collaborative, with external evaluation team members and host country experts seeking full agreement on all aspects of the final report findings and recommendations.

Should there be significant and/or irreconcilable disagreement between the external team members and the host country experts or among the external or among the host country experts, the External Evaluation Team Lead will decide the outcome; this 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 were held with assessment team members, the WHO Office in Morocco and the Morocco host to review the agenda, responsibilities, and logistics.
- A national training was conducted on 7–8 May to provide national stakeholders with information and resources for a successful participation in the JEE process, and guidance on self-reporting requirements and responsibilities.
- Background documents were collected and shared with the JEE team along with the complete JEE tool for review.
- The WHO Office in Morocco and the Morocco host facilitated the necessary administrative and logistic arrangements for the deployment of the external experts to the country.
- A one-day orientation session was conducted for the external experts on the JEE process and tool, objectives and expected outcomes, and on discussions to finalize the agenda of the mission.
- Meetings with 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 was held to present the outcomes of the JEE, best practices and priority actions.
- A press release was issued describing the participation of Morocco in the JEE, highlighting the main strengths, gaps and priority actions that need to be in place to meet the requirements of the 19 technical areas.

Limitations and assumptions

- The assessment was limited to one week, which limited the amount and depth of information that could be managed.
- The results of this assessment will be made publicly available.
- The assessment is not an audit and information provided by Morocco is not independently verified. Information provided by Morocco was discussed and an assessment rating was mutually agreed by Morocco and the assessment team in a peer-to-peer review approach.

Key host country participants and institutions

Department/Structure	Name
Ministry of Interior General Directorate for Local Authorities	Zineb Cherrat
Crisis Coordination Centre (PCC)	Moustaine Ismail Alaoui Driss El Qorchi Mohammed Rbai
Royal Gendarmerie	Ennaji Sindagad
Health Services of the Royal Armed Forces	Mohammed Rbai
Directorate General for National Security	Jalil Benkassem
Directorate General for Civil Protection	Hicham Lasry Ben Kacem Jalil
Ministry of Agriculture, National Office for Health Security of Food Products	Asmae Kamili Yassir Lezaar Zineb Semmaoui Abdelkrim Moujanni Houriya El Bazaoui
Ministry of Equipment, Transport and Logistics, Directorate of Civil Aviation	Adil Bouloutar Safae Reddaf
Ministry of Finance, Customs Administration	Fergani Kawtar Fatima Faddak
Ministry in charge of the Environment	Salma Karakchou
Airports Authority (ONDA)	M'hammed Nazim Kamri
National Ports Agency (ANP)	Abdelali Okacha Taoufik Drhourhi
Royal Air Maroc	Ouafaa Kohen
Ministry of Health, Directorate of Administrative Procedures	Mounia Bouhami Rajaa Tahloun
Ministry of Health, Directorate of Hospital andAmbulatory Care	Mohammed Yammou Moulay Mustapha Alaoui
Ministry of Health, Directorate for Human Resources	Rachid Dekiki
Ministry of Health, School of Public Health	Kenza Bennani
Ministry of Health, Public Health (Field Epidemiology Training Programme)	Noureddine Sakhri Issam Ahadi Ouafae Alaoui Ismaili
Ministry of Health, Directorate ofthe Population	Mohammed Ben Azzouz
Ministry of Health, Directorate of Medicines and Pharmaceutical Products	Mohamed Wadie Zerhouni
Ministry of Health, General Secretariat, Division of Information and Communication	Jamila Jbili Hala Benjelloun
Ministry of Health, General Secretariat, Supply Division	Fatima Zahra Abdennaim
Directorate of Epidemiologyand Disease Prevention	Abderrahmane Maaroufi (IHR NFP) Rachid Wahabi Mohammed Youbi Ahmed Rguig Driss Machraa Hind Ezzine Houda Moumni Abdou Rabia Lahlawti Nawal Regrag Moncef Ziani Bouchaib Benbakhta Zakia Sebban

National Institute of Hygiene (INH)	Mohammed Rhajaoui Larbi Baassi Nezha Barakate Amal Barakate Ghizlane Selka
National Poison and Pharmacovigilance Centre	Hanane Chaoui Naima Rhalem Oumayma El Bouazzi Semellaliilham
Pasteur Institute of Morocco	Jalal Nourlil
National Centre of Radiation Protection	Mohamed Tazi Houriya El Badaoui
National Blood Transfusion Centre	Khadija Lahjouji
Nongovernmental organization, Moroccan Biosafety Association (MOBSA)	Samira Senouci
Nongovernmental organization, Moroccan Biological Safety Association (AMBS)	Abdelkrim Filali Maltouf Mohamed Benbouida
Private sector, Hospital Cheikh Zaid	Anissa Ben Aouda Mohamed Benbachir
Airport Mohammed V, Casablanca	Mohamed Moussif
Airport Ménara, Marrakech	Mohamed Bellout Mohamed Zaffa
Airport Rabat-Salé	El Amine El Bacha
Airport Fès Sais	Saad Mekouar
Port of Casablanca	Mohamed Chikhaoui Ali Nouaman
Port of Tangier Med	Abderrahim Rachdi
WHO	Yves Souteyrand Ahmed Chahir Abdelaziz Barkia (Consultant)

Supporting documentation provided by host country

Technical area	Background/support documents
Chemical events	- Réglementation - Bases de données nationales et rapports nationaux - Lignes directices internationales - Lignes directrices des Conventions ratifiées par le Maroc - Les systèmes de surveillance existants (Environnement, santé) - Alertes déjà produites
Food safety	- Circulaire du Ministère de la Santé sur les TIAC - Circulaire conjointe Santé Agriculture Intérieur sur les cellules de veille sanitaire - Procédure interne de gestion des TIAC spécifique à chaque intervenant - Loi No 28-07 sur la sécurité sanitaire des aliments et ses textes d'application - Coordination intersectorielle et communication de risque entre les parties prenantes
Reporting	- Règlementation, RSI - Rapport de notification - Développer des mécanismes de coordination entre le MS et l'ONSSA quant à la notification
Legislation	- Élaboration des textes d'application

Linking pubichealth with security	- PCC et ministère de l'Intérieur - Règlementation - Développer un mémorandum entre la santé et l'autorité chargée de la sécurité au niveau national
IHR coordination, communicationand advocay	- Règlementation - Rapport d'évaluation - Développer et mettreen application les procédures de coordination et de communication multisecteorielle
Preparedness, emergency response operations, and medical countermeasures and personnel deployment	- Dahirs, Arrêtés , Plan stratégique2012-2016, Circulaires
Surveillance	- Règlementation - Rapport d'évaluation - Monitoring - Guidelines et documents technique - Notification électroniques - Analyse des données systématiquement avec évaluation de risque - Surveillance basée sur les évènements
Zoonoses	- Guides de programmes - Rapports d'investigations - Rapports de programmes - Textesréglementaires
Immunization	- Plan stratégique du Ministère de la santé - Guides du programme - Rapports - Enquêtes population - JRF - Enquêtes population - JRF
Risk communication	- Le plan stratégique national 2012 -2016 - L'arréte de la création de la division - Circulaire organisant la communication régionale - Plan de riposte spécifique et les manuels des procédures
Antimicrobial resistance and infection prevention and control	- Règlementation - Rapport d'évaluation - Guidelines et documents technique - Elaboration d'un plan d'action national de lutte contre la résistance aux antimicrobiens inspiré du GLASS
Radiation emergencies	- Décret n° 2-97-30 du 28 octobre 1997relatif à la protection contre les rayonnements - Décret n° 2-97- 132 du 28 octobre 1997 relatif à l'utilisation des rayonnements à des fins médicales ou dentaires - Elaboration de plan d'urgence National - Mise à niveau de quelques hôpitaux pour la prise en charge des personnes irradiées

Points of entry	- Circulaire ministérielle 1999 relative à l'organisation du contrôle sanitaire international - Annexe 9 OACI - Manuel de procédure des contrôles sanitaires au Maroc - Manuel des procédures de contrôle sanitaire aux frontières; - Exigences OACI (Annexe9) - Guides OMS - Plans d'urgence des aéroports - Manuel d'urgence de l'aéroport Mohammed V - Ports (ANP, validée par la DEIM) : Procédure de la libre pratique des bâtiments en cas d'urgence de santé publique à portée internationale. - Plans d'urgence de santé publique à tous les points d'entrée - Plans de surveillance et d'action en cas d'urgence pour les vecteurs
Biosecurity and biosafety	- LOI (GBEA) - Loi sur le transport des matières dangereuses) - Loi 28,00 et décrets d'application - CWA - Développement des compétences en biosécurité et biosûreté

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