IHR (2005) MONITORING AND EVALUATION FRAMEWORK

JOINT EXTERNAL EVALUATION TOOL

INTERNATIONAL HEALTH REGULATIONS (2005)

World Health Organization

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Contents

Acronyms

AMR	antimicrobial resistance
APSED	Asia Pacific Strategy for Emerging Infectious Diseases
BSC	biosafety cabinet
CLSI	Clinical and Laboratory Standards Institute
DTP	diphtheria tetanus pertussis
EBS	event-based surveillance
EOC	Emergency Operation Centre
EPI	Extended Programme on Immunization
EQA	external quality assessment
EUCAST	European Committee on Antimicrobial Susceptibility Testing
FAO	Food and Agriculture Organization
FELTP	field epidemiology and laboratory training programme
FETP	field epidemiology training programme
GLEWS	Global Early Warning System
GPHIN	Global Public Health Information Network
HCAI	health care associated infections
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IDSR	Integrated Disease Surveillance and Response
IHR	International Health Regulations
IHR NFP	National IHR Focal Point
ILO	International Labour Organization
INFOSAN	International Food Safety Authority Network
INTERPOL	International Criminal Police Organization
IPC	infection prevention and control
JEE	joint external evaluation
MMR	measles mumps rubella
MoH	ministry of health
MoU	memorandum of understanding
NGO	non-governmental organization
OIE	World Organisation for Animal Health
PHEIC	public health emergency of international concern
PoE	point of entry

PPE	personal protective equipment
PVS	performance of veterinary services
RRT	rapid response team
SAICM	Strategic Approach to International Chemicals Management
SOP	standard operating procedure
ToR	terms of reference
UNECE	United Nations Economic Commission for Europe
UNSGM	United Nation Secretary General's Mechanism for Investigation of Alleged Use of Chemical and Biological Weapons
WAHIS	World Animal Health Information System
WHO	World Health Organization

Background

THE INTERNATIONAL HEALTH REGULATIONS (2005)

In May 2005, the Fifty-eighth World Health Assembly (WHA) adopted the International Health Regulations (2005) [IHR (2005)] which subsequently entered into force on 15 June 2007. The purpose and scope of the IHR (2005) are "to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade". State Parties are required by the IHR (2005) to develop certain minimum core public health capacities.

IHR capacity requirements are defined in Article 5 as "the capacity to detect, assess, notify and report events"; in Annex 1A on "Core capacity requirements for surveillance and response"; and in Annex 1B on "Core capacity requirements for designated airports, ports and ground crossings". In addition, the core capacity monitoring framework has a checklist and indicators which should be used for monitoring progress in the development of IHR Core Capacities in States Parties (http://www.who.int/ihr/publications/checklist/en/).

As stated in Annex 1A.2, each State Party shall assess the ability of existing national structures and resources to meet the minimum requirements described in Annex1. As a result of such assessment, States Parties shall develop and implement plans of action to ensure that these core capacities are present and functioning throughout their territories.

In 2012, the World Health Assembly (WHA65.23) urged States Parties to take the necessary steps to prepare and carry out appropriate national implementation plans in order to ensure the required strengthening, development and maintenance of the core public health capacities as provided for in the International Health Regulations (2005).

The IHR Review Committee on Second Extensions for Establishing National Public Health Capacities and on IHR Implementation (WHA 68/22 Add.1) suggested that '…, *and with a longer term vision, the Secretariat should develop through regional consultative mechanisms options to move from exclusive self-evaluation to approaches that combine self-evaluation, peer review and voluntary external evaluations involving a combination of domestic and independent experts. These additional approaches should consider, amongst other things, strategic and operational aspects of the IHR, such as the need for high level political commitment, and whole of government / multi-sectoral engagement. Any new monitoring and evaluation scheme should be developed with the active involvement of WHO regional offices and subsequently proposed to all States Parties through the WHO governing bodies' process.'*

The call for the move from 'exclusive self-evaluation' to external evaluation comes from the recognition that transparency and mutual accountability in the international community are essential in implementing IHR collectively. A technical consultation meeting on the IHR Monitoring and Evaluation Framework post-2015 was organised in Lyon in October 2015, and suggested the development of processes and a tool to conduct joint external evaluation.

The tool below is arranged according to following core elements:

- Preventing and reducing the likelihood of outbreaks and other public health hazards and events defined by IHR (2005) is essential.
- Detecting threats early can save lives.
- Rapid, effective response requires multi-sectoral, national and international coordination and communication.

PURPOSE OF THE JOINT EXTERNAL EVALUATION

The Joint External Evaluation Tool - International Health Regulations (2005) is intended to assess country capacity to prevent, detect, and rapidly respond to public health threats independently of whether they are naturally occurring, deliberate, or accidental. The purpose of the external evaluation process is to measure country specific status and progress in achieving the targets. This will require a sustainable and flexible process to allow for additional countries and regular evaluation visits. The first time the external evaluation is conducted, it will establish a baseline measurement of the country's capacity and capabilities. Subsequent evaluations are necessary to identify progress made and ensure any improvements in capacity are sustained.

Joint external evaluations share a number of important features, including: voluntary country participation; a multisectoral approach by both the external teams and the host countries; transparency and openness of data and information sharing; and the public release of reports. It also refers to the joint process during an external evaluation (envisioned to take place approximately every five years) where a team of national experts first prepares a self-assessment supplied to the external team prior to the on-site visit, and the external team uses the same tool for their independent evaluation, working together with the national team in interactive sessions.

The external evaluation allows countries to identify the most urgent needs within their health security system, to prioritize opportunities for enhanced preparedness, response and action, and to engage with current and prospective donors and partners to target resources effectively. Transparency is an important element in order to attract and direct resources to where they are needed most.

PROCESS

The first stage of the evaluation is a country survey completed by the country using self-reported data for the various indicators on the joint external evaluation tool. This information is then given to the joint external evaluation team comprised of national and international subject matter experts. Review of this self-assessment data provides the team members with a baseline understanding of the country's health security capabilities. These subject matter experts will then visit the country for facilitated in-depth discussion of the self-reported data as well as structured site visits and meetings organized by the host country. The evaluation team will use findings of various relevant evaluation and assessments like World Organisation for Animal Health: Performance of Veterinary Services (OIE PVS) pathway, monitoring and evaluation of disaster risk reduction and others.

After conducting the evaluation visit, the evaluation team will draft a report to identify status levels for each indicator, as well as an analysis of the country's capabilities, gaps, opportunities and challenges. This information will be shared with the host country and, with permission of the host country, various other stakeholders in order to facilitate international support of country implementation efforts, share best practices and lessons learned, promote international accountability, engage stakeholders, and inform and guide IHR implementation both in the host country and internationally.

FORMAT

Every indicator in the evaluation tool has attributes that reflect various levels of capacity with scores of 1-5 (1 indicates that implementation has not occurred; 5 indicates that implementation has occurred, is tested/reviewed/exercised and that the country has a high level of capability for the indicator). For each indicator, a country will receive a single score based on their current capacity. The Technical Area Questions will help the evaluators determine the appropriate score. Most of the measures are descriptive and qualitative.

Countries will be asked to provide documentation for some if these items in addition to the responses. The documentation and responses will be reviewed by the evaluators, and will then be discussed during the external assessment. Final report will include scores as well as report narrative identifying existing capacities, gaps, and challenges. The results of the JEE are to guide IHR implementation in the country.

The tool was developed to provide an external mechanism to evaluate a country's IHR capacity for ensuring health security. This tool draws on the original IHR core capacities and incorporates valuable content and lessons learned from tested external assessment tools and processes of several other multilateral and multisectoral initiatives that have supported the building of capacity to prevent, detect, and respond to infectious disease threats.

COLOUR SCORING SYSTEM

While overlaps exist among the capacity sections of the tool, each will be considered separately in the evaluation exercise. The implementation status of each core capacity will be delineated by a level of advancement or scoring, which reflects the capacity to be institutionalized and sustainable. Following describes the level of advancement or scoring with colour coding.

1. **No Capacity :** Attributes of a capacity are not in place Colour Code:

Red

2. **Limited Capacity :** Attributes of a capacity are in development stage (some are achieved and some are undergoing; however, the implementation has started). Colour Code:

Yellow

3. **Developed Capacity :** Attributes of a capacity are in place; however, there is the issue of sustainability and measured by lack of inclusion in the operational plan in National Health Sector Planning (NHSP) and/or secure funding. Colour Code:

Yellow

4. **Demonstrated Capacity :** Attributes are in place, sustainable for a few more years and can be measured by the inclusion of attributes or IHR (2005) core capacities in the national health sector plan. Colour Code:

Green

5. **Sustainable Capacity :** Attributes are functional, sustainable and the country is supporting other countries in its implementation. This is the highest level of the achievement of implementation of IHR (2005) core capacities. Colour Code:

Green

1. Without achievement of all attributes at prior capacity levels, a country cannot progress to the adjacent levels (for instance, in order to reach demonstrated capacity, one has to meet all the attributes of developing and demonstrated capacity).
2. All responses should be supported by documentable evidence.

Country Evaluation Tool

PREVENT

NATIONAL LEGISLATION, POLICY AND FINANCING

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

Desired Impact: Legislation, laws, regulations, administrative requirements, policies or other government instruments and budget in place sufficiently support IHR implementation.

Score	Indicators - 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.	**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)**
No Capacity – 1	Assessment of relevant legislation, regulation, administrative requirements and other government instruments for IHR (2005) implementation not carried out	Legislation, regulation, administrative requirements and other government instruments are not in place for the implementation of the IHR (2005)
Limited Capacity – 2	Assessment of relevant legislation, regulation, administrative requirements and other government instruments for IHR (2005) implementation has been carried out	Assessment of relevant legislation, regulation, administrative requirements and other government instruments for IHR (2005) implementation has been carried out and adjustment needs have been identified
Developed Capacity – 3	Recommendations following assessment of relevant legislation, regulations, administrative requirements and other government instruments are implemented	The country can demonstrate the existence and use of relevant laws and policies in the various sectors involved in the implementation of the IHR[2]
Demonstrated Capacity – 4	Policies to facilitate IHR NFP core and expanded functions and to strengthen core capacities	The country has legislation references and/or administrative requirements for specific areas (e.g. current legislation specifically address IHR NFP designation and operations)
Sustainable Capacity – 5	Policies to facilitate IHR NFP core and expanded functions and to strengthen core capacities incorporated within the national health sector plan (NHSP)	The country ensures coordination of the legal and regulatory frameworks between sectors

[2] For the Animal Health Sector, this information can be found in the country PVS report, Critical Competencies cards IV-1: preparation of legislation and regulation & IV-2: Implementation of legislation and regulation and compliance thereof

Notes:

- National legislation, policy and financing: These questions should be answered by legal or legislative advisers, experts at the MoH or other relevant government office/ NFP. Please ask to see the relevant documents.

Contextual questions: N/A

Technical Questions:

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

1. Is there legislation or are there regulations or administrative requirements, or other governmental instruments3 governing public health surveillance and response?
2. Has an assessment of relevant4 legislation, regulations or administrative requirements, and other governmental instruments been carried out (to determine if they facilitate full implementation of the IHR)?
3. Cross-border agreements, protocols or memoranda of understanding (MoUs) with neighbouring countries with regard to public health emergencies

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

1. Does the assessment also identify adjustment needs for relevant legislation, regulation, administrative requirements and other government instruments for IHR (2005) implementation?
2. Show the evidence of using relevant legislation and policies in various sectors involved in the implementation of IHR.
3. Does the country legislation or any references addresses other specific areas other than NFP function (designation and its operation) if yes, what are those areas covered?
4. How the country does ensure coordination of the legal and regulatory frameworks between sectors? (show the evidence)

[3] Legislation: state constitutions, laws, decrees, ordinances or similar legal instruments.

[4] Relevant areas include: public health, environment, points of entry (international ports, airports, and ground crossings including quarantine),food safety, agriculture (including animal health),radiation safety, chemical safety and transportation (including dangerous goods).

IHR COORDINATION, COMMUNICATION AND ADVOCACY

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

Expected Impact: A mechanism for multisectoral/multidisciplinary coordination, communication and partnerships is functional to detect, assess and respond to any public health event or risk. The NFP is accessible at all times to communicate with the WHO IHR Regional Contact Points and with all relevant sectors and other stakeholders in the country.

Score	Indicators - IHR Coordination, Communication and Advocacy
	P.2.1 A functional mechanism is established for the coordination and integration of relevant sectors in the implementation of IHR.
No Capacity – 1	Coordination mechanism between relevant ministries is not in place
Limited Capacity – 2	Coordination mechanism between relevant ministries is in place National Standard Operating Procedures (SOPs) or equivalent exists for the coordination between IHR NFP and relevant sectors
Developed Capacity – 3	A multisectoral, multidisciplinary body, committee or taskforce addressing IHR requirements on surveillance and response for public health emergencies of national and international concern is in place and participated in latest event
Demonstrated Capacity – 4	Multisectoral and multidisciplinary coordination and communication mechanisms are tested and updated regularly through exercises or through the occurrence of an actual event Action plan developed to incorporate lessons learnt of multisectoral and multidisciplinary coordination and communication mechanisms
Sustainable Capacity	Annual updates on the status of IHR implementation to stakeholders across all relevant sectors conducted

Notes:

Additional information can be used from following indicators:

1. D.3.1 System for efficient reporting to WHO, FAO and OIE
2. D.3.2 Reporting network and protocols in country
3. R.3.1 Public Health and Security Authorities, (e.g. Law Enforcement, Border Control, Customs are linked during a suspect or confirmed biological event)

Contextual Questions: N/A

Technical questions:

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

1. Is there coordination within relevant ministries on events that may constitute a public health event or risk of national or international concern?
2. Are SOPs or guidelines available for coordination between NFP and other relevant sectors?
3. Have functional mechanisms for intersectoral collaborations that include animal and human health surveillance units and laboratories been established?
4. Is there timely and systematic information exchange between animal surveillance units, laboratories, human health surveillance units and other relevant sectors regarding potential zoonotic risks and urgent zoonotic events?
5. Is a multi-sectoral, multidisciplinary coordination and communication mechanisms updated and tested regularly?
6. Do you have action plans developed to incorporate lessons learnt of multi-sectoral/disciplinary coordination and communication mechanism?
7. Are the updates of IHR implementation shared with other relevant sectors?
8. Have the functions of the IHR NFP been evaluated for effectiveness?

Documentation or Evidence for Level of Capability:

- OIE Reports (World Animal Health Information System - WAHIS)
- IHR reports to the World Health Assembly
- Legislation, protocols or other policies related to reporting to WHO
- Please provide any plans that have been drafted that cover response to possible biological events (move to documentation)

ANTIMICROBIAL RESISTANCE (AMR)

Target: Support work being coordinated by WHO, FAO, and OIE 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), including: a) Each country has its own national comprehensive plan to combat antimicrobial resistance; b) Strengthen surveillance and laboratory capacity at the national and international level following agreed international standards developed in the framework of the Global Action plan, considering existing standards and; c) Improved conservation of existing treatments and collaboration to support the sustainable development of new antibiotics, alternative treatments, preventive measures and rapid, point-of-care diagnostics, including systems to preserve new antibiotics. As Measured by: (1)Number of comprehensive plans to combat antimicrobial resistance agreed and implemented at a national level, and yearly reporting against progress towards implementation at the international level. (2)Number of countries actively participating in a twinning framework, with countries agreeing to assist other countries in developing and implementing comprehensive activities to combat antimicrobial resistance, including use of support provided by international bodies to improve the monitoring of antimicrobial usage and resistance in humans and animals.

Desired Impact: Decisive and comprehensive action to enhance infection prevention and control activities to prevent the emergence and spread of AMR, especially among drug-resistant bacteria. Nations will strengthen surveillance and laboratory capacity; ensure uninterrupted access to essential antibiotics of assured quality; regulate and promote the rational use of antibiotics in human medicine and in animal husbandry and other fields as appropriate; and support existing initiatives to foster innovations in science and technology for the development of new antimicrobial agents.

Score**	Indicators - Antimicrobial Resistance (AMR) *			
	P.3.1 Antimicrobial resistance (AMR) detection	**P.3.2 Surveillance of infections caused by AMR pathogens**	**P.3.3 Healthcare associated infection (HCAI) prevention and control programs**	**P.3.4 Antimicrobial stewardship activities**
No Capacity – 1	No national plan for detection and reporting of priority AMR pathogens has been approved	No national plan for surveillance of infections caused by priority AMR pathogens has been approved	No national plan for HCAI programs has been approved	No national plan for antimicrobial stewardship has been approved
Limited Capacity – 2	National plan for detection and reporting of priority AMR pathogens has been approved	National plan for surveillance of infections caused by priority AMR pathogens has been approved	National plan for HCAI programs has been approved	National plan for antimicrobial stewardship has been approved
Developed Capacity – 3	Designated laboratories are conducting detection and reporting of some priority AMR pathogens	Designated sentinel sites are conducting surveillance of infections caused by some priority AMR pathogens	Designated facilities are conducting some HCAI programs	Designated centres are conducting some antimicrobial stewardship practices
Demonstrated Capacity – 4	Designated laboratories have conducted detection and reporting of all priority AMR pathogens for at least one year	Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for at least one year	Designated facilities have conducted all HCAI programs for at least one year	Designated centres have conducted all antimicrobial stewardship practices for at least one year
Sustainable Capacity – 5	Designated laboratories have conducted detection and reporting of all priority AMR pathogens for five years with a system for continuous improvement	Designated sentinel sites have conducted surveillance of infections caused by all priority AMR pathogens for five years with a system for continuous improvement	Designated facilities have conducted all HCAI programs for five years with a system for continuous improvement	Designated centres have conducted all antimicrobial stewardship practices for five years with a system for continuous improvement

* Antimicrobial resistance in bacteria, including tuberculosis AMR, is covered by this section. Viral, other non-bacterial pathogen and vector resistance is out of scope, unless integrated in national policies, standards or guidelines

** For full scores, capabilities should be separately evaluated both in the human and animal sectors and mechanisms for regular comparison and joint policy-development in a One-Health fashion should be in place. For final scores, the average should be taken

Notes:

- Priority AMR pathogens may include some, all, or more than the seven selected pathogens listed by the World Health Organization (E. coli, K. pneumonia, S. aureus, S. pneumoniae, Salmonella spp., Shigella spp, N. gonorrheae). Other priority pathogens may be added by national authorities based on country needs including Mycobacterium tuberculosis.
- The number of designated laboratories for AMR detection/reporting, sentinel sites for surveillance of infections caused by AMR pathogens, facilities for IPC programs, and centres for antimicrobial stewardship will be decided by national authorities.
- Detection of AMR should occur by recommended standards such as CLSI or EUCAST.
- Each activity should occur in both veterinary and human sectors. The scope of activities in these two sectors should be decided by national authorities.
- Healthcare associated infection prevention and control programs might include training, audit and feedback components for personnel in addition to environmental controls such as disinfection and waste management.
- Antimicrobial stewardship might include uninterrupted access to high-quality medicines to treat bacterial infections, measurements of antibiotic use, regular updates to local antibiograms to inform empiric treatment of infections, and audit-feedback to prescribers of antibiotics to encourage appropriate use.

Contextual questions: N/A

Technical Questions:

P.3.1 Antimicrobial resistance (AMR) detection

1. Is there a national plan for laboratory testing of WHO priority pathogens?
2. Does a national plan for the detection and reporting of AMR pathogens exist? How often is the plan updated and reviewed?
    a. Is there a national AMR lab in the country?
    b. How many laboratories within the nation are able to conduct AMR detection and reporting? Of these, how many will be designated laboratories for AMR detection and reporting?
    c. Which AMR pathogens are the designated laboratories able to test for?
    d. How are these data validated?
    e. Have laboratory methods been verified and the quality monitored, such as through external quality assurance?
    f. What types of reports are generated? Who receives these reports?

P.3.2 Surveillance of infections caused by AMR pathogens

1. Does a national plan for surveillance of infections caused by AMR pathogens exist? How often is the plan updated and reviewed?
    a. How many hospitals are in the country? Of these, how many are (will be) sentinel sites for surveillance of infections caused by AMR pathogens among humans?

b. How many farms with livestock are in the country? Of these, how many are (will be) sentinel sites for surveillance of infections caused by AMR pathogens in livestock?
c. How many of these sentinel sites are operational?
d. How are data validated? What types of reports are generated? Who receives these reports?

P.3.3 Healthcare associated infection prevention and control programs

1. Is there a national plan for HCAI? How often is the plan updated and reviewed?
   a. How many facilities are involved in the national HCAI?
   b. What components of HCAI are implemented?
2. Availability of functioning IPC policy, operational plan and SOPs at all health facilities.
3. Availability of isolation units at tertiary hospitals.
4. Availability of guidelines for the protection of health care workers from health care associated infection.
5. Availability of surveillance within high risk groups to promptly detect cluster of health care associated infection.
6. Availability of designated trained IPC professionals in all tertiary hospitals.
7. Availability of system to regularly evaluate the effectiveness of infection control measures and publish results.

P.3.4 Antimicrobial stewardship activities

1. Does a national plan for antimicrobial stewardship exist? Is there national guidance on appropriate antibiotic use? How often is the plan updated and reviewed?
   a. Has a survey on the proper administration of antibiotics been implemented?
   b. How many centres are assessing antibiotic use patterns? How is antimicrobial usage monitored?
   c. How many centres adhere to national guidance on appropriate antibiotic use (if known)?
2. Is a prescription required for antibiotic use in humans?
3. Is a prescription required for antibiotic use in animals? When is a prescription not required?

Documentation or Evidence for Level of Capability:

- Dated versions of plans for AMR detection/reporting, surveillance of infections caused by AMR pathogens, HCAI programs, and antimicrobial stewardship programs

- Copy of reports measuring:
  - proportion of AMR pathogens among specimens or isolates
  - results from participation in international external quality assessment (EQA) rounds of the national reference laboratory
  - incidence of infections caused by AMR pathogens at sentinel sites (community and hospital acquired, respectively)
  - proportion of facilities adhering to best practices for HCAI (if known)
  - percentage of antibiotics administered appropriately (if surveyed)
- Documentation of review process, including participating agencies or sectors

Glossary:

Designated centres: Facilities or organizations, which on a regularly basis are involved in the described control programs

References:

- WHO Global AMR Action Plan
- OIE recommendations

ZOONOTIC DISEASE

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

As Measured by: Identify the five zoonotic diseases/pathogens of greatest national public health concern and strengthen existing surveillance systems for prioritized zoonoses.

Desired Impact: Implementation of guidance and models on behaviours, policies and practices to minimize the spill over, spread, and full emergence of zoonotic disease into or out of human populations prior to the development of efficient human-to-human transmission. Nations will develop and implement operational frameworks—based on international standards, guidelines, and successful existing models—that specify the actions necessary to promote One Health approaches to policies, practices and behaviours that could minimize the risk of zoonotic disease emergence and spread.

Score**	Indicators - Zoonotic Disease*		
	P.4.1 Surveillance systems in place for priority zoonotic diseases/pathogens	**P.4.2 Veterinary or Animal Health Workforce**	**P.4.3 Mechanisms for responding to infectious zoonoses and potential zoonoses are established and functional**
No Capacity - 1	No zoonotic surveillance systems exist	Country has no animal health workforce capacity capable of conducting one health activities.	No mechanism in place
Limited Capacity - 2	Country has determined zoonotic diseases of greatest national public health concern but does not have animal zoonotic surveillance systems in place	Country has animal health workforce capacity within the national public health system.	National policy, strategy or plan for the response to zoonotic events is in place
Developed Capacity - 3	Zoonotic surveillance systems in place for 1-4 zoonotic diseases/ pathogens of greatest public health concern	Animal health workforce capacity within the national public health system and less than half of sub-national levels.	A mechanism for coordinated response to outbreaks of zoonotic diseases by human, animal and wildlife sectors is established
Demonstrated Capacity - 4	Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern	Animal health workforce capacity within the national public health system and more than half of sub-national levels.	Timely[4] and systematic information exchange between animal/wildlife surveillance units, human health surveillance units and other relevant sectors in response to potential zoonotic risks and urgent zoonotic events
Sustainable Capacity - 5	Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern with system in place for continuous improvement	Animal health workforce capacity within the national public health system and at all sub-national levels. This includes a plan for animal health workforce continuing education	Timely[5] (as defined by national standards) response to more than 80% of zoonotic events of potential national and international concern

* Refers to zoonotic infections shared by animals and humans

** For full scores, capabilities should be separately evaluated both in the human and animal (livestock, companion animal and wildlife) sectors and mechanisms for regular comparison and joint policy-development in a One-Health fashion should be in place. For final scores, the average should be taken.

5 Timeliness is judged and determined by each country.

6 "Timely" referred to here is the time between detection and response

Notes:

- The indicator refers to zoonotic disease surveillance capacity for the country.
- Surveillance systems for zoonotic disease should include:
  - The system of surveillance for major zoonotic diseases covers 80% of level 3 administrative units in the country (to be considered "nationwide")
  - Regular reports to relevant authorities both in human and animal health leadership.
- Linkages between Ministry of Health, Ministry of Agriculture, and wildlife specialists to promote the sharing of information and data. Linkage should also exist on the regional and local level.
- The Ministry of Agriculture (or other relevant agency) can provide an accurate estimate of animal population within the country and within each administrative unit.
- Reports from OIE PVS pathway need to be used to inform the performance of veterinary services, including for the assessment of Workforce Development (Detect 4).

Contextual Questions:

1. What zoonotic diseases are of greatest public health concern within the country?
2. Is there a formal policy for "one health" in the country?
3. Within the past two years, has an exercise been conducted or real event occurred, involving Ministries of Health and Agriculture, to practice and test skills of both human and animal public health workers to investigate and respond to a zoonotic event?
   a. Please describe the exercise or real event which occurred.
   b. What were the most significant lessons learned from the exercise/real event?
4. How are estimates of animal population within the country determined?
   a. How often are these estimates developed?
   b. What department or agency is responsible for developing these estimates?
5. Can you list the zoonotic diseases for which control policies exist with the purpose of reducing spill over of zoonotic disease into human populations?
   a. Please describe the progress in implementing these policies
   b. Is there a plan in place to encourage reporting of animal disease (may include indemnities paid)?
   c. Is there a plan in place to address factors which might prevent farmers/owners from reporting animal disease (may include lack of familiarity with reporting process, lack of indemnity, social stigma)?

Technical Questions:

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

1. Does the country have a mechanism in place to identify priority zoonotic diseases that pose a national health risk?
2. Does the country have a surveillance system in place for relevant animal populations?
3. Please describe partnerships between ministry of health, ministry of agriculture and wildlife specialists as they relate to zoonotic disease detection and response
    a. Are situational awareness reports or reports of potential disease outbreaks shared between the agencies?
4. Are public health laboratories and animal health laboratories linked?
    a. Is there a process for sharing specimens between public health and animal health laboratories?
    b. Is there a process for sharing laboratory reports between public health and animal health laboratories?
    c. Are these reports shared on a regular basis, or only when zoonoses are discovered or suspected?
5. Describe reports produced from animal surveillance systems for zoonotic disease
    a. What ministries receive reports produced by the animal surveillance systems on zoonotic diseases?
    b. How is animal surveillance systems linked to surveillance systems used for human pathogens?
    c. Is there a mechanism or mechanisms for establishing interagency response teams in the event of a suspected zoonotic outbreak?
    d. Is there a process for sharing surveillance reports between public health and animal health laboratories?
    e. How do these systems pick up emerging diseases versus endemic diseases?

P.4.2 Animal Health and Veterinarian Workforce

1. Describe public health training offered to animal health veterinary staff within the country.
    a. Describe what training in controlling zoonotic disease in animal populations is offered to public health staff within the country.

2. Are animal health experts and veterinarians included in country FETP or other equivalent training program?
3. What is the current animal population for the country, including farm and agricultural animals?

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

1. Describe the policy, strategy or plan for the response to zoonotic events in the country.
   a. Is there a joint planning or strategy which exists between animal health, human health and wildlife sectors?
   b. Is there any memorandum of understanding between sectors for the management of zoonotic events?
2. Describe how the latest zoonotic events were managed, for example:
   a. How the information is shared between sectors?
   b. How often do the sectors meet at the technical level?
   c. Do you have outbreak investigation and response report on the latest zoonotic events?
3. Describe the roles and responsibilities of animal health, human health and wildlife sectors on these recent zoonotic events.
4. Do you consider that country has capacity to respond to more than 80% of zoonotic events on time? What is the timeliness at present?

Documentation or Evidence for Level of Capability:

- List of zoonotic priority pathogens for public health
- Descriptions of existing zoonotic surveillance systems
- OIE Country PVS report
- OIE Country PVS Gap Analysis Report

References:

- OIE PVS Pathway
- Handbook for the assessment of capacities at the human animal interface, WHO & OIE, 2015.
- www.who.int/ihr/publications/handbook_OMS_OIE/en/
- Publication Related to Food Safety: http://www.who.int/foodsafety/publications/all/en/

FOOD SAFETY

Target: States Parties should have surveillance and response capacity for food and water borne disease risk or events. It requires effective communication and collaboration among the sectors responsible for food safety and safe water and sanitation.

Desired Impact: Timely detection and effective response of potential food-related events in collaboration with other sectors responsible for food safety

Score	Indicator - Food Safety
	P.5.1 Mechanisms are established and functioning for detecting and responding to foodborne disease and food contamination.
No Capacity – 1	No mechanism in place
Limited Capacity – 2	Focal points are identified in relevant stakeholders (food safety sector, human health sector, surveillance and response staffs, animal health sector, key laboratories)
Developed Capacity – 3	Operational links are established between surveillance and response staffs, food safety, animal health and laboratories
Demonstrated Capacity – 4	Staff responsible for surveillance and response, food safety, laboratories and agriculture work together to consider the risks and interventions
Sustainable Capacity – 5	There is an effective (formal or informal) mechanism for rapid information exchange during suspected foodborne disease outbreak investigations between all the stakeholders / relevant sectors

Notes:

- Indicators refer to detection and responding to the food-related events and enabling environment for putting food safety control mechanism in place with appropriate legislation, laws, or policy and with the involvement of multiple sectors.
- Detection capacity includes surveillance but also the laboratory capacity required for the verification of any events.

Contextual Questions:

1. Does the country have the national or international food safety standard available?
2. How often food safety-related events happen in the country per year?
3. Describe the latest food-related events including food poisoning or foodborne disease outbreak? How do you evaluate the response to that event?
4. Is the country participating with International Food Safety Authority Network (INFOSAN)?

Technical Questions:

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

Have appropriate people been nominated at the national level to take part in outbreak response teams?

1. Are the people identified to take part in the outbreak response teams trained to undertake outbreak investigations of foodborne diseases?
2. During each event /outbreak response, does the outbreak response team:
    a. Interview people affected with the disease using a standardised questionnaire?
    b. Develop and apply a case definition?
    c. Describe the number of cases using a line list?
    d. Provide some descriptive comments about the syndrome and possible source of the illness?
    e. Collect appropriate clinical specimens from symptomatic cases?
3. Does the surveillance and response staff know who the focal points are for food safety, animal health and the key laboratories that would be required to test clinical and/or food samples collected during an event?
4. Is there an effective (formal or informal) mechanism for rapid information exchange during suspected foodborne disease outbreak investigations between all the stakeholders / relevant sectors?
5. Is there a multisectoral involvement in risk profiling of food safety problems to help identify opportunities for authorities to implement appropriate risk management strategies?
6. Is a communication mechanism between food safety stakeholders in the country in place and functioning? This includes agreement on:
    a. What information is to be shared?
    b. When does the information need to be shared?
    c. Who needs to know the information?
7. How is the information to be shared? Are there communication mechanism and materials in place to deliver information, education, and advice to stakeholders across the farm-to-fork continuum?
8. Have food safety control management systems been implemented?

References:

- Publication Related to Food Safety: http://www.who.int/foodsafety/publications/all/en/

BIOSAFETY AND BIOSECURITY

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

As Measured by: Number of countries who have completed/Completion of a national framework and comprehensive oversight system for pathogen biosafety and biosecurity, strain collections, containment laboratories and monitoring systems that includes identification and storage of national strain collections in a minimal number of facilities.

Desired Impact: Implementation of a comprehensive, sustainable and legally embedded national oversight program for biosafety and biosecurity, including the safe and secure use, storage, disposal, and containment of pathogens found in laboratories and a minimal number of holdings across the country, including research, diagnostic and biotechnology facilities. A cadre of biological risk management experts possesses the skillset to train others within their respective institutions. Strengthened, sustainable biological risk management best practices are in place using common educational materials. Rapid and culture-free diagnostics are promoted as a facet of biological risk management. The transport of infectious substances will also be taken into account.

Score	Indicators - Biosafety and Biosecurity	
	P.6.1 Whole-of-government biosafety and biosecurity system is in place for human, animal, and agriculture facilities	**P.6.2 Biosafety and biosecurity training and practices**
No Capacity - 1	No elements of a comprehensive national biosafety and biosecurity system are in place	No biological biosafety and biosecurity training or plans are in place
Limited Capacity - 2	Some, but not all, elements of a comprehensive biosafety and biosecurity system are in place; country is: Starting the process to monitor and develop an updated record and inventory of pathogens within facilities that store or process dangerous pathogens and toxins and what they house Developing, but has not finalized, comprehensive national biosafety and biosecurity legislation Developing laboratory licensing Developing pathogen control measures, including standards for physical containment and operational handling and failure reporting systems Not consolidating dangerous pathogens and toxins into a minimum number of facilities Not employing diagnostics that preclude culturing dangerous pathogens Not implementing oversight monitoring and enforcement mechanisms	Country has conducted a training needs assessment and identified gaps in biosafety and biosecurity training but has not yet implemented comprehensive training or a common training curriculum General lack of awareness among the laboratory workforce of international biosafety and biosecurity best practices for safe, secure and responsible conduct Country does not yet have sustained academic training in institutions that train those who maintain or work with dangerous pathogens and toxins
Developed Capacity - 3	Comprehensive national biosafety and biosecurity system is being developed; country is: Finalizing the process to support the active monitoring and maintaining of up-to-date records and pathogen inventories within facilities that store or process dangerous pathogens and toxins Finalizing the development and implementation of comprehensive national biosafety and biosecurity legislation Finalizing the development and implementation of laboratory licensing Finalizing the development and implementation of pathogen control measures, including standards for physical containment and operational handling , and containment failure reporting systems Starting the consolidation of dangerous pathogens and toxins into a minimum number of facilities Starting to put into place tools and resources to support diagnostics that preclude culturing dangerous pathogens Starting to put into place oversight monitoring and enforcement mechanisms	Country has a training program in place with common curriculum; has begun implementation Country has a training program in place at most facilities housing or working with dangerous pathogens and toxins Training on biosafety and biosecurity has been provided to staff at some, but not all, facilities that maintain or work with dangerous pathogens and toxins Country is developing, or has not yet implemented, a train-the-trainers program for biosafety Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins

Demonstrated Capacity - 4	Biosafety and biosecurity system is developed, but not sustainable; country is: Actively monitoring and maintaining an updated record and inventory of pathogens within facilities that store or process dangerous pathogens and toxins Implementing enacted comprehensive national biosafety and biosecurity legislation Implementing laboratory licensing Implementing pathogen control measures, including standards for physical containment and operational handling and containment failure reporting systems. Completed consolidating dangerous pathogens and toxins into a minimum number of facilities. Employing diagnostics that preclude culturing dangerous pathogens Implementing oversight monitoring and enforcement activities	Country has a training program in place with common curriculum and a train-the-trainers program Country has a training program in place at all facilities housing or working with dangerous pathogens and toxins Training on biosafety and biosecurity has been provided to staff at all facilities that maintain or work with dangerous pathogens and toxins Country is implementing a train-the-trainers program Country has in place sustained academic training in institutions that train those who maintain or work with dangerous pathogens and toxins Country has limited ability to self-sustain all of the above
Sustainable Capacity - 5	Sustainable biosafety and biosecurity system is in place; country is: Compliant with numbers one through six under "Demonstrated Capacity" plus: Ministries have made available adequate funding and political support for the comprehensive national biosafety and biosecurity system, including maintenance of facilities and equipment	Country has a sustainable training program, train-the-trainers program, and common curriculum. Staff are tested at least annually and exercises are conducted on biological risk protocols Country is compliant with numbers one through five under "Demonstrated Capacity" and has funding and capacity to sustain all of the above Review of training needs assessment is conducted annually and refresher training on need areas conducted annually Training on emergency response procedures provided annually

Notes: N/A

Contextual Questions: N/A

Technical Questions:

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

1. Actively monitoring and developing an updated record and inventory of pathogens within facilities that store or process dangerous pathogens and toxins.
    a. Does the country have in place an updated record of where and in which facilities dangerous pathogens and toxins are housed?
        i. Have collections of pathogens and toxins been identified?
2. Implementing enacted comprehensive national biosafety and biosecurity legislation.
    a. Does the country have biosecurity legislation and/or regulations in place? Are they being implemented?

b. Does the country have biosafety legislation and/or regulations in place? Are they being implemented?

c. Please provide a copy of the country's national biosecurity legislation, regulations or frameworks, and a copy of the country's biosafety legislation, regulations or frameworks.

   i. Please describe how this information is shared with laboratories at subnational levels within the country.

   ii. Are regulations and/or guidelines for biosecurity followed by laboratories within the country? What about for biosafety?

   iii. Describe biosecurity monitoring activities. Describe biosafety monitoring activities

   iv. Has a third party assessed biosecurity at national laboratory facilities? What about biosafety?

      1. When?

      2. Have the recommendations from that biosecurity assessment been put into place? What about for biosafety?

   v. What type of laboratory requires a licence in the country?

   vi. Are there common licence conditions/safety and security requirements for all licensed labs? If so, what are they?

   vii. How is laboratory licensing monitored within the country?

   viii. Is there adequate availability of funding to support biosecurity programs/initiatives and their oversight and enforcement at the ministry level? What about for biosafety?

   ix. Is there a mechanism for biosecurity oversight of dual use research and responsible code of conduct for scientists? This may include a biosafety committee or other review committee

3. Implementing laboratory licensing and pathogen control measures including requirements for physical containment and operational practices and containment and failure reporting systems.

   a. Physical Security: are appropriate security measures in place to minimize potential inappropriate removal or release of biological agents (e.g. theft, earthquake, flood)?

   b. Information Security: is access to sensitive information (e.g. inventory of agents and toxins) controlled by adequate policies and procedures?

   c. Transportation Security: are procedures for a safe and secure transport of culture, specimens, samples and other contaminated materials established and followed?

   d. Personnel Security: is there a mechanism to determine which personnel are authorized to access pathogens of security concern?

   e. Biosafety and biosecurity practices at facilities housing or working with dangerous pathogens:

      i. Are site-specific biosafety and biosecurity management programs and supporting documents (manuals, SOPs, job aides, records) available to include biosafety, biosecurity, incident response and emergency plans (e.g. in case of explosion, fire, flood, worker exposure, accident or illness, major spillage)?

ii. Are roles and responsibilities related to biosafety and biosecurity management defined and documented (biosafety officer, security manager)?

iii. Have the biosafety and biosecurity risks been assessed and categorized?

iv. Are biosafety and biosecurity control measures described in an action plan?

v. Are there mechanisms to ensure that personnel is suitable and competent (e.g. best practices) in human resources management (e.g., verification of prior education and employment, periodic performance reviews), successful completion of training, mentorship programs, ability to work unsupervised)?

f. Is there a system in place to conduct audits of laboratory facilities?

i. If so, are audits performed regularly?

ii. What organization conducts these audits? Within the government or external?

iii. Which types of laboratories are subject to these audits?

g. Do laboratories have appropriate ISO accreditation? If so, which ISO accreditations do the facilities have?

h. Do any of the national laboratories have other relevant classifications? (i.e. WHO Collaborating Centre, OIE Reference Laboratory, FAO Reference Laboratory/ Collaborating Centre)

4. Completed consolidating dangerous pathogens and toxins into a minimum number of facilities.

a. Has the country considered consolidating the locations for dangerous pathogens and toxins and, if so, has that been implemented?

i. If not, will consolidation be considered?

b. Have collections of dangerous pathogens been consolidated into a minimum number of facilities?

5. Employing diagnostics that preclude culturing dangerous pathogens.

a. Does the country utilize diagnostic tests that eliminate the need for culturing dangerous pathogens?

6. Implementing oversight and enforcement mechanism, and ministries have made available adequate funding to support the comprehensive national biosafety and biosecurity system.

a. Are there mechanisms for oversight, enforcement and attribution for biosecurity legislation, regulations and/or guidelines? What about for biosafety?

b. Does the country have funding for these activities? Is the funding source sustainable?

P.6.2 Biosafety and biosecurity training and practices

1. Country has a training program in place at all facilities housing or working with dangerous pathogens and toxins.
    a. Is biosecurity training in place across all facilities housing or working with dangerous pathogens? What about biosafety training?
    b. Is a common curriculum used for biosecurity training across all facilities housing or working with dangerous pathogens? What about for biosafety?
2. Training on biosafety and biosecurity has been provided to staff at all facilities that maintain or work with dangerous pathogens and toxins.
    a. Does your country conduct needs assessments for biosafety and biosecurity trainings? How often?
    b. How often is staff trained on biosecurity procedures? What about biosafety?
    c. How often is staff tested or exercised on biosecurity procedures? What about biosafety?
    d. How are these exercises monitored and assessed?
    e. Do these exercises include a process to document successes and areas for improvement?
    f. Are there corrective action plans in place?
3. Country is implementing a train-the-trainers program.
    a. Does the country have a train-the-trainer program for biosafety and biosecurity?
4. Country has in place sustained academic training in institutions that train those who maintain or work with dangerous pathogens and toxins.
    a. Do academic institutions in the country have biosafety training programs in place for those training to work with dangerous pathogens?
5. Country has funding and capacity to sustain biosafety and biosecurity training.
    a. Does the country have funding for these activities? Is the funding source sustainable?

Questions for facilities and biosafety equipment maintenance

1. Are the new facilities planned with long-term commitment of resources for operation and maintenance and formally commissioned before opening?
2. Can the biosafety cabinets (BSC) be serviced locally?
3. Are there sufficient national resources (budget and human) to ensure proper and timely maintenance of facilities and equipment?

Additional questions:

1. Is there induction and refresher training for all laboratory staff on biosafety and biosecurity?
2. Is there an appropriate waste management policy?
3. Is there a mechanism to ensure and monitor staff competence and proper training at all laboratories?

4. Does each facility have sufficient PPE based upon the local risk assessment?
5. Is there a framework to document, report, investigate and address any incidents and accidents at the facility and national levels?
6. Are national regulations in place and up-to-date for the transport of infectious substances (Categories A and B)?
    a. If yes, do local carriers ensure the transport of infectious substances according to the national regulations?
    b. Do the people responsible for the shipment of specimens have access to training on infectious substance transport?
        i. If yes, are these trainings in line with United Nations regulations on the transport of infectious substances?
7. Do laboratory personnel have equal access to occupational/worker health services in all facilities?
8. Is there a specific vaccination policy (pre-exposure prophylaxis) for laboratory personnel (Hepatitis B and other relevant diseases)?
9. Is post-exposure prophylaxis treatment provided to laboratory workers in all facilities?

Documentation or Evidence for Level of Capability:

- Documentation of dangerous pathogen collections housed in the country
- Establishment, enactment and enforcement of any relevant national legislation on biosafety & biosecurity
- Biosafety officers certified and stationed at all laboratories that have the potential to handle dangerous pathogens
- Policy document for biorisk or biosafety management in a facility is a written policy statement that is signed and reviewed annually
- Membership in good standing of a regional or international biosafety association
- OIE Country PVS report (also included for Prevent 2- Zoonoses)
- OIE Country PVS Gap Analysis report (also included for Prevent 2- Zoonoses)
- OIE Country PVS Laboratory Mission Report

Glossary:

- Biosafety: Laboratory biosafety describes the containment principles, technologies and practices that are implemented to prevent the unintentional exposure to pathogens and toxins, or their accidental release.
- Biosecurity: Laboratory biosecurity describes the protection, control and accountability for valuable biological materials within laboratories as well as information related to these materials and dual-use research, in order to prevent their unauthorized access, loss, theft, misuse, diversion or intentional release.
- Dangerous Pathogens and toxins: As an example, the informal Australia Group provides a List of Human and Animal Pathogens and Toxins for Export Control (http://www.australiagroup.net/en/human_animal_pathogens.html)

IMMUNIZATION

Target: A functioning 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.

As Measured by: 90% -95% coverage of the country's twelve-month-old population with at least one dose of measles-containing vaccine as demonstrated by coverage surveys or administrative data.

Desired Impact: Effective protection through achievement and maintenance of immunization against measles and other epidemic-prone vaccine-preventable diseases (VPDs). Measles immunization is emphasized because it is widely recognized as a proxy indicator for overall immunization against VPDs. Countries will also identify and target immunization to populations at risk of other epidemic-prone VPDs of national importance (e.g., cholera, Japanese encephalitis, meningococcal disease, typhoid, and yellow fever). In the case of some diseases that are transferable from cattle to humans, such as anthrax and rabies, animal immunization should also be taken into account.

Score	Indicators - Immunization	
	P.7.1 Vaccine coverage (measles) as part of national program	**P.7.2 National vaccine access and delivery**
No Capacity - 1	Less than 50% of the country's 12-month-old population has received at least one dose of measles containing vaccine, as demonstrated by coverage surveys or administrative data; plan is in place to improve coverage, including supplemental immunization activities	No plan is in place for nationwide vaccine delivery OR plans have been drafted to provide vaccines throughout the country to target populations but not implemented; inadequate vaccine procurement and forecasting lead to regular stock outs at the central and district level.
Limited Capacity - 2	50-69% of the country's 12-month-old population has received at least one dose of measles containing vaccine, as demonstrated by coverage surveys or administrative data; plan is in place to reach 90% within the next five years to include supplemental immunization activities	Implementation has begun to maintain cold chain for vaccine delivery, but is available in fewer than 40% of districts in country OR vaccine delivery (maintaining cold chain) is available to less than 40% of the target population in the country; inadequate vaccine procurement and forecasting lead to occasional stock outs at the central and district level
Developed Capacity - 3	70-89% of the country's 12-month-old population has received at least one dose of measles containing vaccine, as demonstrated by coverage surveys or administrative data; plan is in place to reach 90% within the next three years	Vaccine delivery (maintaining cold chain) is available in 40-59% of districts within the country OR Vaccine delivery (maintaining cold chain) is available to 40-59% of the target population in the country; vaccine procurement and forecasting leads to no stock outs of vaccines at central level and occasional stock outs at district level
Demonstrated Capacity - 4	90% of the country's 12-month-old population has received at least one dose of measles containing vaccine, as demonstrated by coverage surveys or administrative data. 80% of all sub-national (districts/provinces) units covered.	Vaccine delivery (maintaining cold chain) is available in 60-79% of districts within the country OR Vaccine delivery (maintaining cold chain) is available in 60-79% of the target population in the country; functional vaccine procurement and forecasting lead to no stock outs at the central level and rare stock outs at the district level.
Sustainable Capacity - 5	95% of the country's 12-month-old population has received at least one dose of measles containing vaccine, as demonstrated by coverage surveys or administrative data; or 90% of the country's 12-month-old population has received at least one dose of measles containing vaccine and the trajectory of progress, plans and capacities are in place to achieve 95% coverage by 2020. More than 80% of all sub-national (districts/provinces) units are covered.	Vaccine delivery (maintaining cold chain) is available in greater than 80% of districts within the country OR Vaccine delivery (maintaining cold chain) is available to more than 80% of the national target population; systems to reach marginalized populations using culturally appropriate practices are in place; vaccine delivery has been tested through a nationwide vaccine campaign or functional exercise; functional procurement and vaccine forecasting results in no stock-outs

Notes: N/A

Contextual Questions:

- Please describe if there are nationally important other immunizations outside the scope of the WHO Global Vaccine Action Plan (e.g., cholera, Japanese encephalitis, meningococcal disease, typhoid, and yellow fever or any other)
- Is public perception monitored on the topic of immunizations? Do vaccination campaigns address perception issues?

Technical Questions:

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

1. Does the country have a national-level immunization program or plan?
    a. What vaccine preventable diseases are covered by this program or plan?
    b. Please list the target rates for coverage for each of these vaccines.
    c. Is the country's national vaccine action plan aligned with the WHO Global Vaccine Action Plan?
    d. Does the country's plan take into account zoonoses of national concern?
    e. Is immunization mandatory or voluntary?
2. What programs or incentives are in place to encourage/support routine vaccination?
3. What factors discourage/hinder routine vaccination?
4. Please describe the systems used to monitor vaccine coverage.
    a. Is the % coverage with MCV and DTP tracked for the population?
    b. Which offices or agencies are involved in monitoring vaccine coverage for the country?
    c. How often is vaccine coverage measured?
    d. What is the source and quality of the data used as denominator in coverage estimates?
    e. Which systems do you have in place to monitor the quality of coverage data?
5. Is there specific support (monetary and staffing) for data gathering /reporting?

P.7.2 National vaccine access and delivery

1. Please describe how national systems ensure continuous cold chains as necessary for vaccine delivery throughout the country.
2. What is the structure and mechanisms which are in place to ensure sustainable supply to enable a successful program?
3. Please describe the most recent national vaccine campaign(s) or any recent functional exercises geared towards vaccine distribution and/or administration in the country.
4. Is there specific support (monetary and staffing) for immunization delivery?

Documentation or Evidence for Level of Capability: N/A

References:

- WHO EPI Program: http://www.who.int/immunization/programmes_systems/supply_chain/benefits_of_immunization/en/
- WHO Measles and Polio eradication programs
- WHO Global Vaccine Action Plan http://www.who.int/immunization/global_vaccine_action_plan/en/

DETECT

NATIONAL LABORATORY SYSTEM

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

As Measured by: A nationwide laboratory system able to reliably conduct at least five of the 10 core tests on appropriately identified and collected outbreak specimens transported safely and securely to accredited laboratories from at least 80 percent of intermediate level/districts in the country.

Desired Impact: Effective use of a nationwide laboratory system capable of safely and accurately detecting and characterizing pathogens causing epidemic disease, including both known and novel threats, from all parts of the country. Expanded deployment, utilization and sustainment of modern, safe, secure, affordable and appropriate diagnostic tests or devices established.

Score*	Indicators - National Laboratory System			
	D.1.1 Laboratory testing for detection of priority diseases	**D.1.2 Specimen referral and transport system**	**D.1.3 Effective modern point of care and laboratory based diagnostics**	**D.1.4 Laboratory Quality System**
No Capacity – 1	National laboratory system is not capable of conducting any core tests.	No system is in place for transporting specimens from intermediate level/ districts to national laboratories, only ad hoc transporting.	No evidence of use of rapid and accurate point of care and laboratory based diagnostics. No tier specific diagnostic testing strategies are documented.	There are no national laboratory quality standards
Limited Capacity – 2	National laboratory system is capable of conducting 1-2 core tests	System is in place to transport specimens to national laboratories from less than 50% of intermediate level/districts in country for advanced diagnostics	Minimal, laboratory diagnostic capability exists within the country, but no tier specific diagnostic testing strategies are documented. point of care diagnostics being used for country priority diseases	National quality standards have been developed but there is no system for verifying their implementation
Developed Capacity – 3	National laboratory system is capable of conducting 3-4 core tests	System is in place to transport specimens to national laboratories from 50- 80% of intermediate level/districts within the country for advanced diagnostics	Tier specific diagnostic testing strategies are documented, but not fully implemented. Country is proficient in classical diagnostic techniques including bacteriology, serology and PCR in select labs but has limited referral and confirmatory processes. Country is using point of care diagnostics for country priority diseases, and at least one other priority disease.	A system of licensing of health laboratories that includes conformity to a national quality standard exists but it is voluntary or is not a requirement for all laboratories.
Demonstrated Capacity – 4	National laboratory system is capable of conducting five or more of the ten core tests	System is in place to transport specimens to national laboratories from at least 80% of intermediate level/districts within the country for advanced diagnostics	Country has tier specific diagnostic testing strategies documented and fully implemented, a national system of sample referral and confirmatory diagnostics culminating in performance of modern molecular or serological techniques at national and/or regional laboratories. Country is using point of care diagnostics according to tier specific diagnostic testing strategies for diagnosis of country priority diseases	Mandatory licensing of all health laboratories is in place and conformity to a national quality standard is required.

Sustainable Capacity – 5	In addition to achieving "demonstrated capacity", country has national system for procurement and quality assurance	Demonstrated capability plus, transport specimens to/from other labs in the region; specimen transport is funded from host country budget	Country has sustainable capability for performing modern molecular and serological techniques as part of a national system of sample referral and confirmatory diagnostics. Country is using rapid and accurate point of care diagnostics as defined by tier specific diagnostic testing strategies. Country is also engaging formally other reference laboratories for testing capacity not available in country where needed to supplement the national diagnostic testing strategies for seven or more of ten lab tests required for priority diseases Country is able to sustain this capability on its own (no more than 20% dependence on donor funding).	Mandatory licensing of all health laboratories is in place and conformity to an international quality standard is required.

* For full scores, capabilities should be separately evaluated both in the human and animal livestock sectors and mechanisms for regular comparison and joint policy-development in a One-Health fashion should be in place. For final scores, the average should be taken.

Notes:

- The indicators refer to national laboratory capacity for the country.
- The national laboratory system should include:
  - Ability to conduct at least five of the ten core tests defined under the glossary in this section (see page 39);
  - Ability to transport specimens safely and quickly from 80% or more of intermediate levels/districts to national laboratory facilities for advanced diagnostics;
  - Ability to conduct higher level diagnostic testing at national laboratories or agreements with regional networks to ensure testing is available.
- Core tests can include local priority tests determined by country-selected indicator pathogens on the basis of major national public health concern.

Contextual Questions:

1. Which of the ten core tests is the country capable of conducting?
2. Please describe structure of the laboratory system, including number of labs, at local, intermediate levels/district, and national level.
   a. How many reference labs exist and for which microbes?
   b. Do local clinicians have the custom of using the laboratory system? Are there national guidelines for clinicians on which microbiological tests should be taken in specific syndromes like severe pneumonia, severe diarrhoea or suspected meningitis (for example)

c. What systems exist for getting laboratory results back to practitioners? How long does this take?
d. What percentage of the population has access to laboratory services for the ten priority diseases?

3. Have national laboratories been accredited?
   a. If yes, to what standard?
   b. Are guidelines and protocols for quality management system enforced and in use by public and animal health laboratories?
   c. Is there a national body that oversees Internal Quality Controls and External Quality Assessment schemes for public health laboratories at all levels?
   d. Are all laboratories enrolled in EQA program for the tests they perform to detect any of the ten priority diseases?
4. How is laboratory data on zoonotic diseases shared between human and animal health laboratories? Are the two data systems interoperable? (please see related questions for Prevent 2- Zoonotic Disease)
5. Is Personal Protective Equipment available for laboratory staff?
   a. How is availability of PPE tracked for laboratories?
   b. Please describe training procedures for PPE use in national laboratories
6. What biosecurity/biosafety training is provided to laboratory workers? (please see related technical questions for Prevent - Biosafety and Biosecurity)

Technical Questions:

D.1.1 Laboratory testing for detection of priority diseases

1. Is there a set of national diagnostic algorithms for performance of core laboratory tests that has been aligned with international standards (i.e. WHO, CLSI, OIE)?
2. How many of the core tests for ten priority diseases are implemented effectively across the tiered laboratory network?
   a. Of the tests that cannot be conducted, are there plans and timelines in place to gain this capacity within the next year?
   b. Are there official agreements with labs outside of the country for specialized testing not available in country?
3. Do labs have required equipment (based on the testing appropriate for the level in the tiered lab network) to support performance of core laboratory tests? Are maintenance contracts in place for key equipment and preventive maintenance implemented regularly?
4. How does the country ensure standardization of testing? Do national laboratories send out samples for testing validation of more local/regional labs?

D.1.2 Specimen referral and transport system

1. Is the specimen referral network documented for each of the tests necessary to detect and confirm etiologies of ten priority diseases?
2. Is there proof of functioning referral system available? For example, data on the number of isolates/samples submitted to national reference lab for key disease(s) per 100 000 population.

3. Please describe the system for specimen transport from intermediate/district levels to reference laboratories and national laboratories.
    a. Are standardized SOPs in place for specimen collection, packaging, and transport?
    b. Is the specimen transport, eg, courier contracts supported by MOH or partners?
4. Does the host country participate in a regional (international) laboratory network?

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

1. Is there a plan in place to improve the availability of point of care diagnostics at clinical sites in the country?
2. Does the MoH/MoA have in-country production and/or procurement processes for acquiring necessary media and reagents for performance of core laboratory tests?

D.1.4 Laboratory Quality System

1. Is there a national body in charge of laboratory licensing?
2. Is there a national body in charge of laboratory inspection?
    a. If yes, please describe the inspection mechanism (frequency, procedures, sanctions, etc.)
3. Is there a national body in charge of laboratory certification (e.g. using ISO 9001)?
    a. If yes, please provide name(s).
4. Is there a national body in charge of laboratory accreditation (e.g. using ISO 15189)?
    a. If yes, please provide name(s).
    b. If no, do laboratories use services of foreign national or regional accreditation bodies?
    c. If yes, please provide name(s).
5. Are some laboratories accredited for disease-specific testing by WHO (e.g. polio, measles, HIV genotyping)?
6. Please provide number of laboratories certified or accredited and specify to which standard.
7. Is there a specific national document which describes the registration procedure for in vitro diagnostic medical devices (IVD, i.e. kits and reagents)?
8. Is there a national regulatory authority responsible for in vitro diagnostic device (e.g. reagents) qualification or registration?
    a. If yes, please provide a summary of the qualification or registration mechanisms.
9. Besides the inspection, certification or accreditation detailed above is any other kind of supervision organized?
    a. If yes or partial, describe the supervision plan and procedures (e.g. through specific networks like TB control programme or surveillance programmes)
10. Are there standardized supervision checklists or procedures?
11. When supervised, do the laboratories receive a report after each supervision?

12. Are there indicators to measure the progress in laboratory test quality? Please list these indicators
13. Does your country have a national EQA programme (proficiency-testing or rechecking) in the following areas:
    a. Bacteriology?
    b. Virology?
    c. Serology?
    d. Parasitology?
    e. Biochemistry
    f. Haematology?
    g. Anatomical pathology?
    h. Cytogenetic?
    i. Transfusion medicine?
14. Please describe the national EQA programme/s organization by providing for each: name of the programme, contact person/s, one line of description.
15. If applicable, is participation in national EQA programmes/s mandatory for public laboratories?
16. If applicable, is participation in national EQA programmes/s mandatory for private laboratories?
17. Percentage of public laboratories participating in the national EQA scheme (EQAS)?
18. Percentage of private laboratories participating in the national EQAS?
19. Are corrective actions organized when assessment result is poor?

Documentation or Evidence for Level of Capability:

- National Laboratory Strategic Plan defining tiered laboratory network
- National Laboratory Policy
- Documented list of top ten priority diseases and three core syndromes for targeted improvement of prevention, detection and response
- Certificates of accreditation for national laboratories and/or EQA results within previous six months for core tests
- Documented specimen referral routes for detection/confirmation of top ten priority diseases
- Plan for transporting specimens safely throughout the country

References:

- International Health Regulations: What Gets Measured Gets Done (includes listing of the 10 core tests) http://wwwnc.cdc.gov/eid/article/18/7/12-0487-t2
- WHO Laboratory Assessment Tool. WHO/HSE/GCR/LYO/2012.2 http://www.who.int/ihr/publications/laboratory_tool/en/

Glossary:

- 10 core tests: The list of 10 core tests in each country includes six testing methods selected according to the IHR immediately notifiable list and the WHO Top Ten Causes of Death in low-income countries: polymerase chain reaction (PCR) testing for Influenza virus; virus culture for poliovirus; serology for HIV; microscopy for mycobacterium tuberculosis; rapid diagnostic testing for plasmodium spp.; and bacterial culture for Salmonella enteritidis serotype Typhi. These six methods are critical to the detection of epidemic-prone and emerging diseases, and competency in these methods is indicated by the successful testing for the specific pathogens listed. The remaining four tests should be selected by the country on the basis of major national public health concerns.
- Transport 'system': accurately collect and maintain specimen integrity and is written in SOP
- 'Ad hoc' transport system: no SOP on how to transport sample
- Rapid: Diagnostic test performed and result obtained within 12-48 hours or otherwise timely for triggering and guiding control measures
- Modern: Novel molecular and cellular methods capable of prompt and accurate identification of pathogens in time-saving and cost-effective manner.

REAL TIME SURVEILLANCE

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 (local and intermediate), 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 can include epidemiologic, clinical, laboratory, environmental testing, product safety and quality, and bioinformatics data; and advancement in fulfilling the core capacity requirements for surveillance in accordance with the IHR and the OIE standards.

As Measured by: Surveillance for at least three core syndromes indicative of potential public health emergencies conducted according to international standards.

Desired Impact: A functioning public health surveillance system capable of identifying potential events of concern for public health and health security, and 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. Countries will support the use of interoperable, interconnected systems capable of linking and integrating multi-sectoral surveillance data and using resulting information to enhance the capacity to quickly detect and respond to developing biological threats. Foundational capacity is necessary for both indicator-based (including syndromic) surveillance and event-based surveillance, in order to support prevention and control activities and intervention targeting for both established infectious diseases and new and emerging public health threats. Strong surveillance will support the timely recognition of the emergence of relatively rare or previously undescribed pathogens in specific countries.

Score	Indicators - Real Time Surveillance			
	D.2.1 Indicator and event based surveillance systems	**D.2.2 Interoperable, interconnected, electronic real-time reporting system**	**D.2.3 Analysis of surveillance data**	**D.2.4 Syndromic surveillance systems**
No Capacity - 1	No indicator or event-based surveillance systems exist	No interoperable, interconnected, electronic real-time reporting system exists	No reports related to data collection	No syndromic surveillance systems exist
Limited Capacity - 2	Indicator and event-based surveillance system(s) planned to begin within a year	Country is developing an interoperable, interconnected, electronic real-time reporting system, for either public health or veterinary surveillance systems	Sporadic reports related to data collection with delay	Syndromic surveillance system(s) planned to begin within the next year; policy/legislation is in place to allow for syndromic surveillance
Developed Capacity - 3	Indicator OR event-based surveillance system(s) in place to detect public health threats	Country has in place an inter-operable, inter-connected, electronic reporting system, for either public health or veterinary surveillance systems. The system is not yet able to share data in real-time.	Regular reporting of data with some delay; ad-hoc teams put in place to analyse data	Syndromic surveillance system(s) in place to detect 1-2 core syndromes indicative of public health emergencies
Demonstrated Capacity - 4	Indicator and event-based surveillance system(s) in place to detect public health threats	Country has in place and interoperable, interconnected, electronic real-time reporting system, for public health and/or veterinary surveillance systems. The system is not yet fully sustained by the host government.	Annually or monthly reporting; attributed functions to experts for analysing, assessing and reporting data	Syndromic surveillance system(s) in place to detect three or more core syndromes indicative of public health emergencies
Sustainable Capacity - 5	In addition to surveillance systems in country, using expertise to support other countries in developing surveillance systems and provide well-standardized data to WHO and OIE for the past five years without significant external support	Country has in place an inter-operable, interconnected, electronic real-time reporting system, including both the public health and veterinary surveillance systems which is sustained by the government and capable of sharing data with relevant stake-holders according to country policies and international obligations.	Systematic reporting; dedicated team in place for data analysis, risk assessment and reporting	In addition to surveillance systems in country, using expertise to support other countries in developing surveillance systems

Notes:

- The indicator refers to surveillance capacity for the country.
- The real-time surveillance system should include:
  - ability to conduct surveillance for at least three core syndromes indicative of a public health emergency;
  - ability to provide reports and data to high level public health decision makers in country, and feedback to lower levels implementing control programs;
  - linkages to laboratory and other information systems to provide a complete surveillance picture.
- Event-based surveillance is the organized and rapid capture of information about events that are a potential risk to public health. This information can be rumours and other ad-hoc reports transmitted through formal channels (i.e. established routine reporting systems) and informal channels (i.e. media, health workers and nongovernmental organizations reports) and can supplement traditional syndromic surveillance

Contextual Questions:

1. Does the country have a list of notifiable diseases?

Technical Questions:

D.2.1 Indicator and event based surveillance systems

1. Describe event-based surveillance in-country.
   a. Describe sources utilized by event based surveillance systems and mechanisms of collecting data (paper, fax, electronic, phone?).
   b. Does event based surveillance exist at any subnational (intermediate and local) levels?
   c. Describe indicator based surveillance system(s) and mechanisms of collecting data.
2. Describe data validation and quality assurance systems/efforts.

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

1. How is public health staff trained on disease surveillance systems?
2. How is clinical staff trained to report on notifiable diseases?
3. Does the public health staff on intermediate levels/regional and/or national levels have the skills to analyse the surveillance data to create information triggering/ supporting action?
4. How does the country utilize electronic reporting systems for notifiable diseases for human health and animal health?
5. Are these systems shared between sectors, or independent?
6. If no electronic reporting systems exist in the country, are there plans to implement electronic reporting in the future?
7. Describe the reporting feedback to intermediate levels/regional and local levels.

8. Describe reporting to national and intermediate levels/regional stakeholders.
9. Describe public reporting.

D.2.3 Integration and analysis of surveillance data

1. Describe how laboratory data feeds into the surveillance systems.
    a. Does the surveillance system collect ongoing/real time laboratory data that is connected to MoH systems?
    b. Are standardized forms (electronic or otherwise) available to collect this data?
    c. Does the MoH share laboratory data with other ministries/agencies?
    d. Is there a centrally located mechanism for integrating data from clinical case reporting and data from clinical or reference microbiological laboratories?

D.2.4 Syndromic surveillance systems

1. Describe syndromic surveillance systems that are in place within the country:
    - Describe various syndromes and pathogens that are detected and reported.
    - Describe how many sites participate in each surveillance system.
    - Describe how data is validated.
    - Describe any syndromic surveillance systems that utilize electronic reporting.
    - Describe reports that are produced by each surveillance system and how they are used by public health decision makers. Are these reports shared with any other Ministries within the country?
    - Please describe any linkages that exist between systems at a national level.

Additional questions on indicator- based surveillance:

1. Describe indicator-based surveillance system(s) and mechanisms of collecting data.
    a. List of priority disease, conditions and case definitions.
    b. Completeness and timeliness of reporting from at least 80% of all reporting units.
2. Describe data validation and quality assurance systems/efforts.

Documentation or evidence for level of capability:

- Samples of surveillance reports used by public health decision-makers in country
- Listing of core syndromes indicative of public health emergency
- Plans for enhancing syndromic surveillance
- Plans for developing or enhancing event-based surveillance
- OIE Reports (World Animal Health Information System - WAHIS)

References:

- WHO Guide to Establishing Event Based Surveillance http://apps.who.int/iris/bitstream/10665/112667/1/WHO_HSE_GCR_LYO_2014.4_eng.pdf?ua=1
- International Health Regulations (2005) Includes lists of disease that have "…demonstrated ability to cause serious public health impact " http://whqlibdoc.who.int/publications/2008/9789241580410_eng.pdf
- OIE Terrestrial Animal Health Code - Section 1
- OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals: http://www.oie.int/en/international-standard-setting/terrestrial-manual/access-online/

Glossary:

- Real-time surveillance: Daily or max weekly collection, consolidation and evaluation of public health and/or veterinary data
- Three Core Syndromes: Internationally recognized standards for syndromic surveillance are available for the following five syndromes: severe acute respiratory syndrome, acute flaccid paralysis, acute haemorrhagic fever, acute watery diarrhoea with dehydration, and jaundice with fever. The three syndromes will be chosen depending on national disease control priorities. These surveillance systems should include early warning surveillance data and laboratory findings, which should be analysed by trained epidemiologists
- Interoperable: Describes the extent to which systems and devices can exchange data, and interpret that shared data. For two systems to be interoperable, they must be able to exchange data and subsequently present that data such that it can be understood by a user (definition by Healthcare Information and Management Systems Society).

REPORTING

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

As Measured by: Number of countries trained for reporting of potential public health events of international concern to WHO and to other official reporting systems such as OIE-WAHIS. (and/or) Number of National IHR Focal Points connected to the learning package on reporting to WHO.

Desired Impact: Countries and their National IHR Focal Points, OIE Delegates, and WAHIS National Focal Points will have access to a toolkit of best practices, model procedures, reporting templates, and training materials to facilitate rapid (within 24 hours) notification of events that may constitute a PHEIC to WHO / listed diseases to OIE and will be able to rapidly (within 24/48 hours) respond to communications from these organizations.

Score	Indicators - Reporting	
	D.3.1 System for efficient reporting to WHO, FAO and OIE	**D.3.2 Reporting network and protocols in country**
No Capacity - 1	No national IHR focal point, OIE Delegate and/or WAHIS National Focal Point has been identified and / or identified focal point/delegate does not have access to learning package and best practices as provided by WHO, OIE and FAO.	Country does not have protocols or processes for reporting to WHO, OIE or FAO; does not have plans to establish within the next year plans and protocols for reporting
Limited Capacity - 2	Country has identified National IHR Focal Point, OIE delegates and WAHIS National Focal Points; focal point is linked to learning package and best practices as provided by WHO, OIE and FAO	Country is in the process of developing and establishing protocols, processes, regulations, and/or legislation governing reporting to start implementation within a year.
Developed Capacity - 3	Country has demonstrated ability to identify a potential PHEIC and file a report to WHO based on an exercise or real event, and similarly to the OIE for relevant zoonotic disease	Country has established protocols, processes, regulations, and/or legislation governing reporting and processes for multisectoral coordination in response to a potential PHEIC to WHO and to the OIE for relevant zoonotic disease.
Demonstrated Capacity - 4	Country has demonstrated ability to identify a potential PHEIC and file a report to WHO within 24 hours and similarly to the OIE for relevant zoonotic disease, based on an exercise or real event	Country demonstrates timely reporting of a potential PHEIC to WHO and to the OIE for relevant zoonotic disease in alignment with national and international standards in selected intermediate levels (districts or regions), based on an exercise or real event.
Sustainable Capacity - 5	Country has demonstrated ability to identify a potential PHEIC and file a report within 24 hours, and similarly to the OIE for relevant zoonotic disease, and has a multisectoral process in place for assessing potential events for reporting	Country demonstrates timely reporting of a potential PHEIC to the WHO from district to national and international level and to the OIE for relevant zoonotic disease (based on an exercise or real event); country has a sustainable process for maintaining and improving reporting and communication capabilities and communication mechanisms are backed by established documentation (e.g. protocols, regulations, legislation.)

Notes:

- Not all countries will have reported a potential PHEIC to the WHO or reported to the OIE for relevant zoonotic disease
- NOTE: all questions should be answered to reflect human and zoonotic animal diseases

Contextual questions: N/A

Technical Questions:

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

1. Which ministry or office within the country has been identified and notified to the WHO as the IHR NFP?
    a. Is the IHR national focal point currently operational?
    b. Is there an operational OIE contact point?
    c. Are food safety issues due to microbiological origin reported through the IHR NFP and to the OIE?
    d. Is there a mechanism to ensure that the IHR NFP and OIE contact points exchange information when needed (e.g. for zoonotic diseases)?
    e. Please describe the training that the IHR NFP/OIE contact point responsible person(s) have undergone for this specific role
    f. Please list the ministries that these focal points represents towards the WHO/OIE and who report through the NFP (e.g. ministry of health, ministry of agriculture).
2. What are the mechanisms for public health, animal health and security authorities to make decisions on reporting?
3. Please describe if the country has multilateral regional (international) or bilateral neighbouring country reporting requirements. If yes, specify.
4. Is there anything which limits the performance of the IHR NFP? (may include quality and timeliness of information received, obstacles caused by coordination with other levels and sectors)
    a. Does the IHR NFP use the informal consultation mechanisms with WHO under Article 8 of the IHR?
    b. Does the IHR NFP use the bilateral exchange mechanisms with other IHR NFPs?

D.3.2 Reporting network and protocols in country

1. Please describe most recent exercise (or event) that tested the country's systems to identify and report on a potential public health emergency of international concern (PHEIC).
    a. How was the health event identified? What surveillance systems were linked?
    b. How were public health decision-makers and other leadership consulted in the decision-making process?

c. Which ministries were engaged in the exercise or event? (ministry of health? defense? agriculture?)
d. If the country has not yet exercised PHEIC reporting, please identify if there are any plans to do so within the next year.

2. Has the country passed legislation or other policies related to procedures and/or approvals for reporting on a potential PHEIC to the WHO? If so, please describe the parties involved in approvals as well as the major steps in approvals. If possible, please provide a copy of relevant legislation or policies.
3. Does the country have standard operating procedures in place for approving and reporting on a potential PHEIC to WHO?

Documentation or Evidence for Level of Capability:

- OIE Reports (World Animal Health Information System - WAHIS)
- IHR reports to the World Health Assembly
- Legislation, protocols or other policies related to reporting to WHO, OIE or FAO
  - World Animal Health Information Systems (WAHIS)

References:

- WHO IHR Annex 2
- OIE Terrestrial Animals and Health Code – Section 1
- European Union Decision 1082/EU/2013, Early Warning and Response System

WORKFORCE DEVELOPMENT

Target: State parties should have skilled and competent health personnel for sustainable and functional public health surveillance and response at all levels of the health system and the effective implementation of the IHR (2005). A workforce includes physicians, animal health or veterinarians, biostatisticians, laboratory scientists, farming/livestock professionals, with an optimal target of one trained field epidemiologist (or equivalent) per 200,000 population, who can systematically cooperate to meet relevant IHR and PVS core competencies.

As Measured by: A workforce including physicians, animal health or veterinarians, biostatisticians, laboratory scientists, farming/livestock professionals, with an optimal target of one trained field epidemiologist (or equivalent) per 200,000 population, who can systematically cooperate to meet relevant IHR and PVS core competencies.

Desired Impact: Prevention, detection, and response activities conducted effectively and sustainably by a fully competent, coordinated, evaluated and occupationally diverse multi-sectoral workforce.

Score	Indicators - Workforce Development		
	D.4.1 Human resources are available to implement IHR core capacity requirements	**D.4.2 Applied epidemiology training program in place such as FETP**	**D.4.3 Workforce strategy**
No Capacity - 1	Country doesn't have multidisciplinary HR capacity required for implementation of IHR core capacities	No FETP or applied epidemiology training program established	No health workforce strategy exists
Limited Capacity - 2	Country has multidisciplinary HR capacity (epidemiologists, veterinarians, clinicians and laboratory specialists or technicians) at national level	No FETP or applied epidemiology training program is established within the country, but staff participate in a program hosted in another country through an existing agreement (at Basic, Intermediate and/or Advanced level)	A healthcare workforce strategy exists but does not include public health professions (e.g. epidemiologists, veterinarians and laboratory technicians)
Developed Capacity - 3	Multidisciplinary HR capacity is available at national and intermediate level	One level of FETP (Basic, Intermediate, or Advanced) FETP or comparable applied epidemiology training program in place in the country or in another country through an existing agreement	A public health workforce strategy exists, but is not regularly reviewed, updated, or implemented consistently
Demonstrated Capacity - 4	Multidisciplinary HR capacity is available as required at relevant levels of public health system (e.g. epidemiologist at national level and intermediate level and assistance epidemiologist (or short course trained epidemiologist) at local level available)	Two levels of FETP (Basic, Intermediate and/or Advanced) or comparable applied epidemiology training program(s) in place in the country or in another country through an existing agreement	A public health workforce strategy has been drafted and implemented consistently; strategy is reviewed, tracked and reported on annually
Sustainable Capacity - 5	Country has capacity to send and receive multidisciplinary personnel within country (shifting resources) and internationally	Three levels of FETP (Basic, Intermediate and Advanced) or comparable applied epidemiology training program(s) in place in the country or in another country through an existing agreement, with sustainable national funding	"Demonstrated Capacity" has been achieved, public health workforce retention is tracked and plans are in place to provide continuous education, retain and promote qualified workforce within the national system

Notes

- The indicator refers to public health workforce capacity for the country.
- Public health workforce planning should include:
  - epidemiologists, biostatisticians, information systems specialists, veterinarians, and other public health personnel;
  - indication of trainings that have been provided at a national level or are available to staff from a partner entity;
  - description of long-term training programs that are available to help expand the pipeline of qualified public health professionals within the country.
- FETP Basic Level Training: For local health staff, it consists of limited classroom hours interspersed throughout 3–5 month on the job field assignments to build capacity in conducting timely outbreak detection, public health response, and public health surveillance.
- FETP Intermediate Level Training: For intermediate levels (district/regions) epidemiologists, it consists of limited classroom hours interspersed throughout 6- 9 month on the job mentored field assignments to build capacity in conducting outbreak investigations, planned epidemiologic studies, and public health surveillance analyses and evaluations.
- FETP Advanced Level Training: with a national focus for advanced epidemiologists, it consists of limited classroom hours interspersed throughout 24-month mentored field assignments to build capacity in outbreak investigations, planned epidemiologic studies, public health surveillance analyses and evaluations, scientific communication and evidence-based decision making for development of effective public health programming.
- Workforce development is a crosscutting element, and many other aspects of IHR implementation will depend on strong public health workforce.

Contextual questions: N/A

Technical Questions:

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

1. Describe current HR capacity in the country.
   a. What is the existing capacity on epidemiologists, clinicians, biostatisticians, information systems specialists, veterinarians, social scientists, laboratory technicians/specialists and other public health personnel for different level of the health system (local, intermediate and national).
   b. To what extent are these capacities available (only at national levels or below)?
   c. Does each local and/or intermediate level have some capacity on epidemiology, case management, laboratory etc.?
2. Describe how these multi-disciplinary team is formed and communicated to each other (at national level, intermediate level and peripheral levels)
   a. How are multi-disciplinary teams organized?
   b. Discuss the individual HR capacities:
      a. Epidemiology (including field epidemiology short and long term)
      b. Clinicians and clinical assistants
      c. Nursing

d. Laboratory specialist and technicians
e. Information specialists and assistants
f. Social scientist
g. Veterinarians and veterinary technicians
h. Other relevant public health personnel

Additional questions on field epidemiology capacity

1. Describe current field epidemiology capacity in-country.
   a. Describe the training program for field epidemiologists. Who conducts this training?
   b. How is field epidemiology capacity tracked in-country?
2. Describe how epidemiologists at the national, intermediate, and local levels communicate on a regular basis. Are there standard reporting connections between these levels?
3. Describe how epidemiologists at the national, intermediate, and local levels communicate during an infectious disease outbreak. Are there standard reporting connections between these levels during outbreaks?
4. How many trained field epidemiologists are available to support investigations throughout the country?
5. Does each intermediate level/district (or other similar administrative division) have field epidemiology capacity?

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

1. Is there an FETP or other standard Field Epidemiology Training Program in-country?
   a. Does the field epidemiology training program target current members of the public health workforce? Academic students? Both?
   b. Please provide measures on the number of FETP graduates in the country.
   c. Please describe the mentorship program for FETP residents.
   d. Is there a partnership with other countries in the region to share FETP graduates during emergency events?
2. Please describe any other long-term training programs that are available to help expand the pipeline of qualified public health professionals within the country
   a. For physicians (public health and/or clinical care)?
   b. For nurses (public health and/or clinical care)?
   c. For veterinarians (public health, agricultural and/or private practice)?
   d. For biostatisticians?
   e. For laboratory assistants and specialists?
   f. For farming/livestock professionals?

D.4.3 Workforce strategy

1. Please describe which career tracks are included in the workforce strategy (epidemiologists, veterinarians, laboratory assistants and specialists, doctors, nurses, other)?
2. What is the median number of years public health personnel have been on staff within the ministry and/or national institutes?
    a. Is attrition a concern for the national public health system (may be caused by aging employees, staff departures or other reasons)?
3. How is the workforce strategy being implemented and tracked?
    a. Please provide a copy of the strategy, if available.
    b. Please provide a copy of workforce strategy tracking report, if available.
4. Are there incentives in place to maintain the existing public health workforce within the country?
    a. Please describe efforts to retain the public health workforce.
    b. Are there specific incentives for any workforce specialties (may include physicians, nurses, veterinarians, biostatisticians laboratory assistants and specialists, or animal health professionals)?
5. How is the national public health workforce financed within the country?

Documentation or Evidence for Level of Capability:

- Sample field epidemiology training curriculum used in the country
- Public health workforce strategy, if available
- Annual reports based on workforce strategy

RESPOND

PREPAREDNESS

Targets: Preparedness includes the development and maintenance of national, intermediate and local or primary response 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 or primary response levels during a public health emergency.

Desired Impact: Emergency response operation up to sub-national (local and intermediate) level during public health emergency is successfully conducted in line with the emergency response plan with adequate support of resources and capacities.

Score	Indicators - Preparedness	
	R.1.1 Multi-hazard national public health emergency preparedness and response plan is developed and implemented	**R.1.2 Priority public health risks and resources are mapped and utilized.**
No Capacity – 1	National public health emergency preparedness and response plan is not available to meet the IHR core capacity requirements. (Annex 1A Article 2)	Public health risk and resources mapping is not done
Limited Capacity – 2	A multi-hazard national public health emergency preparedness and response plan to meet IHR core capacity requirements has been developed (Annex 1A Article 2)	A national risk assessment has been conducted to identify potential 'urgent public health events' and resource mapping has been done
Developed Capacity – 3	National public health emergency response plan(s) incorporates IHR related hazards and Points of Entry AND Surge capacity to respond to public health emergencies of national and international concern is available	National resources have been mapped (logistics, experts, finance etc..) for IHR relevant hazards and priority risks and plan for management and distribution of national stockpiles is in place
Demonstrated Capacity – 4	Procedures, plans or strategy in place to reallocate or mobilize resources from national and intermediate levels to support action at local response level (including capacity to scaling up the level of response)	National profiles on risks and resources developed and reviewed at least an annual basis and stockpiles (critical stock levels) for responding to priority biological, chemical and radiological events and other emergencies are accessible
Sustainable Capacity – 5	The national public health emergency response plan(s) is implemented /tested in actual emergency or simulation exercises and updated as needed.	The national risk profile and resources are assessed regularly to accommodate emerging threats.

Note: N/A

Contextual questions: N/A

Technical questions:

R.1.1 Multi-hazard national public health emergency preparedness and response plan is developed and implemented

1. Does the country have a national public health emergency preparedness and response plan?
    a. Does the plan have multi-hazard whole of society approach?
    b. Does the plan cover the IHR core capacity requirements of Annex 1A Article 2

2. Does the plan incorporate other IHR-related hazards?
3. Does the plan incorporate points of entry?
4. Is surge capacity available to respond to public health emergencies of national and international concern?
5. Describe the procedures, plans to relocate or mobilize resources from national and intermediate levels to support response at local level.
    a. What are those procedures and plans?
    b. What are the resources available and status of stockpiling?
    c. What is the mechanism to address the resource gaps?
6. Is the plan implemented or tested?
    a. Has the review been done after implementation and testing?
    b. What are the key findings (SWOT analysis)?
    c. Is the plan updated accordingly?
    d. Is the plan tested after revision or update?

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

1. Describe public health risk and resource mapping?
    a. When it was done and who was involved?
    b. What are the findings of the national risk assessment?
2. Describe the findings of the resources mapping.
    a. Does this mapping address IHR relevant hazards and priority risks?
    b. What is the status of logistics for these mapped risks?
    c. Do the stockpiles also ensure provisions for response to other IHR-related hazards?
    d. What is the status of experts?
    e. How the funding is ensured?
3. How often are national profiles on risk and resources reviewed and updated?
4. How often are national risk profile and resources assessed to accommodate?

References:

- Monitoring and Evaluation for Disaster Risk Reduction - http://www.un-spider.org/risks-and-disasters/sendai-framework-drr
- Sendai Framework for Disaster Risk Reduction 2015-2030

EMERGENCY RESPONSE OPERATIONS

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

As Measured by: Documentation that a public health EOC meeting the above criteria is functioning.

Desired Impact: Effective coordination and improved control of outbreaks as evidenced by shorter times from detection to response and smaller numbers of cases and deaths.

Score	Indicators - Emergency Response Operations			
	R.2.1 Capacity to Activate Emergency Operations	**R.2.2 Emergency Operations Centre Operating Procedures and Plans**	**R.2.3 Emergency Operations Program**	**R.2.4 Case management procedures are implemented for IHR relevant hazards.**
No Capacity - 1	No identified procedures have been developed to determine when to activate public health emergency operations	No EOC plans/procedures for Incident Management Structure (or equivalent) are in place	No exercises have been completed	No case management guidelines are available for priority epidemic-prone diseases[7]
Limited Capacity - 2	EOC point of contact is available 24/7 to guide response	EOC plans/procedures describing incident management structure (IMS) or equivalent structure are in place; plan describes key structural and operational elements for basic roles (including Incident management or command, Operations, Planning, Logistics and Finance)	Table top exercise has been completed to test systems and decision making	Case management guidelines are available for priority epidemic-prone diseases
Developed Capacity - 3	EOC staff team is trained in emergency management and PHEOC standard operating procedures and is available for response when necessary	In addition to meeting requirements of "limited capacity", EOC plans are in place for functions including public health science (epidemiology, medical and other subject matter expertise), public communications, partner liaison	Functional exercise has been completed to test operations capabilities but EOC has not yet been activated for a response. System is not yet capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency	Case management guidelines for other IHR relevant hazards[8] are available at relevant health system levels and SOPs are available for the management and transport of potentially infectious patients in the community and at PoE[9]
Demonstrated Capacity - 4	In addition to activities for "developed capacity", there is dedicated EOC staff that has received training and can activate a response within two hours	In addition to meeting "developed capacity", the following EOC plans are in place: concept of operations; Forms and templates for data collection, reporting, briefing; Role descriptions and job aids for EOC functional positions	EOC activated a coordinated emergency response or exercise within 120 minutes of the identification of a public health emergency; response utilized operations, logistic and planning functions	Case management, patient referral and transportation, and management and transport of potentially infectious patients are implemented according to guidelines and/or SOPs

[7] For the animal health sector, this information can be found in the country PVS report, Critical Competency card: II-6: Emergency response

[8] Nuclear, chemical, zoonotic and food safety

[9] As specified in Article 57, 2(d) IHR (2005)

Sustainable Capacity - 5	In addition to activities for "demonstrated capacity", exercises are conducted two or more times per year to test EOC activation	In addition to meeting "demonstrated capacity", response plans are in place that describe scaled levels of response with resource requirements for each level and procedures for acquiring additional resources	In addition to achieving demonstrated capacity, a follow up evaluation was conducted and corrective action plan was developed and implemented	In addition to demonstrated capacity, appropriate staff and resources (as defined by the country) is in place in management of relevant IHR-related emergencies

Notes

- The indicator refers to public health emergency operations for the country.
- The EOC should include:
  - information systems to connect public health decision makers to appropriate data sources;
  - communications equipment;
  - staff that are trained and capable of coordinating an emergency response.
- Emergency operations plans should be developed that can be scalable and flexible to address emerging disease threats.
- Exercises should test the capacity of the emergency operations systems and staff to coordinate a large response affecting multiple communities, and involving multi-sectoral coordination.
- Functional exercises should be held on an annual basis; additional drills, table-top exercise and simulations can supplement the functional exercises.

Contextual Questions:

1. Please describe the physical structure of the current public health emergency operations centre (EOC) at the national level, if applicable.
   a. If there is an EOC, please provide a floor plan and description of equipment.
   b. What is the total staff capacity for the EOC? Is there a plan in place to accommodate additional staff, if necessary?
   c. Is there a reliable power source for the EOC?
   d. Is there reliable communications structure for the EOC? Does this include internet, email, and phone capabilities?
   e. Is the organization able to convene participants from ministries and other national and multinational partners as appropriate?
2. During an emergency, is there a process for sharing scientific data and recommendations with policy makers and national leaders?
3. Is there a multisectoral commission or a multidisciplinary emergency response department for public health/animal health?
   a. Does this combine security, public health, veterinary, wildlife, and other experts?
   b. Has this team received public communication training?
   c. How often do these groups meet to discuss cross cutting issues?

4. How do subnational (intermediate and local) entities manage emergency response activities?
    a. Is there a role for public health, or is this a civil defence activity?
5. How do localities manage emergency response activities?
    a. Is there a role for public health, or is this a civil defence activity?
6. Is there a hotline people/clinicians can call for help on handling a disease of unknown origin?
    a. Is there a comparable system for animal disease support?

Technical Questions:

R.2.1 Capacity to Activate Emergency Operations

1. Describe scenarios or triggers for EOC activation. Are there multiple levels of EOC activation?
    a. Who decides the change of level?
2. Please describe roles for staff that have been identified to support EOC functions.
    a. Is there 24/7 coverage for emergency operations?
3. Please describe how EOC staff have been trained on emergency operations principles.
    a. How have response teams been trained?
    b. Is there a training program for EOC staff?
    c. Is there an emergency operations training curriculum for staff who support EOC functions?
    d. How are surge staff identified? Is there training available to surge staff in advance of a response? Is there "just in time" training available?

R.2.2 Emergency Operations Centre Operating Procedures and Plan

1. Please describe procedures that are in place for emergency operations.
    a. How often are procedures updated?
    b. How are records of procedures maintained and distributed?
    c. Is there a procedure in place for decision making?
2. When there is a national public health emergency, who serves as the Incident Manager for the EOC?
3. Describe the availability/dissemination for different target groups of the situational awareness and reports.

R.2.3 Emergency Operations Program

1. Please describe public health emergency operations exercises or activations that have been conducted within the past year.
    a. Please describe functional exercises that have been completed within the last year.
    b. Please describe table-top exercises that have been completed within the last year.
    c. Please describe any emergency activation within the last year.
    d. Please provide summary of any improvement plans, after action reports, or lessons learned documents that were completed as a result of these exercises or activations.
    e. How many times has the emergency operations centre been operated in the past five years?

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

1. Availability of case management guidelines for priority diseases and IHR relevant hazards at all health system levels.
2. Availability of SOPs (accordingly to national or international guidelines) for the management and transport of potentially infectious patients in the local level and point of entry.
3. Availability of patient referral and transportation mechanism with adequate resources (designated ambulances and SOPs).
4. Availability of appropriate staff trained in case management of IHR related emergencies.

Documentation or Evidence for Level of Capability:

- Floor plan of the EOC, and listing of available equipment
- Training plans for emergency operations staff
- Exercise plan, including evaluation and corrective action plan if available
- Activation plan for emergency response including e.g. roster of emergency operations staff and role

References:

- WHO EOC NET: http://www.who.int/ihr/eoc_net/en/
- Monitoring and Evaluation for Disaster Risk Reduction - http://www.un-spider.org/risks-and-disasters/sendai-framework-drr
- Sendai Framework for Disaster Risk Reduction 2015-2030

LINKING PUBLIC HEALTH AND SECURITY AUTHORITIES

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

As Measured by: Evidence of at least one response within the previous year that effectively links public health and law enforcement, OR a formal exercise or simulation involving leadership from the country's public health and law enforcement communities.

Desired Impact: Development and implementation of a memorandum of understanding (MOU) or other similar framework outlining roles, responsibilities, and best practices for sharing relevant information between and among appropriate human and animal health, law enforcement, and defence personnel and validation of the MOU through periodic exercises and simulations. In collaboration with FAO, International Criminal Police Organization (INTERPOL), OIE, WHO, individual Biological and Toxin Weapons Convention States Parties (and where appropriate the Implementation Support Unit), the United Nations Secretary-General's Mechanism for Investigation of Alleged Use of Chemical and Biological Weapons (UNSGM), and other relevant regional and international organizations as appropriate, countries will develop and implement model systems to conduct and support joint criminal and epidemiological investigations to identify and respond to suspected biological incidents of deliberate origin.

Score	Indicator - Linking Public Health and Security Authorities
	R.3.1 Public Health and Security Authorities, (e.g. Law Enforcement, Border Control, Customs) are linked during a suspect or confirmed biological event
No Capacity – 1	No legal background, relationships, protocols, MOUs or other agreements exist between public health, animal health and security authorities
Limited Capacity - 2	Points-of-contact and triggers for notification and information sharing have been identified and shared between public health, animal health and security authorities
Developed Capacity - 3	Memorandum of Understanding (MOU) or other agreement (i.e., protocol) exists between public health and security authorities within the country and has been formally accepted
Demonstrated Capacity - 4	At least 1 public health emergency response or exercise within the previous year that included information sharing with Security Authorities using the formal MOU or other agreement (i.e., protocol)
Sustainable Capacity - 5	Public health and security authorities exchange reports and information on events of joint concern at national, intermediate and local levels using the formal MOU or other agreement (i.e., protocol)public health and security authorities engage in a joint training program to orient, exercise, and institutionalize knowledge of MOU or other agreements

Notes:

- Multisectoral collaboration is key to engaging in effective public health emergency response. Security Authorities may include law enforcement, border control officers, defence and/or customs enforcement. Effective multisectoral collaboration should also include food safety inspectors and animal health authorities.

Contextual questions: N/A

Technical Questions:

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

1. Is there a memorandum of understanding or other agreement between public health and Security Authority entities at the national level?
    - Which security authority organizations are covered by a memorandum of understanding or other agreement? Law enforcement? Border control? Customs enforcement? Food safety inspectors? Other?
    - If not, is there a memorandum of understanding or other agreement between public health and another sector (agriculture, defence, foreign affairs) that could be used as a sample agreement to promote information sharing and collaboration during emergency events?
    - Are there agreements between public health and security authorities at any intermediate and/or local levels?

2. Have trainings been conducted jointly (at an intermediate level (regional) or national level) including both public health and security authorities on topics related to information sharing and joint investigations/responses?
3. Are there SOPs or agreements in place for coordination of joint response to public health and other emergencies at official locations such as points of entry where both public health and security authorities have operational safety and health security responsibilities?
4. Are there SOPs or agreements in place for a joint/shared risk assessment during events of public health and security significance?
5. Is there legislation in place which allows the government to detain/quarantine an individual who presents a public health risk?
6. How are potential biological events or other public health events that may have deliberate motives identified in the country? Please provide any plans that have been drafted that cover response to possible biological events.
7. Are public health experts involved in emergency response linked to the Biological and Toxins Weapons Convention (BTWC)?
8. Has the country participated in an exercise, simulation, or response within the past year that involves leadership from both public health and security authorities? If so, please describe the exercise, simulation or response.
    - Describe any corrective actions that were recommended for how the public health organization should coordinate with security authorities.
9. Are informational reports regularly shared between public health and any security authorities within the country? Is there a mechanism in place to encourage regular reporting?
    - What types of reports are shared from public health entities to security authorities regularly?
    - What types of reports are shared from security authorities to the public health system regularly?
10. Is there a country-specific joint investigations curriculum in place to train public health and law enforcement entities on joint investigations?
11. Describe how the national government is connected to Interpol. What ministry is charged with interacting with Interpol?

Documentation or Evidence for Level of Capability:

- SOPs or emergency response plans that would include security authorities
- Informational reports that are regularly shared with security authorities

References:

- WHO-OIE Operational Framework for Good governance at the human-animal interface: Bridging WHO and OIE tools for the assessment of national capacities/ http://www.oie.int/fileadmin/Home/fr/Media_Center/docs/pdf/WHO_OIE_Operational_Framework_Final2.pdf
- OIE Terrestrial Animal Health Code – Veterinary Legislation – Chapter 3.4: http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_vet_legislation.htm

MEDICAL COUNTERMEASURES AND PERSONNEL DEPLOYMENT

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

As Measured by: Evidence of at least 1 response to a public health emergency within the previous year that demonstrates that the country sent or received medical countermeasures and personnel according to written national or international protocols, OR a formal exercise or simulation that demonstrates these things.

Desired Impact: Countries will have the necessary legal and regulatory processes and logistical plans to allow for the rapid cross-border deployment and receipt of public health and medical personnel during emergencies. Regional (international) collaboration will assist countries in overcoming the legal, logistical and regulatory challenges to deployment of public health and medical personnel from one country to another.

Score	Indicators - Medical Countermeasures and Personnel Deployment	
	R.4.1 System is in place for sending and receiving medical countermeasures during a public health emergency	**R.4.2 System is in place for sending and receiving health personnel during a public health emergency**
No Capacity - 1	No national countermeasures plan has been drafted	No national personnel deployment plan has been drafted
Limited Capacity - 2	Plans have been drafted that outline system for sending and receiving medical countermeasures during public health emergencies	Plans have been drafted that outline system for sending and receiving health personnel during public health emergencies
Developed Capacity - 3	Table-top exercise(s) has been conducted to demonstrate sending or receiving of medical countermeasures during a public health emergency	Table-top exercise(s) has been conducted to demonstrate decision making and protocols for sending or receiving health personnel from another country during a public health emergency
Demonstrated Capacity - 4	At least one response OR a formal exercise or simulation within the previous year in which medical countermeasures were sent or received by the country	At least one response OR formal exercise or simulation within the previous year in which health personnel were sent or received by the country
Sustainable Capacity - 5	Country participates in a regional/international partnership or has formal agreement with another country or international organization that outlines criteria and procedures for sending and receiving medical countermeasures AND has participated in an exercise or response within the past year to practice deployment or receipt of medical countermeasures	Country participates in a regional/international partnership or has formal agreement with another country or international organization that outlines criteria and procedures for sending and receiving health personnel AND has participated in an exercise or response within the past year to practice deployment or receipt of health personnel

Notes:

- If country has a stockpile of medical countermeasures, country will not be asked to provide a list or formulary.

Contextual questions: N/A

Technical Questions:

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

1. Does the country have a plan in place that identifies procedures and decision making related to sending and receiving medical countermeasures during a public health emergency?
    a. Does the plan address regulatory concerns of receiving drugs or devices from an international source?
    b. Does the plan address logistic concerns related to sending, receiving and distributing medical countermeasures during a public health emergency?
    c. Does the plan address security concerns that may emerge related to sending/receiving/distributing medical countermeasures during a shortage?
2. Has the country exercised plans for sending or receiving medical countermeasures within the past year?
    a. If yes, please describe the exercise and specific outcomes.
3. Does the country have a stockpile of medical countermeasures for national use during a public health emergency?
    a. Does the country have capacity to produce i.e. antibiotics, vaccines, laboratory supplies/equipment or others?
4. Does the country have agreements in place with manufacturers or distributors to procure medical countermeasures during a public health emergency? Please describe.
5. Is the country part of any regional/international countermeasure procurement agreements? Please describe.
6. Is the country part of any regional/international countermeasure sharing agreements? Please describe.
7. Is the country part of any regional/international countermeasure distributing agreements? Please describe.
8. Are there dedicated resources/staffing identified for logistics related to delivery and receipt of countermeasures?
9. Are there dedicated resources/staffing identified for tracking and distribution of countermeasures?
10. Does the country have a Pandemic Preparedness Plan that addresses countermeasures? Please describe.
11. Does the country have a plan, procedure or legal provision in place for procuring animal countermeasures? Please describe.
12. Does the country have a plan, procedure or legal provision in place for distributing animal countermeasures? Please describe.

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

1. Does the country have a plan in place that identifies procedures and decision-making related to sending and receiving health personnel during a public health emergency?
    a. Does the plan address regulatory and licensure concerns of receiving health personnel from an international source?
    b. Does the plan identify training criteria and standards for health personnel who will be sent or received during a public health emergency?
    c. Does the plan address liability concerns for using medical personnel during an international deployment?
    d. Does the plan address safety concerns for health personnel during an international deployment?
    e. Does the plan address financial concerns for health personnel during an international deployment?
    f. Are other sectors (i.e. security authorities, animal health) included in plans for sending/receiving personnel during an emergency?
2. Do plans for surge staffing for public health emergency response activations include triggers for requesting personnel from other countries?
    a. Have training procedures and materials been developed to orient arriving personnel into the organization?
3. Has the country exercised plans for sending or receiving health personnel within the past year?
    a. If yes, please describe the exercise and specific outcomes.
4. Is the country part of any regional/international personnel deployment agreements such as WHO-GOARN? Please describe
    a. Are policies and resources in place to ensure that technical institutions and networks are able to be active partners in the Global Outbreak Alert and Response Network (GOARN)? Please describe.
    b. Does the country have a Pandemic Preparedness Plan or other Emergency Preparedness Plan that addresses personnel deployments? Please describe.

Documentation or Evidence for Level of Capability:

- Countermeasures deployment plan
- Personnel deployment plan
- Pandemic Preparedness Plan (if applicable)

RISK COMMUNICATION

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

Desired Impact: Responsible entities effectively communicate and actively listen and incorporate the publics' and communities' concerns through the media, social media, mass awareness campaigns, health promotion, social mobilization, stakeholder engagement and community engagement for increased risk awareness to reduce and mitigate the expected impact of the health hazard before during and after public health events.

Score	Indicators - Risk Communication		
	R.5.1 Risk Communication Systems (plans, mechanisms, etc.)	**R.5.2 Internal and Partner Communication and Coordination**	**R.5.3 Public Communication**
No Capacity – 1	No formal government risk communication arrangement	No coordination platform and mechanisms for internal and partner communication for engaging key national, intermediate, local and international stakeholders (including health care workers)	No central unit or locus for public communication, reactive, ad hoc media outreach
Limited Capacity – 2	Formal government arrangement including a national multi-hazard emergency risk communication plan (reviewed within past 24 months) in place and a dedicated core team responsible for this area of work established; but significant gaps in capacity in human resources, platforms , and resources to deal with a large-scale emergency	Some ad hoc communication coordination such as meetings with some partners and/or irregular information-sharing	Public communication unit or team exists, government spokesperson identified and trained, procedures for public communication in place
Developed Capacity – 3	Formal government arrangements and systems in place with standard operating procedures and capacity with multisectoral and multi-stakeholder involvement, but insufficient allocation and alignment of human and financial resources	Communication coordination exists but with limited partner and stakeholder engagement including health care workers, civil society organizations, private sector and other non-state actors	Level 2 (limited capacity) plus proactive public outreach on a mix of platforms (newspapers, radio, TV, social media, web) as appropriate according to national and local preferences; and in relevant national and local languages and otherwise understandable to populations . Use of locally relevant technologies for public communications (mobile phones, etc.)
Demonstrated Capacity – 4	Fully operational national system established meeting criteria of all previous levels, with reasonable skilled and/or trained personnel and volunteers, and financial resources and arrangements for scale-up as evidenced by a simulation exercise or tested by a real health emergency	Effective, regular communication coordination with all partners required by all preceding levels, and their coordination tested by a simulation exercise or tested by a real health emergency	There is planned communication with continuous engagement and proactive media outreach (including regular media briefings) guided by risk communication best practices and achieves comprehensive geographical coverage, evidenced by regular coverage of health issues and risks in relevant languages; as well as by media and social media activity during an emergency.

Sustainable Capacity – 5	Lessons learnt from capacity level 4 integrated into the revision of the national plans and the continuous strengthening of the system. Regular allocation of resources to maintain and grow the system	Effective, regular and inclusive communication coordination with partners and stakeholders including definition of roles, sharing of resources and joint action plans	The government, partners and diverse media outlets are engaged in robust and increasingly responsive collaboration to provide health advice, including addressing people's concerns and rumours; and address misinformation

Score	**Indicators – Risk Communication**	
	R.5.4 Communication Engagement with Affected Communities	**R.5.5 Dynamic Listening and Rumour Management**
No Capacity – 1	No arrangement exists to systematically engage populations at community level for emergencies. There may be social mobilization, health promotion or community engagement on health risks for maternal child health, immunization, malaria, TB and HIV/AIDS, polio, NTDs and other develop-mental programmes but these are not systematically used for emergencies.	No system exists to identify or response to rumours, and misinformation; nor to understand and analyse public concerns and fears
Limited Capacity – 2	Community level engagement system is semi-formed with mapping of existing processes, programmes, partners and stakeholders. Social mobilization, behaviour change communication and community engagement are included in the national risk communication strategy in the context of health emergencies. Some key stakeholders in this domain are identified at national and intermediate (provincial/regional) level.	Ad hoc systems for listening and rumour management, including through health care workers, but not fully used to guide the response
Developed Capacity – 3	Stakeholders mapped at intermediate and local levels, decentralized system (including financial and human resources) in place for community engagement involving community and religious leaders, community based organisations (CBOs), and other decentralized teams. Standard practice of developing information education communication (IEC) materials with the involvement of community and key stakeholders. Community consultation mechanisms are in place (e.g. hotline, surveys, etc.).	Routine and event-based systems for listening and rumour management or ongoing system with limited or unpredictable influence on the response
Demonstrated Capacity – 4	Regular briefing, training and engagement of social mobilization and community engagement teams including volunteers. Mechanisms to harness scale up capacity exist and are operational. Feedback loop from listening (Domain 5) into community engagement is operational.	Strong system for listening and rumour management on a permanent basis which is integrated into the decision-making and response actions for public communications (Domain 3), communication engagement with affected communities (Domain 4), as well as for internal and partners communications (Domain 2)
Sustainable Capacity – 5	Communities are equal partners in risk communication process as evidenced by the review of a simulation exercise or tested by a real health emergency.	Misinformation and rumours have little or minimum traction because risk communication is effective; the public(s) trust official health advice; and desired behaviour change is evidenced where appropriate

Notes:

1. Under the current IHR (2005) capacity assessment framework, only one element of the key components of risk communication – public communication – was assessed. The elements assessed focused predominantly on outputs of public communications activities. The revised framework proposed here addresses risk communications outcomes. The framework builds on the existing IHR capacity assessment content, and draws on an evidence-based "logic model" for evaluating emergency risk communication outcomes developed jointly by WHO and Harvard School of Public Health in 2014.
2. Domain 5 (Dynamic listening and rumour management) should be assessed independently as well as in relation to domains 2 (Internal and partner communication and coordination), 3 (Public communication) and 4 (Communication engagement with affected communities)

Contextual Questions: N/A

Technical Questions:

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

1. Is there a function for risk communication in your national response plan?
2. Are there communications personnel or government departments that informally respond to public information needs during emergencies?
3. Is there a permanent or surge staff dedicated to risk communication during emergencies?
4. Are the roles and responsibilities of the risk communication staff articulated in a response plan?
5. Are there significant improvements that could be made in the staffing, platforms, financial resources or other factors to improve communications with the public and partners during emergencies?
6. Are there shared communication plans, agreements and/or standard operating procedures between other response agencies such as public safety, law enforcement, hospitals, emergency response, Red Cross/Crescent and/or government agencies such as ministries of defence, agriculture, food/drug, etc.?
7. Is there a dedicated budget line for communications personnel, materials and activities for emergencies?
8. Does communication to the public during an emergency automatically revert to another government agency besides or in conjunction with the ministry of health?
9. Are the plans tested on at least a yearly basis?
10. Is training provided to the risk communications personnel for response to local hazards?
11. Is there an agreement internal to your agency for clearance of messaging to the public?
12. Have alterations been made to response plans based on lessons learnt from exercises or actual responses?
13. Have communications response staff been made aware of and/or trained on response plan alterations?
14. Is there a dedicated budget for the communications system to be sustained and to grow?

Additional Information - Availability of following related to R.5.1 (documentation)

a. National response plans – communication sections
b. Organizational Chart
c. Emergency risk communication staff plans
d. Job description for communication staff members
e. Shared agreements with response agencies
f. Emergency response budget sample
g. Various meeting notes
h. Exercise plans and results
i. Training workshops objectives/results
j. Message clearance plan
k. Plan alterations
l. Mechanism of sharing plan alteration
m. Long-term budget plan

R.5.2 Internal and Partner Communication and Coordination

1. Is there a mechanism informally or formally to coordinate communication internal to your agency during an emergency?
2. Is there a mechanism informally or formally to coordinate communication among national stakeholders and response agencies during an emergency?
3. Is there a mechanism informally or formally to coordinate communication among international stakeholders and response agencies during an emergency?
4. Have there been incidents where stakeholder/partner agencies have released information that was inconsistent or contradicted your agency's information during an emergency?
5. Have there been incidents where valuable time was taken because of a lack of agreement regarding which agency would respond during an emergency?
6. Do you have an example of an emergency or event that could have been better coordinated between partner agencies?
7. Is there a formal mechanism to coordinate communication with the hospital and healthcare sector during an emergency?
8. Is there a formal mechanism to coordinate communication among civil society organizations during an emergency?
9. Is there a formal mechanism to coordinate communication with the private sector during an emergency?
10. Has your organization conducted exercise testing communication coordination with partner organizations?

11. Has your organization responded in an actual emergency that tested communication coordination with partner organizations?
12. Does your organization regularly develop communication response plans together with external partner and stakeholders?
13. Does your organization have a coordinated budget for communications response with external partners and stakeholders?

Additional Information - Availability of following related to R.5.2 (documentation)

a. Internal and external coordination events
b. Response reports
c. News stories during past emergencies
d. Plans for communication coordination with external agencies
e. After action reports from exercises or emergency responses
f. Agreed upon response plan and coordinated budget plan for emergency communication

R.5.3 Public Communication

1. Does your organization have a formalized function to communicate with the public?
2. Does your organization have a designated and trained public spokesperson?
3. Does your organization have a communication team dedicated to media and social media outreach?
4. Do your organization conduct target audience analyses to better understand audience language, trusted information resources and preferred communication channels?
5. Does your organization have a communication strategy that proactively reaches out to a variety of media platforms such as newspapers, radio, TV, social media, web in order to target communication messages to specific audiences?
6. Does your organization provide information in local languages as needed by the audience?
7. Does your organization conduct media research to determine message reach among target audience members?
8. Does your organization alter public health messaging according to geographic location, language and media preference?
9. During emergencies or exercises, does your organization provide regular media briefings and updates through mass and social media?
10. Does your organization contribute to an evidence base of what communications methods best enabled target audiences to change behaviour during emergencies?
11. Does your organization share experience and new strategies with partner organizations to continually improve communication response?
12. Does your organization monitor for rumours and misinformation and when found address the issues rapidly?

Additional Information- Availability of following related to R.5.3 (documentation)

a. Organizational chart
b. Media department strategy
c. Community outreach plans
d. Media response plans
e. Community outreach plans
f. Communication research protocols and publications (formal/informal)
g. Examples of rumours and methods for handling them

R.5.4 Communication Engagement with Affected Communities

1. Does your organization have a social mobilization, health promotion or community engagement department or working group that is used for communication response during emergencies?
2. Does your organization have a social mobilization, health promotion or community engagement department or working group that regularly works with a media department or focal person within your organization?
3. Does your organization have a social mobilization, health promotion or community engagement department or working group that reaches out to the affected or at risk populations during health emergencies?
4. Is social mobilization, health promotion or community engagement included in the national response plan?
5. Does your organization have a social mobilization, health promotion or community engagement functions working at intermediate (district/provincial) levels?
6. Do intermediate (district/provincial) level community engagement functions work in vertical fashion that enables national level leadership to both learn from intermediate levels and share lessons learned with other intermediate levels?
7. Do community outreach programs regularly conduct information education communication (IEC) materials testing with members of the target audience?
8. Does your organization regularly provide information sharing or training opportunities between experienced community engagement experts and volunteers or potential surge capacity to be used during emergencies?
9. Does your organization have a plan to scale up existing community engagement capacities to be deployed during emergencies?
10. Is there an ongoing and functioning feedback loop between at-risk or affected populations and response agencies?
11. Does your organization regularly and rapidly change messaging to address audience feedback, misinformation and questions?
12. During the last actual emergency or exercise was there a clear function to receive audience feedback or questions?

Additional Information- Availability of following related to R.5.4 (documentation)

a. Organizational charts
b. Reports on local at-risk populations
c. Risk assessments that address most likely local public health threats
d. National response plan – communication section
e. Materials testing protocols
f. Communication campaign strategy examples
g. National response plan – communication section
h. Surge capacity plan
i. Data from public health hotline (relevant questions from the public, etc.)
j. Community outreach plan
k. After action report from actual emergency or exercise

R.5.5 Dynamic Listening and Rumour Management

1. Does your organization have a formal communication function to monitor and address rumours and misinformation?
2. Does your organization have ad hoc methods in which to hear about some rumours regarding public health issues (health care workers, hotline information, etc.)?
3. Does your organization have a method for addressing rumours and misinformation?
4. Does your organization monitor the effectiveness of methods or messages used to disprove a rumour or correct misinformation?
5. Does your organization regularly collect rumours and misinformation, the methods and messages to address them and shares them with partners to ensure message consistency?
6. Does your organization consider communication feedback including rumours and misinformation from the public in its decision making process to improve communication response?
7. Does your organization regularly evaluate its communication response and ability to address rumours and misinformation to determine that actions changed behaviour and/or stopped the rumour from spreading?

Additional Information - Availability of following related to R.5.5 (documentation)

a. Media response plans
b. Data from public health hotline (relevant questions from the public, etc.)

Other IHR-related hazards and Points of Entry (PoE)

POINTS OF ENTRY (POE)

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

Desired Impact: Timely detection and effective response of any potential hazards that occur at PoE.

Score	Indicators – Points of Entry (PoE)	
	PoE.1 Routine capacities are established at PoE.	**PoE.2 Effective Public Health Response at Points of Entry**
No Capacity – 1	No capacity at PoE for appropriate medical services	No National public health emergency contingency plan exists for responding to public health emergencies occurring at points of entry.
Limited Capacity – 2	Designated PoE have access to appropriate medical services including diagnostic facilities for the prompt assessment and care of ill travellers and with adequate staff, equipment and premises (Annex 1B,1a)	National public health emergency contingency plan in place for responding to public health emergencies occurring at points of entry, integrated with other PH response plans, covering all relevant sectors and services at PoE developed and disseminated to all key stakeholders
Developed Capacity – 3	Designated PoE can provide access to equipment and personnel for the transport of ill travellers to an appropriate medical facility	Facilities for assessing potentially contaminated/ infected travellers and animals either onsite or through liaison with local PH services available as well as facilities for the assessment and quarantine of suspect travellers
Demonstrated Capacity – 4	Inspection program to ensure safe environment at PoE facilities functioning. A functioning programme for the control of vectors and reservoirs in and near PoE exists (Annex 1b, Art. 1e)	Referral system and transport for the safe transfer of ill travellers to appropriate medical facilities in place with regular updating and testing of national public health emergency contingency plan with published reports
Sustainable Capacity – 5	Trained personnel for the inspection of conveyances are available at designated PoE (Annex 1b, Art. 1c)	Evaluation and publication of effectiveness in responding to PH Events at PoE

Notes: N/A

Contextual questions: N/A

Technical Questions:

PoE.1 Routine capacities are established at PoE

1. Do the designated PoE have access to appropriate medical services including diagnostic facilities for the prompt assessment and care of ill travellers and with adequate staff, equipment and premises (Annex 1B,1a)?
2. Do these PoE provide access to equipment and personnel for the transport of ill travellers to an appropriate medical facility?
3. Do these PoE carry out inspection program to ensure safe environment at PoE facilities?
4. Do you have evidence of control of vectors and reservoirs in and near PoE (Annex 1b, Art. 1e)? Do you have specific programs on this?
5. Does the country have trained personnel for the inspection of conveyances available at designated PoE (Annex 1b, Art. 1c)? If not, is there a mechanism to bring them from outside?

PoE.2 Effective Public Health Response at Points of Entry

1. Is the national public health emergency contingency plan for responding to public health emergencies occurring at points of entry, integrated with other PH response plans, covering all relevant sectors and services at PoE, and developed and disseminated to all key stakeholders?
2. Is the plan integrated with other response plans for responding to public health emergencies occurring at points of entry and PH emergencies for all hazards and covering relevant services at POE (e.g. immigration, transportation, security, media etc.) disseminated to all stakeholders?
3. Is a referral system and transport for the safe transfer of ill travellers to appropriate medical facilities in place?
4. Is there a system in place for safe referral and transfer of ill travellers to appropriate medical facilities, with MoUs, SOPs, trained staff, equipment and regular exchange of information between PoE, health authorities and facilities for all designated PoE?
5. Has the country evaluated the effectiveness of PoE in responding to PH Events at PoE? If yes, is it published?

Documentation or Evidence for Level of Capability:

1. Documented, regular-updated, tested national guidelines and SOPs to reflect all relevant technical and operational guidance tools for PoE in place and disseminated to all relevant sectors including for:
    a. the detection, reporting and response to event related to travel and transport;
    b. the application of Public Health measures to be applied at PoE, that may be recommended by WHO (e.g. exit/entry screening, isolation, quarantine, contact tracing, etc.); and

c. the application of other PH measures that could affect international travel and transport.

2. Documentation available for all relevant technical and operational guidance for PoE Annex 1 B, 1, e "to provide as far as practicable a programme and trained personnel for the control of vectors and reservoirs in and near points of entry".
3. Documentation available on, regularly-updated and tested national guidelines and SOPs to reflect all relevant technical and operational guidance tools for PoE in place and same disseminated to all relevant sectors including application of recommended measures to disinsect, derat, disinfect, decontaminate or otherwise treat baggage, cargo, containers, conveyances, goods or postal parcels including, when appropriate, at locations specially designated and equipped for this purpose.
4. Documentation on systematic collection with standardized tools, analysis and dissemination of data on PH events occurring at PoE, with updated list of priority conditions for notification, baseline data trends, and thresholds for alert and action, timely(ie, per national standards) reporting (using standard reporting formats and tools), and providing timely and regular feedback disseminated on surveillance data and trends to relevant stakeholders using standardized feedback formats (e.g. Epi bulletins, electronic summaries, newsletter, surveillance reports, etc.).
5. Documentation of regular receipt of PoE findings by national surveillance unit is available.

Additional Tools

- PoE checklist Core Capacity Requirements Assessment Tools for Designated Airports, Ports and Ground Crossings http://www.who.int/ihr/ports_airports/PoE/en/index.html

CHEMICAL EVENTS

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

Expected Impact: Timely detection and effective response of potential chemical risks and/or events in collaboration with other sectors responsible for chemical safety, industries, transportation and safe disposal.

Score	Indicators – Chemical Events	
	CE.1 Mechanisms are established and functioning for detecting and responding to chemical events or emergencies.	**CE.2 Enabling environment is in place for management of chemical Events**
No Capacity – 1	No mechanism in place	National policies or plans or legislation for chemical event surveillance alert and response do not exist
Limited Capacity – 2	Guidelines or manuals on the surveillance, assessment and management of chemical events, intoxication and poisoning are available	National policies or plans or legislation for chemical event surveillance alert[10] and response exist
Developed Capacity – 3	Surveillance is in place for chemical events, intoxication, and poisonings with laboratory capacity or access to laboratory capacity to confirm priority chemical events	An emergency response plan that defines the roles and responsibilities of relevant agencies in place including inventory of major hazard sites and facilities
Demonstrated Capacity – 4	Timely and systematic information exchange between appropriate chemical units[11], surveillance units and other relevant sectors about urgent chemical events and potential chemical risks and their response	Functional mechanisms for multisectoral collaborations for chemical events are in place including involvement in international chemical/toxicological networks. E.g. INTOX?
Sustainable Capacity – 5	Adequately resourced poison centre (s) are in place[12]	A chemical event response plan has been tested through occurrence of real event or through simulation exercise and is updated as needed

[10] Elements of alert include SOPs for coverage, criteria of when and how to alert, duty rosters etc.

[11] E.g. chemical surveillance, environmental monitoring and chemical incident reporting.

[12] E.g. clinical toxicology, 7/24 hotline, material data sheet, safety data sheet, and contact details of chemical manufactures.

Notes:

- Indicators refer to detection and responding to the chemical events and enabling environment for management of chemical events in place with appropriate legislation, laws, or policy and with involvement of multi-sectors.
- Detection capacity also includes not only surveillance but also the laboratory capacity required for the verification of any events.

Contextual Questions:

1. Have there been chemical safety assessments in the past five years? If applicable, please describe outcome/provide report.
2. Have there been baseline public health assessments with regard to chemical safety in the past five years, for example considering morbidity, mortality and biomarkers?
3. Have there been any major chemical incidents in the past five years?
4. Are any international chemical conventions/agreements ratified/implemented?
5. Is the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals in International Trade ratified?
6. Is the Stockholm Convention on Persistent Organic Pollutants ratified?
7. Is the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal ratified?
8. Is the Strategic Approach to International Chemicals Management (SAICM) implemented?
9. Is the United Nations Economic Commission for Europe (UNECE) Convention on the Transboundary Effects of Industrial Accidents ratified?
10. Is the International Labour Organization (ILO) Convention 174 on Prevention of Major Industrial Accidents ratified?
11. Is the International Labour Organization (ILO) Convention 170 on Safety in the Use of Chemicals at Work ratified?

Technical Questions:

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

1. Are guidelines or manuals on the surveillance, assessment and management of chemical events, intoxication and poisoning available?
    a. Are these implemented?
    b. Are these updated after events or following exercises (or updated regularly)?
    c. Does this surveillance also have monitoring activities to support chemical safety?
2. Is there chemical incident surveillance?
3. Is there an authority/institute/agency with primary responsibility for chemicals and surveillance/monitoring?
4. Is there an efficient information flow in chemicals surveillance/monitoring?

5. Is there surveillance of sentinel health events that may signal a hazardous chemical exposure?
6. Is there environmental monitoring (water, air, soil, sediment) with regard to chemical hazards?
7. Is there monitoring of consumer products (e.g. foodstuffs and good) with regard to chemical hazards?
8. Are there procedures for risk assessment in chemicals surveillance/monitoring, to trigger/mount a response of suitable composition and magnitude?
9. Is the laboratory capacity is available for systematic analysis?
10. Are current human resources sufficient to meet the needs for chemical safety?
11. Are current financial resources sufficient to meet the needs for chemical safety?
12. Are investigation reports produced in the chemicals surveillance/monitoring?
13. Is there regular (e.g. weekly, monthly or yearly) feedback of data and response activities in chemicals surveillance/monitoring?
14. Is there an inventory of reference health care facilities for chemical safety?
15. Are there protocols/guidelines for case management with regard to chemical hazards?
16. Are there poison centre(s)?

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

1. Is there a strategic plan for chemical safety, e.g. a National Chemicals Management Profile? Is it up-to-date and implemented?
2. Does chemicals legislation provide comprehensive coverage?
   Some areas may be covered by legislation not specific for chemicals. The following areas could be considered:
   a. Hazardous sites registration
   b. Control of hazardous sites, e.g. through safety reports and safety management systems
   c. On-site emergency plans
   d. Off-site emergency plans
   e. Siting and land use planning
   f. Control of procedures and sites for disposal of hazardous waste
   g. Control of contaminated land, water (drinking and other), crops, foodstuffs
   h. National and international transport/trade of dangerous goods or substances
   i. Hazardous substances registration
   j. Control of labelling and accompanying safety information for hazardous substances

k. Inspection/monitoring and enforcement
l. Public communication
m. Incident documentation and reporting
n. Incident investigation
o. Epidemiological and medical follow-up
p. Occupational health

3. Is there a national coordinating body/committee with regard to chemical safety?
4. Is there a public health plan for chemical incidents/emergencies?
5. Does a public health plan for chemical incidents/emergencies consider the range of functions required in a crisis?
   If applicable, please describe. Please consider availability of resources and standard operating procedures (SOP). The plan should consider the following aspects:
   a. Roles and responsibilities
   b. Public communication
   c. Referral, transport and treatment of large numbers of affected individuals
   d. Stockpiling of equipment and medication
   e. Follow-up of patients
   f. Decontamination of people, premises and environment
   g. Regular evaluation/revision of plan
   h. Restrictions, evacuation
   i. Emergency funds
   j. Exercises organized on a regular basis to test and revise the plan
6. Are there mulltisectoral/interdisciplinary coordination mechanisms with regard to chemical safety?
   If applicable, please describe mechanisms and indicate shortcomings. Coordination mechanisms could consider:
   a. Health
   b. Environment
   c. Agriculture
   d. National IHR Focal Point
   e. All public health levels (local, intermediate and national)

f. Emergency preparedness
g. Emergency services (fire, police, ambulance, medical responders)
h. Consumer safety
i. Administrative/political authorities at all levels (local, intermediate, national)
j. Hazardous sites
k. Meteorological services
l. Points of entry (ports, airports, ground crossings), in particular those designated under the IHR
m. Transport
n. Private sector/industry
o. Poison centre(s)
p. National surveillance institute(s) with regard to chemical safety
q. Reference laboratory/ies with regard to chemical safety
r. Reference health care facilities with regard to chemical safety

7. In the event of a public health emergency of chemical origin, could a budget be mobilized to meet additional demands?
8. Is there an audit/evaluation system for exercises/responses?
9. Is there involvement in international chemical/toxicological networks, e.g. INTOX?
10. Is there a chemical database available at all times, e.g. INCHEM, INTOX, Poisindex?

RADIATION EMERGENCIES

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

Desired Impact: Timely detection and effective response of potential radio-nuclear hazards/events/emergencies in collaboration with other sectors responsible for radio-nuclear management.

Score	Indicators – Radiation Emergencies	
	RE.1 Mechanisms are established and functioning for detecting and responding to radiological and nuclear emergencies.	**RE.2 Enabling environment is in place for management of Radiation Emergencies**
No Capacity – 1	National policies, strategies or plans for the detection, assessment, and response to radiation emergencies are not established	No coordination and communication mechanism between national authorities responsible for radiological and nuclear events with ministry of health and/or IHR NFP
Limited Capacity – 2	National policies, strategies or plans for the detection, assessment, and response to radiation emergencies are established and radiation monitoring mechanism exists for radiation emergencies that may constitute a public health event of international concern	National authorities responsible for radiological and nuclear events have a designated focal point for coordination and communication with the ministry of health and/or IHR NFP
Developed Capacity – 3	Technical guidelines or SOPs developed, evaluated and updated for the management of radiation emergencies (including risk assessment, reporting, event confirmation and notification, and investigation)	A radiation emergency response plan exists (could be part of national emergency response plan) and national policies, strategies or plans for national and international transport of radioactive material, samples and waste management including those from hospitals and medical services are established
Demonstrated Capacity – 4	Systematic information exchange between radiological competent authorities and human health surveillance units about urgent radiological events and potential risks that may constitute a public health emergency of international concern	Functional coordination[13] and communication mechanism[14] between relevant national competent authorities responsible for nuclear regulatory control/ safety, and relevant sectors[15].

[13] Note that these cross-references with legislation, policy and financing (core capacities 1 and 2).and these attributes for this component should be also fully addressed under those core capacities. They are under this hazard for coherence, flow, and triangulation where this is administered to the hazard expert.

[14] Information-sharing, meetings, SOPs developed for collaborative response etc.

[15] Coordination for risk assessments, risk communications, planning, exercising, monitoring and including coordination during urgent radiological events and potential risks that may constitute a public health emergency of international concern.

Sustainable Capacity – 5	A mechanism is in place to access[12] health facilities with capacity to manage patients of radiation emergencies	Radiation emergency response drills carried out regularly, including the requesting of international assistance (as needed) and international notification

Notes:

- Indicators refer to detection and responding to the radiation emergencies and enabling environment for management of radiation events in place with appropriate legislation, laws, or policy and with involvement of multi-sectors.
- Detection capacity also includes not only surveillance but also the laboratory capacity required for the verification of any events with collaboration with laboratory network outside and inside the country.

Contextual Questions:

1. Have there been radiation safety assessments in the past five years? If applicable, please describe outcome/provide report.
2. Have there been baseline public health assessments with regard to radiation safety in the past five years, for example considering morbidity, mortality?
3. Have there been any major radiation emergencies in the past five years?
4. Are any international conventions signed or ratified for radio-nuclear?

Technical Questions:

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

1. Are there national policies, strategies or plans for the detection, assessment, and response to radiation emergencies available?
   a. Are these implemented?
   b. Are these updated after events or following exercises (or updated regularly)?
2. Is there an authority/institute/agency with primary responsibility for radiation and surveillance/monitoring?
3. Is there monitoring of consumer products (e.g. foodstuffs and good) with regard to radiation hazards?
4. Are there procedures for risk assessment in radio-nuclear surveillance/monitoring, to trigger/mount a response of suitable composition and magnitude?
5. Is the laboratory capacity or access to laboratory capacity available for systematic analysis?
6. Are current human resources sufficient to meet the needs for radiation safety?
7. Are current financial resources sufficient to meet the needs for radiation safety?

[16] Have agreements, established arrangements and mechanisms to access these capacities in relevant collaborating institutions in country or in other countries.

8. Is there an inventory of reference health care facilities for radiation emergencies?
9. Are there protocols/guidelines for case management with regard to radio-nuclear hazards?

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

1. Is there a strategic plan for radiation safety? Is it up-to-date and implemented?
2. Is there a national coordinating body/committee with regard to radiological and nuclear events?
3. Is there an emergency response plan exist for radiation emergencies?
4. Does an emergency response plan consider the range of functions required in a crisis? If applicable, please describe. Please consider availability of resources and standard operating procedures (SOP). The plan should consider the following aspects:
    a. Roles and responsibilities
    b. Public communication
    c. Referral, transport and treatment of large numbers of affected individuals
    d. Stockpiling of equipment and medication
    e. Follow-up of patients
    f. Decontamination of people, premises and environment
    g. Regular evaluation/revision of plan
    h. Restrictions, evacuation
    i. Emergency funds
    j. Exercises organized on a regular basis to test and revise the plan
5. Are there multisectoral/interdisciplinary coordination mechanisms with regard to radiation safety?
   If applicable, please describe mechanisms and indicate shortcomings. Coordination mechanisms could consider:
    a. Health
    b. Environment
    c. Nuclear plant (if existing)
    d. Hospitals
    e. National IHR Focal Point
    f. All public health levels (local, intermediate, national)

g. Emergency preparedness
h. Emergency services (fire, police, ambulance, medical responders)
i. Consumer safety
j. Administrative/political authorities at all levels (local, intermediate, national)
k. Hazardous sites
l. Meteorological services
m. Points of entry (ports, airports, ground crossings), in particular those designated under the IHR
n. Transport
o. Private sector/industry
p. Poison centre(s)
q. National surveillance institute(s) with regard to radio-nuclear safety
r. Reference laboratory(ies) with regard to radio-nuclear safety
s. Reference health care facilities with regard to radio-nuclear safety

6. In the event of a radiation emergency, could a budget be mobilized to meet additional demands?
7. Is there an audit/evaluation system for exercises/responses?
8. Are their radiation emergency response drills carried out regularly? Describe the last drill.
9. Are there plans for national and international transport of radioactive material, samples and waste management including those from hospitals and medical services is/are established? Describe in detail.

Appendix 1: Glossary

Note: *these terms and definitions have been provided for use within the context of this tool and may differ from those used in other documents.*

Biosafety: the maintenance of safe conditions in biological research to prevent harm to workers, non-laboratory organisms, or the environment.

Case: a person who has the particular disease, health disorder, or condition which meets the case definitions for surveillance and outbreak investigation purposes. The definition of a case for surveillance and outbreak investigation purpose is not necessarily the same as the ordinary clinical definition *(adapted from Last JM, ed. A Dictionary of Epidemiology, 2001)*.

Case definition: a set of diagnostic criteria that must be fulfilled for an individual to be regarded as a case of a particular disease for surveillance and outbreak investigation purposes. Case definitions can be based on clinical criteria, laboratory criteria or a combination of the two with the elements of time, place and person. (In the IHR, case definitions are published on the WHO website for the four diseases for which all cases must be notified by States Parties to WHO, regardless of circumstances, under the IHR as provided in Annex 2).

Chemical event: a manifestation of a disease or an occurrence that creates a potential for a disease as result of exposure to or contamination by a chemical agent

Cluster: an aggregation of relatively uncommon events or diseases in space and/or time in amounts that are believed or perceived to be greater than could be expected by chance *(adapted from Last JM, ed. A Dictionary of Epidemiology, 2001*).

Communicable disease (infectious disease): an illness due to a specific infectious agent or its toxic products that arises through transmission of that agent or its products from an infected person, animal, or reservoir to a susceptible host, either directly or indirectly through an intermediate plant or animal host, vector, or the inanimate environment *(Last JM, ed. A Dictionary of Epidemiology, 2001)*.

Community surveillance: starting point for event notification at the community level, generally done by a community worker; it can be active (looking for cases) or passive (reporting cases). It may be particularly useful during an outbreak and where syndromic case definitions can be used (the identification of community cases of Ebola virus infection by community workers was an example of active community surveillance).

Competent authority: an authority responsible for the implementation and application of health measures under the IHR.

Contamination: the presence of an infectious or toxic agent or matter on a human or animal body surface, in or on a product prepared for consumption or on other inanimate objects, including conveyances that may constitute a public health risk. (IHR)

Decontamination: a procedure whereby health measures are taken to eliminate an infectious or toxic agent or matter on a human or animal body surface, in or on a product prepared for consumption or on other inanimate objects, including conveyances that may constitute a public health risk.

Disease: an illness or medical condition, irrespective of origin or source that presents or could present significant harm to humans.

Disinsection: the procedure whereby health measures are taken to control or kill the insect vectors of human diseases present in baggage, cargo, containers, conveyances, goods and postal parcels.

Early warning system: in disease surveillance, a specific procedure to detect as early as possible any abnormal occurrence or any departure from the usual or normally observed frequency of phenomena (e.g. one case of Ebola fever). An early warning system is only useful if linked to mechanisms for early response *(adapted from Last JM, ed. A Dictionary of Epidemiology, 2001)*.

Epidemic: the occurrence in a community or region of cases of an illness, specific health related behaviour, or other health-related events clearly in excess of normal expectancy. The community or region and the period in which the cases occur are specified precisely. The number of cases indicating the presence of an epidemic varies according to the agent, size, and type of population exposed, previous experience or lack of exposure to the disease, and time and place of occurrence *(adapted from Last JM, ed. A Dictionary of Epidemiology, 2001)*.

Event: a manifestation of disease or an occurrence that creates a potential for disease

Event based surveillance: the organized and rapid capture of information about events that are a potential risk to public health. This information can be rumours and other ad hoc reports transmitted through formal channels (i.e., established routine reporting systems) and informal channels (i.e., the media, health workers and reports from NGOs), including events related to the occurrence of disease in humans and events related to potential human exposure.

Feedback: the regular process of sending analyses and reports about surveillance data back through all levels of the surveillance system so that all participants can be informed of trends and performance.

Ground crossing: a point of land entry into a State Party, including those utilized by road vehicles and trains.

Hazard: the inherent capability of an agent or situation to have an adverse effect. A factor or exposure that may adversely affect health (similar concept to the risk factor).

Health-care worker: any employee in a health-care facility who has close contact with patients, patient-care areas or patient-care items; also referred to as 'health-care personnel.'

Health event: any event relating to the health of an individual, e.g., the occurrence of a case of a specific disease or syndrome, the administration of a vaccine or an admission to hospital.

Health measure: a procedure applied to prevent the spread of disease or contamination; a health measure does not include law enforcement or security measures.

Incidence: the number of instances of illness commencing, or of persons falling ill, during a given period in a specified population *(Prevalence and Incidence. WHO Bulletin, 1966, 35: 783-784)*.

Indicator based surveillance: the routine reporting of cases of disease, including notifiable diseases surveillance systems, sentinel surveillance, laboratory based surveillance, etc. This routine reporting is commonly health-care facility based with reporting done on a weekly or monthly basis.

Infection: the entry and development or multiplication of an infectious agent in the body of humans and animals that may constitute a public health risk.

Infection control: measures practiced by health-care personnel in health-care facilities to decrease transmission and acquisition of infectious agents (e.g., proper hand hygiene; scrupulous work practices; and the use of personal protective equipment such as masks, respirators, gloves, gowns, and eye protection. Infection control measures are based on how an infectious agent is transmitted and include standard, contact, droplet, and airborne precautions.

Infectious disease *see* **Communicable disease.**

International Health Regulations (2005) (IHR or the Regulations): a legally-binding instrument of international law which has its origin in the International Sanitary Conventions of 1851, concluded in response to increasing concern about the links between international trade and the spread of disease (cross-border health risks).

Isolation: separation of ill or contaminated persons or affected baggage, containers, conveyances, goods or postal parcels from others in such a manner as to prevent the spread of infection or contamination.

Legislation: the range of legal, administrative or other governmental instruments which may be available for States Parties to implement the IHR. This includes legally binding instruments, e.g., state constitutions, laws, acts, decrees, orders, regulations, and ordinances; legally non-binding instruments, e.g., guidelines, standards, operating rules, administrative procedures or rules; and other types of instruments, e.g., protocols, resolutions, and inter-sectoral or inter-ministerial agreements. This encompasses legislation in all sectors, e.g., health, agriculture, transportation, environment, ports and airports, and at all applicable governmental levels, e.g., national, intermediate, local etc.

National legislation *see* **Legislation**

National IHR Focal Point (IHR NFP): the national centre, designated by each State Party, which shall be accessible at all times for communications with WHO IHR contact points under the IHR.

Notifiable disease: a disease that, by statutory/legal requirements, must be reported to the public health or other competent authority in the pertinent jurisdiction when the diagnosis is made *(adapted from Last JM, ed. A Dictionary of Epidemiology, 2001)*.

Notification: the processes by which cases or outbreaks are brought to the knowledge of the health authorities. In the context of the IHR, notification is the official communication of a disease/health event to the WHO by the health administration of the Member State affected by the disease/health event.

Other governmental instruments: agreements, protocols, and resolutions of any government authority or body.

Outbreak: an epidemic limited to localised increase in the incidence of a disease, e.g., in a village, town or closed institution *(adapted from Last JM, ed. A Dictionary of Epidemiology, 2001)*.

Personal protective equipment (PPE): specialized clothing and equipment designed to create a barrier against health and safety hazards; examples include goggles, face shields, gloves and respirators.

Point of entry (PoE): a passage for international entry or exit of travellers, baggage, cargo, containers, conveyances, goods and postal parcels, and the agencies and areas providing services to them upon entry or exit.

Port: a seaport or a port on an inland body of water where ships on an international voyage arrive or depart.

Public health emergency of international concern (PHEIC): an extraordinary event which is determined, as provided in the IHR (i) to constitute a public health risk to other States through the international spread of disease and (ii) to potentially require a coordinated international response.

Public health risk: the likelihood of an event that may adversely affect the health of human populations, with an emphasis on whether it may spread internationally or present a serious and direct danger.

Quarantine: the restriction of activities and/or separation from others of suspect persons who are not ill or of suspect baggage, containers, conveyances or goods in such a manner as to prevent the possible spread of infection or contamination.

Rapid response team (RRT): a group of trained individuals that is ready to respond quickly to an event. The composition and terms of reference are determined by the country concerned.

Regulations or administrative requirements: all regulations, procedures, rules and standards.

Risk communication: risk communication for public health emergencies includes the range of communication capacities required through the preparedness, response and recovery phases of a serious public health event to encourage informed decision making, positive behaviour change and the maintenance of trust.

Surveillance: the systematic ongoing collection, collation and analysis of data for public health purposes and the timely dissemination of public health information for assessment and public health response, as necessary.

Syndrome: a symptom complex in which the symptoms and/or signs coexist more frequently than would be expected by chance on the assumption of independence *(Last JM, ed. A Dictionary of Epidemiology, 2001)*.

Trained staff: individuals that have educational credentials and/or have received specific instruction that is applicable to a task or situation.

Urgent event: a manifestation of a disease or an occurrence that creates a potential for disease which has a serious public health impact and/or unusual or unexpected nature, with high potential for spread. Note: the term 'urgent' has been used in combination with other terms (e.g., infectious event, chemical event) in order to simultaneously convey both the nature of the event and the characteristics that make it 'urgent' (i.e., serious public health impact and/or unusual or unexpected nature with high potential for spread).

Vector: an insect or other animal that normally transports an infectious agent that constitutes a public health risk.

Verification: the provision of information by a State Party to WHO, confirming the status of an event within the territory or territories of that State Party.

WHO IHR contact point: the unit within WHO that is accessible at all times for communications with the NFP.

Zoonosis: any infection or infectious disease that is naturally transmissible from vertebrate animals to humans. (WHO web site http://www.who.int/topics/zoonoses/en)

Zoonotic event: a manifestation of a disease in animals that creates a potential for a disease in humans as result of human exposure to the animal source.

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