Joint external evaluation of IHR Core Capacities of
Sri Lanka

Mission report 19-23 June

World Health Organization

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

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Executive summary

Findings from the joint external evaluation

Sri Lanka is to be commended for volunteering to host a Joint External Evaluation. This shows tremendous commitment, foresight and leadership from the government. The country team should also be congratulated on bringing together a large number of key individuals, from a variety of organizations and departments, to contribute to the evaluation. This ensured the participation of colleagues from, for example, the Ministries of Agriculture, Defence and Foreign Affairs and the departments of animal health and atomic energy, in addition to the participation of numerous colleagues from the public health sector. Their contributions greatly enriched the preparation and delivery of the mission.

During the JEE mission, the external team developed three cross-cutting recommendations which require urgent high-level commitment and prioritization. These are as follows:

Strengthen multisectoral engagement and foster a true One Health approach

Sri Lanka established an IHR Steering Committee in 2016. This provides an opportunity to significantly increase collaboration and information exchange between ministries, sectors and disciplines and thereby improve the health and health security of humans and animals. The planned formalization of the committee—with high-level membership and an annual work plan—will make it an important body for coordination and collaboration among ministries at the national level. To complement this development, it is recommended that Sri Lanka:

- Establishes or enhances mechanisms to promote systematic collaboration between the human health, animal health and other relevant sectors on technical and policy areas.

Enhance surveillance

Sri Lanka has demonstrated its commitment to strong surveillance systems for national priority diseases in the human and animal health sectors, as well as systems for detecting antimicrobial-resistant microbes, adulterated food and counterfeit medicines. These systems will be invaluable for providing early warnings of potential threats to human and animal health, monitoring priority diseases and informing implementation measures. However, it is recommended that to ensure the effectiveness of these systems, Sri Lanka:

- Integrates the surveillance efforts of the human and animal health sectors, across all levels of government and especially at the national level, and;
- Improves the quality and management of data, considering the use of enhanced electronic reporting tools and registries to facilitate the rapid collection, exchange, analysis and use of health data. New information technology has enabled the development of electronic patient registries covering clinical and laboratory data from all levels and sectors of the healthcare system. This allows real-time surveillance and reporting activities, as well as linkages with other sources of data.

Ensure sustainable and scalable health security through improved documentation

Sri Lanka has evidenced high levels of expertise and operational capacity for dealing with public health threats and emergencies. The country also benefits from teams of experienced public health professionals who are trusted by the public. However, it is recommended that Sri Lanka:

- Develops, finalizes and formally approves national plans, memoranda of understanding, standard operating procedures and other administrative mechanisms that facilitate and formalize implementation, communication and coordination across sectors, while maintaining the flexibility to adapt to situations as they develop, and;
- Implements these administrative mechanisms to empower all relevant sectors and ensure a One Health and multi-hazard approach, contributing to business continuity and Sri Lanka's ability to respond to unexpected events and large-scale emergencies.

The JEE team would like to both note and express our appreciation for the considerable work and effort Sri Lanka dedicated to this process, including both the self-evaluation and the external evaluation.

The professionalism, transparency, and willingness of the Sri Lankan team to seek solutions together with the team was instrumental to the success of the mission. The team now hopes that the evaluation can serve as a platform from which to develop a country action plan for the way forward.

Sri Lanka scores

Technical areas	Indicators	Score
National legislation, policy and financing	P.1.1 Legislation, laws, regulations, administrative requirements, policies or other government instruments in place are sufficient for implementation of IHR (2005)	4
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	P.4.2 Veterinary or animal health workforce	3
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	P.6.2 Biosafety and biosecurity training and practices	1
Immunization	P.7.1 Vaccine coverage (measles) as part of national programme	5
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National laboratory system	D.1.1 Laboratory testing for detection of priority diseases	4
	D.1.2 Specimen referral and transport system	2
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Real-time surveillance	D.2.1 Indicator- and event-based surveillance systems	3
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	D.3.2 Reporting network and protocols in country	2
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	D.4.2 FETP[1] or other applied epidemiology training programme in place	4
	D.4.3 Workforce strategy	3
Preparedness	R.1.1 National multi-hazard public health emergency preparedness and response plan is developed and implemented	1

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[1] FETP: field epidemiology training programme

	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	1
	R.2.2 EOC operating procedures and plans	2
	R.2.3 Emergency operations programme	3
	R.2.4 Case management procedures implemented for IHR relevant hazards.	4
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Note on scoring of technical areas of the JEE tool

The JEE process is a peer-to-peer review and a collaborative effort between host country experts and JEE team members. In completing the self-evaluation, the first step in the JEE process, and as part of preparing for an external evaluation, host countries are asked to focus on providing information on their capabilities based on the indicators and technical questions included in the JEE tool.

The host country may score their self-evaluation or propose a score during the onsite visit with the JEE team. The entire external evaluation, including the discussions around the score, strengths/best practices, the areas which need strengthening, challenges and the priority actions, is done in a collaborative manner, with the JEE team members and host country experts seeking agreement.

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

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.

Sri Lanka level of capabilities

In Sri Lanka, the Quarantine and Prevention of Disease Ordinance (1897) governs the prevention of the spread of disease and measures relating to quarantine. The Ordinance allows Ministers to introduce regulations designed to prevent the introduction of disease to Sri Lanka and prevent the spread of disease, both within and outside the country's borders.

In 2014 the government completed an assessment on the extent to which Sri Lanka's existing legislation was sufficient for IHR implementation. In 2016, following this assessment, Sri Lanka's cabinet approved several amendments to the Ordinance in order to bring it in line with IHR requirements.

Other laws, including those relating to animal health have been updated to better reflect IHR requirements. Sri Lanka has clear regulations on activities that should be carried out at the local level to follow up on events. Reporting used to be paper-based but is now web based and covers both the public and private sector.

Sri Lanka does not have specific agreements in place for collaboration with other countries, however WHO mechanisms can be used when needed.

Following the tsunami in 2004, the government set up a national disaster commission that can provide funding during disasters. The country has extensive experience in disaster management, clear procedures in place and a collaborative approach to preparedness. There are compensation schemes for farmers who are affected by disasters.

Sri Lanka has had mixed experiences with receiving aid from other countries. The country has established a mechanism and registration process for receiving foreign professionals, but this process is not always followed.

Sri Lanka is currently updating its animal health legislation, which covers zoonotic diseases. The World Organization for Animal Health has recommended a review of this legislation.

Recommendations for priority actions

- Update the Quarantine and Prevention of Disease Ordinance with amendments that were recently approved by Sri Lanka's cabinet, in order to bring the legislation up to date with IHR requirements.
- Formalize, through regular meetings and established terms of reference, coordination between IHR focal points within the various line ministries as an administrative requirement for IHR implementation.
- Establish a multisectoral technical working group to further assess the legal system and administrative arrangements in relation to the IHR across the whole of government, and, where necessary, adjust laws, regulations and administrative practices in order to enable IHR implementation.
- Document and publish the administrative arrangements and policies from various sectors in order to further encourage cross-sectoral collaboration.

Indicators and scores

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

Strengths/best practices

- Sri Lanka has legislation in place that provides the necessary basis for IHR implementation, including a disease prevention ordinance from 1987 and a disaster management act from 2005.
- Additional regulations on specific diseases and on border issues are in place.
- Similar legislation exists for the animal health sector.
- Many acts and laws have been amended, and structures have been established, in recent years to facilitate the implementation of the IHR. This includes the establishment of a directorate for quarantine.

Areas that need strengthening/ challenges

- There is a need to further develop and assess the need for changes in other parts of national legislation in order to have capability across government to implement the IHR.
- More formal structures are needed to improve coordination among different parts of the government.

P.1.2 The State can demonstrate that it has adjusted and aligned its domestic legislation, policies and administrative arrangements to enable compliance with the IHR (2005) – Score 3

Strengths/best practices

- Sri Lanka has carried out two assessments of its laws and administrative arrangements with regards to supporting the IHR.
- Several adjustments have been made to laws and regulations following these assessments.

Areas that need strengthening/challenges

- There is a need to establish a multisectoral group to suggest further adjustments to laws and regulations to fully comply with the 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.

Sri Lanka level of capabilities

Sri Lanka's Ministry of Health, Nutrition and Indigenous Medicine is the main body responsible for implementing the IHR. The Ministry performs this role in collaboration with stakeholders from a variety of other ministries and departments.

The Quarantine and Prevention of Disease Ordinance, first introduced in 1897 and revised in 1962, is the principal law governing the prevention of the spread of diseases. The second section of the ordinance provides the Minister of Health with the authority to introduce regulations for the purpose of preventing the introduction into Sri Lanka of any disease and also preventing the spread of any disease outside Sri Lanka.

In 2008, the Director of the Quarantine Unit and the Chief Epidemiologist at the Ministry of Health, Nutrition and Indigenous Medicine were nominated as the joint National Focal Points for the IHR.

In 2016, Sri Lanka established a National IHR Steering Committee, under the chairmanship of the Director General of Health Services. The committee includes the following individuals and organizations:

- Public Health Services, Quarantine Unit, Epidemiology Unit, Decision Making Unit (Ministry of Health, Nutrition and Indigenous Medicine)
- Civil Aviation Authority of Sri Lanka
- Chief Executive Officer of Bandaranaike International Airport
- Commanding officer of Bandaranaike International Airport
- Airport Aviation Sri Lanka
- Air Line authorities
- Ports Authority
- Deputy Inspector General, Sri Lanka Police
- Sri Lanka Customs
- Department of Immigration and Emigration
- Department of Animal Production and Health
- Department of Agriculture
- Ministry of Disaster Management

- Atomic Energy Regulatory Council and the Atomic Energy Regulatory Board
- Central Environment Authority
- Security authorities

Recommendations for priority actions

- Draft and formalize terms of reference for the National IHR Steering Committee, including roles and responsibilities and frequency of meetings; and formulate an action plan for the committee.
- The National IHR Steering Committee should participate fully in completing the IHR annual questionnaire.
- Hold an annual meeting of the National IHR Steering Committee to inform members about IHR updates.

Indicators and scores

P.2.1 A functional mechanism established for the coordination and integration of relevant sectors in the implementation of IHR – Score 2

Strengths/best practices
- Establishing a directorate of quarantine, identifying National IHR Focal Points and providing necessary finances for the function of these mechanisms.
- A National IHR Steering Committee was established in 2016 to improve the coordination of IHR-related activities. During a public health emergency of international concern, the Director General of Health Services coordinates activities with all relevant stakeholders.
- IHR strengthening activities were included the Ministry of Health, Nutrition and Indigenous Medicine's Master Plan 2017-2025
- A multisectoral avian influenza committee was established in 2009 and convenes every month. This provides an effective platform through which to discuss influenza and other emerging health threats.
- The Advisory Committee on Communicable diseases was formed three years ago and convenes every two months to take high-level policy decisions related to communicable diseases. This committee includes representation from experts from many different disciplines.

Areas that need strengthening/challenges
- The National IHR Steering Committee requires strengthening through more regular meetings and defined plans of action.
- The IHR annual questionnaire should be completed with the full participation of all stakeholders.
- IHR updates should be disseminated to all relevant stakeholders through an annual meeting.
- Sectoral coordination focal points for IHR activity need be established.

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..

Sri Lanka level of capabilities

Sri Lanka has identified antimicrobial resistance (AMR) as an important area for public health action. In May 2017, Sri Lanka published its first National Strategic Plan for Combating AMR, which was developed with input from multiple sectors and is aligned with the WHO Global Action Plan on AMR.

Sri Lanka has an extensive and well-established healthcare system, including more than 60 microbiology labs across the country. These labs can conduct AMR surveillance (with varying levels of capability) for WHO priority pathogens. Additional support is provided by a national reference lab. For animal health, 24 district-level veterinary labs provide a limited level of AMR surveillance capability. A multisectoral steering committee is responsible for providing national AMR policy guidance and support.

Over the next few years, Sri Lanka is planning to increase the number of laboratories (both human and veterinary) that submit AMR data, expand healthcare acquired infection surveillance beyond MRSA bacteraemia and develop robust hospital-based AMR stewardship programmes.

Sri Lanka has demonstrated much progress on AMR since 2009 when AMR surveillance was first implemented. Given its well-trained and dedicated workforce, the country is well-positioned to improve on its scores at the next JEE.

Recommendations for priority actions

- Conduct systematic awareness programmes on AMR among target groups in the human health, veterinary, fisheries, and agriculture sectors.
- Establish and expand the national AMR surveillance system to cover all priority pathogens for AMR in human health and relevant AMR pathogens (such as Salmonella, E.coli, and S. aureus) in animal health.

- Expand healthcare acquired infections (HCAI) surveillance to include at least one additional HCAI (such as surgical site infections or ventilator-associated pneumonia).
- Establish antibiotic stewardship programmes and strengthen legislation against unauthorized prescriptions in the human and animal health sectors.

Indicators and scores

P.3.1 Antimicrobial resistance detection – Score 3

Strengths/best practices

- An accessible, country-wide human and veterinary laboratory network.
- More than 60 human microbiology laboratories have the capability to detect resistance in WHO priority pathogens.
- National reference laboratory for human health (at the Medical Research Institute); Specialized national reference laboratories for N. gonorrhoea and M. tuberculosis
- Three multisectoral, national-level committees support AMR (a steering committee, a quality assurance committee, and an infection control and prevention committee).

Areas that need strengthening/challenges

- Develop a system for multisectoral coordination between human and animal health.
- Expand capability for AMR surveillance at veterinary laboratories.

P.3.2 Surveillance of infections caused by antimicrobial-resistant pathogens – Score #3

Strengths/best practices

- The National Strategic Plan has identified AMR as a priority public health issue.
- AMR surveillance is currently being conducted routinely at 15-20 laboratories.
- Participation in the WHO Gonococcal Antimicrobial Resistance Surveillance Programme.
- Projects on AMR pathogens are underway in the animal health sector (including on mastitis in animals and surveillance of S. aureus, Streptococcus, and E.coli).

Areas that need strengthening/challenges

- Encourage participation of all hospitals (at base hospital-level A or higher) in AMR surveillance activities.
- Start to collect AMR data on Shigella infections.
- Broaden surveillance for AMR infections by including other sectors such as animal health and agriculture.

P.3.3 Health care-associated infection (HCAI) prevention and control programmes – Score 3

Strengths/best practices

- National Advisory Committee on Infection Prevention.
- All hospitals have an infection control unit and an infection control committee.
- Infection control has been included in some curricula for healthcare workers (for example in postgraduate training).

- All infection control doctors and nurses undergo in-service training on infection control after being appointed to the infection control unit.
- MRSA bacteremia surveillance is conducted at select hospitals.

Areas that need strengthening/challenges

- Develop national-level infection control policies.
- Establish a comprehensive healthcare acquired infection surveillance system and incorporate it into the national notifiable diseases system.
- Expand healthcare acquired infection surveillance to include all human health hospitals as well as farms.
- Establish negative-pressure isolation rooms in all tertiary-care level hospitals, according to international standards.

P.3.4 Antimicrobial stewardship activities – Score 3

Strengths/best practices

- National guidelines on empirical antibiotic therapy for select clinical conditions (such as leptospirosis and dengue).
- 'Red Light' antibiotics require approval prior to prescription.
- The Drug Act covers the animal health sector.
- Local antibiotic stewardship programmes are available in some hospitals.
- The National Medicines Regulatory Authority aims to ensure that all medicines and medical devices available in Sri Lanka are efficacious, safe and of acceptable quality, and to ensure uninterrupted supply and rational use.

Areas that need strengthening/challenges

- Continue to develop AMR awareness programmes in all relevant sectors, including for the public.
- Develop legislation to ensure strict oversight and enforcement of unauthorized, over-the counter sale of antibiotics in both human and animal health sectors.
- Strengthen the existing mechanism for monitoring prescription policies.
- Develop comprehensive AMR stewardship programmes for healthcare personnel.

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.

Sri Lanka level of capabilities

Sri Lanka has a number of strengths in zoonotic diseases. These include a network of qualified veterinarians and para-professionals across the country, and a network of district-level veterinary investigation centres. However, mechanisms are not yet in place for a true One Health approach that is based on an effective collaboration between the human health and animal health workforces. Until recently, activities related to zoonotic diseases have been primarily the responsibility of the Ministry of Health, Nutrition and Indigenous Medicine. Now, the Department of Animal Health and Production has the mandate (but not budgetary authority) to perform activities such as rabies vaccinations for dogs. The Department has also requested the establishment of a Veterinary Public Health division, which would come under its management.

Zoonotic diseases of importance in the country include: rabies, leptospirosis, salmonellosis, brucellosis, bovine spongiform encephalopathy, avian influenza, Japanese encephalitis and tuberculosis. Zoonotic diseases with parasitic agents are not identified as priorities, although they are likely to be of significance in the country.

In addition to the priority actions identified below, it is recommended that Sri Lanka implements all relevant recommendations of the World Organization for Animal Health's PVS Evaluation and requests a follow-up evaluation.

Recommendations for priority actions

- Establish a veterinary public health team within the Department of Animal Health and Production) with an appropriate allocation of human, physical and operational resources at both the central and field levels.
- Establish a formal One Health platform, bringing together the four key ministries and agencies (Health, Animal Health and Production, Fisheries and Environment/Wildlife) with local government and private stakeholders to deliver a national zoonotic disease control strategy.
- Design, implement and annually evaluate zoonotic disease control plans for rabies, brucellosis, tuberculosis and leptospirosis, among others.

Indicators and scores

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

Strengths/best practices

- There is a network of qualified veterinarians and para-professionals that covers the whole country.

- The district level-Veterinary Investigation Centre network comprises 25 regional laboratories, which are manned with veterinarians and para-professionals who can perform bacteriology, haematology and parasitology.
- There is a Veterinary Research Institute, equipped to a satisfactory standard, within the Central Veterinary Investigation Centre.

Areas which need strengthening and challenges

- The National strategy on zoonotic disease control requires finalization and approval.
- A mechanism is needed to institutionalize One Health surveillance activities that link all relevant sectors
- Streamlining of all on-going surveillance programmes, including the upgrade of surveillance in slaughterhouses and strengthened collaboration with private veterinarians and with the wildlife sector.
- Upgrading diagnostic facilities at all levels.
- Improving the infrastructure, logistics and implementing mechanisms for veterinary public health activities.

P.4.2 Veterinary or animal health workforce – Score 3

Strengths/best practices

- Well-trained veterinary staff. Half of graduates on internship programmes have at least a masters-level qualification.
- Staff and para-professionals are provided with continuous professional development opportunities, both in Sri Lanka and abroad.

Areas which need strengthening and challenges

- Ensuring that there is an adequate workforce within the Department of Animal Health and Production.
- Appointing adequate numbers of public health veterinary surgeons.
- Establishing a mechanism to implement veterinary public health activities at the divisional level.
- Filling vacancies for veterinary surgeons and para-professionals as soon as possible.

P.4.3 Mechanisms for responding to infectious and potential zoonotic diseases established and functional – Score 1

Strengths/best practices

- Veterinary Investigation Officers and the Central Veterinary Research Institute are able to rapidly connect and respond in the event of an outbreak.
- Continuous monitoring after outbreaks.
- The Department of Animal Health and Production and the Ministry of Health, Nutrition and Indigenous Medicine share specimens for tuberculosis testing.

Areas which need strengthening and challenges

- Epidemiology capacity for outbreak investigation, disease reporting, surveillance and emergency response
- Laboratory capacity for disease diagnosis
- Standard operating procedures for laboratory and field activities

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..

Sri Lanka level of capabilities

Sri Lanka's health authorities, including the Food Control Administration, have long-standing experience in food safety issues. The Ministry of Fisheries and Aquatic Resources Development has also gradually upgraded its capacity regarding aquatic food so that its standards comply with those of the European Union and United States Food and Drug Administration. However many challenges remain concerning food consumed in Sri Lanka, whether imported or locally produced.

These challenges include the need to develop a food safety strategy and to improve hygiene practices in establishments handling, preparing or producing products of animal origin. Sri Lanka's strengths in food safety include the nationwide network of Ministry of Health, Nutrition and Indigenous Medicine Officials and the country's laboratories and regulations etc.

A key recommendation is to develop and formalize collaboration between the Ministries of Health, Rural Economy, Agriculture and Fisheries in order to assess and manage risks throughout the food chain continuum. Some operational links between agencies have been established but there is a lack of formalized collaboration on many aspects of food safety, for example on Salmonella.

Recommendations for priority actions

- Strengthen collaboration between Sri Lanka's various agencies and ministries, aspiring to a "farm-to-plate" approach.
- Carry out a risk profiling assessment and use the results to revise inter-agency responsibilities and the overall food safety strategy.
- Upgrade capacities and guidelines, particularly laboratory capacity in areas such as on-site testing, and testing on chemical residues.

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 3

Strengths/best practices

- There is a good regulatory framework.

- A single agency, the Food Control Administration (part of the Ministry of Health, Nutrition and Indigenous Medicine) has the lead role in food safety.
- Food control laboratories are managed by the Ministry of Health, Nutrition and Indigenous Medicine.
- The Food Act and 30 regulations provide legislative backing for food safety activities.
- More than 1600 officers regularly sample food for laboratory analysis.
- The Ministry of Health, Nutrition and Indigenous Medicine has four food laboratories across the country. These laboratories are now being upgraded to face present day threats.

Areas which need strengthening and challenges

- Define a food safety strategy and amend regulations accordingly.
- Ensure annual action plans are agreed upon between human health and animal health authorities and those annual reports are produced and shared.
- Improve and enforce hygiene practices in establishments handling, preparing or producing products of animal origin.
- Upgrade laboratories with the capacities to, for example, test for heavy metals and pesticides.
- Ensure that the workforce related to food safety is larger and better trained.
- Implement all relevant recommendations of the World Organization for Animal Health's PVS Evaluation and/or request a follow-up evaluation.

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.

Sri Lanka level of capabilities

Sri Lanka has identified the importance of ensuring biosafety and biosecurity within human health, animal health and agricultural laboratory facilities. A biosafety manual for medical laboratories provides laboratory staff in the public and private sectors with guidance, information and knowledge on biosafety and biosecurity. The manual has also been distributed to public sector hospitals and laboratories.
The Medical Research Institute has an institutional biosafety committee and a biosafety policy document. Infection Control Committees in each hospital have responsibility for monitoring and implementing the basic principles of biosafety and biosecurity.
Individual organizations and facilities that store or process dangerous pathogens, including the Medical Research Institute, the National Programme for Tuberculosis Control and Chest Diseases, the National STD/AIDS Control Programme and the Veterinary Research Institute, maintain up-to-date records and inventories of pathogens. However there is no national inventory for dangerous pathogens.

One public sector laboratory and a small number of private sector laboratories have obtained ISO accreditation. The government is encouraging further laboratories to gain accreditation.
Training programmes at all facilities have a biosafety component. On-the-job training is mainly conducted at the institutional level, according to local protocols. Staff responsible for the shipment of specimens are trained on infectious substance transport. WHO-sponsored training courses on international shipping regulations are also offered.

Recommendations for priority actions

- Develop a comprehensive, multisectoral biosafety and biosecurity strategy and accompanying legislation.
- Based on the strategy, develop an action plan for implementation at the national level for both the public and private sectors, including:
  - A biosafety and biosecurity training programme that includes professional awareness training;

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   o Measures to update the inventory dangerous pathogens and toxins
- Update the laboratory licensing accreditation process to include biosafety and biosecurity requirements.
- Identify how sustained funding can be ensured for biosafety and biosecurity programmes.

Indicators and scores

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

Strengths/best practices

- The country has identified facilities to store or process dangerous pathogens, consolidating dangerous pathogens into a minimum number of facilities. The Veterinary Research Institute has been identified for the storage of pathogens in the animal health sector.
- Although Sri Lanka does not have comprehensive national biosafety and biosecurity legislation, guidelines are available at the national level.
- A biosafety manual has been distributed to public sector hospitals and is available for private sector hospitals. The animal health sector has institutional guidelines and the agriculture sector has a national plant protection act.
- The country has an accreditation board and several private sector laboratories and one public sector laboratory are ISO 15189 accredited. The animal health sector has ISO 17025 accredited laboratories. The Medical Research Institute's polio, measles and rubella laboratories are WHO accredited.

Areas which need strengthening and challenges

- Sri Lanka does not have national level records or an inventory to monitor the number and type of dangerous pathogens and toxins collected in the country.
- The country does not have comprehensive biosafety and biosecurity legislation or regulations in place.
- The laboratory licensing and accreditation process for state sector laboratories.
- Pathogen control measures, including standards for physical containment and operational handling and containment failure reporting systems.
- Oversight, monitoring and enforcement mechanisms.

P.6.2 Biosafety and biosecurity training and practices – Score 1

Strengths/best practices

- Biosafety and biosecurity is included in the training curricula in the human and animal health and agriculture sectors.
- Institutional level training on biosafety and biosecurity has been provided to staff at all facilities that work with dangerous pathogens and toxins.
  Some public and private sector laboratory staff have participated in WHO- and ministry-sponsored workshops international biosafety and biosecurity best practices for safe, secure and responsible conduct.
- Staff responsible for the shipment of specimens have been trained on infectious substance transport.

Areas which need strengthening and challenges

- Sri Lanka has not completed a training needs assessment.
- A comprehensive common training curriculum needs to be developed at the national level.
- A train-the-trainers programme on biosafety should be developed, based on the results of the needs assessment.

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.

Sri Lanka level of capabilities

The history of immunization in Sri Lanka goes back to the 19th century. The law relating to compulsory vaccination (against smallpox) is referred to in the Vaccination Ordinance of 1886.

The Expanded Programme on Immunization, established in 1978, has made excellent progress over the past two decades, most notably in terms of achieving high immunization coverage and disease control.Ninety-five percent of Sri Lanka's 12-month old population has received at least one dose of measles containing vaccine, as demonstrated by coverage surveys and administrative data. Vaccine delivery and cold chain services are available in more than 80% of districts and vaccine delivery is available to more than 80% of the national target population.

Sri Lanka started a passive surveillance system for adverse events following immunization in the mid 1990s. A 2012 study by the Ministry of Health, Nutrition and Indigenous Medicine concluded that the activities related to such events adopted and practiced at immunization clinics and by medical health officers were of a good standard.

There are many regulatory mechanisms to control coverage, although vaccination remains voluntary. Children's vaccination records have to be provided during the application process for school places and at regular school medical inspections.

Public health midwifes conduct household visits to share information, observe and report on vaccination status and assist with other public health issues.

Seasonal influenza vaccination is not on Sri Lanka's immunization schedule. However the vaccine is available and systematically recommended.

Current challenges for immunization in Sri Lanka include the need to strengthen human resources capacity and the increased cost of vaccines.

Recommendations for priority actions

- Introduce the Immunization Act, which will provide legal backing for the full implementation of the National Immunization Policy.

Indicators and scores

P.7.1 Vaccine coverage (measles) as part of national programme – Score 5

Strengths/best practices

- A routine immunization programme is incorporated into the maternal and child health programme.
- Well-established public health infrastructure and well-trained staff.
- Vaccination coverage monitoring is in place (through public health midwives and surveys).
- Legal provision for a sustainable immunization programme.

Areas that need strengthening/challenges

- To maintain a well-qualified public sector workforce

P.7.2 National vaccine access and delivery – Score 5

Strengths/best practices

- Legal provisions to ensure vaccine quality and safety, for example the National Medicinal Regulatory Act.
- Well-established public health infrastructure and well-trained staff.

Areas that need strengthening/challenges

- To maintain a well-qualified public sector workforce.
- To meet the populations demand for new and combined vaccines, taking into account increased vaccine costs.
- To ensure that the provision of vaccines through the private sector is well-regulated and monitored through the Immunization Policy and Act.

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.

Sri Lanka level of capabilities

Sri Lanka has a well-established, tiered hospital system that has extensive coverage island-wide and is complemented by microbiology laboratory services at more than 60 hospitals. Most confirmatory testing is performed at the Medical Research Institute, which was established in 1991 and functions as the national reference laboratory.

The animal health laboratory system is less developed. Although there are 24 district-level veterinary laboratories, the Veterinary Research Institute provides only limited reference and specialized services.

Specimen transport to the Medical Research Institute and Veterinary Research Institute is currently conducted ad hoc, mostly by informal transport through ambulances and other vehicles. There are no standardized procedures for how to package specimens safely and securely. Point-of-care testing, although available for some priority and core pathogens, is not comprehensive and there is a lack of documentation on tier-specific diagnostic testing strategies.

Since 2014, the Medical Research Institute has established a voluntary, external quality assurance programme in bacteriology, chemical pathology, and haematology. The Institute also participates in several pathogen-specific international quality assurance programmes. There are currently no external quality assurance programmes for veterinary laboratories.

Overall, Sri Lanka has an excellent foundation for their national laboratory system. Further improvements and capacity building are needed in specimen transport, quality assurance, and point-of-care testing.

Recommendations for priority actions

- Develop a national standard operating procedure for safe and efficient specimen transport to reference laboratories.
- Develop a quality management system for laboratories, including national reference laboratories in the human and animal health sectors.

- Increase the number of laboratories (human and veterinary) that participate in quality assurance programmes.
- Strengthen multisectoral collaboration by sharing laboratory facilities and data, particularly between the human and animal health sectors.
- Expand the number and scope of agreements with regional laboratories for specialized or advanced diagnostics (such as for emerging diseases).

Indicators and scores

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

Strengths/best practices

- A tiered, country-wide hospital laboratory system, including a national reference laboratory.
- National capability to perform all six IHR core tests, as well as two country-specific priority diseases (leptospirosis and dengue).
- In human laboratories, tests are performed by trained staff under microbiologists' supervision.

Areas that need strengthening/challenges

- Limited testing capacity in veterinary laboratories for IHR core tests relevant to animal health.
- A lack of coordination between human and veterinary laboratories.
- Expand the national system for procurement and quality assurance.

D.1.2 Specimen referral and transport system – Score 2

Strengths/best practices

- Laboratory specimens can be sent to the Medical Research Institute from any hospital in the country.
- Local transport guidelines are in place at select hospitals.
- Specimen transport to other countries is available by courier.

Areas that need strengthening/challenges

- Continue with efforts to improve the ad hoc specimen transport system and develop a systematic national programme.
- Regulations governing a specimen referral network for each of the core tests should be established.
- A systematic delivery system for reports from reference laboratories is also needed.
- Develop a specimen transport system for veterinary laboratories.

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

Strengths/best practices

- Rapid testing is available at most hospitals for some diseases, such as dengue and malaria.

- Diagnostic tests for all six IHR core pathogens can be conducted at the national reference laboratory.
- In-vitro diagnostic devices are regulated by the National Medicines Regulatory Act.

Areas that need strengthening/challenges

- Further develop and implement tier-specific testing strategies for rapid diagnostics and other point-of-care tests.
- Develop a plan for evaluating new point-of-care tests.
- Expand point-of-care testing capability at primary care hospitals and veterinary facilities.

D.1.4 Laboratory quality system – Score #3

Strengths/best practices

- There is a national body for laboratory quality assessment (the Sri Lanka Accreditation Board).
- For human laboratories, Sri Lanka has a voluntary, national external quality assurance programme for bacteriology, haematology, chemical pathology, and anatomical pathology.
- The national reference laboratory has international certification for select pathogens (polio, measles, Rubella, Japanese encephalitis, and influenza).
- Some private laboratories are accredited by the Sri Lanka Accreditation Board.

Areas that need strengthening/challenges

- Introduce mandatory monitoring of quality indicators and develop international standards of measurements for the quality indicators.
- Develop a national external quality assurance programme for the animal health sector.
- Ensure that accreditation programmes include all laboratories.

Real-time surveillance

Introduction

The purpose of real-time surveillance is to advance the safety, security and resilience of the nation by leading an integrated 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.

Sri Lanka level of capabilities

Sri Lanka has several different surveillance programmes in place. Routine communicable disease surveillance is in the form of a passive surveillance system that covers 28 specific diseases and has the capacity to report on unusual outbreaks. In addition there is a sentinel site surveillance system for influenza, polio, measles, rubella, congenital rubella syndrome, neonatal tetanus and 15 vaccine-preventable diseases.

Sri Lanka also has an event-based surveillance system that relies on print and electronic media reports, direct phone calls, facsimiles and direct information from health care institutions. All reported events are investigated. Reporting is regulated by law in Sri Lanka. There is a clear structure in place for how reporting should operate, with designated responsibilities at different levels of the health system and agreed case definitions. Reporting is coordinated at the national level by the epidemiology unit, at the district level by regional epidemiologists and at the divisional level by the Ministry of Health, Nutrition and Indigenous Medicine and Public Health Inspectors.

Sri Lanka has an animal health reporting system in place, however it less develop that the system for the human health sector. Communications and data sharing between sectors rely on personal interactions, rather than a formalized structure.

Recommendations for priority actions

- Expand the web-based surveillance system so that it includes hospitals.
- Increase capacity for incorporating laboratory data in the surveillance system by, for example, establishing a public health laboratory.
- Formalize and implement structures for sharing data between the human and animal health sectors.
- Develop formal structures, based on existing collaboration practices, for the joint analysis of surveillance data from the animal and human heath sectors at all levels.

Indicators and scores

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

Strengths/best practices

- The surveillance system has nationwide coverage and has, to date, proved to be reliable.
- The system is supported by a well-established public health infrastructure and well-trained staff at all levels.
- The system is well-known and used at the local level.

Areas that need strengthening/challenges

- Surveillance is predominantly passive and it is likely that there is under-reporting.
- Evaluation shows that surveillance is not always timely.
- Reporting from outpatient clinics and from the private sector is not of a high standard.
- A clearer role and increased involvement from laboratories is needed.
- Connections between the human and animal health sectors are, to a large extent, built upon personal connections, with no formal data sharing.
- The coverage and timeliness of reporting.

D.2.2 Interoperable, interconnected, electronic real-time reporting system – Score 4

Strengths/best practices

- There is a web-based surveillance system that reaches from the ministry level to district medical officers.
- There are several surveillance systems on the human side that are interoperable and are used to minimize underreporting.
- Structures and responsibilities in the surveillance system are clearly defined and ensure interoperability in the human sector.

Areas that need strengthening/challenges

- Collaboration and integration of surveillance by the human and animal health sectors. Great improvements could be made by establishing formal structures for this collaboration, since both sectors have good systems in place.

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

Strengths/best practices

- The reporting system has built-in monitoring and evaluation at all levels and there are clear mandates for implementing control measures.
- The use of different systems diminishes the chance of missed cases.
- There are a number of established routines for analysing data and for integration between different systems.

- Collaboration between the human and animal health sectors needs to be further documented and structured.

D.2.4 Syndromic surveillance systems – Score 4

Strengths/best practices

- Sri Lanka has a strong, highly proficient health system and a surveillance system that covers most important diseases.
- The requirement to report any unknown clustering of diseases diminishes the need for syndromic surveillance.
- Syndromic surveillance has been in place for acute flaccid paralysis for a long time and now covers suspected measles and rubella cases. Furthermore the rabies reporting system functions as a syndromic system.

Areas that need strengthening/challenges

- A national risk assessment is required to determine the need for additional syndromic surveillance, as well its usefulness.

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.

Sri Lanka level of capabilities

Sri Lanka does not have formal multilateral, regional or bilateral reporting agreements. However the country has demonstrated its capacity to identify a potential public health emergency of international concern and file a report to WHO and to the World Organization for Animal Health for relevant zoonotic diseases.

The National IHR Focal Point is the Ministry of Health, Nutrition and Indigenous Medicine. The Ministry of Animal Production and Health is the contact point for the World Organization for Animal Health.

The National IHR Focal Point uses informal consultation mechanisms with WHO under Article 8 of the IHR if needed, as well as bilateral exchange mechanisms with other national focal points.

There is a national polio outbreak preparedness and response plan which has been prepared and updated in accordance with global requirements. Under Sri Lanka's Quarantine and Prevention of Diseases Ordinance, all incidences of group A diseases must be reported to WHO through identified official channels.

The Advisory Committee on Communicable Diseases acts as a decision making body regarding health-related public health emergencies of international concern.
Periodic reporting exercises have been carried out at points of entry and selected hospitals.

Sri Lanka is in the process of developing and establishing protocols, processes, regulations, and legislation regarding reporting that are due for implementation within the next year. Such developments can be expected to increase the country's scores in this technical area.

Recommendations for priority actions

- Develop and establish protocols, processes, regulations and, if necessary, legislation on reporting, for implementation within one year.
- Develop a collaboration mechanism between the human and animal health sectors that is aligned with the IHR and World Organization for Animal Health standards.

Indicators and scores

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

Strengths/best practices
- The National IHR Focal Point is fully functional.
- A contact point for the World Organisation for Animal Health has been identified.
- National and sub-national staffs are aware of Annex 2 of the IHR
- Parallel reporting systems (online and paper-based) have been established.
- Response systems can be activated within a few hours of the verification of an outbreak.
- There is regular information sharing between the focal points for IHR and the World Organization for Animal Health during monthly meetings.

Areas that need strengthening/challenges
- Develop and establish protocols, processes, regulations, and legislation regarding reporting.

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

Strengths/best practices
- National focal points have been identified and follow the relevant guidelines and protocols for reporting.
- The private-sector reporting system for human health and animal health is well established.

Areas that need strengthening/challenges
- Vertical collaboration mechanisms between the human health and animal health sectors.

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).

Sri Lanka level of capabilities

The Sri Lankan health system comprises both curative and preventative care. Hospitals fall under curative care and range from teaching hospitals to primary medical care units. Preventative care is provided through the Ministry of Health, Nutrition and Indigenous Medicine's epidemiology unit, specialized disease control campaigns at the national level, regional epidemiologists and regional disease control programmes and the offices of medical officers of health at the peripheral level.

All three administrative levels coordinate with each other through the Ministry of Health, Nutrition and Indigenous Medicine and regional and provincial directors of health. In the animal health sector, both preventive and curative care activities are carried out together.

Sri Lanka's workforce is multisectoral and includes a diverse range of personnel, from high-level administrators to staff at the field level. The main health functions are carried out by physicians, veterinarians, epidemiologists, biostatisticians, laboratory scientists and farming or livestock professionals.

Recommendations for priority actions

- Review the draft workforce strategy; giving consideration to the various sectors that need to be included, cadre revisions based on realistic cadre projections, measures to retain staff and career pathways for some categories of staff (veterinary staff and public health laboratory technicians, for example); and responding to the workforce-related recommendations of the World Organization for Animal Health's PVS gap analysis.
- Develop strategies for joint training programmes with other sectors to improve coordination and collaboration between the human and animal health sectors.
- Expand the current public health and field epidemiology training programmes to include: refresher courses, an induction programme for field epidemiologists, regular in-service programmes and continuous professional development programmes for veterinary public health staff and a sustainable methodology and process to provide continuous and regular education for field epidemiology staff from both the human and animal health sectors.

Indicators and scores

D.4.1 Human resources available to implement IHR core capacity requirements – Score 4

Strengths/best practices

- Sri Lanka has adequate human resource capacities at the national, intermediate and peripheral levels. This includes district and divisional level capacity for epidemiology and case management and laboratories for the human and animal health sectors.

- There is good communication between the national, district and divisional levels through a notification system.
- Field-based divisional, intermediate and national level staff are trained in epidemiology, outbreak investigation and surveillance through basic training and through in-service training programmes.
- The network of primary care units and secondary and tertiary care hospitals has well-trained professionals that include medical administrators, consultants, medical officers, nursing staff and allied health staff.
- The epidemiology unit routinely develops and sends guidelines to hospitals on the management of outbreaks and communicable diseases with a significant public health impact.
- There is an extensive preventive health network at the national, regional and peripheral levels, which has a clear geographical demarcation of responsibilities to ensure no overlapping or duplication of services.
- Weekly epidemiological data is published online and there are regular review meetings conducted with staff.

Areas that need strengthening/challenges

- There is currently no formalized coordination related to workforce development between the human and animal sectors, despite collaborate between the two sectors during outbreaks.

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

Strengths/best practices

- Applied and basic epidemiology is included in postgraduate degrees in medical administration and community medicine.
- There is a masters degree programme for clinical physicians, medical administrators and community physicians.
- Epidemiology training is included in other human paramedical, veterinary medicine and paraveterinary basic training curricula.

Areas that need strengthening/challenges

- Frequent changes in personnel involved in field epidemiology (due to annual transfers in the public sector) results in supply challenges and the need for continuous induction programmes.
- Staff shortages mean that it can be difficult for health professionals to attend in-service training programmes.
- Continuous professional development is not always incentivized.
- Health professionals do not undergo induction or refresher training programmes on field epidemiology when they are appointed to new positions that require epidemiology knowledge and skills (when Medical Officers become Regional epidemiologists, for example).
- There is a need to improve in-service training programmes for all health professionals in order to update their knowledge and skills.
- A mentorship programme for field epidemiology training programme residents would be of great benefit.

D.4.3 Workforce strategy – Score 3

Strengths/best practices

- Career pathways are available in the human health sector.
- The public sector offers high levels of job satisfaction and security and a good pension scheme.
- Benefits for employees include in-service training and additional allowances.
- The budget for the health sector is allocated from the government's capital funds.

Areas that need strengthening/challenges

- Career pathways for veterinarians are not established.
- The national workforce strategy is still in the draft stage; however the National Health Strategic Master Plan (2016 – 2025) makes reference to strategies, indicators and means of verifications regarding human resources for health.
- Implementing the workforce strategy in both the human and animal health sectors.

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.

Sri Lanka level of capabilities

The 2004 tsunami was a turning point for public health emergency and disaster preparedness and response in Sri Lanka. Following the disaster, the country introduced the Disaster Management Act (2005). There are now four emergency operations centres in the country—one at the national level and three at the subnational level—and the Postgraduate Institute of Medicine runs a disaster management course.

The mass displacement of people in the North and East of Sri Lanka in 2009 also confirmed the need for a coordinated response by government, with the involvement of multiple partners. Stakeholders responsible for disaster management include the:

- Disaster Preparedness and Response Division—for overall coordination;
- Office of the Secretary of Health (and other relevant secretaries)– for national level leadership and guidance;
- Office of the Director General of Health Services–for national leadership;
- Office of the Deputy Director General of Health Services–for coordination of preparedness;
- Family Health Bureau, Epidemiological Unit, Health Education Bureau, Dengue Control Unit, Anti Malaria Campaign, Medical Supplies Division–for technical guidance on preparedness for their respective areas;
- All directorates relevant to the incident or disaster–for preparedness specific to that event;
- Provincial, regional and divisional health authorities–for preparedness at their respective levels;
- Disaster Management Centre–for general disaster management preparedness at the national level;
- Armed Forces–for preparedness in the Army, Navy, Air Force and Police.

Sri Lanka has recently revised the Disaster Management Act, however it has not yet been published. Despite extensive experience with disaster management operations, Sri Lanka did not achieve high scores in this technical area as the country does not have a national public health emergency preparedness and response plan, nor has it carried out public health risk and response mapping. Remedying these shortcomings would likely result in much higher scores in future evaluations.

Recommendations for priority actions

- Identify and map the country's main risks.
- Develop and disseminate the national emergency preparedness and response plan among responsible stakeholders, considering a multi-hazard approach in compliance with the IHR.

Indicators and scores

R.1.1 National multi-hazard public health emergency preparedness and response plan developed and implemented – Score 1

Strengths/best practices

- Extensive experience with disaster management operations.
- Several different components of preparedness are addressed through Sri Lanka's Strategic Plan for Health Sector Disasters, Standard Operation Plans for Health Sector Disaster Management and Avian Influenza Preparedness Plan.

Areas that need strengthening/challenges

- Multi-hazard risk mapping has not conducted.
- There is no joint national preparedness and response plan.

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

Strengths/best practices

- A strong communicable disease surveillance system is in place.
- Hospital risk assessments are conducted on a yearly basis.
- Geographic Information System technology is available for risk mapping.

Areas that need strengthening/challenges

- Risk mapping is difficult due to the involvement of multiple stakeholders.
- Staff are not trained to perform risk assessments.

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.

Sri Lanka level of capabilities

Sri Lanka has a history of successfully responding to a diverse set of disasters, including public health emergencies. There is a Public Health Emergency Operations Centre at the Disaster Preparedness and Response Division of the Ministry of Health, Nutrition and Indigenous Medicine. This centre can be activated within minutes.

The national Public Health Emergency Operations Centre (PHEOC) is staffed by nine people and has additional work stations for use during emergencies. Emergency generator backup for the centre is available with 24/7 maintenance support. The centre has fixed line telephones, code-division multiple-access phones, mobile phones and has equipment for communication by facsimile, email, the internet and radio.

The Disaster Preparedness and Response Division can convene subject matter experts and stakeholders from other ministries and multinational partners as needed. There is a system in place to collect, collate and disseminate disaster and emergency related data from the emergency operations centre to other ministries as well as to national policy makers and leaders.

Three subnational emergency operation centres have been established, with the support of the World Health Organization, in three disaster-prone districts of Sri Lanka. Emergency operation centres can be established in other districts as required.

Clinicians contact the Epidemiological Unit at the Ministry of Health, Nutrition and Indigenous Medicine if they suspect that they are dealing with a disease of unknown origin. In such situations, the general public can contact the medical officer of health in their area, who will respond to queries in consultation with regional epidemiologists. Regional epidemiologists can consult the Epidemiological Unit for advice.

Recommendations for priority actions

- Develop a national PHEOC handbook, following WHO guidelines, that expands upon existing response documentation and includes:
  - Procedures for daily 'watch mode' operations, to include triage of information from surveillance, laboratory, and other information sources, as well as keeping public health leaders informed of emerging public health situations in a timely manner;

- o Criteria and authorities for declaration of a public health emergency;
- o Procedures for activation and deactivation of the national PHEOC;
- o A concept of operations for the national PHEOC within the national disaster management system, and;
- o Procedures for post-response (and post-exercise) review and corrective action planning.
- Develop an integrated national public health emergency training and exercise programme that includes:
  - o A competency-based master curriculum of public health emergency management trainings for both national and sub-national emergency operations centre staff, building upon existing training programmes, and addressing both position-specific functions as well as training on national public health policies, plans, and procedures.
  - o A multi-year series of progressive discussion and operations-based exercises that address national risk-based priority public health threats.
- Expand the cadre of trained personnel on roster as both core and surge staff for national and sub-national PHEOCs.

Indicators and scores

R.2.1 Capacity to activate emergency operations – Score 1

Strengths/best practices
- The national PHEOC is capable of supporting multiple levels of activation, covering extended working hours.
- At all times, there is a Disaster Preparedness and Response Division staff member available to serve as the national PHEOC contact point and to facilitate activation of the PHEOC for a response.
- Core PHEOC staff are pre-identified and available to perform key functions in the PHEOC upon activation.
- There is an existing system for training medical officers, nursing officers, public health inspectors, and other public health personnel on disaster response principles.

Areas that need strengthening/challenges
- Procedures and criteria for activation of the national PHEOC have not been documented.
- Core PHEOC staffing is insufficient to sustain 24/7 operations; guidelines for identification and seconding of surge staff to the PHEOC do not exist.
- A public health emergency management master curriculum against which to train both core and surge PHEOC staff does not exist.
- Current policies are ineffective at guiding PHEOC response operations; surge staff are currently not required to follow PHEOC procedures.

R.2.2 EOC operating procedures and plans – Score 2

Strengths/best practices
- The national PHEOC has the ability to draw surge staff from across the Ministry of Health, Nutrition and Indigenous Medicine.

- A cadre of medical officers has received training through a Diploma of Health Sector Disaster Management programme; this provides a potential pool of PHEOC surge staff with relevant basic training in public health emergency management.
- There is a system to collect data and disseminate routine situation reports.

Areas that need strengthening/challenges
- The Director General of Health Services acts as the incident manager during a national public health emergency; this removes a key policy maker from the oversight function of the Ministry and places them in a command function.
- Frequent turn-over of staff causes losses in institutional memory. No emergency operations centre handbook has been assembled; although some of the basic contents exist, advanced content is missing, such as a national concept of operations, terms of reference for all positions in the PHEOC, forms/templates, and standard operating procedures for all public health functions.
- Support for strengthening and resourcing the national PHEOC wanes when it is not activated.

R.2.3 Emergency operations programme – Score 3

Strengths/best practices
- Almost all health-related emergencies are channelled through the national PHEOC.
- The PHEOC has been activated for actual responses within 30 minutes of the decision being made to activate.
- A post-response review of actions taken is routinely conducted (often with senior decision makers), and lessons learned are shared with stakeholders.

Areas that need strengthening/challenges
- Due to frequent activations of the PHEOC, responses to other priority public health threats are not exercised; there is no comprehensive exercise programme linking the master training curriculum (see R.2.1) to the contingency plans (see R.1.1) developed on the basis of a national risk assessment of public health threats (see R.1.2).
- Although historical examples exist of rapid activation, activation of the national PHEOC within 120 minutes of a public health emergency determination (following Ministry-developed criteria and processes) has not yet been achieved.
- The lessons learned from post-response reviews are not converted into documented improvement plans that hold responsible parties accountable for improvements; no formal corrective action programme for assignment, tracking, and implementation of such improvements exists.

R.2.4 Case management procedures implemented for IHR relevant hazards – Score 4

Strengths/best practices
- Case management guidelines for epidemic prone diseases and other IHR relevant hazards exist.
- A strong technical network from the health institutions up to the regional epidemiologists supports dissemination and usage of the case management guidelines.
- Continuous training through professional colleges is available on the case management guidelines.

Areas that need strengthening/challenges
- Standard operating procedures for management and transport of potentially infectious patients require wider dissemination.
- The availability of trained staff to use the case management guidelines may sometimes be lacking when outbreaks occur.

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.

Sri Lanka level of capabilities

Sri Lanka's Establishments Code serves as a memorandum of understanding for institutional collaboration and coordination of activities during disasters and public health emergencies. The main stakeholders involved in public health with the security authorities are:

- The Ministry of Public Administration and Management;
- The Ministry of Disaster Management;
- The Quarantine Unit of the Ministry of Health, Nutrition and Indigenous Medicine;
- The Ministry of Defence, which is responsible for the Sri Lankan Army, Navy, Air Force, Police and Civil Security Department.

Sri Lanka's disaster management framework is a document that provides for collaboration between the public health and security authorities.

During disasters and epidemics, Sri Lanka's army, navy and air force provide support to the public health sector as needed. In turn, the Ministry of Health, Nutrition and Indigenous Medicine provides support to the health services of the army, navy, and air forces through capacity building and emergency medical supplies, which are provided by the World Health Organization.

Other stakeholders involved in linking public health and security authorities include the Ministry of Health, Nutrition and Indigenous Medicine, Sri Lanka Customs, the Department of Civil Security and the Department of Animal Health and Production.

The public health and security sectors communicate through: the Office of the Chief of Defence of Staff; the Disaster Management Centre; direct orders from the President; and Reports from the field.

Recommendations for priority actions
- Expand mechanisms for information sharing and joint operations between the security and health sectors.
- Perform regular joint exercises between the health, security and other sectors.

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 #4

Strengths/best practices

- The armed forces, police, Department of Civil Defence and Sri Lanka Customs have real experience of collaborating with health authorities during emergencies.

Areas that need strengthening/challenges

- Developing more standard operating procedures for collaboration between different stakeholders (for example on transferring equipment and handling donations).
- Joint trainings and exercises between the health, security and other authorities are infrequent.

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.

Sri Lanka level of capabilities

Sri Lanka's Medical Supplies Division has its own network for the routine supply and distribution of medical countermeasures. During a public health emergency the country can expedite these routine services and reschedule consignments. Sri Lanka also has an emergency purchasing system and the ability to redistribute medicines among institutions through a database system.

The country has guidelines and instructions, based on WHO guidelines for sending and receiving medical countermeasures during public health emergencies. These documents also address regulatory issues concerning drugs or devices from international sources. Sri Lanka has recent experience of sending and receiving medical countermeasures and has dedicated resources and staff for logistics and monitoring related to delivery and receipt of countermeasures.

Coordinating national and overseas emergency medical teams was identified as a priority for Sri Lanka during the response to the 2004 Tsunami and displacement from Northern areas in. Officials from the Ministries of Health, Nutrition and Indigenous Medicine have been trained in the coordination of emergency medical teams. During the recent floods, a coordination Cell was established to management multiple national emergency medical teams. Sri Lanka has also responded to emergencies in the region, sending missions to Nepal, Philippines, Pakistan and Myanmar. The armed forces are often involved as a part of deployment.

However there is no written plan for deploying and receiving emergency medical teams in Sri Lanka, nor is there a system in place to cover liability issues. During previous deployments, only travel insurance has been obtained. Financial matters with regards to the deployment of emergency medical teams are handled in an ad hoc manner. In addition no formal training procedures and materials have been developed.

Recommendations for priority actions

- Revise and formalize policy guidelines for receiving or sending medical countermeasures during an emergency.
- Draft a national plan and associated guidelines for deploying national and receiving international personnel during emergencies, including capacity building for these personnel in collaboration with health and non-health stakeholders such as the Ministries of Defence, Disaster Management, Finance and Foreign Affairs.

Indicators and scores

R.4.1 System in place for sending and receiving medical countermeasures during a public health emergency – Score 2

Strengths/best practices
- A well-established country-wide supply, distribution and storage network, supported by trained pharmacists.
- Efficient medical supplies information management and an efficient transport mechanism.
- Real experience in receiving and sending medical countermeasures.

Areas that need strengthening/challenges
- Legal provision for supply and distribution during disasters.
- A lack of coordination among stakeholders.

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

Strengths/best practices
- National-level staff is trained in the management of emergency medical teams.
- The trial of an emergency medical team coordination cell during the recent floods.

Areas that need strengthening/challenges
- No written plan for deploying and receiving emergency medical teams.
- Advocacy with health and non-health stakeholders on management of emergency medical teams.
- Enhance the country's capacity so that its medical teams can be registered as adhering to WHO standards.
- Build the capacity of health staff to manage emergency medical teams.

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.

Sri Lanka level of capabilities

Sri Lanka's Health Education Bureau is a dedicated institute and directorate for health promotion, health communication and behaviour change communication. The Bureau has a dedicated officer for media communications. All programme directors, consultants and medical officers have pre-approval to speak to the media regarding the technical areas that they are responsible for.

The main health communication and risk communication activities of the Health Education Bureau include: media seminars; media conferences and briefings; and the production of information, education and communication materials.

Risk communication stakeholders include:
- Other ministries—for communications with staff or populations that they interact with.
- International agencies—for access to international expertise in relevant subject areas.
- Electronic and print media institutions—with which the Health Education Bureau and the Ministry of Health, Nutrition and Indigenous Medicine have a good relationship.
- Sri Lanka's President—a former health minister.
- The general public—who, in general, are receptive to the advice and recommendations of health officials.

Overall, Sri Lanka has good operational capacity for risk communications, having demonstrated its ability to deal with large-scale emergencies. However the country has not scored highly in some areas due to the lack of a published risk communications plan for the country.

Recommendations for priority actions

- Develop a consolidated risk communications plan that brings together existing policies, protocols and procedures.
- Increase monitoring and outreach through social media (which could include the establishment of government social media accounts).
- Develop a sector-wide training programme that includes regular seminars and refresher courses for risk communications and standard trainings for staff, including surge capacity staff.
- Review the feasibility of developing a formal network for risk communications that includes stakeholders, partners and surge capacity staff from all sectors.

Indicators and scores

R.5.1 Risk communication systems (plans, mechanisms, etc.) – Score 2

Strengths/best practices

- All public media channels can be summoned at short notice for a press conference.
- All health sector leaders and staff can be reached within short period of time.
- Health teams at the local level work in partnerships with other administrative leaders.
- The basic principles of risk communication: shared responsibility, transparency and access to credible data are respected and adhered to.

Areas that need strengthening/challenges

- A consolidated national risk communication plan would strengthen and streamline the current risk communication process.
- The identification of a risk communication focal point at the Ministry of Health, Nutrition and Indigenous Medicine.
- Risk communications training for health officials and staff.
- Programme managers act both as technical spokespeople and as implementers of risk communications. Sri Lanka should consider appointing a risk communication focal point and establishing the role of risk communications experts in the risk communication process.

R.5.2 Internal and partner communication and coordination – Score 5

Strengths/best practices

- Timely and effective internal communication that is respected and accepted by health personnel.
- Health ministry staff are accepted as leaders for risk communication.
- A specific directorate for public communications
- High levels of adherence to risk communication guidelines, best practices and handbooks.
- The Health Education Bureau is a key stakeholder in almost all risk communication activities of the Ministry of Health, Nutrition and Indigenous Medicine.

Areas that need strengthening/challenges

- There is currently no formal nil reporting process for risk communication among stakeholders. More regular, year-round communication is needed.
- Given that most ministry staff involved with risk communications are surge staff, it will be a challenge to establish and run a risk communication network.

R.5.3 Public communication – Score 3

Strengths/best practices

- Extensive communication and media infrastructure.
- A highly literate population and high levels of health literacy.
- Strong communicators at the national level and at the local level (public health midwives for example).

Areas that need strengthening/challenges

- Developing an effective feedback system.
- Utilizing social media for health and risk communications.
- Encouraging the general public to question state health communicators in order to gain a better understanding of issues.
- Developing a dialog between health risk communicators and the general public.

R.5.4 Communication engagement with affected communities – Score 4

Strengths/best practices

- Health service provision in Sri Lanka is geographically well distributed. Each household in the country has a government health facility within five kilometres. There are public health midwifes and inspectors working at the local level who are able to communicate with communities during disasters or public health emergencies.
- All health staff have been trained on counselling skills and the provision of psychological first aid. In service training programmes also emphasise communication skills.
- Two new categories of staff will be recruited in the near future—health promotion officers and psychologists.

Areas that need strengthening/challenges

- Staff development and capacity development.
- Expediting the recruitment of health promotion officers and psychologists.
- A feedback system from affected communities, incorporated in to the risk communication strategy, would help to guide and strengthen engagement with affected communities.

R.5.5 Dynamic listening and rumour management – Score 5

Strengths/best practices

- Media seminars, conferences and briefings are a regular and established activity in Sri Lanka, with high levels of respect between officials and media.
- Health-related rumours rarely gain traction among the general public. In rural areas, the advice of health officials is considered to be authoritative.
- The Director General of Health Services, the Health Secretary and the Minister of Health give on-the-spot media briefings and issue press releases to address any misunderstandings.

Areas that need strengthening/challenges

- The 24-hour national health hotline, 'Suwaseriya' need to be expanded and better promoted.
- Social media should be harnessed as a channel through which to monitor and respond to misinformation and rumours.

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.

Sri Lanka level of capabilities

Sri Lanka has a public health contingency plan for airports and ports, which was developed with the participation of all sectors and tested in 2016 through table-top exercises.

There are two international airports and two international ports in Sri Lanka. However, only Bandaranayke International Airport and Colombo port have been designated as points of entry. There are four authorized ports that issue ship sanitation certificates.

Sri Lanka evaluated the core capacities of the designated points of entry in 2009 and 2015 and hosted an Assistance Visit from the Collaborative Arrangement for the Prevention and Management of Public Health Events in Civil Aviation in 2014. Several corrective measures were taken following these assessments, including the development of standard operating procedures and Sri Lanka's public health contingency plan for point of entry. The health information system for points of entry still requires further development.

The designated points of entry have access to appropriate medical services for the assessment, care and transfer of ill passengers. There is a routine environmental sanitation inspection programme at airports and ports. In 2017, Sri Lanka initiated the medically important integrated vector surveillance programme, with the support of the anti-malaria campaign.

The health offices at points of entry have sufficient public health personnel. Port medical officers are given in-service training on ship sanitation certification.

Sri Lanka has adequate facilities and competent staff at its airports and ports for the quarantine of small numbers of animals and small quantities of food. The Sri Lanka port authority taps into a wide range of relevant stakeholders to coordinate prevention and response to public health emergencies.

Recommendations for priority actions

- Enhance facilities, in terms of spaces and equipment, at points of entry for the inspection, isolation and treatment of passengers who are suspected to be ill.
- Develop a regular capacity building programme for health officials on how to carry out conveyance inspection and quarantine procedures.
- Develop a health information system for points of entry that includes real-time surveillance for both human and animal health.
- Establish an integrated vector surveillance mechanism for all medically important vectors at all designated points of entry.
- Conduct regular simulation exercises on public health contingency plans at points of entry and publish the assessment reports.
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Indicators and scores

PoE.1 Routine capacities established at points of entry– Score 3

Strengths/best practices

- Points of entry have access to appropriate medical services, including for the assessment, care and transfer of ill passengers.
- Routine environmental sanitation inspection programmes have been established at airport and ports.
- An integrated vector surveillance programme was initiated in 2017, with the support of the anti-malaria campaign.
- Port medical officers are given in-service training on issuing ship sanitation certificates.

Areas which need strengthening and challenges

- The facilities for assessment, care and isolation of ill passengers need to be further developed at points of entry (especially Colombo port).
- An integrated vector surveillance mechanism needs to be established for all medically important vectors; this will require technical support.
- Further capacity building for ship sanitation certification, cruise ship inspection and air craft inspection.
- The points of entry health information management system should be upgraded to an online system.

PoE.2 Effective public health response at points of entry– Score 4

Strengths/best practices

- Public health contingency plans for designated points of entry have been developed. and tested (in 2016) through table-top exercises.
- There is good coordination between all sectors at points of entry.
- Personal protective equipment training has been conducted, with WHO assistance, for all points of entry staff and the necessary equipment has been supplied to designated points of entry.

Areas which need strengthening and challenges

- Public health contingency plans should be updated following regular exercises and after real events.
- Medical equipment and other auxiliary equipment are required for proper examination of ill passengers and for conveyance inspection.

Chemical events

Introduction

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

Target

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

Sri Lanka level of capabilities

A number of major chemical incidents have taken place in the past five years in Sri Lanka. In response, Sri Lanka has taken a number of steps to enable timely and effective response to chemical events. A National Action Plan on management of chemicals has been developed, but further improvement is still needed in terms of intersectoral coordination for chemical safety assessment.

The Strategic Approach to International Chemicals Management policy framework has been implemented in Sri Lanka, but this implementation needs further strengthening. A National Chemical Profile was updated in 2015. However, no systematic public health assessments of chemical threats have taken place, only intermittent assessments of suspected occupational health exposures. Similarly, no national level risk assessment has been undertaken to identify the most significant chemical threats within the country.

Although there are some limited chemical monitoring activities in place, no national-level integrated chemical surveillance system currently exists. Similarly, although general roles and responsibilities for response activities have been identified, neither risk assessment guidelines for assessing chemical events nor a national-level chemical event response plan currently exist.

Recommendations for priority actions

- Create a national, multisectoral coordinating body to:
    - Establish an integrated chemical surveillance system that builds upon existing monitoring activities;
    - Strengthen laboratory capacities for chemical detection and identification;
    - Establish standards for environmental and occupational health monitoring across sectors;
    - Implement standards for classification and labelling of chemicals, and;
    - Facilitate the sharing, data basing, and integration of chemical-relevant data from the surveillance, laboratory, environmental and occupational health monitoring activities from all sectors.
- Develop guidelines or standard operating procedures for chemical surveillance and risk assessment of chemical events.
- Develop a national-level chemical event response plan based on a national risk assessment of chemical threats, expanding on existing documentation of roles and responsibilities, inventories of chemical sites, and case management guidelines.

Indicators and scores

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

Strengths/best practices
- Some monitoring of foodstuffs and consumer goods takes place, as well as environmental monitoring. Laboratory capacity for chemical analysis is available.
- There is a national Poison Control Centre at the national hospital in Colombo, which has a public hotline for consultations.
- Case management guidelines for intoxication and poisoning are available and implemented.

Areas that need strengthening/challenges
- There is no sentinel surveillance system to detect a hazardous chemical exposure.
- There are no risk assessment procedures in place to trigger a response to a chemical event.
- Despite having identified focal points within stakeholder organizations for different areas of chemical safety, there is no umbrella body with primary responsibility for chemical surveillance and monitoring, and no feedback or reporting mechanism exists for inter-sectoral sharing of information about chemical response activities.
- Stronger laboratory capacity is needed at the field level, as well as at the national reference level.

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

Strengths/best practices
- There is a current action plan for sound management of chemicals.
- Sri Lanka can mobilize budget resources as necessary for responses to chemical events.
- Sri Lanka has access to international toxicology networks, as well as access to a chemical reference database.

Areas that need strengthening/challenges
- Although national legislation exists for chemical safety, there is no comprehensive legislation for chemical safety or for response to chemical events. For example, although on-site emergency response plans are required, off-site emergency response plans generally are not.
- Land use planning does not always take into consideration siting of chemical threats or disposal facilities.
- The national Disaster Management Centre coordinates all disaster responses, to include chemical responses, but there is no coordinating body to address chemical safety issues.
- The Disaster Response Division of the Ministry of Health, Nutrition and Indigenous Medicine has a common plan to address all responses, but this needs to be strengthened to specifically address the unique needs of chemical responses.
- Environmental and occupational health monitoring efforts are not aggregated for national level situational awareness of emerging chemical threats.
- No multi-sectoral exercise programme currently exists, nor does an evaluation system for chemical event exercises.

Radiation emergencies

Introduction

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

Target

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

Sri Lanka level of capabilities

Although historically, there have been no radiation emergencies in Sri Lanka, there are a number of domestic medical and industrial radiation sources in the country. In addition, India has a nuclear power plant less than 300 kilometres away from the Sri Lankan shore, and Sri Lanka is potentially vulnerable to unknown importation of radiation sources.

The Sri Lanka Atomic Energy Regulatory Council (SLAERC) has conducted radiation safety assessments in the past with the International Atomic Energy Agency (IAEA), but no baseline public health assessments with regards to radiation threats have been conducted.

A national radiation early warning system exists based upon a distributed network of detectors and a text message system to warn people of a potential radiation emergency. Imported foodstuffs are also tested for radiation contamination.

A relatively new governmental agency, the Sri Lanka Atomic Energy Regulatory Council, has initiated a number of activities that when completed, will provide a good foundation for detecting and rapidly responding to a potential radiation emergency.

Recommendations for priority actions
- Develop risk assessment guidelines for radiation emergencies.
- Finalize and gain approval for radiation emergency documents that are currently in draft form.
- Incorporate the draft radiation Emergency Management Plan, the radiation detection guidelines, and the radiation monitoring mechanism for radiation emergencies that may constitute a public health event of international concern into existing plans.
- Develop an information sharing system for radiation-relevant information among all sectors.
- Create an integrated multisectoral radiation emergency training and exercise programme.

Indicators and scores

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

Strengths/best practices

- Sri Lanka has an established early warning system through gamma radiation detectors that are deployed around the country and will provide gross detection of a potential wide-spread radiation threat.
- The network of detectors is augmented with dosimetry at ports of entry, and the Sri Lanka Atomic Energy Board has accredited gamma spectroscopy capacity to rapidly characterize radiation threats.
- A base of national policy documents exists which lays the foundation for future radiation responses. National policy for response operations is prepared by the Disaster Management Centre, which addresses a suite of 21 potential natural and man-made threats; this policy establishes general principles and strategies for response and mitigation operations, which can broadly be applied to radiation responses.
- The National Disaster Management Plan assigned the development of a National Nuclear or Radiological Emergency Management Plan to the Sri Lanka Atomic Energy Regulatory Council; although drafted, this document has not yet been finalized and promulgated.
- The National Emergency Operations Plan reinforces the Sri Lanka Atomic Energy Regulatory Council's role in nuclear and radiological emergencies, and contains standard operating procedures for a number of relevant response activities, to include case management of radiation casualties.

Areas that need strengthening/challenges

- Although the Sri Lanka Atomic Energy Regulatory Council has been assigned responsibility for radiation surveillance and monitoring, it has not yet developed appropriate strategies and mechanisms for conducting such activities.
- There is no established process for systematic real-time information exchange between radiological competent authorities and human health surveillance systems.
- To fully meet the capacity requirements of RE1 score 2, a national strategy for radiation detection needs to be finalized and approved, a national strategy for radiation risk assessment needs to be created, and a monitoring mechanism for radiation emergencies that may constitute a public health emergency of international concern needs to be established.

RE.2 Enabling environment in place for management of radiation emergencies – Score 3

Strengths/best practices

- A designated focal point exists for coordination and communication between national authorities for nuclear and radiological events and the Ministry of Health, Nutrition and Indigenous Medicine.
- Multi-sectoral coordination mechanisms with regards to radiation safety are described in the draft Emergency Management Plan.
- The national radiation response plan addresses the range of functions required in a crisis, and the roles and responsibilities of various agencies are delineated in the National Emergency Operations Plan.
- A budget for responses to radiation emergencies can be mobilized.
- The Atomic Energy Act (2014) calls for licensing and inspection of radiation facilities. Transportation of radioactive materials, samples, and wastes is covered under this licensing process. Drills are conducted as a condition of licensing.

Areas that need strengthening/challenges

- Although drafted, the Emergency Management Plan has yet to be finalized and approved.

- Response functions have not been evaluated through a defined exercise process and no integrated national multi-sectoral training and exercise programme exists.

Appendix 1: JEE background

Mission place and dates

Colombo, Sri Lanka; 19-23 June 2017.

Mission team members:

- Dr Bardan Rana, WHO South East Asia Regional Office (team lead)
- Dr Peter Rzeszotarski, United States Centers for Disease Control and Prevention (team co-lead)
- Dr Patrice Gautier, France, World Organization for Animal Health
- Dr Moe Ko Oo, WHO South East Asia Regional Office
- Dr Karma Lhazeen, Bhutan, Ministry of Health
- Mr Sam Nuttall, United Kingdom, WHO Headquarters (consultant)
- Dr Anna Pashalishvili, WHO Uzbekistan Country Office
- Dr Rajesh Sreedharan, JEE Secretariat, WHO Headquarters
- Dr Anders Tegnell, Sweden, Public Health Agency
- Dr David Wong, United States Centers for Disease Control and Prevention, Republic of Korea Country Office

Objective

To assess Sri Lanka's capacities and capabilities relevant to the 19 technical areas of the JEE tool for providing baseline data to support Sri Lanka'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

Dr Bardan Rana, the mission team leader, visited Sri Lanka on the 3- 4 April for the preliminary discussions on the mission. During the discussions, all stakeholders were briefed on the IHR and JEEs. Dr Rana also had detailed discussions with national focal points and the WHO Country Office on logistical arrangements and the agenda for the week of the mission. The self-assessment was conducted during May 2017 and the self-assessment workbook was submitted during the first week of June.

Multiple teleconferences were held between Dr Rana, the national focal points and the WHO Country Office to refine the agenda and further details of the mission. Logistical arrangements were made by the national focal points, WHO South East Asia Regional Office, WHO Country Office and WHO Headquarters.

Limitations and assumptions

- The evaluation was limited to one week, which limited the amount and depth of information that could be managed.
- It is assumed that the results of this evaluation will be publically available.
- The evaluation is not just an audit. Information provided by Sri Lanka will not be independently verified but will be discussed and the evaluation rating mutually agreed to by the host country and the evaluation team. This is a peer-to-peer review.

Key host country stakeholders and institutions

- Dr J Bandara, Director General of Health Services, Ministry of Health, Nutrition and Indigenous Medicine
- Dr S Amunugama, Deputy Director General (Public Health Services -1), Ministry of Health, Nutrition and Indigenous Medicine
- Dr H Beneragama, Deputy Director General (Laboratory Services),Ministry of Health, Nutrition and Indigenous Medicine
- Dr S De Alwis, Deputy Director General (Education Training and Research), Ministry of Health, Nutrition and Indigenous Medicine
- Dr A Jayalal, Deputy Director General (Environmental and Occupational Health), Ministry of Health, Nutrition and Indigenous Medicine
- Dr L Gamlath, Director, Education Training and Research, Ministry of Health, Nutrition and Indigenous Medicine
- Dr H Herath, Director, Disaster Preparedness and Response Division, Ministry of Health, Nutrition and Indigenous Medicine
- Dr P Karunapema, Director, Quarantine Unit, Ministry of Health, Nutrition and Indigenous Medicine (Main Point of Contact)
- Dr S Ginige, Chief Epidemiologist, Epidemiology Unit, Ministry of Health, Nutrition and Indigenous Medicine
- Dr S Dhanapala, Director, Family Health Bureau, Ministry of Health, Nutrition and Indigenous Medicine
- Dr A Lodowyke, Director, International Health, Ministry of Health, Nutrition and Indigenous Medicine
- Dr L Panapitiya, Director, Medical Supplies Division, Ministry of Health, Nutrition and Indigenous Medicine
- Mrs A Ahamed, Chief Legal Officer, Ministry of Health, Nutrition and Indigenous Medicine
- Dr D Samarasekera, Consultant Community Physician, Quarantine Unit, Ministry of Health, Nutrition and Indigenous Medicine
- Dr R Batuwanthudawa, Consultant Community Physician, Ministry of Health, Nutrition and Indigenous Medicine
- Dr D Dharmawardene, Director, Education Training and Research, Ministry of Health, Nutrition and Indigenous Medicine
- Dr I Suraweera, Consultant Community Physician, Environmental and Occupational Health Division, Ministry of Health, Nutrition and Indigenous Medicine
- Dr L Kumarathilake, Director, Medical Research Institute, Ministry of Health, Nutrition and Indigenous Medicine
- Dr K Karunaratne, Consultant Microbiologist, Lady Ridgeway Hospital
- Dr L Karunanayake, Consultant Microbiologist, Medical Research Institute, Ministry of Health, Nutrition and Indigenous Medicine

- Dr M Karunaratne, Consultant Microbiologist, Medical Research Institute, Ministry of Health, Nutrition and Indigenous Medicine
- Dr N Wijesekara, Medical Officer, Disaster Preparedness and Response Division, Ministry of Health, Nutrition and Indigenous Medicine
- Dr R Pimburage, Veterinary Surgeon, Public Health Veterinary Services, Ministry of Health, Nutrition and Indigenous Medicine
- Dr R Hettiarachchi, Additional Director General, Department of Animal Production and Health
- Dr N Jayaweera, Director (Animal Health), Department of Animal Production and Health
- Dr T Wijayathilaka, Deputy Director, Veterinary Research Institute, Department of Animal Production and Health
- Air Chief Marshal K A Gunatilleke, Chief Of Defence Staff, Ministry of Defence
- Dr J Senanayake, Additional Director, National Plant Quarantine Unit, Ministry of Agriculture
- Dr J Ganegama Arachchi, Principal Scientist, Post Harvest Technology Division, National Aquatic Resources Research and Development Agency
- Mr M Sivakumar, Director, Environmental Pollution Control Unit, Central Environmental Authority
- Mr A Ranjitha, Director General, Sri Lanka Atomic Energy Regulatory Council
- Mr P Kadadunna, Deputy Director, Sri Lanka Atomic Energy Regulatory Council
- Ms A Seneviratne, Director-Mitigation/Research & Development, Ministry of Disaster Management
- Captain R Jayawickrama, Harbour Master (Colombo Port), Sri Lanka Ports Authority
- Captain N Silva, Deputy Harbour Master (Colombo Port), Sri Lanka Ports Authority
- Ms D Kumarajeewa, Legal draftsman, Ministry of Justice
- Mr P Perera, Director, Ministry of Foreign Affairs
- Mr H Nimalsiri, Director General, Airport & Aviation Services Sri Lanka Ltd.
- Dr B Dias, Senior Aviation Officer, Airport & Aviation Services Sri Lanka Ltd.

Supporting documentation provided by host country

Before the mission, the Sri Lankan team prepared a comprehensive self-evaluation covering all 19 technical areas. This self-evaluation was provided to the external team ahead of the mission. In addition, the Sri Lankan team prepared presentations on each technical area that were delivered during the mission.

Relevant documentation for each of the technical areas is as follows:

National legislation, policy and financing

- Quarantine and Prevention of Disease Ordinance (1897
- Prevention of Mosquito Breeding Act (2007)
- Severe acute respiratory syndrome regulations (2003)
- Notifiable Disease List (last gazetted in 2014)
- Food Act (1980), amended in 1991
- Animal Diseases Act (1992)
- Plant Protection Act (1999) and Seeds Act (2003)
- Civil Aviation Act (2010)
- Sri Lanka Port Authority Act (1979)
- Sri Lanka Disaster Management Act (2005)
- National Environmental Act (2000)

IHR coordination, communication and advocacy

- National IHR steering committee formulation order
- Ebola preparedness assessment
- Ministry of Health Master Plan 2017-2025
- Avian influenza and emerging diseases monthly meeting minutes
- Communicable diseases meeting minutes

Antimicrobial resistance

- National Strategic Plan for Combating AMR
- Laboratory manual on microbiology
- Handbook on the external quality assessment scheme in bacteriology
- AMR Surveillance Report (2011)
- Annual Health Bulletin (2015)
- List of hospitals
- Livestock Statistical Bulletin (2015)
- Infection Control Manual (Under review)
- National and local guidelines on empirical antibiotic therapy (for dengue, leptospirosis)
- Circular on the national external quality assurance programme

Zoonotic Diseases

- Veterinary Public Health Strategic Master Plan (Draft)
- Salmonella Control Strategy (Draft)
- Rabies Control Strategy
- Veterinary Public Health Concept Paper
- Disease reporting formats, including the master return and weekly disease return
- Highly pathogenic avian influenza sample collection guidelines
- Animal Diseases Act
- Animal Feeds Act
- Veterinary Surgeons and Practitioners Act
- World Organization for Animal Health PVS Evaluation of Veterinary Services of Sri Lanka (2008)
- World Organization for Animal Health PVS Gap Analysis of Veterinary Services of Sri Lanka (2011)

Food safety

- World Organization for Animal Health PVS Evaluation of the Veterinary Services of Sri Lanka. 2008.
- World Organization for Animal Health PVS Gap Analysis of the Veterinary Services of Sri Lanka. 2011.
- Food Act (1980) and amendments.

Biosafety

- Biosafety Manual for medical laboratories- second Edition
- Hospital infection control manual
- Plant Protection Act
- Enforcement of Private Medical Institutions (registration) Act (2006)

Immunization

- National Immunization Hand book
- Vaccine safety surveillance guide
- National Immunization Policy
- National immunization gazette notification
- Comprehensive multiyear plan for immunization (2017–2021)
- Immunization policy implementation strategic plan
- Web-based immunization information system user manual

National Laboratory System

- Laboratory Manual in Microbiology
- Annual Health Bulletin (2015)
- List of hospitals
- Handbook on External Quality Assessment Scheme in Bacteriology
- Livestock Statistical Bulletin 2015
- Infection Control Manual
- National guidelines on Influenza, dengue, leptospirosis, gonococcus
- WHO and CDC certifications on polio, measles, rubella and influenza
- Biosecurity training programmes in the animal sector
- National External Quality Assessment Scheme in Bacteriology

Real time Surveillance

- Surveillance case definitions
- E –surveillance user manual
- National influenza pandemic plan
- Japanese Encephalitis surveillance manual
- Eradication of Poliomyelitis A comprehensive guide for Medical Officers
- Outbreak management guidelines
- Disease specific prevention guideline circulars (for Ebola, MERS CoV, Zika, Influenza, H1N1)

Reporting

- Polio outbreak preparedness and response plan
- National influenza pandemic plan

Workforce Development

- National Health Strategic Master Plan (2017-2025)
- Masters prospectuses on medical administration, community medicine, community medicine, biomedical informatics, paediatrics, microbiology and general medicine
- Various national curricula
- Health facility survey (2015)
- Sri Lanka Government Gazette

- Surveillance case definitions
- Disease notification system
- Annual Health Bulletin 2014

Preparedness
- Sri Lanka Disaster Management Act (2005)
- National Disaster Management Plan (2013—2017)
- Sri Lanka Comprehensive Disaster Management Programme (2014—2018)
- National Emergency Operational Plan
- Strategic Plan for Health Sector Disasters and Emergency Management
- Standard Operating Procedures for Health Sector Disaster Management
- Avian Influenza Preparedness Plan
- Communicable diseases risk maps
- Dengue Risk Map
- Malaria Risk Map
- Hospital risk assessment reports
- Videos of Hospital Drills conducted based on risk assessments.

Emergency Response Operations
- Emergency Operations Centre – Floor Plan and Equipment Lists
- Staff Roles and Responsibilities of Disaster Preparedness and Response Division Staff
- List of sub-regional Emergency operations centres
- Case management guidelines

Linking public health and security authorities
- Establishment Code
- Quarantine and Prevention of Disease Ordinance (1897
- Disaster Management Act

Medical countermeasures and personnel deployment
- National Medicinal Policy
- Manual on the management of drugs
- National Medicinal Regulatory Act
- Guidelines for deployment of international emergency medical teams.

Risk communication
- Teaching modules and lectures on risk communication
- Minutes from lessons learnt meetings following 2016 disasters
- Daily review meeting minutes from the 2017 floods
- Reproductive health communication strategy
- Duty list for the Directorate of Health Education and Publicity
- Media Use Data Collection Tool (2016)
- Media seminar materials

- Call centre report summaries (2016 and 2017)

Points of entry
- Public Health Contingency Plan for Sea Ports
- Public Health Contingency Plan for Airports
- Standard operating procedures for prevention, early warning and response to public health events at points of entry
- Approved cabinet paper on revisions to the quarantine and disease prevention act
- Schedule of in-service training programmes

Chemical Events
- National Disaster Management Plan
- National Emergency Operations Plan
- National Chemical Profile of Sri Lanka
- Action Plan for Sound Management of Chemicals in Sri Lanka
- Roadmap for Chemical Accident Prevention and Preparedness in Sri Lanka (draft)

Radiation Emergencies
- National Disaster Management Plan
- National Emergency Operations Plan
- Emergency Management Plan (draft)
- Sri Lanka Atomic Energy Act (2014)
- Sri Lanka Atomic Energy Regulatory Council Annual Report (2015)
- IAEA Manual for First Responders to a Radiological Emergency
- IAEA Safety Standards, General Safety Requirements Part 7