JOINT EXTERNAL EVALUATION OF IHR CORE CAPACITIES

of the

KINGDOM OF ESWATINI

Mission report:
9-13 April 2018

World Health Organization

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Contents

ACKNOWLEDGEMENTS

Acronyms and abbreviations

ACSCAR	AMR Containment Strategic Plan to Combat Antimicrobial Resistance (2017–2021)
AEFI	Adverse events following immunization
ALARA	As low as reasonably achievable
AMR	Antimicrobial resistance
CMS	Central Medical Stores
CVL	Central Veterinary Laboratory
DHIS	District Health Information System
DHMT	District health management team
DVLS	Department of Veterinary and Livestock Services
EDCU	Epidemiology and Disease Control Unit
EMS	Emergency Medical Services
EOC	Emergency operations centre
EPI	Expanded Programme on Immunization
EPRU	Emergency Preparedness and Response Unit
FAO	Food and Agricultural Organization of the United Nations
FETP	Field Epidemiology Training Program
HMIS	Health Management Information System
HP&E	Health Promotion and Education Department
HCAI	Health care-associated infection
HPAI	Highly-pathogenic avian influenza
HR	Human resources
IAEA	International Atomic Energy Agency
IDNS	Immediate Disease Notification System
IDSR	Integrated Disease Surveillance and Response
IHR	International Health Regulations
ILO	International Labour Organization
IPC	Infection prevention and control
INFOSAN	International Food Safety Authorities Network
ISO	International Organization for Standardization
MCM	Medical countermeasures
MoA	Ministry of Agriculture

MoU	Memorandum of Understanding
NDMA	National Disaster Management Agency
NFP	IHR National Focal Point
NGO	Nongovernmental organization
NRL	National Reference Laboratory
OIE	World Organisation for Animal Health
PHEIC	Public health emergency of international concern
PoE	Points of entry
PVS	Performance of Veterinary Services (evaluation)
RRT	Rapid response team
SADC	Southern African Development Community
SADCAS	Southern African Development Community Accreditation Services
SEA	Swaziland Environmental Agency
SEPI	Swaziland Expanded Programme on Immunization
SOP	Standard operating procedure
SRA	Swaziland Revenue Authority
SWASA	Swaziland Standard Authority
TB	Tuberculosis
UNICEF	United Nations Children's Fund
USDF	Umbutfo Swaziland Defence Force
VAC	Vulnerability Assessment Committee
WAHIS	World Animal Health Information System
WHO	World Health Organization

Executive summary

Eswatini has fortunately not experienced any large-scale emergencies recently. An acute emergency, however, can occur at any time. Cognizant of this fact, the Government of Eswatini volunteered to undertake the Joint External Evaluation (JEE) to identify its gaps in emergency preparedness, detection and response and improve on its strengths/capacities for health security. This is highly commendable. The external peer-to-peer review of Eswatini's capacities in 19 technical areas of the International Health Regulations (IHR) commenced on 9 April 2018.

The country was found to have various strengths including the implementation of IHR through the Integrated Disease Surveillance and Response (IDSR), a good sample/specimen transport system with dedicated vehicles managed by staff trained in specimen referral and laboratory testing systems for priority diseases. Among the strengths identified during the field visits is the national emergency hotline, the toll-free 977-telephone number used throughout the country, which could be considered a best practice. The staff managing the hotline are extremely well trained and organized, utilizing an electronic system for data. The system is also used by health staff to report cases (e.g. cholera), which activates communication with all appropriate stakeholders to mount a response.

A lot of work has been done in the area of developing plans and strategies which were shared during the peer-to-peer review. Many of these documents however were in draft form, and had not yet received formal endorsement or enactment by ministers or parliament. Consequently, in order to maintain the integrity of the JEE tool, a number of scores assigned were lower than expected. It is important to note that in such instances, the country can quickly increase its scores by formally ratifying/enacting the plans, such as the draft National Multi-Hazard Contingency Plan, which is currently only awaiting the signature of one minister in order to be formally adopted. Once complete, the country will have a strategy to address multiple hazards with all relevant stakeholders, and work can begin on operationalizing work plans. It will also quickly result in an increase in the country's score in the technical area of national legislation.

Eswatini is not a large country; its area is 17,364 km2, with a population of just over 1 million. For that and other reasons, officials in the country have made use of informal communication and ways of working that have worked in the past—however, due to their informal nature, several processes are not documented. Documentation of protocols and standard operating procedures was found to be lacking in a number of the technical areas assessed. This does not mean, however, that the capacity of the country is necessarily absent or lacking in certain technical areas. Using IHR coordination as an example, it is clear that strong relationships exist between staff of the Ministries of Health and Agriculture for example; however there are no formal standard operating procedures that outline coordination mechanisms among all key sectors.

Another overarching area in which Eswatini needs to focus is the provision of adequate resources to address the gaps identified in each technical area by investment in building the necessary skills and competencies. For example it was found during the visit to the ground crossing that staff were not sensitized to the IHR requirements and requested further training to adequately perform their duties. Additional resources are needed to bring the points of entry (PoE) to the level that fulfils the requirements outlined by IHR.

While biosafety issues are catered for, another point brought out by the review is the lack of structures to address biosecurity systems. So it is imperative to incorporate biosecurity elements in the biosafety plan. This will improve the scores in this technical area.

During the review national and international colleagues worked tirelessly to accurately determine the state of the emergency preparedness and response capacity in Eswatini. It is clear that the strong political will observed can be harnessed to quickly address the gaps identified by the JEE; that political will is needed to mobilize the resources to implement the national action plan for health security. This will allow the country to achieve more sustained capacities for health security.

Eswatini scores and priority areas for action

Technical area	Indi-cators	Indicator description	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 (2005)	2
	P.1.2	The State can demonstrate that it has adjusted and aligned its domestic legislation, policies and administrative arrangements to enable compliance with IHR (2005)	2
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	1
Antimicrobial resistance	P.3.1	Antimicrobial resistance detection	1
	P.3.2	Surveillance of infections caused by antimicrobial-resistant pathogens	1
	P.3.3	Health care-associated infection (HCAI) prevention and control programmes	1
	P.3.4	Antimicrobial stewardship activities	1
Zoonotic diseases	P.4.1	Surveillance systems in place for priority zoonotic diseases/pathogens	3
	P.4.2	Veterinary or animal health workforce	4
	P.4.3	Mechanisms for responding to infectious and potential zoonotic diseases are established and functional	2
Food safety	P.5.1	Mechanisms for multisectoral collaboration are established to ensure rapid response to food safety emergencies and outbreaks of foodborne diseases	2
Biosafety and biosecurity	P.6.1	Whole-of-government biosafety and biosecurity system is in place for human, animal and agriculture facilities	1
	P.6.2	Biosafety and biosecurity training and practices	1
Immunization	P.7.1	Vaccine coverage (measles) as part of national programme	3
	P.7.2	National vaccine access and delivery	2
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	2
	D.1.4	Laboratory quality system	2
Real-time surveillance	D.2.1	Indicator- and event-based surveillance systems	4
	D.2.2	Interoperable, interconnected, electronic real-time reporting system	2
	D.2.3	Integration and analysis of surveillance data	4
	D.2.4	Syndromic surveillance systems	4
Reporting	D.3.1	System for efficient reporting to FAO, OIE and WHO	1
	D.3.2	Reporting network and protocols in country	2

Technical area	Indi-cators	Indicator description	Score
Workforce development	D.4.1	Human resources available to implement IHR core capacity requirements	2
	D.4.2	FETP[1] or other applied epidemiology training programme in place	1
	D.4.3	Workforce strategy	1
Preparedness	R.1.1	National multi-hazard public health emergency preparedness and response plan is developed and implemented	2
	R.1.2	Priority public health risks and resources are mapped and utilized	1
Emergency response operations	R.2.1	Capacity to activate emergency operations	2
	R.2.2	EOC operating procedures and plans	1
	R.2.3	Emergency operations programme	3
	R.2.4	Case management procedures implemented for IHR relevant hazards	2
Linking public health and security authorities	R.3.1	Public health and security authorities (e.g. law enforcement, border control, customs) are linked during a suspect or confirmed biological event	2
Medical countermeasures and personnel deployment	R.4.1	System in place for sending and receiving medical countermeasures during a public health emergency	1
	R.4.2	System in place for sending and receiving health personnel during a public health emergency	1
Risk communication	R.5.1	Risk communication systems (plans, mechanisms, etc.)	1
	R.5.2	Internal and partner communication and coordination	2
	R.5.3	Public communication	3
	R.5.4	Communication engagement with affected communities	1
	R.5.5	Dynamic listening and rumour management	2
Points of entry	PoE.1	Routine capacities established at points of entry	1
	PoE.2	Effective public health response at points of entry	1
Chemical events	CE.1	Mechanisms established and functioning for detecting and responding to chemical events or emergencies	2
	CE.2	Enabling environment in place for management of chemical events	2
Radiation emergencies	RE.1	Mechanisms established and functioning for detecting and responding to radio-logical and nuclear emergencies	1
	RE.2	Enabling environment in place for management of radiation emergencies	1

Scores: 1=No capacity; 2=Limited capacity; 3=Developed capacity; 4=Demonstrated capacity; 5=Sustainable capacity.

1   FETP: Field epidemiology training programme

3

PREVENT

National legislation, policy and financing

Introduction

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

Target

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

Eswatini's level of capabilities

Eswatini is a signatory to the 2005 International Health Regulations (IHR) and is committed to strengthening its core capacities including surveillance, laboratory, preparedness and response. The in-depth self-assessment of the core capacities conducted in 2010 resulted in the development of the IHR implementation plan and the adoption of the Integrated Diseases Surveillance and Response (IDSR) as a vehicle for the implementation of IHR.

The country has a number of legislative instruments and documents that govern public health surveillance and response. These include the Animal Diseases Act (1965), the Public Health Act (1969), Environmental Health Policy (2002), Disaster Management Act (2006), National Health Policy (2007), the Veterinary Public Health Act (2013), the National Health Sector Strategic Plan (2014–2018) and the Medicines and Related Substances Control Act (2016). Eswatini is also signatory to a number of cross-border agreements on malaria involving Mozambique, South Africa and Eswatini and acute flaccid paralysis involving Eswatini, Lesotho and South Africa. The Government however recognized the need to update some of these documents to accommodate the legal framework to support and enable the implementation of all the IHR (2005).

The legislative and regulative framework for health review was undertaken in 2015 for the purpose of undertaking the existing relevant laws for public health, which resulted in the amendment of the Public Health Act (1969) and Medicines and Related Substances Control Act (2016) and drafting of the Health Bill. This bill is awaiting finalization and various processes before final approval by parliament. For animal health, an assessment of existing legislation was conducted as part of the 2015 Performance of Veterinary Services (PVS) evaluation. The recently-adopted Veterinary Public Health Act (2013) was found to cover

the main pillars of the IHR (2005), albeit through compliance with OIE standards. Despite the assessments of these pieces of legislation, the exercise to prioritize respective IHR-related laws to be updated is outstanding. Active engagement and training of the legal counsels of the relevant ministries on IHR (2005) is needed to conduct this exercise.

Recommendations for priority actions

- Finalize the Health Bill which addresses gaps identified in the Public Health Act (1969) and other IHR related legislation (chemical, radiation, etc.) and submit them through the processes for enactment.

- Establish a budget line for funding IHR activities as outlined in the IHR implementation plan.

- Compile list of laws that are relevant for IHR according to priority and update them to conform to IHR (2005).

- Establish an inter-ministerial legal committee that regularly meets to operationalize the legal requirements of IHR.

Indicators and scores

P.1.1 Legislation, laws, regulations, administrative requirements, policies or other government instruments in place are sufficient for implementation of IHR (2005) – Score 2

Strengths/best practices

- Eswatini has several laws, policies and administrative procedures that speak to components of IHR.

- There is a draft Health Bill nearing completion that includes several clauses that address IHR compliance.

- IDSR is being implemented at all levels and has been identified as the channel for operationalizing IHR.

Areas which need strengthening/challenges

- Enforcement of existing laws addressing IHR is inadequate.

- A mechanism for financing the steps needed to operationalize IHR is not clearly delineated.

- While for some diseases such as malaria there are cross-border agreements, no such agreements with neighbouring countries exist for public health emergencies.

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 2

Strengths/best practices

- Assessment of relevant laws to IHR has been conducted and adjustment needs identified

- Findings from the assessment of IHR legislation and documents have informed the development of the Veterinary Public Health Act (2013) and the draft Health Bill.

Areas which need strengthening/challenges

- There is inadequate collaboration among the legal counsels in the different ministries relevant to IHR to oversee the implementation of the legal requirements of IHR.

- There are some laws in other ministries relevant to IHR that are yet to be updated to comply with IHR.

IHR coordination, communication and advocacy

Introduction

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

Target

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

Eswatini's level of capabilities

Coordination, communication and advocacy related to the IHR in Eswatini are implemented in the context of Integrated Disease Surveillance and Response (IDSR). Following a One Health approach it brings together Ministries of Health, Agriculture and Environmental Services as well as nongovernmental organizations (NGOs) and the private sector. A fully staffed IHR National Focal Point (NFP) Secretariat has been established and operates continuously. Lines of communication between the NFP and both veterinarian and public health sectors are operational; the NFP reports promptly to WHO (within 24 hours) as prescribed in the IHR.

The National Epidemic Task Force provides leadership to the Epidemic Task Force (ETF) and rapid response team (RRT) structures and collaborates with and provides coordination for multiple Ministry of Health (MoH) units, external agencies and NGOs involved in a large-scale response. However, these surveillance and response mechanisms are currently restricted to infectious diseases epidemics under IDSR as these are the principal hazards in Eswatini. In order to meet IHR requirements the existing coordination mechanisms would have to be expanded to address all multi-hazard public health threats as stipulated in the IHR (2005). In the event of a major emergency or disaster, there is a fully operational National Disaster Management Agency (NDMA), which can coordinate all the relevant sectors and actors to implement a response to the emergency, including a public health emergency of international concern (PHEIC).

The MoH has prioritized its commitment to IHR as evident from investment in human and operational resources but it will be necessary to advocate beyond the health sector for an all-government, comprehensive engagement in order to comply with IHR requirements. National policies encourage government ministries to work together but the current level of collaboration is insufficient to comply with IHR core capacities and requires more formalization. All stakeholders will need to be sensitized to ensure action-oriented preparedness systems are put into place. It will be critical to communicate that IHR is an obligation of the Government of Eswatini as a whole, not just the work of the NFP or even the MoH.

There is a need for formal multisectoral coordination structures and mechanisms, which cut across all the technical areas being assessed in the Joint External Evaluation. Although this applies across all technical areas, those that were identified as particular challenges are: preparedness, emergency response operations; linking public health and security authorities and risk communication.

Recommendations for priority actions

- Establish and operationalize formal, regular coordination mechanisms with other key sectors (via a task force or committee) through finalized standard operating procedures (SOPs) to address all hazards and core capacities described in the IHR.

- Conduct annual internal assessments for IHR and after-action evaluations of public health events across multiple sectors to document lessons learned and strengthen collaboration between sectors for future events.

- Advocate for and mobilize necessary resources from government and other stakeholders for implementation of IHR-related activities.

Indicators and scores

P.2.1 A functional mechanism established for the coordination and integration of relevant sectors in the implementation of IHR – Score 1

Strengths/best practices

- Functional National and Regional Epidemic Task Forces exist for multisectoral coordination when responding to disease outbreaks using RRTs.

- The MoH has established a secretariat for the NFP, which is available continuously and has a functioning communication system.

- Informal mechanisms for intersectoral coordination exist and the NDMA has the authority for national coordination in the event of a major crisis.

Areas which need strengthening/challenges

- A formal multisectoral and multidisciplinary IHR coordination mechanism, through a task force or committee, is required to engage all the relevant sectors. This mechanism should function both during and outside an emergency and include established communication channels, collaboration on joint activities, access to decision-makers, and documentation of cooperation through meeting reports, plans and evaluations. Expansion of the scope of the existing task force for IDSR to include hazards outlined in IHR would achieve this objective.

- Development and implementation of appropriate SOPs and guidelines are needed for coordination of IHR activities at all levels and across all sectors for preparedness and response to public health threats, particularly to enable the One Health approach.

Antimicrobial resistance

Introduction

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

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

Target

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

Eswatini's level of capabilities

In Eswatini the detection of antimicrobial resistance (AMR) in microbial pathogens is done in three public laboratories. For the microbial pathogens isolated from community and hospital acquired clinical specimens, AMR detection is done at the National Reference Laboratory (NRL) and Raleigh Fitkin Memorial Hospital Laboratory, whereas AMR detection in microbial pathogens from the animal health sector is done at the Central Veterinary Laboratory. In addition, two private laboratories i.e. Lancet and Ampath laboratories, are also engaged for antibiotic susceptibility testing of AMR pathogens. The respective laboratories conduct external quality assurance programmes to ensure the validity of the AMR testing. The public laboratories are in the process of officially subscribing to an institute for international standards on AMR testing guidelines (Clinical Laboratory Standards Institute Guidelines), and are committed to attaining accreditation for the NRL and the other public health laboratories.

In accordance with the IHR (2015) requirements, there must be an endorsed "National Action Plan" that describes activities and surveillance systems for the AMR detection and surveillance, HCAI detection, surveillance and management, and antimicrobial usage and stewardship. It is commendable that Eswatini finalized their national "AMR Containment Strategy to Combat Antimicrobial Resistance (2017–2021)" in December 2017. It has been signed by two of the ministers from the three relevant ministries: Ministry of Health (signed), Ministry of Agriculture (signed) and awaiting the signature of the Minister of Natural Resources and Energy.

This document identifies interventions that are required in Eswatini for the development of a robust surveillance system for AMR and HCAIs, optimal antimicrobial usage and antimicrobial stewardship. The next essential step is for the country to develop an implementation plan that describes specific activities and the associated costs, timelines, risks and mitigation measures for each of the respective interventions stated in the Antimicrobial Resistance Containment Strategic Plan. This important step will facilitate effective implementation of AMR and HCAIs surveillance nationwide.

Eswatini has comprehensive and commendable Infection Prevention Control (IPC) 2014 guidelines, which intricately describe the country's various IPC procedures. In addition, there are designated trained IPC personnel in respective healthcare facilities in the public system and healthcare personnel benefit from IPC training. However, since the IPC guidelines were published in 2014 they will need to be reviewed and updated according to recent WHO guidelines implemented in 2016[2]. These may then be incorporated into the national implementation plan for AMR (and HCAIs) or incorporated into a separated national action plan for IPC procedures.

As the finalization of the national action plans (i.e. on AMR, HCAI, IPC, antimicrobial use and stewardship) is conducted, it will be important to recall that since AMR affects the public health, animal health and environmental health sectors, an important requirement of IHR (2005) is to ensure that established surveillance systems are integrated across all sectors (One Health approach). So where required, a multi-sectoral team may be valuable for respective efforts during this process.

Recommendations for priority actions

- Complete the approval process of the AMR Containment Strategy to Combat Antimicrobial Resistance [ACSCAR] (2017–2021) by obtaining the remaining signature from the Minister of Natural Resources and Energy.

- Develop an implementation plan that includes AMR detection and surveillance, HCAI detection, surveillance and management and antimicrobial usage and AMR stewardship, with a relevant monitoring and evaluation framework (or incorporate these points into the current draft plan). Note: while the draft ACSCAR is comprehensive it only describes interventions. An implementation plan that describes action/work to be done in the short, mid and long term, inclusive of a budget for the planned actions, would be valuable.

- Review and update the IPC guidelines (2014) according to the WHO guidelines published in 2016. These may then be incorporated into a separate "National action plan for IPC" or incorporated into the implementation plan of the ACSCAR (2017–2021), as suggested above.

- Update the Standard Treatment Guidelines (2012) to include a multisectoral (One Health) approach and engage the relevant stakeholders to enforce legislation for the requirement of prescriptions for antibiotics in both the public health and animal health sectors.

- Upgrade existing isolation units in tertiary hospitals and put in place isolation units in regional public health hospitals, at least one per region.

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2 Guidelines on core components of infection prevention and control programmes at the national and acute health care facility level. Geneva: World Health Organization; 2016 (http://apps.who.int/iris/bitstream/handle/10665/251730/9789241549929-eng.pdf, accessed 27 April 2018).

Indicators and scores

P.3.1 Antimicrobial resistance detection – Score 1

Strengths/best practices

- The ACSCAR (2017–2021) document identifies strategic areas of work for AMR in the following six areas: awareness; surveillance and research; reducing infections through IPC, biosafety; use of antimicrobial medicines in humans and animals; research and development (R&D); and governance and stewardship.

- Antibiotic susceptibility testing is conducted at National Reference Laboratory (NRL), Raleigh Fitkin Memorial Hospital, the Central Veterinary Laboratory and two private laboratories: Lancet and Ampath.

- The laboratories conducting antibiotic susceptibility testing are enrolled in external quality assurance programmes.

- The animal health sector is guided by global AMR initiatives through WHO, FAO and OIE.

Areas which need strengthening/challenges

- Although the AMR Containment Strategy to Combat Antimicrobial Resistance (2017–2021) has been developed, the implementation plan including an M&E framework needs to be developed.

- Subscription to an institute for International standards and guidelines for AMR testing (Clinical Laboratory Standards Institute guidelines) needs to be finalized.

- Sentinel sites for AMR surveillance need to be designated and international tools for AMR surveillance (GLASS[3]; AGISAR[4] and ATLAS[5]) need to be adopted and implemented.

- Established systems must allow for the integration of AMR detection and surveillance in both the public health and animal health sectors.

P.3.2 Surveillance of infections caused by antimicrobial-resistant pathogens – Score 1

Strengths/best practices

- There is a plan is to set up AMR sentinel surveillance in four regional hospitals

- The central veterinary laboratory monitors anti-microbial resistance and submits monthly reports to the office of the Director of Veterinary and Livestock services

Areas which need strengthening/challenges

- The national implementation plan should also include the surveillance of the infections caused by AMR pathogens.

P.3.3 Health care-associated infection (HCAI) prevention and control programmes – Score 1

Strengths/best practices

- Infection Prevention and Control (IPC) guidelines (2014) are available.

- IPC personnel are present in healthcare facilities across the public health system; IPC SOPs have been developed and healthcare workers are trained on IPC procedures.

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3   Global Antimicrobial Resistance Surveillance System (GLASS)
4   WHO Advisory Group on Integrated Surveillance of Antimicrobial Resistance (AGISAR)
5   Antimicrobial Testing Leadership and Surveillance (ATLAS)

Areas which need strengthening/challenges

- The national implementation plan for the country's IPC programme does not include surveillance and management of HCAIs.

- Existing isolation units in the tertiary hospitals need to be upgraded; establishing isolation units in other hospitals is also a need (i.e. at least one per region).

P.3.4 Antimicrobial stewardship activities – Score 1

Strengths/best practices

- There are some national documents on medicines and antimicrobials which are approved and in use i.e. Standard Treatment Guidelines to Regulate and Promote Rational Use of Antibiotics (2012), and the Medicines and Related Substances Control Act (2016).

- Importation and distribution of antimicrobials for the animal health sector is done by the Department of Veterinary Services in the Ministry of Agriculture and is governed by the Animal Diseases Act (1965). This allows regulatory authority for the control and distribution of veterinary medicines.

Areas which need strengthening/challenges

- A national implementation plan for antimicrobial use and stewardship has not yet been developed.

- Monitoring of the prescription and use of antimicrobials needs to be strengthened, at pharmacies by healthcare workers and as a follow up with patients.

- Prescriptions are a requirement for the acquisition of antibiotics used in the public health and animal health sectors but it is possible for antibiotics to be purchased without the presentation of a prescription. The legislation that requires having a prescription to purchase antibiotics needs to be enforced by the relevant regulatory authorities within the country.

PREVENT

Zoonotic diseases

Introduction

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

Target

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

Eswatini's level of capabilities

Eswatini conducts surveillance of several zoonotic diseases, i.e. bovine spongiform encephalopathy, brucellosis, cysticercosis, echinococcosis, rabies, Rift Valley fever, salmonellosis and tuberculosis. However, not all of these diseases are perceived as being of domestic public health concern. For example, tuberculosis surveillance in dairy cattle focuses on M. bovis, while corresponding surveillance in public health focuses primarily on M. tuberculosis. When conducting surveillance for avian influenza, animal health surveillance focuses on all types of influenza, some not shown to be transmissible to humans. Therefore, whereas epidemiological surveillance on zoonosis is conducted on the side of the Ministry of Agriculture (MoA) at sometimes an advanced level, there is a mismatch with some of the priorities of the Ministry of Health. This may be due to a perceived lack of formal cooperation, such as through an inter-ministerial mechanism or One Health platform. Such a platform could go a long way in streamlining surveillance of zoonoses between the two entities (agreeing on a shortlist of zoonoses of interest to both the public health and the animal health security). An informal comparison of such priorities – conducted during the plenary session – only produced a clear match for rabies, tuberculosis and avian influenza (but with the caveats mentioned above).

The best illustrative practice in terms of joint zoonotic disease collaboration is rabies, for which there is a mechanism for the joint investigation and management of bite-incidents, which offers prospects for the elimination of dog-mediated rabies by 2030, as promoted by WHO, FAO and OIE. The well-qualified veterinary and (para-professional) workforce is regarded as an important asset in the country.

Recommendations for priority actions

- Strengthen and formalize the collaboration between the Ministry of Agriculture and the Ministry of Health on zoonotic disease surveillance and control through the One Health approach (e.g. through MoUs).

- Develop or extend a continuing education programme to enhance the technical capabilities of technical staff to manage zoonotic diseases, with particular emphasis – for veterinary staff – on issues of biosecurity and (personal) biosafety when dealing with outbreaks of suspected emerging or re-emerging zoonotic diseases in animals.

- Improve and prioritize funding of zoonotic animal health disease control/prevention programmes, with particular emphasis on the funding of risk mitigation measures that result from surveillance outcomes (i.e. rabies and brucellosis/tuberculosis control).

Indicators and scores

P.4.1 Surveillance systems in place for priority zoonotic diseases/pathogens – Score 3

Strengths/best practices

- Several surveillance systems (both passive and active) are in place for priority diseases (refer to the above list).

- There is regular reporting on animal diseases to regional, continental and international bodies (SADC, AU-IBAR, OIE) and a list of notifiable diseases. Legislation is in place for the control of animal diseases (and foodborne diseases from animal products). Refer to the list under "relevant documentation" below. This includes an official list of notifiable animal diseases (for which declaration to the veterinary authority is mandatory).

- Due to its demanding foot-and-mouth disease free status and export-accreditation to the European Union (beef), the country maintains stringent controls of importation of livestock and livestock products and border inspections of these products. These products are audited by both the OIE and the European Commission's Food and Veterinary Office.

Areas which need strengthening/challenges

- Collaboration needs to be strengthened between all stakeholders involved in zoonotic diseases surveillance and control, in particular between the MoH and the MoA, but also with civil society organizations (consumers), animal welfare organizations (rabies) and environmental authorities (wildlife).

- The Veterinary Public Health Act, adopted in 2013, still needs to be implemented to its full capacity, including through the adoption of further secondary legislation.

- To fully meet the capacity requirements of P.4.1. score 4, the following capacities must be strengthened: full alignment of surveillance for formally identified and prioritized zoonotic diseases between the MoH, MoA and relevant other stakeholders for at least five zoonotic diseases of national public health concern.

P.4.2 Veterinary or animal health workforce – Score 4

Strengths/best practices

- There are trained personnel for the control of animal diseases:

  ❍ Veterinarians at national level

  ❍ Veterinarians at regional level

  ❍ Veterinary para-professionals (veterinary assistants) at sub-regional level

  ❍ Community-based animal health workers (Dip Tank Assistants) at community level

Areas which need strengthening/challenges

- The country in general lacks a structured and institutionalized system of continuing education or continuous professional development of its technical staff to improve technical capabilities on existing, but especially emerging and re-emerging zoonotic diseases, such as e.g. Rift Valley fever or new highly-pathogenic avian influenza (HPAI) strains.

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

Strengths/best practices

- The above-mentioned challenges in respect to rabies vaccination capacity are in part overcome by good cooperation with the public health authorities which collaborate even at the community level.

Areas which need strengthening/challenges

- Budgetary constraints limit the implementation of response mechanisms for some of the surveillance programmes in place.

- A mechanism for coordinated response to outbreaks of zoonotic diseases by public health, animal and wildlife sectors will have to be established, at least through agreed joint standard operating procedures (SOPs).

Food safety

Introduction

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

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

Eswatini's level of capabilities

Disease outbreaks related to food safety rarely occur in Eswatini, but it is possible that outbreaks are occurring but are not being detected, since faecal specimens from diarrhoeal cases are not always analysed and there is no chemical, toxicological and microbiological monitoring of food from farm to fork. There is no surveillance system in place for prioritized foodborne illnesses, which may be the reason why Eswatini rarely reports food safety-related events. There is therefore a need to improve the national food safety surveillance system. While a lot is being done by dedicated professionals from various ministries, monitoring and control is very fragmented.

The Ministry of Health and the Ministry of Agriculture are both responsible for food safety in the country and in practice they share this responsibility with several other actors like the Ministry of Commerce, Industry and Trade, the Regulatory & Quality Infrastructure Development, Licensing Section, the Ministry of Education (Home Economics Section), the Eswatini Standard Authority (SWASA), the Eswatini Nutrition Council, the Eswatini Dairy Board, the National Marketing Board, the Eswatini Consumer Association and the Eswatini Consumer Forum. Responsible focal points from the various ministries know each other well and strive to keep food as safe as possible, but they work through informal procedures that only work because they know each other.

Most of the food used in Eswatini is imported from South Africa and Eswatini relies a lot on the controls that South Africa (or other countries) implement before exporting. During outbreaks or other food safety-related incidents the focal points manage to reduce risks and even find sources, but the legal background for necessary control measures is lacking. In March 2018 some processed meat products originating from South Africa were found to be contaminated with Listeria Monocytogenes. In the absence of a robust surveillance system for foodborne illnesses, Eswatini was only able to passively respond to the emergency – responding to recalls coming from the companies in South Africa that produced the meat and relying on information received from the Ministry of Health of South Africa. Direct and successful measures were taken to recall the contaminated products and the International Food Safety Authorities Network (INFOSAN) was officially informed. No further incidents occurred and the measures taken, including recall of implicated products and inspections of food establishments seem to have been successful. However, it could not be definitively stated that there were no cases of the implicated Listeria strain present in Eswatini – until

laboratory tests of implicated food items and stools are undertaken. Informal links are working, but are no guarantee for a sustainable and transparent food safety control programme in Eswatini.

Recommendations for priority actions

- Develop a coordinated intersectoral food safety policy and enact legislation specific to food safety.

- Develop standard operating procedures (SOPs) for operational links and roles of responsibility between the focal points from various ministries and agencies responsible for the daily activities and decisions regarding food safety.

- Establish a formalized multisectoral food safety coordination network and a network between all laboratories in the country that deal with food safety.

Indicators and scores

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

Strengths/best practices

- Inspectors from the Ministry of Health, Ministry of Agriculture (including animal health and plant health), National Marketing Board and the Eswatini Dairy Board are available in all the designated Points of Entry for control of export and import of commodities.

- Food safety-related forums are available in the Ministries of Agriculture and Health such as the National Codex Committee (NCC) and the National Sanitary and Phytosanitary Committee (comprising Animal Health OIE; Plant Health; International Plant protection Convention (IPPC) and food safety, Codex Alimentarius).

- There are weekly live and pre-recorded slots for health issues including food safety on the national radio station.

- The Environmental Health Department is represented in the IHR National Focal Point.

Areas which need strengthening/challenges

- Food safety policies and legislation are inadequate.

- Collaboration and communication with other ministries or other organizations responsible for food safety could be improved (i.e. formalized).

- Chemical, toxicological and microbiological monitoring of food from farm to fork needs strengthening. At this moment the Ministry of Agriculture carries out chemical and microbiological analysis for meat export, and municipal governments (Mbabane and Manzini) conduct microbial monitoring of foods in their municipalities.

- Consumer awareness campaigns need to be strengthened.

Biosafety and biosecurity

Introduction

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

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

Target

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

Eswatini's level of capabilities

Eswatini acceded to the Biological and Toxic Weapon Convention (BWC) in 1991 and is also party to the Cartagena Protocol on Biosafety and to the Convention on Biological Diversity.

Eswatini's Biosafety Act of 2012 has recently amended a draft Biosafety Regulations in 2017. This Act empowers the Eswatini Environment Authority to be the national focal point for biosafety. This act also establishes a Biosafety Advisory Committee to provide guidance to relevant stakeholders.

Some elements of biosecurity have been incorporated into the biosafety regulations. However, the focus is primarily limited to agricultural interests.

Biosafety levels of containment are in place at the National Reference laboratory and Central Veterinary Laboratory. Physical security is used in laboratories in both sectors: both laboratories utilize locks, and the National Reference Laboratory utilizes biometrics in addition to prevent access to biological specimens by unauthorized people.

Both the public health and animal health laboratories work with the environmental health sector to manage biological waste.

During the plenary, capacity of this technical area was discussed at length. It was agreed that a score of 1 would not capture the entire capacity of this indicator in the country, but to be true to the JEE tool, 1 was scored here due to the lack of a biosecurity element in the plans and system in place. It was noted that the Suppression of Terrorism Act No.3 of 2008 might provide further information about Eswatini's (planned) capacity in the area of biosecurity, but review of that Act did not occur during the mission.

Recommendations for priority actions

- Develop biosecurity plan or incorporate biosecurity plan elements into the biosafety plan.
- Conduct inventory of public health and veterinary facilities and the pathogens stored in those facilities.
- Develop national legislation that addresses biosecurity and law enforcement as a whole-of-government system.
- Develop biosecurity training for both public health and animal health sectors, which establishes an annual review of policies and procedures.

Indicators and scores

P.6.1 Whole-of-government biosafety and biosecurity system in place for human, animal and agriculture – Score 1

Strengths/best practices

- Memorandums of Understanding (MoUs) exist between the Eswatini Environmental Agency (SEA) & MoH (Environmental Health (Port Health), the Eswatini Revenue Authority (SRA) and Royal Eswatini Police Service.
- Biometrics for entry into key laboratory areas are in place at the National Reference Laboratory. Security cameras are in use in sensitive areas of the national laboratory.
- There is awareness of policies and best practices related to genetically-modified organisms (GMOs) in the agriculture sector.

Areas which need strengthening/challenges

- It is not clear which ministries are the custodians of the Biological Weapons Convention and Suppression of Terrorism Act (2008) in Eswatini; MoH collaboration with the respective ministries is needed to enhance coordination on biosecurity.
- Awareness and understanding of the international definition of biosecurity and related terminology and standards is inadequate.
- A framework that outlines a system for pathogen biosecurity is lacking.
- There is a challenge with coordination of biosecurity activities for public health and veterinary laboratories.
- Coordination of the existing working groups which cover aspects of biosafety and biosecurity e.g. the National Codex Committee, and National Sanitary and Phytosanitary Committee (comprising Animal Health OIE; Plant Health; International Plant protection Convention (IPPC) and food safety, biosafety) is a challenge.
- Incorporating biosafety and biosecurity issues across relevant sectors and government departments is needed.

6.2 Biosafety and biosecurity training and practices – Score 1

Strengths/best practices

- Training on biosafety is conducted at the national laboratory level and within public health units.

- Documentation on biosafety best practices is available at both the national laboratory and the offices of public health units.

- Information on GMOs is being incorporated into training curricula.

Areas which need strengthening/challenges

- Training on biosafety and biosecurity is not available to all laboratory staff (public health and animal health), including management and support staff.

- The Biosafety Act does not currently address biosecurity concepts or reference the Biological Weapons Convention.

- The country lacks a biosecurity strategy and action plan.

Immunization

Introduction

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

Target

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

Eswatini's level of capabilities

The Eswatini Expanded Programme on Immunization (SEPI) was established in 1980 as one of the components of primary health care provision in Eswatini; it is governed by health sector legislation and WHO-adapted and adopted strategies and policy guidelines. Immunization services are provided free of charge to the entire population at all facilities, both private and public. The EPI is integrated into primary health services. Vaccinations have been mandatory and the enactment of the Children Protection and Welfare Act (2012) has also focused on overcoming religious and traditional objections. Bacille Calmette-Guérin (BCG) and poliomyelitis vaccines are administered to all newborns at maternity facilities. EPI technical staff are trained annually on conducting disease surveillance, vaccine and cold chain management and monitoring targeted diseases through weekly and monthly reporting systems. Acute flaccid paralysis, measles, neonatal tetanus (NT) and adverse events following immunization (AEFIs) are reported immediately through the Immediate Disease Notification System (IDNS), which is supplemented by weekly and monthly reports that are sent to WHO global programmes after internal approval. All data are managed electronically within EPI as part of the Health Management Information System (HMIS) of the MoH.

The national laboratory handles diagnostics for some vaccine-preventable diseases and a courier system is in place for transportation of specimens to the laboratory. Technical support is available from WHO and UNICEF and vaccines under the routine immunization schedule are procured and 100% funded directly by the government. For supplementary campaigns and special events funds are made available from WHO and UNICEF. Successful introduction of new vaccines has taken place in the past three years: rotavirus, inactivated polio vaccine (IPV) and measles-rubella vaccine. The country has a system in place to monitor three diseases targeted for elimination/eradication – poliomyelitis, measles and neonatal tetanus – and a committee to oversee poliomyelitis eradication and another for review of AEFIs. Rabies vaccines for animals/dogs are annually administered by veterinary services within the Ministry of Agriculture. Post-exposure prophylaxis for potential rabies exposure of humans is provided by the MoH through the Central Medical Stores (CMS).

Since 2013 there has been a decline in national routine immunization coverage. The indicator to measure national coverage is the coverage of measles vaccine administered to children aged 9 months or below the age of 12 months; this indicator has been below the target of 90% and in 2017 was 79% (a plan is in place to reach 90% in the next three years). Logistics and supplies management problems have led to vaccine stock-outs, which subsequently affect vaccination coverage rates; activities are now in place to overcome this challenge.

Although community-based surveillance exists to ensure that every child is protected from vaccine-preventable diseases, deaths of infants aged under 3 months often are not recorded or reported. Data management within the programme is a fundamental problem because there are no dedicated data managers in the EPI programme and staff are "borrowed" from other departments. There are also challenges in ensuring accuracy and completeness of facility-level (134 facilities) data as well as stock management within the CMS system. Full integration between the Integrated Disease Surveillance and Response (IDSR) and EPI strategic and operational plans is also a gap that the country would like to address. Most importantly, staff shortages at national and regional level hinder programmatic success overall.

Access to yellow fever vaccine is only on demand for travellers (not in routine immunization because it is not endemic in Eswatini) but vaccine supplies are centralized rather than being available at designated points of entry – the country is working on resolving this gap.

Recommendations for priority actions

- Implement a clear plan for strengthening HR capacity within the EPI programme by strengthening national and regional EPI (including training of clinical supervisors and focal persons on adverse events following immunization), as well as community-based disease surveillance.

- Resolve issues within the EPI programme on data management, particularly the newly-implemented Client Management Information System (CMIS), which aims at: (1) facility-level data accuracy, (2) better interoperability with CMS for real-time stock management; and (3) reporting from private clinics conducting immunizations and following AEFIs is enhanced.

- Enhancing data quality within HMIS.

- Pursue the procurement of vaccines through UNICEF Supply Division mechanisms, which would be less costly thereby avoiding supply problems and stock-outs.

- Gazette the Eswatini National Immunization Technical Advisory Group (SWANITAG) so that it can guide the EPI programme on all areas of work, particularly ensuring the EPI programme includes all vaccines used for epidemic response.

- Strengthen and reinforce appropriate linkages between EPI and IDSR for surveillance, reporting and response for vaccine-preventable diseases as well as including all national vaccines under EPI (additional to the routine EPI vaccines), such as yellow fever and rabies.

Indicators and scores

P.7.1 Vaccine coverage (measles) as part of national programme – Score 3

Strengths/best practices

- Eswatini has an effective, government-funded EPI programme that covers the population of the entire country through free-of-cost provision of vaccines provided through both public and private sector clinics.

- Training is provided to staff annually; electronic systems are used for reporting immunization data and for managing vaccine supplies and stocks; and committees oversee poliomyelitis eradication efforts and reported AEFIs.

- The SWANITAG will shortly be gazetted so it can provide overall guidance to EPI.

Areas which need strengthening/challenges

- Challenges for the EPI programme to reach the target for measles coverage of 90% include a lack of dedicated human resources at national and regional levels.

- Vaccine stock-outs due to forecasting and procurement issues (see next indicator) is a challenge.

- Community-based reporting for EPI programme parameters is a challenge.

P.7.2 National vaccine access and delivery – Score 2

Strengths/best practices

- The EPI programme has good capacity at all levels in cold chain equipment and maintenance to ensure national vaccine access and delivery at the health facility level. The cold chain functions best at the new Central Vaccine Stores for all procured vaccines and work is planned to strengthen and expand the cold chain at all levels with dedicated government investment.

Areas which need strengthening/challenges

- Supply chain stock management systems are still in development, which is why there are challenges in reaching required measles vaccine coverage levels.

- Real-time management of vaccine stock is currently a challenge (currently being addressed through interoperability with the system used by CMS).

- Procurement of some vaccines is a challenge (efforts are ongoing to explore pooled procurement mechanisms through UNICEF).

- Technical staff to look at cold chain equipment.

DETECT

National laboratory system

Introduction

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

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

Eswatini's level of capabilities

The National Reference Laboratory (NRL) has commendable expertise and facilities. It currently conducts IHR core tests for six priority diseases/conditions: malaria, measles, meningitis, food poisoning, typhoid and cholera. There is an excellent designated transport system for clinical specimens within the country. However transportation of specimens outside the country (i.e. to South Africa) for advanced diagnostic testing has been dependent on WHO financial support, which will be ending in the near future. So measures will need to be taken that will enable sustainability of the transport system internationally (e.g. apportioning funds from the country's annual budget).

The Central Veterinary Laboratory (CVL) conducts five of the IHR core tests: tuberculosis, highly-pathogenic avian influenza, brucellosis, salmonellosis and rabies. During plenary there was debate about the immediate public health interest of some of those species (i.e. bovine tuberculosis, avian influenza, salmonella spp.). There is no dedicated transport system in place for veterinary specimens like that used for public health facilities. This is partly due to differences in the operational systems in the animal health sector as compared to the public health sector (i.e. farm visits are done by veterinarians who then return with the samples to the CVL). This system has worked to now, as vehicles have been available to collect samples; however a designated transport system would be preferable.

Both the NRL and the CVL engaged in quality assurance through external proficiency testing programmes: the CVL conducts proficiency testing for rabies through the Onderstepoort Veterinary Institute (ARC-OVI), which is the OIE Reference Laboratory for rabies. In addition, the CVL is in the process of acquiring ISO 17025 accreditation and the NRL has applied for accreditation from the Southern African Development Community Accreditation Services (SADCAS).

It was noted during plenary that management of medical waste is a challenge, despite the use of autoclaves and incinerators for medical waste in the public health sector.

Recommendations for priority actions

- Include all the laboratory core tests into an EQA programme at both the Central Veterinary Laboratory and National Reference Laboratory.

DETECT

23

- Secure funds for service contracts for maintenance of laboratory equipment.

- Ensure the sustainability of the transport system, by establishing dedicated funds explicitly for specimens destined for testing internationally (as support from WHO will be ending shortly).

- Finalize the applications for accreditation for the Central Veterinary Laboratory and the National Reference Laboratory with selected accreditation bodies.

- Create a national body in charge of licensing, inspection and certification of laboratories.

Indicators and scores

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

Strengths/best practices

- Both the CVL and the NRL are conducting core tests for more than five of the IHR priority diseases.

Areas which need strengthening/challenges

- Some of the core tests are currently not performed in NRL. These should be incrementally included as the expertise and required consumables and assays become available

D.1.2 Specimen referral and transport system – Score 4

Strengths/best practices

- The National Sample Transport System provides an efficient transport service for specimens and results from intermediate/district level laboratories to the national referral laboratories and vice versa. This enables laboratories to meet the stipulated turnaround times for release of validated results to patients or applicable stakeholders.

Areas which need strengthening/challenges

- The transport system for samples sent internationally (to South Africa) needs to have a dedicated budget to ensure its sustainability.

D.1.3 Effective modern point-of-care and laboratory-based diagnostics – Score 2

Strengths/best practices

- The NRL system has point-of-care diagnostic tests for malaria, HIV and cholera.

Areas which need strengthening/challenges

- Tier specific diagnostic testing strategies for the use of point-of-care tests are not well documented.

D.1.4 Laboratory quality system – Score 2

Strengths/best practices

- The national laboratories for both the public health and animal health sectors are enrolled in quality assurance systems for some of the core tests that are currently conducted.

Areas which need strengthening/challenges

- Some laboratory core tests (of both the CVL and NRL) are not included in external quality assessment programmes (all the core tests that are conducted need to be enrolled in quality assurance programmes).

- Service contracts for maintenance of all laboratory equipment is needed. Currently contracts for larger equipment are in place but generally contracts for "smaller" equipment (e.g. micropipettes) have not been finalized.

- CVL and NRL applications for accreditation with selected accreditation bodies need to be finalized.

- There is currently no national body in charge of licensing, inspection and certification of laboratories in Eswatini.

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 bio-surveillance 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 intermediate level regional capacity to analyse and link data from and between strengthened, real-time surveillance systems, including interoperable, interconnected electronic reporting systems. This would include epidemiologic, clinical, laboratory, environmental testing, product safety and quality and bioinformatics data; and advancement in fulfilling the core capacity requirements for surveillance in accordance with the IHR and OIE standards.

Eswatini's level of capabilities

In 2012 Eswatini adopted the IDSR strategy with an aim to use this strategy as a way of operationalizing the IHR. A primary emphasis of IDSR is on harmonizing multiple surveillance systems into a unified, coordinated effort at every level of the health system.

Indicator and event based surveillance systems are operational for both animal health and public health sectors at all levels in Eswatini. The event-based surveillance system relies on a morbidity register, patient care files, department daily reports, a client management information system (CMIS), a laboratory information system, health workers and members of the public. It makes use of the immediate disease notification system, which utilizes the toll-free number 977. When a clinician suspects and the case presenting fits the IDSR cases definition, he/she dials 977, which sends a text message to responders, thus activating response from the appropriate epidemic task forces. For indicator-based surveillance, reliable sources of data are used; health workers compile these data from morbidity registers and send summaries monthly to the regional Health Management Information System (HMIS) offices. Regional HMIS officers aggregate data from facilities and submit them to the national office.

In public health there are 15 notifiable diseases and three of those are zoonotic in nature (Influenza subtypes, suspected Rift Valley fever and suspected human rabies). The animal health sector relies on an entirely paper-based reporting system (with the exception of the Eswatini Livestock Identification and Traceability System, SLITS[6], a system relying on both paper and electronic data). Data from this sector come from more than 900 dipping tank areas[7], 28 sub-regional offices, four regional offices and the national level epidemiology unit, which also integrates data coming from meat inspections, laboratory services, quarantine stations and points of entry. From there the data are reported to the continental (African Union) and international (OIE) reporting authorities.

There is regular informal collaboration between the epidemiology unit in the animal health sector and the corresponding unit within the MoH, the Epidemiology and Disease Control Unit (EDCU). The bulletin

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6   https://www.icar.org/wp-content/uploads/2015/09/Mdluli.pdf
7   Dipping tanks are where animals such as cattle are treated to remove/prevent ticks from spreading disease to animals.

produced by the EDCU on a monthly basis covers only three zoonoses, i.e. Rift Valley fever, avian influenza(s) and human rabies, which does not entirely match the priorities of the veterinary surveillance system (which does not conduct surveillance for Rift Valley fever for example). More collaboration between the public health and animal health sectors is therefore needed.

Recommendations for priority actions

- Develop an electronic reporting system for the animal health sector.
- Develop the list of priority zoonotic diseases for both the animal health and public health sectors.
- Institutionalize collaboration between human health, animal health and environmental sectors (e.g. MOUs between the sectors).
- Institutionalize integration of surveillance system, data validation, data analysis and sharing of information between relevant sectors.

Indicators and scores

D.2.1 Indicator- and event-based surveillance systems – Score 4

Strengths/best practices
- IDSR has been implemented since 2012.
- Indicator and event based surveillance system is in place for both human health and animal health sectors.
- A nationally available toll-free number is established, which triggers SMS to stakeholders, alerting them about reported health events so a response can be launched.
- Weekly and monthly epidemiological surveillance bulletins are published and circulated.

Areas which need strengthening/challenges
- Regular training of health workers in surveillance is needed at all levels.
- Information sharing between sectors still has challenges.

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

Strengths/best practices
- Surveillance reporting is done electronically for the public health sector.
- CMIS, an electronic reporting system for public health, is being used.

Areas which need strengthening/challenges
- The reporting system in the animal health sector is still paper-based.
- Reporting systems of public health and animal health sectors are not interconnected or interoperable.
- Poor internet connectivity negatively affects the real-time data collection of the CMIS which is not fully adopted.
- Information sharing between the human health and animal health surveillance systems is poor.

D.2.3 Integration and analysis of surveillance data – Score 4

Strengths/best practices

- Case-based forms are standardized and include a laboratory component.

- The public health sector produces bulletins to share information.

- Data analysis is done at the national level.

Areas which need strengthening/challenges

- Data analysis at all levels is inadequate.

- Capacity of staff to analyse data in both the public health and animal health sectors needs to be increased.

D.2.4 Syndromic surveillance systems – Score 4

Strengths/best practices

- Syndromic surveillance exists for acute flaccid paralysis, acute influenza and acute diarrhoea with dehydration, which serve as early warning indicators for a potential disease outbreak.

- Diarrhoea is one of the four diseases/conditions monitored among children aged under 5 years through a sentinel surveillance system and the production of weekly reports.

Areas which need strengthening/challenges

- Feedback on the outcome of suspected cases to health facilities and other stakeholders is inadequate.

- Coordination by the EDCU of the EPI surveillance systems (that monitors acute flaccid paralysis) and the laboratory surveillance system (that monitors acute watery diarrhoea as a proxy for rotavirus, cholera, etc.) is inadequate.

Reporting

Introduction

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

Target

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

Eswatini's level of capabilities

The National IHR Focal Point (NFP) within the Ministry of Health (MoH) is designated as the national authority responsible for decision-making and initial risk assessment with respect to PHEICs and reporting. Information on PHEICs is handled by the NFP with subsequent notification to WHO through official documents. The NFP in the country is located within the Office of the Senior Medical Officer under the Directorate for Public Health of the MoH and consists of the following five functions: Senior Medical Officer, Public Health Epidemiologist, Deputy Chief Environmental Health Officer, Representative of Laboratories and Program Manager for Emergency Preparedness and Response. The core team of the NFP is complemented by an epidemiologist from the Epidemiology and Disease Control Unit (EDCU) and an expert from the Health Promotion Unit.

The MoH reporting flow is organized in two ways: daily reporting happens through the Immediate Disease Notification System (IDNS) while monthly reporting is through the Health Management Information System (HMIS), resulting in weekly and monthly bulletins, respectively. For case identification, a standard immediate disease notification system (IDNS) form has been developed; health facilities/practitioners are required to fill this in and thereafter call the 977 hotline to report to the IDNS database and consult on further steps to be taken. The information fed into the INS database is then communicated to the relevant task forces and units, such as the Regional Epidemic Task Force (RETF), Emergency Preparedness and Response Unit (EPRU), the Health Management Information System (HMIS) and the Epidemiology and Disease Control Unit (EDCU) under the MoH.

Subsequently, in accordance with Annex II of the IHR (2005), the NFP in Eswatini decides if a case needs to be reported to WHO and consult with WHO informally in line with Article 8 of the IHR (2005). At the time of the JEE in Eswatini, the most recent case that was formally reported to WHO under the IHR (2005) was leprosy in August 2017, while an informal consultation with WHO preceded the recent recall of products from the Swazi market related to a listeria outbreak that originated in South Africa in March 2018.

While the NFP is operational, it relies largely on informal communications at the national level. This is mainly attributable to the relatively small size of the country and the professional community dealing with IHR relevant hazards and outbreaks. The same informal networks apply in relation to the reporting of zoonotic diseases and collaboration between the NFP and OIE Delegate.

The OIE Delegate is located in the Ministry of Agriculture and is supported in reporting by the Focal Points for Animal Disease Notification (WAHIS Focal Point), Aquatic Animal Diseases and Wildlife Surveillance in Eswatini. While the OIE Delegate and all other categories of Focal Points have undergone training for her/

his specific role, the NFP has not been linked to learning packages. The ministries of Health and Agriculture in the country are currently reporting independently to authorities, i.e. the MoH reports to WHO while the Ministry of Agriculture reports to OIE.

Recommendations for priority actions

- Train IHR NFPs using the formal learning packages and incorporate IHR/IDSR training in pre-service and in-service training.

- Develop protocols and standard operating procedures (SOPs) for reporting to WHO, FAO and OIE in accordance with national regulations and legislation and international standards.

- Conduct regular simulation exercises on reporting zoonoses (possibly including cross-border collaboration) in order to facilitate multisectoral collaboration and reporting between the NFP, OIE Delegate and World Animal Health Information System (WAHIS) Focal Point.

Indicators and scores

D.3.1 System for efficient reporting to FAO, OIE and WHO – Score 1

In order to improve the D.3.1 capacity level, Eswatini needs to ensure that the NFP has access to pre-service and in-service training as well as learning packages on reporting to facilitate rapid notification of events.

Strengths/best practices

- The NFP and OIE Delegates are operational and Eswatini has demonstrated some capability in reporting to WHO, FAO and OIE.

- The OIE Delegate and the Focal Point for Animal Disease Notification (WAHIS Focal Point) are well trained on this specific role.

- There have been informal consultations with WHO.

Areas which need strengthening/challenges

- The persons within the NFP need to be adequately trained to understand their roles and fulfil their responsibilities most efficiently.

- There is a lack of mechanisms for the exchange of information between the NFP and the OIE Delegate, and thus collaboration between public health and animal health, which can lead to delays in reporting to the external bodies, as reporting is done independently.

- Eswatini has demonstrated some capability in reporting to WHO, FAO and OIE, however timeliness and case accuracy leave room for improvement.

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

Strengths/best practices

- The country has adopted Annex 2 of the IHR (2005) into the IDSR.

- The country has conducted informal consultations with the WHO Country Office on various aspects as per Article 8 of IHR (2005).

- Reporting to OIE through the OIE Delegate within the Ministry of Agriculture is well established and embedded in regulations and standards formulated by OIE.

DETECT

Areas which need strengthening/challenges

- There is a lack of formalized processes and protocols for the NFP and thus documentation on the decision-making process at the national level whether to report a case to WHO.

- The Ministry of Health and the Ministry of Agriculture report via different channels and therefore integration is a challenge. The different methods of reporting need to be harmonized by formulating standard methods and systems for data collection and reporting in order to prevent inconsistencies in the information shared.

- Eswatini`s annual simulation exercises under the auspices of NDMA have so far not tested the country`s capability to report to WHO, FAO, and OIE under IHR (2005).

- There is minimal collaboration for reporting with other countries, as there is a need of MoUs, strategies and legislation that facilitates collaborations between government ministries and other countries.

Workforce development

Introduction

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

Target

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

Eswatini's level of capabilities

Eswatini has some multi-disciplinary human resource capacity at all the levels of service delivery for IHR implementation: an analysis of health worker staffing norms was carried out in selected health facilities in February 2017 and the findings were used to determine staffing norms for 18 priority cadres including medical officers, nurses/midwives, pharmacist and laboratory staff. The staffing norm analysis however did not cover cadres that provided public health surveillance and response services such as community health workers and epidemiologists or staff in the animal health and agriculture sectors.

The country's health sector has a total of 6,665 health workers excluding staff from the central Ministry of Health (MoH), regional health offices and vertical programmes (approximately half of this number are in non-clinical cadres). There are 208 medical doctors and 2,420 nursing and midwifery staff giving a workforce density of 1.64 per 1000 population. The country has only three epidemiologists operating at national level who offer health emergency-related support as and when necessary. Though there is no establishment for biostatistics in the public sector, the MoH is able to access such support from the Central Statistics Office and as such three statisticians have been seconded to the MoH. There are health information officers at the national and intermediate levels (and in some hospitals) who provide data and information management support. Laboratory human resource capacity is available at the regional and facility levels especially hospitals and health centres. The country has established standing national and regional emergency task forces with both regular MoH and seconded staff from other sectors. Of the 498 staff that work in the animal health sector, only 15 are Veterinary Officers and 45 are Animal Health Inspectors. There are no veterinary practitioners that support zoonosis-related work at the MoH.

The MoH has a draft workforce development strategy that includes public health professions but does not address the veterinary and environmental workforce. Though there is poor distribution of staff and a high attrition rate, a human resource information database was established in 2013 to facilitate tracking movement of staff. This database needs to be updated to incorporate more variables and to be linked with the payroll dataset.

Most health staff have received some basic epidemiology training as part of their pre-service programmes. There is no Field Epidemiology Training Program (FETP) or other applied epidemiology training programmes in the country. The national health training division occasionally supports individuals to pursue similar programmes in other countries per the national in-service training arrangements. The MoH has a well-coordinated in-service training programme for health workers through the central ministry (Ministry of Public Service). The local university offers bachelor's degree programmes in nursing, laboratory sciences, animal science, agronomy and crop production.

Recommendations for priority actions

- Conduct human resource analysis in the animal health and environmental health sectors, and incorporate findings in the human resources strategy; finalize and disseminate the resulting document to all stakeholders in the context of One Health and advocate for buy-in by donors/partners to implement a strategy to address the gaps discovered.
- Establish a network with neighbouring countries for Field Epidemiology and Laboratory Training Programs.
- Develop collaboration mechanisms with the private sector, especially to prepare for response to public health emergencies.
- Extend the scope of the health resources information system and veterinary and environmental workforce to facilitate effective management, including tracking of movement of staff.

Indicators and scores

D.4.1 Human resources available to implement IHR core capacity requirements – Score 2

Strengths/best practices

- The country has some multidisciplinary workforce capacity in terms of medical officers, nurses/midwifes, laboratory scientists, information officers and community health workers at all service delivery points.

Areas which need strengthening/challenges

- Key epidemiological positions for surveillance and response to health emergencies at sub-national levels is lacking.
- There are no mechanisms in place to facilitate collaboration (i.e. secondment of staff) between the private and public sector for surveillance and response to health emergencies.

D.4.2 FETP or other applied epidemiology training programme in place – Score 1

Strengths/best practices

- A local university offers pre-service and advance-level programmes in nursing, laboratory sciences, animal science, agronomy and crop production, and could potentially offer some elements of FETP.
- The MoH has a well-coordinated in-service training programme for health workers.
- The ministry of public service and training, through their in-service unit, has the ability to support individuals to pursue IHR-related programmes outside the country.

Areas which need strengthening/challenges

- There is a need to develop an FETP training course in the country or create agreements to train human resources in an FETP in nearby countries.
- In-service training in IHR-related areas is currently insufficient.

D.4.3 Workforce strategy – Score 1

Strengths/best practices

- A draft health sector human resources development strategy exists.

Areas which need strengthening/challenges

- The draft human resources development strategy does not currently include animal and environmental health aspects.
- The human resources strategy is currently not implemented.
- The system to monitor/track human resources in the country is currently not fully up to date.

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.*

Eswatini's level of capabilities

Eswatini has a National Disaster Management Agency (NDMA) established by the Disaster Management Act, 2006 and an Emergency Preparedness and Response Unit (EPRU) within the MoH, which is guided by the Emergency Preparedness and Response strategy 2017–2020. In addition, the National Health Policy, the National Health Sector Strategic Plan and the National Multi-Hazard Contingency Plan are also in place.

Eswatini has conducted a series of assessments to evaluate its capacity including the Eswatini National Vulnerability Assessment, service availability mapping, Comprehensive Health & Nutrition Assessment Report on the Impact of El Niño, and the Disaster Risk Reduction, Emergency Preparedness and Response Capacity Assessment Report. These assessments continuously influence review of national plans. The country has adopted the Integrated Disease Surveillance and Response (IDSR) strategy and established epidemic task forces at national and regional levels including rapid response teams.

It is important to note that the National Multi-Hazard Contingency Plan does not incorporate all the hazards referenced by the IHR (biological, chemical, radiological and nuclear) including points of entry (PoE). In addition, Eswatini is yet to conduct a national multi-hazard multisectoral risk assessment, including resource mapping. These needs have necessitated the scores given for this technical area.

Recommendations for priority actions

- Conduct a multi-hazard, multisectoral risk assessment.
- Complement the National Multi-Hazard Contingency Plan by incorporating the PoE and other IHR-related hazards.
- Roll out EPR plans at regional, facility, and community levels.
- Update and endorse Eswatini's emergency response standard operating procedures (SOPs).

RESPOND

Indicators and scores

R.1.1 National multi-hazard public health emergency preparedness and response plan developed and implemented – Score 2

Strengths/best practices

- The country has established an Emergency Preparedness & Response department, which includes:
  - ○ emergency medical services (which responds to all public health emergencies);
  - ○ a national emergency communication centre (which the public can access for all health-related issues);
  - ○ disaster risk management (which capacitates, maps, and mobilizes resources to mitigate and respond to natural disasters);
  - ○ Epidemics (deals with epidemic hazards and response).

- Policies and legislation that support preparedness are in place, including strategic documents and guidelines such as the National Multi-Hazard Contingency Plan and Environmental Health Strategy.

- National simulations are conducted annually, which test preparedness and include a review of policies.

- There is a mechanism that coordinates the approach to emergencies, which includes epidemic task forces at national and regional levels and inter-sectoral collaboration (e.g. Ministry of Agriculture and national programmes share regional resources, such as skilled personnel, medical supplies, etc.).

Areas which need strengthening/challenges

- Policies and legislation enabling emergency preparedness and response are fragmented; there is a need to formulate policies and legislation to coordinate preparedness and response plans and activities.

- Preparedness and response strategies are not implemented at different levels of service delivery (e.g. human resource training is limited, preparedness and response documents are not readily available and simulations conducted at the local level are limited).

- Coordination and collaboration between the Ministry of Health, UN agencies and stakeholders in other sectors (e.g. among religious groups) is weak.

- The country's research agenda for preparedness needs to be operationalized.

R.1.2 Priority public health risks and resources mapped and utilized – Score 1

Strengths/best practices

- Public health risks were mapped by the Vulnerability Assessment Committee (VAC) report; its vulnerability assessment exercise (conducted annually) addresses some health hazards.

- A service availability and readiness assessment has been completed, which targets and maps facilities' capabilities.

- Service availability mapping report was published in 2013.

- Ministry of Health has allocated a budget for emergency preparedness and response.

Areas which need strengthening/challenges

- Limited resource and funds are available to strengthen response activities and assess their effectiveness against the international benchmark; there is a need to conduct a national resource mapping.

- There are no stockpiles of supplies at the local level.

- While annual simulation exercises take place at the regional level, this is not occurring at the national and intermediate levels, hence affecting the level of preparedness.

Emergency response operations

Introduction

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

Target

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

Eswatini's level of capabilities

Eswatini has established an EOC within the Ministry of Health (MoH), which is responsible for the following functions:

- Incident support – the provision of resources and/or strategic guidance, authorizations, and specific decision-making support. This support may be provided to an incident management team at a site or in limited circumstances, to another EOC.

- Essential services and continuity of operations – this function ensures that essential services are maintained, including where possible, in the areas impacted by the emergency.

The EOC is linked to a call centre (national toll-free 977 telephone number) with trained staff available at all times to guide response. In addition, the country has trained rapid response team that can deploy regionally, with a functioning ambulance system.

The National Disaster Management Agency (NDMA) was established in 2015 to guide emergency response operations and collaboration of all nine sectors in the country, including health. The country has conducted a series of assessments to evaluate capacities and various risks, including the Eswatini National Vulnerability Assessment, service availability mapping, Comprehensive Health & Nutrition Assessment Report on the Impact of El Niño, and the Disaster Risk Reduction, Emergency Preparedness and Response Capacity Assessment Report.

Recommendations for priority actions

- Review EOC manual, procedures and plans to incorporate biosurveillance laboratory networks and information systems.

- Strengthen the links between MoH EOC and other EOCs, i.e. NDMA, Fire department, etc.

- Train staff on EOC procedures, plans and surge capacity.

- Formally endorse the EOC plan.

RESPOND

R.2.1 Capacity to activate emergency operations – Score 2

Strengths/best practices

- There is an established EOC within the MoH.

- Capacity exists to activate emergency response operations.

- During an emergency, the MoH EOC is used to coordinate response.

- Staff working in the MoH EOC are trained in emergency response.

Areas which need strengthening/challenges

- There is weak coordination between public health and animal health sectors.

- Surge capacity training is still weak.

- Links are weak to other response parties, such as the Fire department, the Royal Eswatini Police Service and the Umbutfo Eswatini Defence Force (USDF).

R.2.2 EOC operating procedures and plans – Score 1

Strengths/best practices

- An EOC manual and emergency management dispatch standards (toll–free telephone number) have been developed and are in use.

- Capacity exists to activate emergency response operations.

Areas which need strengthening/challenges

- Links are weak to other response parties, such as the fire department, the Royal Eswatini Police Service and the USDF.

R.2.3 Emergency operations programme – Score 3

Strengths/best practices

- Capacity exists to activate emergency response operations.

- Table-top exercises have been conducted to test the systems in place.

Areas which need strengthening/challenges

- There is weak coordination between public health and animal health sectors.

- EOC is not fully functional.

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

Strengths/best practices

- Standard Treatment Guidelines (2012) and the Essential Medicines List of Common Medical Conditions in the Kingdom of Eswatini 1st edition (2012) are available.

- EOC staff have been trained in case management as part of the national and regional rapid response teams.

Areas which need strengthening/challenges

- SOPs for management and transportation of people potentially exposed to infectious/transmittable hazards (e.g. chemical contamination) are not available.

Linking public health and security authorities

Introduction

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

Target

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

Eswatini's level of capabilities

In Eswatini, the authority of the Royal Eswatini Police Service falls under the Prime Minister, and there is a Director for health under the police services. Responsibility for the army is under the Ministry of Defence, with an entity for military health. The interaction between medical officers in the army and with the police is informal however, and a Memorandum of Understanding (MoU) would streamline the collaboration between public health and security authorities. The Public Health Act, 1969 does provide some legal basis to engage security authorities in public health issues.

While there is no MoU in place between public health and security authorities in Eswatini, public health coordinates with the Ministry of Agriculture, Ministry of Home Affairs (border control) and the Royal Eswatini Police Service as well as the customs officials at points of entry. In the event of a public health emergency, security authorities need to coordinate their response with public health in an efficient manner. While this is not formalized as of yet, annual simulation exercises and joint trainings are taking place, for example by simulating various infectious disease outbreaks (e.g. Ebola virus disease) and the role of relevant actors in the response to these public health events. In May 2018, a simulation exercise will take place in Botswana, including the whole Southern African Development Community (SADC) region, as well as the military. Furthermore, in Eswatini, protocols for communication do exist but are as yet not formalized.

Recommendations for priority actions

- Set up formal collaboration mechanisms (MoUs and SOPs) between public health and security authorities.

- Finalize synchronization of the different call centres, in order to improve public health emergency response.

- Develop a joint training programme on topics related to information sharing and joint investigations/responses, and evaluate the effectiveness of this programme.

RESPOND

Indicators and scores

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

Strengths/best practices

- Informal points of contact during events are established and utilized.

- Leaders from public health and security authorities have participated in annual simulations.

- Preparedness and response training courses have been conducted jointly between health and security forces.

- Synchronization of the different call centres is in process, in order to improve public health emergency response.

Areas which need strengthening/challenges

- Development and implementation of frameworks (e.g. MoUs) outlining roles, responsibilities and best practices for sharing information between public health, animal health and security authorities needs to be done.

- Joint training exercises for public health and security authorities on topics related to information sharing and joint investigations/responses should be conducted.

- SOPs for coordination of joint response to public health and other emergencies need to be developed.

Medical countermeasures and personnel deployment

Introduction

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

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

Eswatini's level of capabilities

Provision of medical countermeasures (MCM) is the responsibility of the Central Medical Stores (CMS) of the Ministry of Health for public health and the Ministry of Agriculture for animal health, especially distribution of vaccines at central, regional and local levels.

There is a dedicated supply infrastructure (warehouse and transport fleet) with permanent staff to run the supply chain system for MCM. In addition, there is a dedicated procurement unit that is responsible for the procurement of MCM, quantification is the responsibility of Central Medical Stores working in collaboration with relevant programmes and departments. An established routine system is in place for sending and receiving medical countermeasures, but there is no documentation showing its efficacy.

The Medicines and Related Substances Control Act (2016) is legislation that has provisions for the control of medicines and related substances in the country; this includes the registration of products. The country, however, has no system in place for personnel deployment during emergencies.

It was noted during plenary that a regulatory authority overseeing medical countermeasures is in the process of being established.

Recommendations for priority actions

- Develop and adopt a plan for sending and receiving medical countermeasures in line with the regulations under the Medicines and Related Substances Act (2016).

- Test the plan through a simulation exercise that includes all relevant stakeholders and Southern African Development Community (SADC) countries.

- Develop and adopt a plan, which includes establishing regional and international agreements such as MoUs, for sending and receiving MCM and personnel for support during a public health emergency.

Indicators and scores

R.4.1 System in place for sending and receiving medical countermeasures during a public health emergency – Score 1

Strengths/best practices

- There is a budget for procuring medicines and supplies during emergencies – framework contracts for emergency supplies exist at the Central Medical Stores.

- The warehouse facilities are adequate to handle emergency supplies in addition to the routine supplies.

- The management of commodities at central level is electronic; however the internal management of supplies at most facilities is still manual even though a digital system is being developed.

Areas which need strengthening/challenges

- There is a lack of documentation (standard operating procedures/protocols) of the existing system of sending, receiving and distributing medical countermeasures, including donations during a public health emergency. The system should be documented and shared with all sectors and relevant beneficiaries.

- There are no formal agreements/MoUs with neighbouring countries (i.e. the Southern African Development Community) and regional/international organizations (e.g. the Global Outbreak Alert and Response Network) to ensure timely mutual cross-border aid (personnel and medical countermeasures).

- The system of sending, receiving and distributing medical countermeasures during a public health emergency needs to be strengthened, to ensure that this can occur at any time.

- There are currently barriers to acquiring MCM quickly during an emergency, including products that fall outside the routine supply chain of the country (i.e. that address issues such as product registration and potentially lengthy customs procedures).

R.4.2 System in place for sending and receiving health personnel during a public health emergency – Score 1

Strengths/best practices

- Some stakeholders such as the EPR/IHR focal point are aware of an informal system for sending and receiving health personnel during a public health emergency even though there is no documentation.

Areas which need strengthening/challenges

- There is no policy or protocol that directly addresses regulatory and licensure concerns of receiving health personnel from outside Eswatini during a public health emergency.

- There is no specific documentation protocol or standard operating procedures (SOPs) guiding deployment of national personnel/health workers internationally during a public health emergency.

Risk communication

Introduction

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

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

Target

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

Eswatini's level of capabilities

The Health Promotion and Education (HP&E) Department in the Ministry of Health (MoH), is responsible for health promotion and community engagement. Generally, risk communication activities are ad hoc and not well coordinated at all levels in Eswatini. There is neither a national risk communication strategy nor any formal agreements that guide officers when they carry out such activities. The department and technical working groups implement risk communication activities during outbreaks and emergencies. Membership of the working groups is limited but includes health care workers and representatives from civil society organizations, partners, the private sector and other non-state actors. The Prime Minister is the one who declares a state of emergency. In case of an emergency the ministries and/or directorates responsible for those specific public health emergencies are designated to be the key spokespersons for initial information dissemination to the public about health risks and events, working in collaboration with the National Disaster Management Agency (NDMA).

Risk communication is included in disease-specific preparedness and response guidelines and plans (e.g. malaria, human papilloma virus and influenza). The HP&E oversees some risk communication materials to ensure they are clear and factually correct. No formalized systems exist for monitoring and addressing media, rumours and other misinformation. Mechanisms for surge staff for risk communication during emergencies are ad hoc. Information is disseminated through mass media such as radio, television and print. Messages are in both languages (SiSwati and English).

RESPOND

There is very little funding available for HP&E, and it was noted during plenary that one of the obstacles to disseminating information via television is the high cost of airtime. One of the priority actions, therefore, addressed cultivating stronger relationships with the media to enhance collaboration.

Recommendations for priority actions

- Develop a communication strategic plan, which includes a monitoring and evaluation (M&E) framework and standard operating procedures (SOPs).

- Develop and implement coordination mechanisms for internal and multi-sectoral (One Health) routine and emergency response communications.

- Institute measures for effective rumour monitoring and feedback at all levels.

- Identify and foster strong partnerships with media personnel on principles and reporting of IHR activities.

Indicators and scores

R.5.1 Risk communication systems (plans, mechanisms, etc.) – Score 1

Strengths/best practices

- There is a dedicated department within the MoH responsible for risk communications.

- Risk communication is incorporated in some disease-specific preparedness and response plans (e.g. malaria)

- Some partners support risk communication activities of the MoH during emergencies, in collaboration with the NDMA.

Areas which need strengthening/challenges

- There is no national risk communication strategy or plan in place with standard operating procedures.

- There is low capacity at national and sub-national levels to effectively implement risk communication interventions.

- There is no dedicated budget for emergency response risk communication, however there is a dedicated budget for emergencies which is open for all technical areas to access.

R.5.2 Internal and partner communication and coordination – Score 2

Strengths/best practices

- There are agreements between the MoH and some partners for endorsing risk communication messages.

Areas which need strengthening/challenges

- The membership of technical working groups is not regularly reviewed; and coordination and collaboration mechanisms between the MoH and all relevant agencies involved in risk communication (routinely and during emergencies) are not formalized.

- Inadequate mechanisms exist for sharing new strategies with partner organizations to continually improve communication response.

R.5.3 Public communication – Score 3

Strengths/best practices

- The Prime Minister is involved in the coordination of risk communication to the public during outbreaks and emergencies.

- A nationwide toll-free telephone number (977) enables anyone to call and report emergencies, suspected cases of disease, or ask questions.

- The Government uses cell phone messages, radio, television and social media to reach the community with educational messages (e.g. the NDMA has a Facebook page).

- Media activities during an emergency are shared in both official languages.

Areas which need strengthening/challenges

- There are no formalized SOPs for public communications within the MoH media and communications department.

- There is a lack of operational research on communication methods to effect behavioural change during emergencies.

R.5.4 Communication engagement with affected communities – Score 1

Strengths/best practices

- Social mobilization and health promotion activities occur in the community, which support interventions during some disease outbreaks.

Areas which need strengthening/challenges

- There is no systematic mechanism for continuous assessment and provision of feedback to at-risk or affected populations and agencies implementing response activities in the community.

R.5.5 Dynamic listening and rumour management – Score 2

Strengths/best practices

- A toll-free telephone number (977) is available, with dedicated staff to receive and advise community members on health and related issues.

Areas which need strengthening/challenges

- There is no system in place responsible for listening and rumour management in the community on a permanent basis.

OTHER IHR-RELATED HAZARDS AND POINTS OF ENTRY

Points of entry

Introduction

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

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

Eswatini's level of capabilities

Eswatini is a landlocked country and utilizes road, railway (for goods only) and air to connect with neighbouring countries Mozambique and South Africa. Of the total 16 points of entry (PoE) (13 ground crossings, two airports and one inland clearance depot), seven are designated PoE: two of the designated border crossings are to Mozambique and the remaining five to South Africa.

The responsibility for establishment of capacity at PoE lies with the Department of Environmental Health, under the Ministry of Health (MoH). The West Africa Ebola virus disease outbreak in 2014 catalysed an increase in capacity at PoE in Eswatini, whereby port health officers were deployed and other assessment equipment such as thermal scanners was installed in some PoE. During plenary however, it was noted that there is a lack of appropriate medical services including diagnostic facilities at most designated PoE. The main border crossings (Ngwenya and King Mswati III International airport) have excellent capacities to respond to public health emergencies, appropriate to the scale and size of these PoE. It was suggested that Eswatini revise the number of IHR-designated PoE, in order to focus efforts to crossings most used both for animals and import/export as well as for humans. Having fewer designated PoE in Eswatini would therefore allow the country to focus its resources on ensuring IHR requirements are met in all designated PoE.

Since 2014, Eswatini has never had a confirmed case of a public health event at a point of entry, and only one known suspected occurrence, which was during the Ebola virus disease outbreak. Two of the designated PoE have access to medical facilities for the prompt assessment and care for ill travellers. The remaining five designated PoE are served by the nearby health facilities (ranging from 3 to 31 km away from PoE), supported by national Emergency Medical Services (EMS) with ambulances. The current National Multi-Hazard Contingency Plan does not contain a specific sector to respond to public health threats at PoE, but there is a specific contingency plan for emergencies at the King Mswati III International Airport.

Recommendations for priority actions

- Incorporate a section on preparedness and response to public health threats at PoE into the National Multi-hazard Contingency Plan.

- Develop guidelines and standard operating procedures (SOPs) for IHR-designated PoE.

- Provide equipment for prompt assessment of ill travellers including facilities for isolation in all IHR-designated PoE.

- Develop programmes and train personnel for the control of vectors and reservoirs as well as the inspection of conveyances and cargo available at IHR-designated PoE.

- Review the IHR designated PoE to determine if all seven need to remain as designated.

- Create posts for port Health.

Indicators and scores

PoE.1 Routine capacities established at points of entry – Score 1

Strengths/best practices

- The King Mswati III international airport has an onsite health clinic and isolation unit with designated staff in addition to the Environmental Health Officers.

- The main border crossing to South Africa (Ngwenya) has onsite medical services, including diagnostic facilities for the prompt assessment and care of ill travellers.

- PoE without onsite medical facilities have access to other government-owned medical facilities within a radius of 3 to 31 km.

- Designated PoE provide access to equipment and personnel for the transport of ill travellers to an appropriate facility, via the EMS and ambulances nationwide.

Areas which need strengthening/challenges

- The Inland clearance depot has no monitoring and no PoE activities established (though there is no human traffic through this PoE).

- Five out of the seven designated PoE do not have equipment for prompt assessment and facilities for isolation (but they do have access to government-owned medical facilities nearby).

- There are no programmes for control of vectors and reservoirs in place, except for a pest control programme at King Mswati III International Airport.

- PoE personnel are a borrowed workforce from the Department of Environmental Health within the MoH; there are no dedicated personnel for PoE.

- Training of personnel for inspection of conveyances and cargo at PoE needs to be undertaken. It was noted during plenary that the Environmental Health Officers at the designated PoE could be capacitated to do these inspections.

PoE.2 Effective public health response at points of entry – Score 1

Strengths/best practices

- Standard operating procedures (SOPs) for designated PoE are under development and are expected to be ready by April 2019.

- Eswatini has a comprehensive and updated National Multi-Hazard Contingency Plan, which is nearing official endorsement.

- A specific emergency order for the international airport (King Mswati III International Airport) is endorsed and indicates the responsibilities and actions by appropriate partners in the event of various hazards.

- A referral system and transport for the safe transfer of ill travellers to appropriate medical facilities is in place.

Areas which need strengthening/challenges

- The National Multi-Hazard Contingency Plan does not contain a specific section on responding to public health emergencies occurring at PoE.

- Facilities for assessing contaminated/infected travellers and animals onsite or facilities for the assessment and quarantine of suspect travellers are not available for most designated PoE.

- Evaluation of effectiveness in responding to public health events at PoE, through either simulation exercises or actual events, has not been done (though no actual public health events have been noted at a PoE since 2014).

Chemical events

Introduction

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

Target

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

Eswatini's Level of Capabilities

Chemicals are extensively used in Eswatini (particularly in the agro-pastoral, health and domestic sectors and some use in industry and mining), but they are currently inadequately managed or their use is addressed in a piecemeal fashion (i.e. there is no one plan discussing all chemicals; different plans and pieces of legislation cover different chemicals, yet frameworks to manage chemicals exist). Chemicals are mainly imported from South Africa for which the South African Registration System to Control Chemical Imports is accepted. Agrochemicals will subsequently be controlled through the Pesticides Management Act, 2018.

Legislation for management of chemicals is currently covered under the Environmental Management Act (2002), the Waste Regulations (2000) and Water Pollution Control Regulations (2010). However, the complementary regulations for control of chemicals and hazardous substances produced intentionally or unintentionally is lacking, and existing legal measures do not address the whole life cycle of chemicals. Exposure to humans and a comprehensive approach will be covered in the Sound Management of Chemicals Bill, which is currently being drafted for submission to parliament. An inter-ministerial coordinating mechanism for consultation among stakeholders and for management of chemical events exists and will be formalized through the Sound Management of Chemicals Bill.

Pharmaceuticals are regulated under the Medicines and Related Substances Control Act (2016). A national chemicals profile giving the administrative infrastructure for management of chemicals with an inventory of chemicals used in the country was prepared in 2015. National implementation plans follow the Strategic Approach to International Chemicals Management (SAICM), and some multilateral environmental agreements have been prepared. Eswatini has ratified the Basel, Minamata, Rotterdam and Stockholm Conventions, and participates in the International Conference on Chemicals Management. However, capacity building is needed to ensure the implementation of multilateral environmental agreements. The implementation of the Globally Harmonized System of Classification and Labelling of Chemicals is being undertaken in the context of SADC.

The ILO conventions 170 and 174 are not in force. Some guides and procedures for sound chemicals management have been elaborated but are only partially implemented. There is some access to international databases relating to chemicals (e.g. WHO and IPCS/INCHEM[8]). Environmental monitoring of air and water and surveillance for chemicals in other media is provided by the Ministry of Tourism & Environmental Affairs through laboratories in South Africa. There is no monitoring of products destined for consumer use. Capacity in the region to monitor chemical contamination of food is being sought through the Codex Alimentarius.

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8   International Programme on Chemical Safety.

OTHER

The Ministry of Health lacks toxicological capacity for chemicals monitoring and health exposure monitoring. Coordination with other IHR sectors is partial and communication of chemical risks needs strengthening. There remains a lack of awareness concerning chemical risks and chemical events and a poor appreciation of the implications for response to chemical emergencies by decision-makers. Educating the public and awareness concerning chemical risks is lacking.

Further training of human resources in chemicals risk assessment and communication is desirable, as is the strengthening of existing training for response to chemical events both by first responders and the medical professions (often medical professionals have an inadequate knowledge concerning the diagnosis and patient management of diseases of chemical etiology).

The laboratory capacity to detect and respond to chemical events is low. Standard operating procedures (SOPs) do not exist and analytical toxicology capacity for diagnosis and treatment of exposed patients remains weak at the country's health facilities. The existing laboratory capacity for identifying viral and bacteriological diseases could be expanded, however, for some toxicological testing. In addition, ensuring access to pharmaceuticals and medical supplies for chemical emergency response is not in place.

A well-developed national centre for toxico-vigilance and pharmacovigilance does not exist; urgent consideration should be given to whether it is adequate to rely on South Africa for this function. Capacity for identification and surveillance of chemical risks from chronic exposure, with the potential of becoming chemical events, needs to be developed.

Some small 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. While the health sector cooperates with the emergency services (coordinated through the MoH) for preparedness and response to chemical events and their notification, there is lack of systematic harmonized data collection and exchange of information on chemical events occurring throughout the country, and on their management.

Financial resources are not available for mobilization for a chemical event response. Industrial installations are required, through their environmental impact assessment, to have their chemical emergency preparedness and response plans for the periphery as well as the interior of the installation. However, this may not adequately cover small- and medium-sized installations, lacking technical reporting capacity. There is a partial system for tracking important hazardous chemical consignments entering the country, and capacity to register and track consignments needs to be strengthened.

Several chemical incidents have occurred (e.g. the Mhlumeni, Illovo and Malagwane caustic soda spills; Texray benzine fumes; Bhunya Phenols and USA Distillers molasses), and the management of these events was not satisfactory. Comprehensive chemical emergency plans are lacking and need developing with SOPs; these should be regularly tested and improved through simulation exercises.

It was noted during plenary that an additional barrier with respect to chemicals procured from other countries (outside Africa) included directions for use in foreign languages and mislabelled products. It was also indicated that a national risk assessment of chemicals would be done in 2018.

Recommendations for Priority Actions

- Advocate among all relevant stakeholders to endorse the enactment of the Sound Management of Chemicals Bill and the promulgation of relevant regulations.

- Encourage each ministry to include chemical incident-emergency response in their relevant sector plans.

- Promote capacity building (infrastructure, technical capabilities and trained human resources) of competent authorities for effective surveillance and enforcement of regulations related to chemicals management.

- Review the need to establish a national poison information centre and related medical and analytical facilities that operates at all times.

Indicators and Scores

CE.1. Mechanisms are established and functioning for detecting and responding to chemical events or emergencies – Score 2

Strengths/best practices

- Legislative frameworks are in place.

- There are chemical profiles, inventories and national implementation plans in place.

- National Competent Authorities exist, and are mandated with sound management of chemicals (albeit limited capacities and resources).

- Monitoring and inspection systems are partially in place, i.e. Memorandum of Understanding (MoU) between SEA & MoH (Environmental Health (Port Health); MoU between Eswatini Environmental Agency (SEA) & Eswatini Revenue Authority (SRA); and an MoU between SEA & the Royal Eswatini Police Service.

Areas which need strengthening/challenges

- The Sound Management of Chemicals Bill is not yet enacted, and the Pesticide Management Act is not yet fully implemented (including the promulgation of accompanying regulations).

- Infrastructure and capacity development for assessment of chemical emergencies in the country needs to be strengthened.

- Awareness about sound management of chemicals needs to be raised at all levels, and across sectors and government departments.

- Capacity for surveillance and detection of chemical events is lacking; such capacity could be promoted through establishment of a poisons information centre and related medical and analytical facilities operating continuously with systematic data collection.

- Analytical toxicology laboratory facilities need strengthening, building on the existing laboratory services for other IHR areas, with the creation of a regional network of accredited laboratories. Capacity should also be strengthened to test for chemicals in food and environmental media.

- Laboratory capacity, qualified human resources and financing remain insufficient.

E.2 Enabling environment is in place for management of chemical events – Score 2

Strengths/best practices

- Legislation for emergency response defining the roles and responsibilities of main stakeholders has been enacted.

- Inventories of facilities using chemicals exist.

- Simulation exercises for health emergencies have been conducted, which include some potential chemical events.

Areas which need strengthening/challenges

- A comprehensive public health plan for preparedness and response to chemical incidents/emergencies has yet to be developed.

- Surveillance guidelines for chemical events do not exist.

- Public awareness on chemical safety needs to be improved.

- There has been no training of medical personnel (including first responders) in diagnosis and management of chemicals events, and there are no guidelines on the subject or routinely scheduled simulation exercises.

- Access to pharmaceuticals and essential equipment for patient management needs to be increased.

Radiation emergencies

Introduction

State parties should have surveillance, assessment, notification, reporting and response capacities for radiological public health hazards, events or emergencies of international concern. This requires effective collaboration and communication among the state organizations with responsibilities in radiation emergency management.

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

Eswatini's level of capabilities

The highest level of radiation hazard in Eswatini is category II sealed sources used in hospitals (medical equipment) and industrial applications that could require on-site protective actions. These are monitored on a regular basis using radiation dosimeters for measurement of radiation received by radiation workers provided by the South African Bureau of Standards (SABS). Since June 2016 dosimeters are inspected every three months. Medical imaging staff use lead-based protective devices and employ the "as low as reasonably achievable" (ALARA) principle to protect themselves and the public from harm. With correct use of such equipment the hazard of exposure is low; but there remain the risks associated with misuse and criminal diversion as well as uncontrolled disposal of obsolete equipment and radioactive materials that might be dumped illegally. There is no nuclear power generation in Eswatini or nuclear reactors. Some food stocks are imported from a region of South Africa that is close to a nuclear power station. A potential major concern is transit of radioactive material through Eswatini.

Eswatini does not have a radiation control authority, a strategic plan for radiation safety, or a complete legislative infrastructure for control of radiological hazards and response to nuclear and radiological emergencies. While the country has a signed radiation safety act (Control of Radio-active Substances Act, 1964), there is no emergency response plan for radiation emergencies. A comprehensive inventory has not been made of potential sources of emergencies or of the magnitude of these hazards, but the Ministry of Natural Resources and Energy is currently making a survey of equipment and radiological sources for medical use. In the event of a radiological/nuclear emergency the National Disaster Management Agency would respond.

There is no monitoring of consumer products (e.g. foodstuffs and goods) regarding radiation hazards. There are no procedures for risk assessment in radio-nuclear surveillance/monitoring, to trigger/mount a response of suitable composition and magnitude. There is no laboratory capacity or access to laboratory capacity available for systematic analysis. Current human and financial resources are not sufficient to meet the needs for radiation safety. There is no existing inventory of reference health care facilities for radiation emergencies. There are no protocols/guidelines for case management regarding radio-nuclear hazards. Procedures on emergency response need to be developed for the involved organizations. Intersectoral coordination is regulated by the Ministry of Natural Resources and Energy.

Eswatini is not yet a party to the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, or the Convention on Early Notification of a Nuclear Accident, among other important conventions and treaties concerning the safe and peaceful use of nuclear energy. There is no focal point for

the WHO Radiological Emergency Medical Preparedness and Assistance Network (REMPAN). Eswatini is not a party to the Treaty on the Non-Proliferation of Nuclear Weapons, nor has it acceded to the International Atomic Energy Agency (IAEA) Convention on the Physical Protection of Nuclear Material (CPPNM) plus its amendment protocol.

 National laboratory facilities for identifying and measuring samples for detecting radioactivity, used for environmental safety and consumer product control, as well as on monitoring of the radiation exposed workforce need to be developed. Qualified technical experts need to be trained by IAEA. Further, arrangements need to be put in place for national and international transport of radioactive materials, samples and waste. Obsolete materials and equipment should be required to be returned to the manufacture for disposal.

As it was noted during plenary that the country is challenged by its storage of medical (particularly radiological) waste, it is suggested that a storage facility be created for confiscated materials and equipment. Training of medical radiation personnel has been provided in South Africa and the United Republic of Tanzania. Coordination and cooperation mechanisms need to be formalized between national authorities responsible for radiological and nuclear events with the Ministry of Health and the IHR National Focal Point (NFP). A review needs to be made of the medical facilities that could be developed to manage patients contaminated with radioactive substances and patients with overexposure. Standard operating procedures (SOPs) for management of radiation emergencies need to be developed and guidelines established for undertaking live drills and simulation exercises with all stakeholders to test emergency response effectiveness. Finally, a system should be introduced for preparing a real-time inventory of transits of radioactive materials, which would allow the following of consignments to their destination.

Recommendations for Priority Actions

- Explore the requirements for Eswatini to adhere to International mechanisms with regards to radiation safety, such as through the IAEA.

- Develop a health policy for the detection of and response to radiation emergencies.

- Develop standard operating procedures for the management of radiation emergencies including the responsibilities for public health assessments and response regarding radiation emergencies.

- Develop a Radiation Safety Bill for the health sector, which includes the establishment of a national radiation monitoring authority or agency.

Indicators and scores

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

Strengths/Best practices

- Medical radiation monitoring with analytical support from South Africa is being conducted.

- The country has ratified the radiation safety treaty of the Control of Radio-active Substances Act, 1964.

- An Intersectoral coordination committee regarding radiation safety is regulated by the Ministry of Natural Resources and Energy.

- Pre-service training of radiographers is in place.

- Medical Imaging staff use lead-based protective devices and employ the ALARA principle.

- Infrastructure of public facilities meets the basic requirements in terms of radiation protection.

- A zero draft of a Nuclear Regulatory Bill has been written.

- Only trained personnel operate radiation-emitting devices.

Areas which need strengthening/challenges

- Radiation events are not systematically documented.

- There are no SOPs for organizations that utilize and those that monitor radiation.

- International radio-nuclear conventions are not adhered to, e.g. General Safety Requirements (GSR) Part 3 and International Basic Safety Standards (BSS).

- Government budget allocation for oversight control and prevention needs strengthening.

- Development of SOPs for interoperable efficiency is required.

- Bio-radio health care expertise needs to be developed.

- Maintenance of nuclear instruments done outside the country at high cost is a challenge.

- There are no satellite offices to respond immediately should an emergency occur at the peripheries.

- The Radiation Safety Bill has not yet been enacted into law; as a result there is no regulatory and licensing authority for medical devices or for monitoring radiation in the country.

- Quality management systems in medical use of radiation need to be strengthened.

RE.2 Enabling environment is in place for management of Radiation Emergencies – Score 1

Strengths/Best practices

- Pre-service training of radiographers is available.

Areas which need strengthening/challenges

- SOPs for interoperable efficiency in the management of radiation emergencies need to be developed.

- Procedures and guidelines for scheduled emergency plan review, live drills and simulation exercises need to be developed.

Appendix 1: JEE background

Mission place and dates

Mbabane, Eswatini 9 – 13 April, 2018

Mission team members:

- Sally-Ann Ohene, World Health Organization, Ghana (Team lead)

- Issa Makumbi, Ministry of Health, Uganda (Co-Lead)

- Franklin Asiedu-Bekoe, Ministry of Health, Ghana

- John A Haines, United Nations Institute for Training and Research

- Naledi Mannathoko, Ministry of Health, Botswana

- Kim Brolin Ribacke, Public Health Agency of Sweden

- Basego Mothowaeng, Ministry of Health, Botswana

- HendrikJan Ormel, Food and Agriculture Organization of the United Nations

- Asheena Khalakdina, World Health Organization, Geneva

- Patrick Bastiensen, World Organization for Animal Health

- Susan Hiers, Centers United States Centers for Disease Prevention and Control

- Romina Stelter, World Health Organization, Geneva

- Gertrude Avortri, World Health Organization, Zimbabwe

- Roland K. Wango, World Health Organization, Senegal

Objective

To assess Eswatini's capacities and capabilities relevant to the 19 technical areas of the JEE tool for providing baseline data to support Eswatini's efforts to reform and improve their public health security.

The JEE process

The JEE process is a peer-to-peer review. 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 JEE team members and host country experts seeking full agreement on all aspects of the final report findings and recommendations.

Should there be significant and irreconcilable disagreement between the external team members and the host country experts, or among the external, or among the host country experts, the JEE 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, there was email communication with the AFRO, assessment team members, the Eswatini WHO Country Office to review the agenda, responsibilities and logistics.

- Workshops were held over the period of 29th December 2017 to 8th March 2018 to provide information to national stakeholders on the JEE process including guidance on the self-assessment and assignment of responsibilities for making presentations during the JEE.

Limitations and assumptions

- The evaluation was limited to one week, which limited the amount and depth of information that could be managed.

- It was indicated that the results of this evaluation will be publically available.

- The evaluation is not just an audit. Information provided by Eswatini was not be independently verified but discussed and the evaluation rating mutually agreed to by the host country and the evaluation team. This was a peer-to-peer review.

Key host country participants and institutions

Eswatini lead representative:

NAME	POSITION	ORGANIZATION
Dr. Njabulo Lukhele (Team Lead)	Senior Medical Officer	Ministry of Health
Mr. Nhlanhla Nhlabatsi	Senior Epidemiologist	Ministry of Health
Mr. Masitsela Mhlanga	Emergency Preparedness & Response Manager	Ministry of Health
Mr. Sipho Shongwe	Deputy Chief Environmental Health Officer	Ministry of Health
Gugu Maphalala	Chief Laboratory Technologist	Ministry of Health
Vusie Lokotfwako	Epidemiologist	Ministry of Health
Bongani Tsabedze	Epidemics Officer	Ministry of Health
Bongiwe Dlamini	Senior Health Promotion Officer	Ministry of Health
Dr Kevin Makadzange	Health Promotion Officer	WHO, Eswatini
Dr Sihle Mdluli	Veterinary Epidemiologist	Ministry of Agriculture
Dr. Zizwe Cindzi	Veterinary Officer	Ministry of Agriculture

Participating institutions:

- Eswatini Ministry of Health

- Eswatini Ministry of Agriculture

- Eswatini Ministry of Tourism & Environmental Affairs

- National Disaster Management Agency

- Eswatini Civil Aviation Authority

- Eswatini Environment Authority

List of Participants

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Supporting documentation provided by host country

National legislation, policy and financing

- Public Health Act (1969)
- Animal Diseases Act (1965)
- Veterinary Public Health Act (2013)
- Medicines and Related Substances Control Act (2016)
- The National Health Policy (2007)
- The National Health Sector Strategic Plan 2014-2018

IHR Coordination, communication and advocacy

- Annual report of the International Health Regulations in Swaziland, 2013
- Disaster Management Act (2006)
- National Strategic Plan for Epidemiology and Disease Control Unit (EDCU) 2016–2020
- Swaziland drought rapid assessment report, 2016
- National Drought Mitigation and Adaptation Plan (NERMAP) 2016–2022
- MDG report for the Kingdom of Swaziland, 2015
- Draft National Multi-Hazard Contingency Plan 2015–2017

- National Multi-Hazard Contingency Plan 2017–2018

- National Health Sector Strategic Plan 2008–2013

- The second National Health Sector Strategic Plan 2014–2018

- Comprehensive drought health and nutrition assessment report, 2016

- MoH Ebola (Haemorrhagic Fever) Preparedness and Response Plan 2014/15

- Integrated Disease Surveillance and Response In the Kingdom of Swaziland, 2014

- Mid-term review and lessons on implementing the National Emergency Response Mitigation and Adaptation Plan 2016–2022

- Draft emergency response standard operating procedures, 2018

- Composition and terms of reference of national and regional epidemic task force teams and rapid response teams in Swaziland, 2016

Antimicrobial resistance

- The AMR Containment Strategy to Combat Antimicrobial Resistance (2017–2021)

- Infection Prevention Control guidelines, 2014

- Medicines and Related Substances Control Act (2016)

- Standard Treatment Guidelines to Regulate and Promote Rational Use of Antibiotics, 2012

Zoonotic diseases

- Veterinary Surgeons Act (1997)

- The Stock Disease (amendment) Regulation (2007) List of Notifiable Diseases. Amendment to the Animal Diseases Act (1965)

- Swaziland National Avian flu Preparedness Plan Draft 5, Ministry of Agriculture and Cooperatives (MoAC) & Ministry of Health (MoH), 2007

- The Veterinary Public Health Act (2013)

- Guidelines for National Veterinary Services (2013)

- OIE – PVS Gap-Analysis mission report – Kingdom of Swaziland (2015)

Food safety

- Public Health Act (1969)

- Public Health (Food hygiene) Regulations, 1973

- Swaziland food related standards developed by the Swaziland Standard Authority

Biosafety and biosecurity

- Swaziland National Biosafety Manual

- The Biosafety Act (2012)

- Draft biosafety regulations, 2017

Immunization

- WHO/UNICEF Joint Reporting Form, 2017
- Draft Swaziland National Immunization Technical Advisory Group Procedure Manual, 2017
- Expanded Programme on Immunization Comprehensive Multi-Year Plan 2017–2021
- Expanded Programme on Immunization policy, 2012
- Swaziland measles rubella catch-up campaign report, 2016
- Swaziland comprehensive EPI review report, 2016
- Introduction plan for rotavirus vaccine in Swaziland, 2014
- Addis Declaration on Immunization
- Swaziland Expanded Programme on Immunization Annual Report, 2016
- Swaziland Expanded Programme on Immunization Annual Report, 2017

National laboratory system

- Mbabane Government Hospital Laboratory – Biosafety Manual, 2014
- Mbabane Government Hospital Laboratory – SOP for CSF Analysis, 2015
- Mbabane Government Hospital Laboratory – SOP for EIA for detection of rubella IgM, 2016
- Ijaz, K. et al. International Health Regulations—What gets measured gets done. Emerging Infectious Diseases. 2012; 18(7):1054–7.
- Guidelines for National Veterinary Services, 2013
- OIE – PVS evaluation follow-up mission report – Kingdom of Swaziland (2015)
- OIE – PVS gap-analysis mission report – Kingdom of Swaziland (2015)
- CVL annual report (2014)
- Regional inter-laboratory proficiency testing for rabies diagnosis. Southern Africa, Congo basin and other selected African countries. April 2013. Technical and financial report (confidential) CDC, ARC, OIE

Real time surveillance

- Weekly Disease Notifiable bulletins
- Monthly Disease Notifiable bulletins
- Listing of core syndromes indicative of public health emergencies
- STI management guidelines at SNAP Swaziland National AIDS Programme
- IDSR Assessment Reports
- National Strategic Plan for Epidemiology and Disease Control Unit (EDCU) 2016–2020
- National Integrated Disease Surveillance and Response Strategy
- OIE reports (World Animal Health Information System – WAHIS)
- Ministry of Agriculture reports

Reporting

- Various Swaziland monthly epidemiological bulletins
- Various immediate disease notification weekly summary reports 2018
- ISDS 2018 Conference Abstracts: Malaria risk assessment through remote sensing and multi-criteria evaluation in Madagascar
- CMIS connect – Client Management Information System news, 2017

Workforce development

- Annual budget performance report F/Y 2017–2018
- Service availability mapping report, 2013
- Analysis of human resources for health in Swaziland, 2017
- Ministry of Health staffing norms. Human Resources Unit of the Ministry of Health, 2016

Preparedness

- Emergency Preparedness and Response strategy 2017–2020
- National Health Sector Strategic Plan
- The Second National Health Sector Strategic Plan 2014–2018
- Annual vulnerability assessment & analysis report 2014
- Swaziland comprehensive health & nutrition assessment report on the impact of El Niño
- Disaster risk reduction, emergency preparedness and response capacity assessment report, 2013
- Swaziland national vulnerability assessment, 2006
- Ebola Preparedness Plan
- National Multi-Hazard Contingency Plan, 2017
- Emergency response SOPs
- Service availability mapping (SAM) report , 2013

Emergency response operations

- Matsapha Simulation & Commemoration of the International Day for Disaster Risk Reduction Report, November 2017
- Natural simulation report 2014
- Disaster Management Act (2006)
- National Emergency Response, Mitigation and Adaptation Plan 2015–2020 (NERMAP), January 2016 to March 2022
- National Multi-Hazard Contingency Plan, 2017
- The Second National Health Sector Strategic Plan 2014–2018
- Annual vulnerability assessment & analysis report 2014
- Swaziland comprehensive health & nutrition assessment report on the impact of El Niño
- Disaster risk reduction, emergency preparedness and response capacity assessment report, 2013

- Swaziland National Vulnerability Assessment, 2006
- Service availability mapping (SAM) report, 2013
- Standard Treatment Guidelines to Regulate and Promote Rational Use of Antibiotics, 2012
- Essential Medicines List of Common Medical Conditions in the Kingdom of Swaziland 1st edition, 2012

Linking public health and security authorities

- Public Health Act (1969)

Medical countermeasures and personnel deployment

- Medicines and Related Substances Control Act (2016)
- Swaziland Donation Guidelines

Risk communication

- The ACSM Implementation Plan
- Introduction Plan for Inactivated Polio Vaccine (IPV) in Swaziland, 2014
- Advocacy, Communication and Social Mobilization Plan for introduction of HPV vaccine, 2017
- Communication and advocacy strategy on avian and human influenzas
- Draft communication and advocacy strategy for the Department Of Veterinary And Livestock Services, 2017
- National Multi-Hazard Contingency Plan 2012 to 2013
- National Health Promotion Strategy 2018–2022
- Malaria Epidemic Preparedness and Response National Guidelines, 2009

Points of entry

- National Multi-Hazard Contingency Plan 2017–2018
- Memorandum of Understanding between the Swaziland Civil Aviation Authority and the Swaziland's Government Ministry of Health
- Sikhuphe International Airport Emergency Orders, 2014

Chemical events

- Environment Management Act (2002)
- Waste Management, part VI of the Environment Management Act (2002) – management of chemical waste, which also domesticates the Basel Convention.
- Draft Chemicals Management Bill
- Pesticide Management Act (2018)
- Ratification of international treaties and dependence on their compliance mechanisms
- Public Health Act (1969)
- Agricultural Chemicals and Control Act (2006)

- Globally Harmonized System of Classification and Labelling of Chemicals –(including Safety Data Sheets)
- Stockholm Convention
- Rotterdam Convention
- Swaziland National Chemicals Management Profile, 2015
- Waste Regulations (2000)
- Water Pollution Control Regulations (2010)

Radiation emergencies

- Radiation Safety Act (draft)
- Draft Zero National Nuclear Regulatory Act 2017
- The Second National Health Sector Strategic Plan 2014–2018
- Control of Radio-active Substances Act (1964)