JOINT EXTERNAL EVALUATION OF IHR CORE CAPACITIES

of

TURKMENISTAN

Mission report:

June 2016

World Health Organization

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Contents

Abbreviations

AMR	Antimicrobial Resistance
EBS	Event Based Surveillance
EQA	External Quality Assurance
ERP	Enterprise Resource Planning
EVM	Effective Vaccine Management
FETP	Field Epidemiology Training Programme
GEMP	Good Emergency Management Practices Training
HCAI	Health care associated infection
IHR	International Health Regulations (2005)
ISO	International Organization for Standardization
JEE	Joint External Evaluation
MOD	Ministry of Defence
MOHMI	Ministry of Health and Medical Industry
OIE	World Organisation for Animal Health
PVS	World Organisation for Animal Health (OIE) Performance of Veterinary Services.
SOPs	Standard Operating Procedures
SQPs	Sanitary-Quarantine Points
SSES	State Sanitary Epidemiological Service
TSMU	Turkmen State Medical University
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WHO	World Health Organization

Executive summary

In February 2016, the World Health Organization (WHO) introduced the joint external evaluation (JEE) tool. Turkmenistan is to be commended for the leadership it has shown in being only the eighth country globally and the first in the WHO European Region to volunteer for a JEE assessment. The political commitment of Turkmenistan in supporting the International Health Regulations (IHR) and the JEE process is exemplary and deserves global recognition and commendation. The consistent presence of senior representatives from the Ministry of Health and Medical Industry (MOHMI) and other relevant ministries and their in-depth familiarity with the technical areas they manage was further evidence of the high level of commitment.

The external assessment team recognizes that a specific interest for Turkmenistan is the process of preparing for the Fifth Asian Indoor Games which will take place in Ashgabat in September 2017. It is our hope and intent that the results of this assessment will support Turkmenistan's preparations for this major international event. Such an event is a significant undertaking and challenge to public health infrastructure and systems; Turkmenistan's proactive approach to reviewing and strengthening capacities will contribute to the overall success of the Games. This review was conducted with this additional challenge in mind; the JEE team included members with extensive experience of mass gathering events. Using a peer-to-peer, collaborative process between WHO experts and Turkmen experts, Turkmenistan's capacities in 19 technical areas were assessed.

The team would like to thank our Turkmen colleagues who prepared the JEE self-assessment and participated in the external evaluation. The team found Turkmen experts to be true professionals whose dedication and commitment to providing Turkmen citizens and foreign visitors alike with world-class health care has impressed the entire team. The JEE evaluation team would also like to express its appreciation for the considerable work and effort Turkmenistan has dedicated to this process – both the self-evaluation as well as the external evaluation. Turkmenistan has shown a tremendous commitment to continuous improvement and external evaluation and is now one of very few countries in the world who have completed both a JEE external evaluation and its corresponding animal health in-depth evaluation – the World Organization for Animal Health (OIE) Performance of Veterinary Services (PVS). The outstanding professionalism, transparency and willingness of our Turkmen hosts to work together with the team to identify strengths and areas for further development were instrumental to the success of the mission. It is the sincere hope of the JEE External Evaluation Team that Turkmenistan will find this report useful in further improving its health security.

Overarching issues and priority actions

Turkmenistan already has in place many key components of outstanding public health infrastructure. In order to further strengthen these capacities and particularly to help ensure that Turkmenistan is well prepared for the Asian Indoor Games in 2017, the following areas are recommended for emphasis and attention.

National implementation of the IHR (2005) requires an all-hazards, whole-of-government approach to enable a proactive and coordinated joint response. Required components include the participation of the various national sectors, a fully authorized National IHR Focal Point supported by an enabling legislative framework, intersectoral information exchange, communication mechanisms and a sufficient level of awareness by non-health sectors about their duties and responsibilities within the IHR. Having these components in place will not only strengthen the central role of the MOHMI in this area, but will also improve the overall preparedness of Turkmenistan to a wide range of public health threats.

The JEE team would like to note that although many aspects of a One Health approach are currently in place, Turkmenistan would benefit from the development of a more formal One Health strategy to ensure

that all necessary standard operating procedures (SOPs) and coordination mechanisms are in place, fully functional and tested through simulation exercises. This will be particularly important for management and coordination before, during and after the Asian Indoor Games. This report contains a number of specific recommendations related to the Games which Turkmenistan could consider implementing – for example, the use of point of contact rapid diagnostic tests. It is also important to identify and manage the risks related to the unknown health and vaccination status of foreign visitors.

Turkmenistan has initiated work to establish and implement electronic systems at multiple levels and in multiple areas. The JEE team fully supports this work and recommends that it be given the highest priority for implementation. The specific areas are noted under the relevant technical areas of the report.

Practical or simulation exercises and scenarios relevant to mass gatherings which require an expanded multisectoral coordination and response will be particularly important activities in the months leading up to the Games to ensure that systems are functioning as intended and can be up scaled as needed.

Turkmenistan scores

Capacities	Indicators	Score
National legislation, policy and financing	P.1.1 Legislation, laws, regulations, administrative requirements, policies or other government instruments in place are sufficient for implementation of the IHR	3
	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)	4
IHR coordination, communication and advocacy	P.2.1 A functional mechanism is established for the coordination and integration of relevant sectors in the implementation of the IHR	3
Antimicrobial resistance	P.3.1 Antimicrobial resistance (AMR) detection	3
	P.3.2 Surveillance of infections caused by AMR pathogens	3
	P.3.3 Health care associated infection (HCAI) prevention and control programmes	3
	P.3.4 Antimicrobial stewardship activities	1
Zoonotic disease	P.4.1 Surveillance systems in place for priority zoonotic diseases and pathogens	3
	P.4.2 Veterinary or animal health workforce: human and animal	2/3
	P.4.3 Mechanisms for responding to zoonoses and potential zoonoses are established and functional	4
Food safety	P.5.1 Mechanisms are established and functioning for detecting and responding to foodborne disease and food contamination	5
Biosafety and biosecurity	P.6.1 Whole-of-government biosafety and biosecurity system is in place for human, animal and agricultural facilities	2
	P.6.2 Biosafety and biosecurity training and practices	2
Immunization	P.7.1 Vaccine coverage (measles) as part of national programme	5
	P.7.2 National vaccine access and delivery	5
National laboratory system	D.1.1 Laboratory testing for detection of priority diseases	4
	D.1.2 Specimen referral and transport system	4
	D.1.3 Effective modern point-of-care and laboratory-based diagnostics	3
	D.1.4 Laboratory Quality System	4
Real-time surveillance	D.2.1 Indicator and event-based surveillance systems	3
	D.2.2 Interoperable, interconnected, electronic real-time reporting system	2
	D.2.3 Analysis of surveillance data	4
	D.2.4 Syndromic surveillance systems	3
Reporting	D.3.1 System for efficient reporting to WHO, the Food and Agriculture Organization of the United Nations (FAO) and OIE	2
	D.3.2 Reporting network and protocols in country	2
Workforce development	D.4.1 Human resources are available to implement IHR core capacity requirements	4
	D.4.2 Field Epidemiology Training Programme or other applied epidemiology training programme in place	3
	D.4.3 Workforce strategy	3

Preparedness	R.1.1 Multihazard National Public Health Emergency Preparedness and Response Plan is developed and implemented	4
	R.1.2 Priority public health risks and resources are mapped and utilized	3
Emergency response operations	R.2.1 Capacity to activate emergency operations	5
	R.2.2 Emergency operations centre operating procedures and plans	4
	R.2.3 Emergency operations programme	5
	R.2.4 Case management procedures are implemented for IHR-relevant hazards	4
Linking public health and security authorities	R.3.1 Public health and security authorities (such as law enforcement, border control and customs) are linked during a suspected or confirmed biological event	3
Medical countermeasures and personnel deployment	R.4.1 System is in place for sending and receiving medical countermeasures during a public health emergency	4
	R.4.2 System is in place for sending and receiving health personnel during a public health emergency	2
Risk communication	R.5.1 Risk communication systems (for example, plans and mechanisms)	3
	R.5.2 Internal and partner communication and coordination	3
	R.5.3 Public communication	3
	R.5.4 Communication engagement with affected communities	3
	R.5.5 Dynamic listening and rumour management	2
Points of entry	PoE.1 Routine capacities are established at points of entry	3
	PoE.2 Effective public health response at points of entry	3
Chemical events	CE.1 Mechanisms are established and functioning for detecting and responding to chemical events or emergencies	3
	CE.2 Enabling environment is in place for the management of chemical events	3
Radiation emergencies	RE.1 Mechanisms are established and functioning for detecting and responding to radiological and nuclear emergencies	3
	RE.2 Enabling environment is in place for the management of radiological emergencies	3

PREVENT

National legislation, policy and financing

Introduction

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

Target

An adequate legal framework for States Parties to support and enable the implementation of all their obligations and rights to comply with and implement the IHR (2005). New or modified legislation in some States Parties for implementation of the IHR (2005). Where new or revised legislation may not be specifically required under the State Party's legal system, States may 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 ensure provision of adequate funding for IHR implementation through the national budget or other mechanisms.

Turkmenistan level of capabilities

Turkmenistan has an appropriate regulatory framework for the implementation of all of their rights and responsibilities under the IHR (2005). There are a number of laws, decrees and orders that facilitate implementation of the IHR. Some of this legislation was recently developed or amended and is aligned with IHR requirements. Turkmenistan has a comprehensive intersectoral plan on the prevention of zoonotic diseases which assists with coordination across sectors at national and subnational levels.

Relatively new legislation and frameworks need advocacy across sectors for effective enactment. In addition, incorporating the IHR function in the National Health Sector Plan would help ensure resources and prioritization. Development of mechanisms or policies for facilitating implementation of the expanded function of the National IHR Focal Point is essential. Turkmenistan has not been challenged with many real-life events, so conducting a multisectoral exercise would help clarify the relevance of this legislation.

Recommendations for priority actions

- Develop mechanisms and policies to facilitate implementation of the expanded functions of the National IHR Focal Point.

- Advocate and communicate to all relevant sectors the implementation of this new amended legislation.

- Consider incorporation of the IHR function in the National Health Sector Plan.

Indicators and scores

P.1.1 Legislation, laws, regulations, administrative requirements, policies or other government instruments in place are sufficient for implementation of IHR – Score 3

Strengths/best practices

- Turkmenistan has an appropriate regulatory framework for implementation of all of their rights and responsibilities under the IHR (2005): Law on the Protection of Citizens' Health; Sanitary Code of Turkmenistan; the Law on the State Border of Turkmenistan; Customs Code of Turkmenistan; Law on the Quality of Food Safety; Law on Migration; Law on Veterinary Business; Order of the MOHMI on the Measures of Prevention of Plague and Cholera among the Population; Law on Welfare and Food Safety Quality; Order of the MOHMI on the Sanitary Protection of the Territory of Turkmenistan; Order of the MOHMI on Extraordinary Reports to the MOHMI.

- New legislation recently developed or amended is aligned with IHR requirements.

- Cross border agreements exist with neighbouring countries in the event of public health emergencies.

Areas which need strengthening/challenges

- Much of this legislation is new and enactment requires advocacy across sectors.

- Incorporating the IHR function in the National Health Sector Plan will ensure adequate attention in terms of advocacy, human, financial and logistic resources and prioritization of health programmes.

- Evaluation of the enactment of this legislation over a period of time will provide evidence of its effective implementation.

P.1.2 The state can demonstrate that it has adjusted and aligned its domestic legislation, policies and administrative arrangements to enable compliance with the IHR (2005) – Score 4

Strengths/best practices

- Turkmenistan has demonstrated the use of relevant legislation and policies in the various sectors involved in the implementation of the IHR by the use of simulation exercises.

- Legislation exists to address other functions of the IHR in addition to highly pathogenic infections. These include: food safety, water quality and emergency response to various situations and events which pose national or international threats to health security.

- Turkmenistan has a comprehensive intersectoral plan to prevent the introduction and spread of zoonotic infections (2016–2020), which assists with coordination of various ministries and organizations at the national level.

- There are intersectoral plans at the regional and subregional levels to enable coordination.

Areas which need strengthening/challenges

- A mechanism or policies should be developed to facilitate implementation of the expanded function of the National IHR Focal Point.

- Turkmenistan has not faced many health emergencies over the past few years. It is therefore imperative to regularly conduct multisectoral exercises or simulations to evaluate this legislation and its relevance.

IHR coordination, communication and advocacy

Introduction

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

Target

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

Turkmenistan level of capabilities

Coordination of a multisectoral response during an outbreak or emergency is well-structured in Turkmenistan, with a number of specific provisions in place including dedicated coordinating bodies and multisectoral communication mechanisms and plans. The coordinating body for a general emergency response is the State Commission on Emergencies. The structure of the Commission consists of three levels. At the national (central) level the Commission consists of the Cabinet of Ministers, other responsible ministries and services, and responsible officials from the municipalities. The second is at the provincial level which includes provincial departments of relevant ministries and authorized municipal officials. The third level is local and includes mayors and local departments of relevant ministries and services. Upon receipt of information of any health emergency situation or an outbreak, the MOHMI convenes an Emergency Counter-Epidemic Commission under the Cabinet of Ministers with the technical leadership of the State Sanitary-Epidemiological Service (SSES). A phase-based approach to health emergency response is used. Various capacities for emergency response are stipulated at the national, provincial and local levels.

Emergency response architecture also provides for timely and systematic communication and exchange of information between the sectors involved. There is a nationwide notification scheme in place at the Center of Emergency Medical Aid, along with relevant terms of reference for the responsible staff within the MOHMI.

The National IHR Focal Point for Turkmenistan is the SSES of the MOHMI, headed by the Deputy Minister, Head of SSES. The National IHR Focal Point has 24/7 access to all national information available to the SSES, largely on communicable diseases. An Intersectoral Coordination Committee that focuses on the preparation and analysis of preparedness plans, public health risks and country preparedness level monitoring involving relevant ministries and services is in place.

Operational plans for the occurrence of any quarantine or especially dangerous disease have been developed. Specific provisions on the prevention and response to individual highly pathogenic infections are included in the relevant decrees of the MOHMI. Additionally, five-year comprehensive multisectoral plans on sanitary protection of the country exist. These plans guide both routine activities aimed at prevention, as well as specific activities to be taken on the identification of a human case. The Ministry of Emergency Situations regularly conducts multisectoral training exercises on a coordinated response. Annual training exercises for medical professionals are organized by the MOHMI.

PREVENT

In spite of strong coordination and communication provisions during an emergency, IHR coordination based on the whole-of-government all-hazards approach is insufficient. Strong emphasis is placed on multisectoral coordination during emergencies, while during so-called peaceful times there are no special provisions that enable coordinated collaboration of all relevant national sectors. This specifically refers to national capacities to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with public health risks, and which avoid unnecessary interference with international traffic and trade. In addition, multisectoral advocacy efforts on the IHR are limited.

Recommendations for priority actions

- Ensure adequate positioning of the MOHMI, in particular the National IHR Focal Point (represented by the SSES) in relation to all the national sectors involved in IHR implementation in the country. The goal is to meet the multisectoral requirement using an all-hazards approach.

- Develop SOPs for national sectors involved in IHR implementation – especially those involved in reporting events to and information sharing with the National IHR Focal Point.

- Strengthen multisectoral coordination and communication mechanisms among national sectors involved in IHR implementation, including necessary coordination and communication and information sharing mechanisms, from being primarily focused on emergency response to provision for so-called peaceful times, (for example, conducting a drill or exercise).

- Consider the possibility of integrating the National IHR Focal Point into existing surveillance systems of non-health sectors involved in IHR implementation.

- Train staff of different national sectors, including health and non-health, on various operational aspects of IHR implementation, with a focus on reporting, information sharing and the function of the National IHR Focal Point.

Indicators and scores

P.2.1 A functional mechanism is established for the coordination and integration of relevant sectors in the implementation of IHR – Score 3

Strengths/best practices

- A functional multisectoral mechanism is well established for coordination of different sectors' activities during an emergency response.

- A vertical reporting line for infectious hazards and supporting regulations ensures timely reporting of communicable health threats to the highest decision-making level.

- An Intersectoral Coordination Committee has been established to oversee overall country preparedness and analyse preparedness plans and public health risks.

- Five-year comprehensive multisectoral plans on sanitary protection of the country exist; they guide both routine activities aimed at prevention as well as specific activities to be taken on identification of a human case.

- The National IHR Focal Point for Turkmenistan is the SSES of the MOHMI, headed by the Deputy Minister, Head of SSES, with 24/7 access to all national information available to the SSES. This information largely focuses on infectious disease hazards.

Areas which need strengthening/challenges

- While coordination and communication mechanisms are well-developed for emergencies, IHR coordination on a routine basis in peacetime is insufficient.

- While vertical integration within the health sector is sufficient, the National IHR Focal Point must be better integrated horizontally with other sectors to ensure a whole-of-government, all-hazards approach to the IHR.

- Advocacy efforts and awareness raising activities for health and non-health sectors are limited and should be intensified.

- Better integration of existing national surveillance systems for different types of hazards consistent with the all-hazards approach of the IHR.

- Development of SOPs to enable all-hazards surveillance.

- Strengthening national capacities for early detection and risk assessment.

- Training of responsible staff on international requirements and standards.

Antimicrobial resistance

Introduction

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

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

Target

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

Turkmenistan level of capabilities

With regard to national capacity for AMR detection, some designated laboratories perform antimicrobial susceptibility tests. These designated laboratories are capable of detecting and reporting priority AMR pathogens listed by WHO (Escherichia coli, Klebsiella pneumoniae, Staphylococcus aureus, Streptococcus pneumoniae, Salmonella spp., Neisseria gonorrhoeae, Mycobacterium tuberculosis and others). The most organized drug resistance testing, reporting and surveillance system is active within the framework of the Turkmenistan tuberculosis programme. A new laboratory centre to combat AMR will open in July 2016 demonstrating the commitment of the government to tackle the AMR issue.

According to the MOHMI Order No. 96/2016 on the Improvement of Disinfection Measures in Hospitals, prevention and control of infections associated with medical care is ensured and designated facilities are conducting HCAI prevention programmes. A system to regularly evaluate the effectiveness of infection control measures has been implemented and reports are published monthly by the SSES.

The current challenge for testing the susceptibility of microorganisms in Turkmenistan is the lack of legislation for mandatory assessment of AMR as well as the lack of standardized protocols or testing methodologies in both human and animal sectors (different assays are used for testing). Another issue to be considered is the high consumption of antibiotics. The greatest problems in this are at the secondary and tertiary levels of care. However, the antimicrobial prescription rate of general practitioners is also rather high. This might be correlated with the lack of a national supervision system for antimicrobial prescription, distribution and use as well as with empirical treatment of patients before laboratory results are available.

The overall awareness of the importance of controlling and preventing AMR is good, even though a comprehensive and multisectoral national plan to fight AMR is not in place. In 2014 the MOHMI established a national working group to tackle the AMR issue. As a result, the National Strategy for Containment of Antimicrobial Resistance in Turkmenistan for 2015–2020 is now under approval (the approval phase started at the end of 2015).

Recommendations for priority actions

- Approve a comprehensive national plan or regulatory framework to combat AMR in human, animal and environmental health sectors, based on specific strategic plans for:
  - ○ detection and reporting of priority AMR pathogens;
  - ○ surveillance of infections caused by priority AMR pathogens;
  - ○ comprehensive prevention and control programmes for HCAI.
- Implement AMR stewardship programmes within health, animal and agricultural sectors (as is in discussion with the Ministry of Justice).
- Improve intersectoral and interministry coordination and collaboration in terms of AMR, particularly taking into account clinical, laboratory and pharmaceutical sectors.
- Strengthen AMR surveillance systems within animal health and public health sectors.

Indicators and scores

P.3.1 Antimicrobial resistance (AMR) detection – Score 3*

* if a national plan for detection and reporting of priority AMR pathogens is approved soon.

Strengths/best practices

- Both animal and public health sectors have AMR testing capacity.
- Internal and external reporting for tuberculosis resistance is conducted; resistance to isoniazid is commonly tested.
- A national working group to tackle AMR was established in 2014 in accordance with previous WHO recommendations.
- The national pharmaceutical department performs quality monitoring of drugs as well as consumption of antibiotics.

Areas which need strengthening/challenges

- Comprehensive national legislation concerning detection and reporting of priority AMR pathogens.
- Intersectoral laboratory coordination and collaboration on AMR detection procedures.
- Awareness of AMR in veterinary, food and environmental sectors.
- Standardized protocols and testing methodologies.

P.3.2 Surveillance of infections caused by AMR pathogens – Score 3*

* if a national plan for surveillance of infections caused by priority AMR pathogens is approved soon.

Strengths/best practices

- Hospitals at provincial level and in Ashgabat are designated as sentinel sites for public health AMR surveillance and they are currently performing AMR tests.
- Surveillance for priority AMR pathogens listed by WHO is in place (E. coli, K. pneumoniae, S. aureus, S. pneumoniae, Salmonella spp., N. gonorrhoeae, M. tuberculosis).
- SSES surveillance reports are available.

Areas which need strengthening/challenges

- National regulations for surveillance of infections caused by priority AMR pathogens.
- AMR sentinel surveillance reporting in the human health sector.
- AMR sentinel surveillance system in the animal health sector.
- Electronic transmission of data reporting on AMR.

P.3.3 HCAI prevention and control programmes – Score 3*

* if a national plan for HCAI programmes is approved and involves also the animal sector.

Strengths/best practices

- Specific HCAI programmes are implemented in health facilities, even without a comprehensive plan to which to refer.
- State epidemiological service tests are routinely performed.
- The country participated in the Central Asian and Eastern European Surveillance of Antimicrobial Resistance (CAESAR) network assessment of HCAI.
- The Bacteriological Laboratory Development and Production Center; the Sanitary and Epidemiological Station of Ashgabat and the Prevention Center of Especially Dangerous Infections participated in an International External Quality Assessment and received certificates.

Areas which need strengthening/challenges

- A national plan for HCAI has not yet been approved.
- HCAI prevention and control programmes in the animal health sector need to be strengthened.
- Guidelines to improve rational use of antimicrobial medicines in both humans and animals need to be developed.

P.3.4 Antimicrobial stewardship activities – Score 1

Strengths/best practices

- There is no local or private manufacture of antimicrobial agents for both humans and animals and control of imports allows usage levels to be estimated.
- The MOHMI and the Ministry of Agriculture perform tight controls on safety, quality and efficacy of antibiotics entering the country for human and animal health, respectively.
- There is currently a legal requirement for prescription of antimicrobial medicines in animals.
- A survey on the proper administration of antibiotics in humans has been implemented.

Areas which need strengthening/challenges

- National guidance on appropriate antibiotic use and dispensing in all sectors.
- Specific legislation and regulations governing antimicrobial use in humans (such as, prescriptions).
- Inadequate number of clinical treatment protocols for certain communicable diseases.
- Stakeholder awareness of alternatives to antimicrobials that can drastically reduce the spread of antimicrobial resistance (for example, appropriate hygiene, vaccines).

Zoonotic diseases

Introduction

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

Target

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

Turkmenistan level of capabilities

Turkmenistan is now one of a very few countries in the world to have completed both a JEE external evaluation (June 2016) and the corresponding in-depth animal health evaluation, the PVS (April 2013). The PVS evaluation highlighted a number of areas where Turkmenistan could build on its strengths and address areas which need to be strengthened. Current strengths include a dedicated and professional workforce, a solid legislative base and many functioning systems. However, in order to keep pace with the improvements and investments which have been made or are anticipated to be made in public health, it is a priority that the veterinary disease infrastructure be strengthened.

For example, Turkmenistan began reporting its animal disease status to OIE in 2012. A strength is the reporting on brucellosis and rabies. However, the reporting is incomplete and both the surveillance and laboratory systems must be strengthened overall to extend these best practices to other sectors. Any weakness in the veterinary infrastructure reduces the likelihood that zoonotic diseases will be notified. The PVS report contains detailed recommendations for improvement and is considered the diagnosis. The OIE also offers a second stage assessment, called gap analysis – this assessment develops the treatment plan. Therefore, the single most important action that Turkmenistan can take to improve zoonotic capacity is to request an updated PVS gap analysis from the OIE. The second priority action, in common with other technical areas, is the development of an interconnected electronic database linking animal health surveillance, laboratory results and reporting with human health systems. Third, best practices from brucellosis and rabies surveillance and reporting should be extended to other diseases. And fourth, particularly in light of the upcoming Asian Indoor Games, Turkmenistan should consider requesting Good Emergency Management Practices Training (GEMP) from the FAO.

The electronic database highlighted the technical ability of the workforce. However, there is a need for continuing education, and in some cases the workforce is inadequate. With Turkmenistan's highly professional workforce, the country could clearly aspire to international accreditation of one or more veterinary laboratories. Risk analysis and epidemiology functions should be strengthened.

Recommendations for priority actions

- Request a PVS update/gap analysis from the OIE. This is the single greatest priority as it will provide detailed recommendations on specific actions to take to help prepare Turkmenistan for the upcoming Games and ensure the animal health sector has the necessary capacities and systems in place to fully support public health on an ongoing basis.

- Fully develop an electronic database which links animal health surveillance, laboratory results and reporting systems vertically within the animal health sector and also horizontally with human health and other systems.

- Extend best practices from brucellosis and rabies surveillance and reporting to other zoonotic diseases.

- Request GEMP training from the FAO.

Indicators and scores

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

Strengths/best practices

- Turkmenistan veterinary authorities are detecting and reporting brucellosis and rabies to the MOHMI as evidenced by actual reports shown to the team. These active as well as passive surveillance, diagnostic and reporting structures could be extended to additional diseases.

- Turkmenistan is a full and active member of the OIE.

- Turkmenistan collaborates regularly with the FAO.

Areas which need strengthening/challenges

- The provision of priority disease vaccines to farmers is a best practice. However, the necessity for farmers to pay for vaccine application is a hindrance that may lead to decreased vaccination coverage. The Government of Turkmenistan could consider covering full costs of vaccinations for all priority diseases, including costs of transportation and vaccine application.

- There is no active surveillance for diseases other than brucellosis and rabies.

- Reliance on passive surveillance is substantial. However, the passive surveillance system is weakened by many factors including insufficient legal framework and SOPs, inadequate data collection and reporting systems, absence of reliable animal identification and traceability systems and lack of motivation for farmers to report disease.

P.4.2 Veterinary or animal health workforce – Score 2/3 (human health/animal health)

Strengths/best practices

Animal health

- Technical positions at the central level are occupied by personnel with university degrees.

- Veterinarians at all levels possess good basic skills and technical capacity for ensuring animal health.

- Though the exact number and qualifications of veterinarians working in the country in government veterinary and private sectors is unknown, the majority of veterinary positions at all levels of government veterinary services are occupied by appropriately qualified veterinarians.

Human health

- The MOHMI collaborates with colleagues at the Ministry of Agriculture's Veterinary Services on a constant basis and considers them to be an integral part of the common animal/human health system.

Areas which need strengthening/challenges

Animal health

- The retention of qualified veterinarians and the geographical distribution of personnel is suboptimal, with some geographical areas having excessive personnel and others experiencing a lack of a qualified workforce.

- No animal health experts or veterinarians have completed a specialized Field Epidemiology Training Programme (FETP) in country (or were sent to attend the parent FETP course in Kazakhstan).

Human health

- There are no veterinarian positions at the MOHMI. The current approach and belief is that goals are adequately achieved through close collaboration and exchange of consultants.

P.4.3 Mechanisms for responding to zoonoses and potential zoonoses are established and functional – Score 4

Strengths/best practices

- Some intersectoral collaboration has occurred as was evident by information exchanges between animal, wildlife and human health surveillance units during times of potentially increased risks (in 2012 for H5N1 and 2013 for H7N9 influenza).

- Currently there is a Comprehensive Intersectoral Plan of Turkmenistan for the period 2016–2020 for the prevention of the introduction and spread of zoonotic infections. This serves as a memorandum of understanding between sectors for the management of zoonotic disease events.

Areas which need strengthening/challenges

- Information exchange between sectors does not happen on a regular basis. There is no functioning intersectoral unit or body that regularly receives and reviews veterinary, wildlife and human disease surveillance and other reports.

- There are no written contingency plans and written SOPs for transboundary animal diseases, potential specific emergency situations (determined by risk assessment) or other unexpected emergencies.

- Intersectoral training (in line with OIE standards) and simulation exercises to test contingency plans and crisis management processes are not happening on a regular basis.

Food safety

Introduction

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

Target

State Parties have surveillance and response capacity for food- and waterborne disease risks or events by strengthening effective communication and collaboration among the sectors responsible for food safety and safe water and sanitation.

Turkmenistan level of capabilities

In Turkmenistan, an accountable and effective system of detection and response to potential food-related events and waterborne diseases is in place. The system is based on solid legislation, in particular the Law on the Quality of Food Safety, the Law on the Protection of Consumers' Rights and the National Program of Healthy Nutrition for the Population of Turkmenistan for 2013–2017 approved by a Decree of the Turkmenistan President. Legislation takes into account international standards in order to provide safe and high-quality food. In 2012, Turkmenistan became a member of the Codex Alimentarius Commission of the WHO and the FAO.

The Experimental and Production Center, under the supervision of the SSES, manages 107 sanitary and food laboratories including those at provincial level and in the capital city. Strict controls are performed at points of entry and throughout the chain, from farm to table, in accordance with a systematic preventive approach. At local level, individual entrepreneurs are required to build their own hazard-analysis and critical control points management system and legal entities control the safety and quality of food in accordance with a previous risk assessment of the critical control points allowing the allocation of resources as appropriate.

On the whole, an effective mechanism for rapid information exchange among all relevant sectors during the investigation of suspected foodborne disease outbreaks is in place.

Recommendations for priority actions

- Perform a real-life non-expected simulation exercise in the context of a specific scenario (such as a full-scale exercise in preparation for the Asian Games, since the population will increase and capacity testing will need to be increased as well).

- Enhance and strengthen risk and data communication capacity with all stakeholders, including foreign visitors, so that they will know in advance what situations they might face when entering the country (such as the availability of potable tap water).

Indicators and scores

P.5.1 Mechanisms are established and functioning for detecting and responding to foodborne disease and food contamination – Score 5

Strengths/best practices

- Strong legislation in accordance with international requirements.
- Capillarity of the system and capacity of detection at all points of entry and throughout the chain, from the farm of a foreign country to the table, following a systematic approach.
- Accountability at all levels.
- Concentration of resources based on previous risk assessment.

Areas which need strengthening/challenges

- Upgrade from discussion-based exercises (or table-top exercises) to operations-based exercises.

Biosafety and biosecurity

Introduction

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

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

Target

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

Turkmenistan level of capabilities

The Sanitary Code of Turkmenistan, No. 133 of 1995, established the Anti-Epidemic Emergency Commission and still regulates the registration, storage, transfer and transport of pathogens at all four biosafety levels, regardless of departmental affiliation. Since 1995, licensing is carried out with accuracy and a minimal number of designed laboratories at the central level ensure that especially dangerous pathogens are identified, held, secured and monitored. In 2014, the Museum of Living Microorganisms was established at the Center for the Prevention of Especially Dangerous Infections.

Turkmenistan is making a significant effort to comply with recent WHO recommendations and a Practical Guide to Biological Safety in the Laboratory is awaiting approval. Nevertheless, an appropriate International Organization for Standardization (ISO) accreditation is not yet in place. The entire medical staff working with biological material are provided with personal protective equipment and have received training in biosafety and biosecurity issues. Traffic patterns for infectious materials are defined, permits to work with infected and possibly infected materials are issued for a period of five years, and the admission of employees to work with infected or suspect materials is made by the senior officer of the institution concerned.

Despite the legislation in force, not all elements of a comprehensive biosafety and biosecurity system are in place, especially for animal health and the agricultural sector. Biosafety procedures and regulations are commonly followed; however, in terms of biosecurity, safeguards to minimize the potential improper removal or release of biological agents or related documentation should be enforced and extended throughout the country.

Specific training in biosafety and biosecurity is offered at undergraduate and postgraduate levels in the appropriate courses (including medicine and biology) and two- or three-year training certification is required to work with microorganisms at biosafety levels 1 and 2 or in virology laboratories. Mechanisms

for biosecurity oversight of dual use research and responsible code of conduct for scientists exist and once every two years specialists undergo knowledge testing on laboratory functions and activities.

Recommendations for priority actions

- Approve comprehensive national biosafety and biosecurity legislation and establish a clear framework for medical, veterinary and agricultural agencies.
- Activate a multisectoral task force to perform risk assessments for biosafety and biosecurity and develop comprehensive SOPs in accordance with international requirements.
- Propose academic high-level biosafety and biosecurity courses for laboratory professionals and build an integrated database of biosafety and biosecurity experts.
- Conduct simulations and drills on biosafety and biosecurity scenarios.
- Improve laboratory waste management.

Indicators and scores

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

Strengths/best practices

- A Museum of Living Microorganisms has been established at the Center for the Prevention of Especially Dangerous Infections.
- Staff working with biological material are provided with personal protective equipment.
- A third party (government) regularly assesses biosecurity and biosafety at national laboratory facilities every five years.

Areas which need strengthening/challenges

- A national biosafety framework for medical, veterinary and agricultural agencies should be introduced.
- It is necessary to develop comprehensive medical, veterinary and agricultural SOPs for all staff working with at risk biological materials in accordance with previous risk assessments and international standards.
- Lack of awareness among the laboratory workforce of international biosafety and biosecurity best practices for safe, secure and responsible conduct.
- Appropriate ISO accreditation.

P.6.2 Biosafety and biosecurity training and practices – Score 2

Strengths/best practices

- A national working group has been established to foster the incorporation of biosafety and biosecurity into national laboratory policies and strategies.
- Biosafety and biosecurity training programmes have been introduced in medical institutions.
- Workforce knowledge on biosafety and biosecurity is tested once every two years.
- The Center for the Prevention of Especially Dangerous Diseases twice a year conducts 45-day training courses for microbiologists and technicians working with microorganisms at biosafety levels 1 to 4.

Areas which need strengthening/challenges

- Common curricula and train-the-trainers programmes for both biosafety and biosecurity in all sectors.
- Training on biosafety and biosecurity should be provided to staff at all facilities (of all sectors) that work with dangerous pathogens and toxins.
- Build an integrated database of biosafety and biosecurity academically certificated experts.

Immunization

Introduction

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

Target

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

Turkmenistan level of capabilities

Turkmenistan has a mandatory immunization plan (2003–2020) that guides the implementation of immunization. Eleven different vaccines are used for routine immunization; for most vaccines coverage is above 95%. Immunization has sustainable funding and the country has a contingency plan to double the health care workforce for the upcoming Asian Games. The vaccine management system is very robust with vaccine logistic warehouses from the national to the subnational to the district level and SOPs in place for their management. There is sustainable funding and mechanisms for vaccine procurement and logistics are in place. There are no issues of vaccine stock outs and stocks are available at various levels of the public health system. The country has addressed the findings of a Turkmenistan/United Nations Children's Fund (UNICEF) assessment of vaccine management, in particular regarding cold chain management.

Including and expanding an electronic reporting system and database for immunization would be beneficial for evidence-based decision-making and programme management. Giving consideration to the introduction of new vaccines based on evidence would further advance the immunization programme. Turkmenistan should continue ongoing activities for public awareness and concentrate particularly on targeting the immigrant population. Additional consideration should be given to the upcoming Asian Indoor Games and implications for vaccine coverage. Continual monitoring and evaluation of vaccine management particularly with regard to the cold chain, effective distribution and warehouse management, with support from an information management system for vaccine logistics would be beneficial.

Recommendations for priority actions

- Conduct drills or exercises with different scenarios which model an influx of people such as will be experienced during the upcoming Asian Games and update plans accordingly.

- Conduct periodic surveys of immunization coverage to validate the actual coverage with the intended administrative coverage.

- Establish and extend an electronic reporting system for immunization coverage and vaccine management for real-time information; this should be linked to disease surveillance information.

- The existing plans for the increased population during the Asian Games should be reviewed in detail making provisions for a) reserve stores of vaccines; b) availability and cold chain maintenance; and c) determining the number of additional people who might need to be vaccinated.

Indicators and scores

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

Strengths/best practices

- An immunization plan (2003–2020) exists and immunization is a high priority for the government.

- The immunization calendar has 11 vaccines available (hepatitis B, polio, BCG, measles, rubella, mumps, diphtheria, Haemophilus influenzae type b (Hib), pertussis, tetanus and human papillomavirus) and they are free.

- Most of the vaccine coverage levels are above 95% and immunization is mandatory (examples presented for measles vaccine coverage).

- Mandatory registration of vaccination and reporting mechanisms are in place.

- An immunization coverage survey (Mix 5) has been conducted with the support of UNICEF.

- Sustainable funding is available for immunization.

- Turkmenistan is planning for a doubling of the nurse workforce for the upcoming Asian Games.

Areas which need strengthening/challenges

- Develop a contingency plan for the upcoming Asian Games and consider conducting drills or exercises for different scenarios.

- The Center is moving towards utilization of an electronic reporting system and database; this should be expanded to regional and peripheral levels.

- Immigration is a challenge; Turkmenistan is providing an extra vaccine for children aged 10–14 who have uncertain vaccine status to deal with this situation.

- Consider the introduction of new vaccines based on evidence (from surveillance information).

- Additional consideration should be given to the upcoming Asian Indoor Games and implications for vaccine coverage.

- Continue ongoing activities for public awareness on vaccination and targeting the immigrant population can further strengthen the immunization coverage.

P.7.2 National vaccine access and delivery – Score 5

Strengths/best practices

- A well-functioning system of vaccine management is in place. Availability of vaccine logistic warehouses in 67 cities or districts, six provincial and one national vaccine storage facility at the SSES.

- Provision of sustainable funding for vaccine management.

- WHO prequalified vaccines are bought through UNICEF. In preparation for effective vaccine management, SOPs were developed and implemented at all levels. Prior to this, monitoring of the cold chain was carried out and measures were taken to improve gaps. Today almost 100% have refrigeration capacity.

- With the support of UNICEF, a vaccine management assessment was introduced and gaps identified in cold chain management and monitoring were addressed.

- Stockpiling (periphery – 1 month, regional level – 3 months and central level – 6 months with surplus).

- Purchase disposable syringes; also use a system of medical waste disposal with safety books for used syringes and needles.

PREVENT

Areas which need strengthening/challenges

- Continue monitoring vaccine management and, where applicable, the use of an information management system for vaccine logistics could be beneficial.

- The UNICEF assessment found that not all refrigerators have a temperature monitor. This has been corrected; however, continued monitoring is essential in order to ensure quality vaccination.

- The Effective Vaccine Management (EVM) assessment report (2014) highlighted some limitations on the effective distribution of vaccines at the peripheral level. There is an ongoing effort to improve this – periodic monitoring and evaluation is essential.

DETECT

National laboratory system

Introduction

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

Target

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

Turkmenistan level of capabilities

Turkmenistan has an excellent national laboratory system with capabilities and capacity for human health under the umbrella of MOHMI. This system is regulated and managed well vertically under the health sector. A national decree joins the human and animal health sectors for zoonosis diagnosis. The laboratory system is capable of testing more than five priority pathogens with a reliable specimen transportation system. The country has established a modern comprehensive laboratory system with required point-of-care testing and laboratory-based diagnoses for all the required IHR biological, chemical and radiological priority risks with an up to date data documentation and reporting system. This is yet to be activated with the required SOPs, workforce training and development for all relevant stakeholders. There is a mandatory licensing requirement from construction up to commissioning by SSES for all health laboratories with conformity to a national quality standard. Integration and enrolment of the governmental and private sectors is essential. Currently, the laboratory information system is managed manually, however the system is being prepared for digitization. Facility and system process regulation, epidemiology and field surveillance, including but not limited to, the National Reference Laboratories for Human and Zoonotic Diseases, is managed by SSES throughout the nation. However there are limited laboratories in the provinces with public health responsibility at this stage and the majority of patient testing is performed in the central laboratories.

Recommendations for priority actions

- Link the National Laboratory Policy within the 20 national health projects with the national laboratory system's technical tool indicators to establish multisectoral minimum standards. Streamline and strengthen the national laboratory system legislation and processes horizontally with stakeholders.

- Ensure minimum infrastructure and human resource standards for diagnostic, food, public health and animal health laboratories.

- Establish provincial public health reference laboratories throughout the country.

- Strengthen biosafety and biosecurity within current and future laboratories and introduce EQA schemes at all levels starting at provincial level linking with federal reference laboratories.

- Establish an Enterprise Resource Planning (ERP) system and electronic real-time laboratory biosurveillance.

Indicators and scores

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

Strengths/best practices

- The national laboratory system is capable of conducting five or more of the ten core tests.

- Established disease-specific reference laboratories.

- Collaboration with international laboratories for test referral and quality control.

- Examples of capacity and expertise that meet international standards.

Areas which need strengthening/challenges

- Strengthen biosafety and biosecurity for laboratories including disposals.

- Implement the national diagnostic algorithms for the performance of core laboratory tests at all levels in the country.

- Set up active mechanisms for validation of laboratory infrastructure and operations as well as the tests used in provincial laboratories at the national level.

- Ensure active training of the workforce and implement succession planning for experienced staff.

- Upgrade the designated provincial laboratories to improve capacity to perform ten core tests.

D.1.2 Specimen referral and transport system – Score 4

Strengths/best practices

- System is in place to transport specimens to national laboratories from at least 80% of intermediate levels or districts within the country for advanced diagnostics.

- Standardized SOPs are in place for specimen collection, packaging and transport.

- Staff trained in packing and shipping samples.

- Courier system for specimen transport from intermediate and district levels to reference laboratories and national laboratories exists.

Areas which need strengthening/challenges

- Horizontal multisectoral tested SOPs and regulations for sample transportation need to be verified and modified accordingly.

- Specimen shipment network to overseas referral laboratories is to be strengthened.

- Systems for the transportation of samples in term of biosafety and security need to be improved and integrated throughout all sectors.

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

Strengths/best practices

- Tier specific diagnostic testing strategies are documented, but not fully implemented.

- Country is proficient in classical diagnostic techniques including bacteriology, serology and PCR (polymerase chain reaction) in selected laboratories 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 reagent and laboratory material procurement exists in almost all public sector institutions.

- Procurement is carried out using standard procedures for animal, chemical, biological and radiological

laboratory detection.

Areas which need strengthening/challenges

- Need to develop a horizontally integrated structure for laboratory testing in different tiers of laboratories; national, provincial, district and community.

- Increased emphasis should be placed on ensuring biosafety and biosecurity in current and new laboratories.

- Development and improvement in workforce planning, development and training at all levels of testing.

D.1.4 Laboratory quality system – Score 4

Strengths/best practices

- Mandatory licensing of all health laboratories is in place and conformity to a national quality standard is required.

- International accreditation process is implemented through central reference laboratories.

- Quality and performance of tests conducted in the reference laboratories is continuously tested and reported.

Areas which need strengthening/challenges

- Adopt and implement the National Laboratory Policy to establish the licensing and inspection of all human, veterinary and food laboratories to international standards.

- Establish a nationally coordinated EQA system for all core human tests and relevant testing in veterinary and food laboratories.

- Promote the adoption of quality management systems for laboratory disposal to ensure isolation of contamination sources through the sanitation drainage.

- Develop an ERP system for the laboratory to facilitate detection and reporting.

DETECT

Real-time surveillance

Introduction

The purpose of real-time surveillance is to advance the safety, security and resilience of the nation by leading an integrated biosurveillance effort that facilitates early warning and situational awareness of biological events.

Target

Strengthened foundational indicator- and event-based surveillance systems that are able to detect events of significance for public health, animal health and health security; improved communication and collaboration across sectors and between subnational, national and international levels of authority regarding surveillance of events of public health significance; improved country and regional capacity to analyse and link data from and between strengthened, real-time surveillance systems, including interoperable, interconnected electronic reporting systems. This would include epidemiologic, clinical, laboratory, environmental testing, product safety and quality and bioinformatics data; and advancement in fulfilling the core capacity requirements for surveillance in accordance with the IHR and the OIE standards.

Turkmenistan level of capabilities

Turkmenistan has established well-functioning reporting systems for many high-priority diseases in humans and animals with the ability to provide data for monitoring and review on a regular basis. These systems are supported by national legislation, the MOHMI and the Ministry of Agriculture ordinances (prikaz), local regulations and SOPs. Robust paper-based disease notification systems are employed by the MOHMI and the Ministry of Agriculture for human and animal diseases, including high-priority infectious diseases in accordance with the IHR, and acute flaccid paralysis syndrome. Standardized disease notification forms and surveillance reports for 71 diseases are used at all levels of the health system in Turkmenistan. Standardized case definitions and indicators are used for certain diseases (such as rabies, measles and rubella). The established reporting mechanism also allows early reporting of unconfirmed cases of some priority infectious diseases with, if necessary, later adjustment of reports based on additional laboratory or other data collected at later times. The dedicated team at the MOHMI reviews incoming data regularly and compiles comprehensive quarterly and annual disease notification reports.

In recent years, Turkmenistan has made tremendous progress in transitioning from paper-based to electronic health records. Currently electronic health records and databases are in use at a limited number of hospitals and clinics, primarily in Ashgabat. Further extension of electronic health records to other areas of the country and implementation of interconnectivity of the databases are expected in the future.

Turkmenistan's current notification system is well established and robust for many infectious diseases (measles, rubella and others), though the system is not fully capable of rapidly identifying potential events of concern for public health and health security in the event of unexpected pathogens or emergencies. Turkmenistan's national and regional capabilities to rapidly recognize aberrations in the incidence of known pathogens or the emergence of relatively rare or previously undescribed pathogens could be greatly strengthened by the development of an interoperable and interconnected multisectoral electronic surveillance system with both indicator-based (including syndromic) and event-based surveillance functionalities.

Recommendations for priority actions

- Development and implementation of an interoperable and interconnected (linking public health and veterinary, for example) electronic real-time reporting system with an integrated electronic Early Warning and Response (EWAR) system to automatically collect, analyse and detect any abnormal occurrence or any divergence from the usual or normally observed frequency of phenomena in real time.

- Development and implementation of event-based surveillance (EBS) to allow the organized collection, monitoring, assessment and interpretation of mainly unstructured ad hoc information regarding health events, which may represent an acute risk to human health. The EBS should be incorporated into the EWAR as an additional functional component of the system.

- Expansion of syndromic surveillance by adding surveillance for at least two additional internationally recognized and standardized syndromes. The selection of those additional syndromes should be based on risk assessment for disease control priorities in the country.

Indicators and scores

D.2.1 Indicator and EBS systems – Score 3

Strengths/best practices

- National legislation combined with MOHMI regulations and orders (prikaz) and the wide net of the SSES serve as a strong foundation for a well-functioning disease indicator-based notification system in the country.

- Infectious diseases are regularly reported to the SSES. Certain infectious diseases require fast track reporting: immediately by phone to the SSES, or within 12 hours from the moment of detection in the city, or within 24 hours in rural areas.

- There is a mechanism for submitting preliminary unconfirmed case paper-based reports from primary care and other medical facilities to the SSES while laboratory or other confirmations are pending.

- Established and functioning indicators are developed for many relevant infectious diseases.

Areas which need strengthening/challenges

- Currently there is no EBS system in place or under development. This limitation diminishes the ability of the country to promptly recognize and investigate the unexpected emergence of not only known, but also rare or previously undescribed pathogens.

- Systematic syndromic surveillance is limited to one syndrome – acute flaccid paralysis. It is recommended that syndromic surveillance be available for at least three core syndromes; therefore, syndromic surveillance in Turkmenistan needs further strengthening by adding additional syndromes to the surveillance list.

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

Strengths/best practices

- Turkmenistan has initiated implementation of electronic health records at selected health care facilities.

- Smart identity cards are issued to patients for identification and storage of personal information and limited medical data.

- Standard medical and clinical data gathered in the provider's office allows health care providers to track health records over time, identify patients who are due for preventive visits (such as vaccinations) and laboratory testing.

- Electronic health record data include information that can be potentially used for disease surveillance purposes.

Areas which need strengthening/challenges

- The electronic health records systems in health care facilities are currently isolated and not interconnected with the SSES.

- SSES's surveillance datasets and databases at local, regional and national level are not interconnected.

- Though the data are shared on an as needed basis between the sectors, there is no common electronic platform for reporting human and animal notifiable diseases. At present, no interoperable, interconnected, electronic reporting systems exist in the country.

- The separated paper-based surveillance systems utilized by the country are susceptible to delays in analysis and recognition of emergent threats.

- Paper-based systems cause delays in analysis of data merged from many sources therefore leading to delayed feedback from the national SSES data processing centre back to intermediate and local levels.

D.2.3 Analysis of surveillance data – Score 4

Strengths/best practices

- Certain infectious diseases requiring fast track reporting (immediately by phone) are reviewed and analysed by the local SSES on a daily and weekly basis.

- National surveillance data for many priority infectious diseases are analysed at least quarterly and annually.

- The data are compiled and analysed by a dedicated team that includes experts in human health, epidemiology and data analysis, and invited consultants in animal health.

- Comprehensive annual surveillance reports present data stratified by disease, time, geographical area and some other factors.

Areas which need strengthening/challenges

- Coordination of data analysis and data interpretation needs to be strengthened with non-health sectors involved in IHR implementation.

- Data sharing between the sectors is not always regular. Surveillance data and analysis reports are not automatically shared across multiple sectors.

- Compilation and analysis of collected surveillance data is extremely time and labour-intensive because many tasks have to be completed manually.

- Implementation of modern tools and software which allow automation of surveillance data analysis and reporting is still lacking.

- The format of most generated surveillance reports is static (limited to disease, time and geographical area). A more frequent and more comprehensive analysis (with, for example, additional stratifications and unadjusted and adjusted ratios) based on risk assessments would strengthen relevance and interpretation of surveillance data.

D.2.4 Syndromic surveillance systems – Score: 3

Strengths/best practices

- There is a functioning national syndromic surveillance system in place to detect and report the syndrome of acute flaccid paralysis.

- The system utilizes various mechanisms (such as chart review and double entry) of data validation of reported cases.

- Data are regularly reviewed and the review reports are used by the SSES and the MOHMI to initiate further investigations and interventions as required.

Areas which need strengthening/challenges

- Systematic syndromic surveillance is limited to only one syndrome – acute flaccid paralysis.

- The syndromic surveillance system is paper-based and does not use electronic reporting.

- Syndromic surveillance reports are not automatically shared with any other ministries within the country.

- Implementation of modern tools and software that allow automatization of data collection, analysis and reporting of syndromic surveillance data is lacking.

DETECT

Reporting

Introduction

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

Target

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

Turkmenistan level of capabilities

The national system for reporting of health events to the central level is well established, being represented by the SSES of the MOHMI, which is also the National IHR Focal Point in Turkmenistan. The senior person in charge is the Deputy Minister of Health, Head of the SSES. For the veterinary sector, the National Focal Point for OIE is located within the Ministry of Agriculture.

A legislative basis for the reporting of infectious diseases exists, and is represented by two dedicated orders: MOHMI Order No. 68 dated 29 February 2012 on the Procedure of Registration of Infectious and Parasitic Diseases in Turkmenistan and MOHMI Order No. 109 dated 7 April 2014 on Extraordinary Reports Submitted to the MOHMI of Turkmenistan. Existing orders also identify the list of infectious diseases, emergence of which initiates dedicated procedures for reporting. There are standard algorithms developed for certain priority infections, such as measles, rubella, acute flaccid paralysis and influenza. Thus, if certain infectious diseases are detected, the medical worker in charge is obliged to report the event to the territorial department of the SSES – if in the city, within 12 hours from the moment of detection, while if in rural area, within 24 hours. For specific infections, such as measles, diphtheria, typhoid, acute flaccid paralysis, an AIDS-defining illness and foodborne infections, the case must be immediately reported to the territorial SSES by phone with subsequent submission of a preliminary written report. The national reporting scheme on infectious diseases reflects the vertical structure of the SSES: the hospital reports to the lowest district (etrap) level SSES, which then reports to the provincial (velayat) level, which then reports the information to the central national level.

The function of IHR reporting is limited largely due to the absence of the necessary standard operating procedures, protocols and established communication channels between the National IHR Focal Point and the non-health sectors, which do not have the National IHR Focal Point function defined in the relevant legislation and procedures. Therefore, at present the National IHR Focal Point has limited reporting capacity, being capable of timely reporting of events within the health sector (infectious hazards) only.

Recommendations for priority actions

- Adequately append the requirement and the mode of reporting from different sectors involved in IHR implementation in Turkmenistan to the National IHR Focal Point.

- Develop reporting mechanisms and modalities that would provide for uninterrupted information sharing between the national sectors and the National IHR Focal Point.

- Develop necessary SOPs and reporting schemes for different sectors involved in IHR implementation in Turkmenistan to the National IHR Focal Point.

- Better link national public health and veterinary sectors, as per the requirements of the One Health approach.

- Train staff involved in surveillance and information management in the health and non-health sectors involved in IHR implementation on the principles of reporting and the Annex 2 decision-making instrument (IHR, 2005) and conduct simulation exercises on reporting for the various sectors.

Indicators and scores

D.4.1 System for efficient reporting to WHO, FAO and OIE – Score 2

Strengths/best practices

- Well established vertical reporting mechanisms within the health surveillance system on infectious hazards with relevant legislative basis.

- Established procedures for reporting priority infectious diseases to the national level.

- Vertical reporting system within the animal health sector in the Ministry of Agriculture.

- The National IHR Focal Point is located at the central (national) level of the country surveillance system, which has wide outreach and is able to provide timely information on infectious hazards.

- Similarly, the National OIE Focal Point is placed at the central (national) level within the Ministry of Agriculture.

- Intercountry agreements on information sharing are present with certain neighbouring countries.

Areas which need strengthening/challenges

- The National IHR Focal Point is not linked with non-health sectors involved in IHR implementation on a regular daily basis.

- Only the MOHMI reports directly to the National IHR Focal Point.

- There is limited routine interaction between the National IHR Focal Point and the National OIE Focal Point within the Ministry of Agriculture, contrary to the principles of the One Health approach;

- There is no systematic reporting or information sharing between the National IHR Focal Point and non-health sectors involved in IHR implementation in Turkmenistan.

- Reporting provisions for the non-health sectors and the modality in relation to timely information sharing with the National IHR Focal Point are absent or insufficient.

- There has been no specialized training conducted for the responsible staff at the National IHR Focal Point on IHR reporting.

- There are no specific provisions for consultation between the National IHR Focal Point and WHO as per Article 8 of the IHR 2005.

D.4.2 Reporting network and protocols in country – Score 2

Strengths/best practices

- Reporting schemes are present within the health sectors facilitating timely vertical flow of information from the periphery to the central decision-making level of the system.

- The National IHR Focal Point has access to WHO training materials and best practices.

- Documents regulating reporting within individual national sectors are present.

- Consultations within the health sector are conducted on a regular basis.

- Trained specialized medical personnel are available.

- Tailored relations between all levels of the health system.

Areas which need strengthening/challenges

- Different reporting modalities existing within different national sectors are not systematically linked under a single IHR coordinating body, the National IHR Focal Point.

- Reporting protocols specific to the IHR are not present within non-health sectors.

- Training on the reporting of events is limited to the health sector only.

- An electronic information system for IHR-related reporting is missing and would be desirable to facilitate timely exchange of information between sectors.

- Further training of specialists, especially from non-health sectors, is necessary for awareness on the IHR reporting requirements and procedures.

- Introduction of an electronic information management system to facilitate timely information exchange between the sectors.

- Coordination with non-health sectors involved in IHR implementation needs to be strengthened.

Workforce development

Introduction

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

Target

State Parties with skilled and competent health personnel for sustainable and functional public health surveillance and response at all levels of the health system and the effective implementation of the IHR (2005). A workforce includes physicians, animal health specialists or veterinarians, biostatisticians, laboratory scientists, farming or 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.

Turkmenistan level of capabilities

Turkmenistan has demonstrated that the country's educational system has adequate resources to train qualified specialists in human and animal health. Higher education institutions, such as the Turkmen State Medical University (TSMU) and the Turkmen Agricultural University, have well established doctoral and master's degree programmes to prepare physicians, veterinarians, laboratory scientists and livestock professionals. Despite having strong and high-quality core curricula, these curricula are not frequently updated in response to the most recent international trends and requirements in the field. For example, the veterinary curriculum is not based on OIE recommendations and does not contain such topics as the application of risk analysis, modern veterinary research or the international trade framework. The medical curriculum does not sufficiently cover such topics as mechanisms, recent trends and control of antimicrobial resistance, current issues of global health, or new and emergent diseases. Various training courses and continuing education courses are regularly offered by the TSMU, including by the university's Department of Epidemiology and Infectious Diseases. Regular attendance and completion of continuing education courses is required for medical professionals. However, there are no similar requirements for veterinarians or other specialties. Current continuing education training offerings do not include structured courses in applied epidemiology equivalent to the short-term FETP.

The number of physicians and nurses working in the country in any medical field are 2.3 and 4.5 per 1,000 population, respectively. Notably, the TSMU has a specialized education programme, Preventive Medicine and Epidemiology, which incorporates some elements of FETP training, and is used to prepare new physician-epidemiologists with the aim of providing a qualified workforce to the SSES. The target of having one epidemiologist per 200,000 population is not only met, but also greatly exceeded (by approximately ten-fold) in Turkmenistan. Data on the precise numbers of veterinarians, wild livestock specialists and other related professionals working in Turkmenistan was not available.

In general, a multidisciplinary workforce is available at all levels of the public health system, with some exceptions (notably, no dedicated social scientists are employed, even at the national level). Since the time the approved National Health Care Workforce Plan for 2012–2016 came into effect, health care provision has undergone substantial changes. However, the retention of qualified personnel and the geographical distribution of the workforce remain suboptimal, with some specialities and geographical areas having excessive numbers of personnel and others experiencing a lack of a qualified workforce. The MOHMI requested and received consultations from the WHO Regional Office for Europe and in-country offices

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on optimizing the performance of health systems through the application of new and innovative ways of addressing health workforce policy, workforce planning and management. Currently a new health care workforce strategy is under development (expected completion in December 2016) by the MOHMI.

Recommendations for priority actions

- Develop and implement a short-course FETP, or equivalent continuous education course, guided by the IHR and the One Health approach and incorporating modern methods of field epidemiology, including outbreak investigation and analysis using specialized software and tools.

- Conduct a multisectoral assessment of the workforce at all levels. Based on the results of this assessment, update the National Workforce Plan to ensure recruitment (including biostatisticians and social scientists), retention, continuous education and promotion of a qualified workforce within the national system.

Indicators and scores

D.5.1 Human resources are available to implement IHR core capacity requirements – Score 4

Strengths/best practices

- Excellent university resources with adequate financial support and well established core curricula.

- Dedicated Preventive Medicine and Epidemiology educational programme to prepare physician-epidemiologists for the SSES.

- Overall, good coverage by physicians and nurses working in the medical field.

- Trained physician-epidemiologists are employed on all levels of the national system, with coverage density far exceeding the recommended minimum of one epidemiologist per 200,000 population.

- Required continued education for physicians and physician-epidemiologists with a variety of training courses offered by the MOHMI.

Areas which need strengthening/challenges

- Curricula are not frequently and promptly updated in response to the most recent trends and requirements of the field.

- The veterinary curriculum is not based on OIE recommendations.

- The veterinary curriculum is missing a variety of advanced educational topics, such as the application of risk analysis, modern veterinary research and the international trade framework.

- The medical curriculum does not cover sufficiently issues of antimicrobial resistance, global health or new and emergent diseases.

- No obligatory requirement for the continued education of veterinarians, wildlife experts or other specialties.

- No dedicated social scientists are employed at the national level.

- Retention of qualified personnel and geographical distribution of the workforce remain suboptimal, with some specialities and geographical areas having excessive numbers and others experiencing a lack of a qualified workforce.

D.5.2 Field Epidemiology Training Programme or other applied epidemiology training programme in place – Score 3

Strengths/best practices

- Collaboration in medical education with ministries of health in other countries; in particular, offering Turkmenistan's physicians the opportunity to complete FETP training in Kazakhstan.

- Four staff members of the MOHMI at national level completed the FETP course in Kazakhstan.

- TSMU's Preventive Medicine and Epidemiology programme incorporates core concepts of field epidemiology and can be generally considered equivalent to the full FETP course.

Areas which need strengthening/challenges

- Though in some areas (such as the epidemiology of specific diseases) TSMU's Preventive Medicine and Epidemiology programme greatly exceeds the coverage offered by the full FETP course, other areas (such as risk assessment, global health, modern methods of outbreak investigation and analysis using specialized software and tools) need to be strengthened.

- Current continuing education training offerings do not include structured courses in applied epidemiology equivalent to a short-term FETP.

D.5.3 Workforce strategy – Score 3

Strengths/best practices

- Successful development and approval of the previous National Health Care Workforce Plan in 2012.

- Recognition of the necessity of updating the workforce strategy and the plan in response to rapidly changing global and national environments.

- Productive collaboration with the WHO Regional Office for Europe to convene a flagship course on human resources for health in Ashgabat (October 2015) and completion of the initial assessment, forecasting and planning of the country's health workforce needs using validated standardized instruments.

- Continuing collaboration with the local WHO office in the development of a new health care workforce strategy (expected completion – December 2016).

Areas which need strengthening/challenges

- Improve coordination and awareness of all ministries involved in the implementation of the IHR in regard to the current workforce situation in various fields and the future development strategy.

- Conduct a multisectoral assessment of the workforce at all levels in collaboration with other ministries.

- Based on the results of the assessment, update the National Workforce Plan to ensure recruitment (including biostatisticians and social scientists), retention, continuous education and promotion of a qualified workforce within the national system.

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Preparedness

Introduction

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

Target

Development and maintenance of national, intermediate (district) and local or primary level public health emergency response plans for relevant biological, chemical, radiological and nuclear hazards. This covers mapping of potential hazards, identification and maintenance of available resources, including national stockpiles and the capacity to support operations at the intermediate and local or primary levels during a public health emergency.

Turkmenistan level of capabilities

Health emergency preparedness in Turkmenistan encompasses a number of reactive mitigation and response measures taken before a disaster event which are aimed at minimizing loss of life and disruption of critical services and damage when the disaster occurs. Preparedness with non-integrated protective processes has enabled the MOHMI and other authorities to vertically respond rapidly and effectively to disaster situations. Health emergency preparedness in Turkmenistan includes capacity-building, development of emergency response plans, effective warning systems, and maintenance of inventories which are sufficient for the national need.

With support from WHO, the National Health Emergency Preparedness and Response Plan was established under the Ministry of Defense (MOD) including emergency medicine and medical services. The Emergency and Disaster Management Authority under the MOD in coordination with the health sector has been playing a vital role in the preparation of health effect response to all defined risks.

The health sector, in consultation with WHO and in collaboration with the Emergency and Disaster Management Authority, leads the multisectoral and all-hazards health preparedness and response planning and implementation. This process is initiated and derived from the All-Hazards National Emergency Preparedness Plan. All national resources have been mapped for active IHR-relevant hazards and priority risks and a plan for management and distribution of national stockpiles is in place. Decrees, SOPs, plans and strategy are in place to allocate, reallocate or mobilize resources from national and intermediate levels to support action at local response level (including the ability to scale up the level of response).

Recommendations for priority actions

- Conduct an all-hazards risk assessment and resource mapping exercise. Develop SOPs to assess risks and map resources. The process for reallocation or mobilization of resources from national and intermediate levels to support action at the local response level (including the ability to scale up the level of response) needs to be revisited. National profiles on risks and resources need to be updated.

- The plan needs to be reviewed on an annual basis including its required stockpiles (critical stock levels) for responding to priority biological, chemical and radiological events and other emergencies. This should be integrated and accessible horizontally between programmes and sectors.

- Designate an independent monitoring, auditing and continuous quality improvement body with processes and resources to ensure that the National Public Health Emergency Preparedness and Response Plan is implemented and tested in an actual emergency or through simulation exercises and updated as needed.

Indicators and scores

R.1.1 Multihazard National Public Health Emergency Preparedness and Response Plan is developed and implemented – Score 4

Strengths/best practices

- Procedures, plans or strategies are in place to reallocate or mobilize resources from national and intermediate levels to support action at local response level (including the ability to scale up the level of response).

- The Government Supreme Council is the national designated body to manage threats to the nation's security, industry and economy.

- The National Public Health Emergency Preparedness and Response Plan is available and addresses multihazard national public health emergency preparedness and response to meet IHR core capacity requirements.

- The National Public Health Emergency Preparedness and Response Plan incorporates IHR-related hazards and points of entry. Surge capacity to respond to public health emergencies of national and international concern is available.

- There is evidence that all government sectors are equipped with the necessary legislative support, policies procedures, functions and resources to manage all magnitude events that significantly affect the national resources, assets, or the safety and well-being of the Turkmenistan national and international community.

- National level, extensive, hazard-specific preparedness plans with solid vertical legislative integration including public health and similar provincial or regional plans exist and are tested annually.

Areas which need strengthening/challenges

- For the plan to be comprehensive and multisectoral the national IHR-specific roles and responsibilities must be defined both vertically and horizontally across sectors.

- A paradigm shift to a One Health approach is needed, with a system to command, control and lessen national risks and threats. This is the basis of a sustainable framework to ensure an effective multisectoral response.

- Steps needs to be taken to share the One Health multisectoral system values with all stakeholders based on an international profile.

- Implement and test the streamlined national plan and subplans during actual incidents or events with simulated modular national exercises and update them with corrective actions as needed.

R.1.2 Priority public health risks and resources are mapped and utilized – Score 3

Strengths/best practices

- National resources have been mapped (including logistics, experts and finance) for IHR-relevant hazards and priority risks and plans for the management and distribution of national stockpiles are in place.

- Each government sector has conducted a national risk assessment and resource mapping exercise which includes all components and has used this exercise to identify potential urgent health and other events consistent with international recommendations.

- Decrees, SOPs, plans and strategies are in place to allocate, reallocate or mobilize resources from national and intermediate levels to support action at the local response level (including the ability to scale up the level of response).

- Each government sector has the required processes to implement its own programmes and has the essential decrees and legislation and functions that are vertically enabled and supported with an established system for the management and distribution of the stockpile.

- The health sector at all levels – federal, provincial, district and local – has reflected an organized systematic, coordinated and well equipped performance on more than one specific project.

Areas which need strengthening/challenges

- A national specific profile on risks and resources linked to IHR-relevant hazards needs to be developed and vertical plans in all sectors should be updated accordingly.

- These plans should then be reviewed and assessed regularly for their ability to respond and accommodate national emergency threats including all priority biological, chemical, radiological and other national emergencies and events with accessible stockpiles.

- There is a need to shift the paradigm from routine implementation of processes and legislative decrees to a more dynamic system with national standardization, integration and sustainability. One of the immediate areas to strengthen in this regard is to use the JEE tool to benchmark development and progress with a One Health multisectoral approach to achieve a multihazard, multisectoral integrated preparedness plan.

Emergency response operations

Introduction

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

Target

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

Turkmenistan level of capabilities

The EOC is an essential component of Turkmenistan's public health event management system. It is supported by the appropriate legislation and decrees. Evidence of integration at all levels between all relevant stakeholders was demonstrated. Turkmenistan has a 24/7 EOC structure and function which operates based on procedures which determine when to activate public health emergency operations. There are plans and procedures for an incident management system. The country regularly conducts exercises to test its system, decision-making processes and operational performance. The EOC's trained and dedicated staff have the capacity to activate and coordinate national public health EOC functions and response within two hours as per the operational guidelines. Case management for priority epidemic-prone diseases and other IHR-relevant hazards is available and is integrated at relevant health system levels. The health sector and the national emergency and disaster EOCs are provided with standardized communication and information tools and services and a management system to perform their central coordinating role between all stakeholders during a response to an emergency or an emergency exercise.

It is necessary to develop a more functional multisectoral response through more horizontal integration between stakeholders. In addition, there is a need to frequently test the EOC activation and coordination plan, document the findings, and augment the plan accordingly in order to ensure its ability to acquire and provide adequate resources for all scaled levels of response.

Recommendations for priority actions

- Ensure that the EOC regularly conducts exercises (two or more times per year) to test its functionality, including follow-up testing and evaluation. The process should be documented and analysed, and a corrective action plan should be developed and implemented.

- Ensure that the plan describes integrated multisectoral scaled levels of response with resource requirements for each level and procedures for acquiring additional resources.

- Ensure regular workforce training and development.

- Adapt an ERP system to ensure timely processes and real-time surveillance in addition to the government requirement for manual documentation for stakeholder's actions and process implementation accountability and responsibilities.

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Indicators and scores

R.2.1 Capacity to activate emergency operations – Score 5

Strengths/best practices

- In addition to activities for demonstrated capacity, exercises are conducted two or more times per year to test EOC activation.

- SOPs are available for EOC activation.

- The EOC organization, operational structure and point of contact are defined. The point of contact is available 24/7 to guide the response.

- The EOC staff are trained in emergency management and public health EOC SOPs. They are available for response 24/7.

- EOC staff are trained and dedicated to the national public health EOC functions and can activate a response within two hours.

- The Government Supreme Council, the MOD and the MOHMI take lead roles in response and coordination with relevant health departments at the federal and provincial levels. The activation is in accordance with the level of emergency with a health cluster approach.

- EOC as a body has appropriate linkages with WHO and the United Nations. Specific guidelines and mechanisms are in place for coordination and integration. Updated legislation has been developed and is pending final approval by the Turkmenistan Government Supreme Council.

Areas which need strengthening/challenges

- Implement and document exercises to test EOC activation conducted two or more times per year.

- Ensure that the EOC is strengthened to effectively respond to any multisectoral national public health emergency based on a horizontally integrated risk management system.

- Adopt a multisectoral approach with the involvement of all relevant stakeholders for standardized, transparent, integrated risk communications.

- Approve IHR coordination and integration legislation and SOPs.

- Strengthen mechanisms for localities to manage emergency response activities.

- Adapt an ERP system to ensure timely processes and real-time biosurveillance.

R.2.2 EOC operating procedures and plans – Score 4

Strengths /best practices

- In addition to meeting developed capacity, the following EOC plans are in place: concept of operations; forms and templates for data collection, reporting and briefing; and role descriptions and job aids for EOC functional positions.

- The EOC has plans and procedures which operate within a defined incident management structure and which describe its key structural and operational elements. These include basic roles for conducting incident management or command, operations, planning, logistics and finance.

- EOC plans and operation manuals are in place. The EOC, as the nation's central public health incident and disaster management coordinating body, has been provided with sufficient operation support resources.

- Turkmenistan provided evidence of all required documentation, legislation, decrees, SOPs and plans and subplans which demonstrate the ability to provide for solid vertical implementation during emergency incidents and exercises at all levels.

- Areas which need strengthening/challenges

- Strengthen EOC response plans to describe and ensure capacity for implementing scaled levels of response with resource requirements for each level and procedures for acquiring additional resources.

- Need to streamline the EOC's operational procedures and plans under a high-level body in order to ensure a One Health approach. Its leadership, management, development, enforcement and sustainability should be mandated and linked to the Supreme Council. This body is essential to close the vertical and horizontal gaps in relation to nation health plans and a One Health strategy.

R.2.3 Emergency Operations Programme – Score 5

Strengths/best practices

- In addition to achieving demonstrated capacity, a follow-up evaluation was conducted and a corrective action plan was developed and implemented.

- The EOC incident management system operations have been proven to be functional through exercises.

- The EOC conducts exercises to test its system decision-making, decision-making processes and operational performance. The exercises are documented, reviewed and analysed.

- The EOC provided evidence of completing an actual event that was conducted to demonstrate its operations capabilities; the results were reviewed and analysed.

- The EOC system is capable of activating a coordinated emergency response within the set standard time from the identification of a public health emergency.

- Vertically the health cluster approach to all national emergency plans and subplans has proven to be effective. It is integrated with the bodies responsible for national emergency and disaster response and the Turkmenistan Government Supreme Council.

- The emergency operations programme is tested annually; corrective actions were taken for identified deficiencies.

- The Turkmenistan EOC demonstrated capacity to provide the following in relation to potentially infectious patients or other IHR patients with significant conditions:
  - Case management;
  - Patient referral;
  - Transportation and its management;
  - Implementation according to guidelines or SOPs;
  - Link and coordination with the Emergency and Disaster Management Authority managed by the MOD.

Areas which need strengthening/challenges

- There is a need for the EOC's emergency operations programme functions to be integrated and unified under a One Health operating plan with appropriate delegation of authority to the health sector, including integration of all stakeholders.

- Through this delegated authority, the following functions should be established: monitoring and evaluation, institution of a performance measurement management system, continuous quality improvement and ongoing research and development.

- The plan should provide the ability to enforce development and sustainability of the above functions.

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

Strengths/best practices

- Case management guidelines are available for priority epidemic-prone diseases and IHR-relevant hazards at all health system levels.

- SOPs are available for the management and transport of potentially infectious patients at both the local level and point of entry.

- Patient referral and transportation mechanisms with adequate resources are available.

- Provincial and district rapid response teams are trained in case management of IHR-related emergencies.

- Integrated human and animal health actions were demonstrated and reported at the national level.

- There is annual actual testing of response capability including event and case management with the returning Hajj pilgrims. This actual exercise is coordinated and managed by the health sector EOC. Lessons are learnt and plans modified accordingly.

Areas which need strengthening/challenges

- Joint training across sectors would create efficiencies and improve capacity.

Linking public health and security authorities

Introduction

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

Target

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

Turkmenistan level of capabilities

The Turkmenistan health sector has demonstrated the availability of legislation, decrees and SOPs that permit a multisectoral response to significant high-risk biological threats that involve national security. The National Emergency and Disaster Management Authority under the MOD is the body that leads emergency medicine at the central and provincial level in collaboration with the appropriate health sector departments, and is mandated to manage and coordinate activities in response to a wide spectrum of disasters and emergencies and to conduct a single window operation. Strong engagement between public health and law enforcement is demonstrated in the response plan.

Within the rules of business in the Government of Turkmenistan, the public and animal health systems at all levels are able to request the support and engagement of law enforcement agencies for assistance with managing a health event or hazard. A current best practice in Turkmenistan is the development of a highly coordinated and integrated strategy to mitigate any reported national risk. The following are in place: legal background, protocols, agreements and defined points of contact between public health, animal health and security authorities. Though there is no formal specific memorandum of understanding between the two sectors, decrees and SOPs are in place outlining the links between public health and security authorities.

There is no formal mechanism for public health and security authorities to exchange reports and information on events of joint concern at national, intermediate and local levels. It is essential to provide joint training to public health and security authorities to institutionalize knowledge of the decrees and SOPs, and integrate their functions in response to a significant event.

Recommendations for priority actions

- Develop a national policy or memorandum of understanding between public health, animal health, food safety, law enforcement and security agencies with specific SOPs to cement and accelerate the coordination needed for a prompt and appropriate response to public health core priority events.

- Conduct joint testing or simulation exercises for a public health emergency response that tests the linkages, SOPs and protocols and ensures information sharing.

- Develop a system or mechanism for public health and security authorities to exchange reports and information on events of joint concern at national, intermediate and local levels using a formal link or protocol.

Indicators and scores

R.3.1 Public health and security authorities, (such as law enforcement, border control and customs) are linked during a suspect or confirmed biological event – Score 3

Strengths/best practices

- A memorandum of understanding or other agreement (that is, a protocol) exists between public health and security authorities within the country and has been formally accepted.

- There is a strong link between the health sector and the MOD.

- The triggers for notification and information sharing between public health, animal health and security authorities are available.

- Extensive decrees and SOPs exist that outline general linking protocols between public health and security authorities within the country. These have been formally adopted.

- The National Emergency and Disaster Management Authority (under the umbrella of the MOD in coordination with the emergency public health departments and their provincial counterparts) have clear protocols that engage the police or the army when there is a disaster or major hazardous event.

- National statutes enable the civil government to call in the security sector or the army to assist with any event requiring law enforcement, rescue and relief and rehabilitation operations. In addition, the rules of business of the Government of Turkmenistan enable the public health service at all levels to request assistance from the police and other security assets.

- At all levels the emergency health and disaster management sector is empowered to direct both health and law enforcement to respond to an event.

- There are highly coordinated and integrated strategies developed jointly by public health and security agencies to mitigate the risk of significant public health events.

- The Turkmenistan MOD, the body in charge of emergency medicine and disasters, has medical infrastructure which is engaged during significant events.

Areas which need strengthening/challenges

- Horizontal integration within the SOPs to guide the actions of different stakeholders in a highly coordinated multisectoral response to a health emergency needs strengthening.

- There is no evidence of training at regional or national levels that includes both public health and security authorities on topics related to specific roles and responsibilities, information sharing and joint investigations and responses.

- The public health emergency response simulations or exercises during the previous year included multisectoral information sharing but not specifically with security authorities.

- Public health and security authorities need to have the capacity to exchange reports and information on events of joint concern at national, intermediate and local levels using the agreed upon plans and decrees.

- Public health and security authorities need to engage in a joint training programme to orient, exercise and institutionalize knowledge of the mutual decrees.

Medical countermeasures and personnel deployment

Introduction

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

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

Turkmenistan level of capabilities

Turkmenistan has a plan in place that identifies procedures and decision-making related to sending and receiving medical countermeasures during a public health emergency. There are agreements with manufacturers or distributors to procure medical countermeasures during a public health emergency. Turkmenistan has a plan and procedures for sending health personnel; health professionals were deployed during the Ebola response, the Nepal earthquake and support to Afghanistan. This plan also ensures liability, financial, safety and security concerns for the deployed personnel.

Conducting regular drills or exercises for sending and receiving medical countermeasures could be beneficial. Development of a plan and standards for receiving health personnel in an emergency is recommended as part of a proactive approach. Turkmenistan has qualified human resource capacities which can be mobilized for international deployment. Developing an affiliation with networks such as the Global Outbreak Alert and Response Network would be beneficial for global health security.

Recommendations for priority actions

- Develop and test the plan and standards for receiving health personnel for public health emergencies.
- Conduct drills or exercise to evaluate and update the plan for sending and receiving medical countermeasures in and out of Turkmenistan.
- Establish or participate in networks such as the Global Outbreak Alert and Response Network for international response, which is beneficial for global health security.

Indicators and scores

R.4.1 System is in place for sending and receiving medical countermeasures during a public health emergency – Score 4

Strengths/best practices
- Turkmenistan has a plan in place that identifies procedures and decision-making related to sending and receiving medical countermeasures during a public health emergency. Stockpiles are available. The pandemic preparedness plan also addresses this topic.
- There are agreements with manufacturers or distributors to procure medical countermeasures during a public health emergency.

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- There are dedicated resources and staffing identified for logistics related to the delivery, receipt, tracking and distribution of countermeasures.

- There is a plan, procedure or legal provision in place for procuring and distributing animal health countermeasures.

Areas which need strengthening/challenges

- Conducting a drill or exercise for sending and receiving medical countermeasures would be beneficial for testing the system and deducing lessons learnt.

R.4.2 System is in place for sending and receiving health personnel during a public health emergency – Score 2

Strengths/best practices

- The county has a plan, procedures and decision-making authorities related to sending health personnel during a public health emergency (teams were deployed during the Ebola outbreak, the Nepal earthquake and to provide support to Afghanistan).

- This plan has addressed the liability, financial, safety and security concerns for medical personnel on international deployment.

- Turkmenistan has an efficient and well trained human resource capacity with a medical background, epidemiology and laboratory experience. These individuals can be considered for international deployment through international networks such as the Global Outbreak Alert and Response Network.

Areas which need strengthening/challenges

- The plan does not address the receiving of health personnel; therefore it is imperative to identify training criteria and qualification or licensing standards for receiving health personnel in the plan.

- Review and revise pandemic preparedness and other emergency plans to include personnel deployment.

Risk communication

Introduction

Risk communications should be a multilevel and multifaceted process which aims at helping stakeholders define risks, identify hazards, assess vulnerabilities and promote community resilience, thereby promoting the capacity to cope with an unfolding public health emergency. An essential part of risk communication is the dissemination of information to the public about health risks and events, such as disease outbreaks. For any communication about risk caused by a specific event to be effective, the social, religious, cultural, political and economic aspects associated with the event should be taken into account, as well as the voice of the affected population. Communications of this kind promote the establishment of appropriate prevention and control action through community-based interventions at individual, family and community levels. Disseminating the information through appropriate channels is essential. Communication partners and stakeholders in the country need to be identified, and functional coordination and communication mechanisms should be established. In addition, the timely release of information and transparency in decision-making are essential for building trust between authorities, populations and partners. Emergency communications plans need to be tested and updated as needed.

Target

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

Turkmenistan level of capabilities

Turkmenistan currently has the structural basis necessary for effective risk communication, as per the requirements set out by the IHR 2005. The Public Health Information Center established on 1 April 2000 coordinates all health education (awareness raising, behaviour change communication and public outreach) activities of the MOHMI. The basis for the work of the Information Center is the annual workplan, which outlines activities of the Center that have been coordinated with the Ministry of Education, Committee on Television and Radio, State Publishing Service and other ministries and services. A multisectoral coordination working group has been established under the Center for the purpose of coordinating and implementing the public outreach activities of the national health programme. This working group includes all the relevant stakeholders – Ministry of Education; Committee on Sports and Tourism; public organizations; Committee on Television and Radio; Ministry of Culture; Ministry of Internal Affairs; and State Migration Services. The thematic scope of activities of the Information Center includes the prevention of communicable and noncommunicable diseases, nutrition, physical activity, occupational health, healthy lifestyles, disabilities, road safety, food safety, seasonal infections, sexual and reproductive health and natural disasters. The Information Center consists of three departments: mass media (responsible for awareness raising and public outreach activities in TV, radio and printed matter); prevention (joint awareness raising and public outreach activities conducted together with family doctors and specialized doctors) and healthy lifestyles (working primarily with educational institutions). The Center uses a variety of mechanisms for outreach to a wide range of target populations including lectures, round table discussions, conferences, seminars, publications in local print media, seminars and actions and video clips. There is a dedicated hotline for public enquiries. Additionally, the Center uses a number of thematic working groups. There are more than 20 national health

programmes each focusing on a particular thematic area, of which many are implemented through a set of ministries, for example, the healthy nutrition programme is implemented in coordination with 12 ministries, while the national health programme involves 44 ministries.

The Ministry of Emergency Situations has a plan specifically on communication with the public during emergencies (2016–17). Additionally, a number of theme-specific plans for communication with the public exist: Strengthening the system of awareness raising during emergencies (2012–2015), Communication plan within the national programme on early child development, National strategy and action plans (2015–19), and Plan of activities on sexual and reproductive health, jointly with the United Nations Population Fund. A national plan on strengthening the communications potential with the public is currently being developed together with a communications strategy.

A number of reviews of the national capacity on public communication have been undertaken including a joint review and analysis with UNICEF on the capacity of the national system of Turkmenistan for the promotion of a healthy lifestyle (2012).

Recommendations for priority actions

- A national risk communication plan needs to be developed. This plan should be based on WHO guidance and contain all the necessary elements for an all-hazards approach based on risk assessment.

- An emergency communication team needs to be established or designated and should undergo the necessary training on the different aspects of risk communication.

- An analysis of vulnerable and hard to reach population groups based on identified priority risks and the most effective way of reaching out to them should be conducted in order to strengthen effective risk communication.

- Develop SOPs to guide communication activities of non-health sectors in the case of emergencies, aimed at better coverage of the population and specific population groups.

Indicators and scores

R.5.1 Risk Communication Systems (plans, mechanisms, etc.) – Score 3

Strengths/best practices
- Turkmenistan has a dedicated national body within the MOHMI responsible for various aspects of communication with the public.

- The Public Health Information Center has the necessary infrastructure for engagement in various aspects of communication with the public.

- Multisectoral working modalities include working arrangements with relevant national sectors and ministries (such as education, sports and tourism, culture and interior, migration) to ensure a multisectoral approach to communication. This also serves as a basis for an all-hazards whole-of-government approach to IHR implementation.

- A variety of theme-specific national plans involving communication with the public exists and serves as a basis for respective work.

Areas which need strengthening/challenges
- Turkmenistan lacks a dedicated risk communication plan developed on the basis of WHO guidance.

- There is no designated unit responsible exclusively for risk communication during emergencies.

- An inventory of all the communication partners, focal points and stakeholders in the country (government, non-government, private, institutions and others) needs to be developed, with mapping of the communication capacities of these partners.

- Agreed upon and shared protocols or SOPs defining roles and responsibilities of various partners and stakeholders should be developed.

- A dedicated risk communication budget for financing dedicated personnel, materials and activities on risk communication during an emergency is needed.

- Communication plans need to be tested through simulation exercises and periodically revised if necessary.

R.5.2 Internal and partner communication and coordination – Score 3

Strengths/best practices

- Turkmenistan has a strong coordination platform and mechanisms for internal and partner communication for engaging key national stakeholders, including health care workers.

- Specific public health themes involving communication with the public, engagement of other sectors is accomplished through dedicated working groups guided by the appropriate national plans.

- The Public Health Information Center is placed within the MOHMI, thereby ensuring system level synergy with the national health sector.

- There is an official communications coordination mechanism between relevant national stakeholders.

- Provisions are present for communications coordination during a public health emergency.

Areas which need strengthening/challenges

- There is no designated unit responsible exclusively for risk communication.

- Inventory of all the communication partners, focal points and stakeholders in the country (government, non-government, private, institutions and others) need to be developed, with mapping of the communication capacities of these partners.

- Agreed upon and shared protocols or SOPs defining roles and responsibilities of various partners and stakeholders should be developed.

- The communication coordination system has not been tested on the basis of an exercise or during an emergency; therefore exercises to test existing communication and coordination provisions are necessary.

- There is no dedicated budget exclusively for risk communication.

R.5.3 Public communication – Score 3

Strengths/best practices

- Turkmenistan has a dedicated entity well-placed at the national level of the health system specifically for public communication, the Public Health Information Center.

- Public communication is well established through dedicated channels, as per respective national plans and programmes focusing on various health themes.

- The country proactively conducts public outreach using a mix of platforms (newspapers, radio and TV) and venues (primary health care centres, schools, universities, colleges and workplaces) as appropriate according to the national context, in national and local languages.

- Communication is planned with continuous engagement and proactive media outreach (including regular media briefings) guided by jointly developed expert opinion based practices.

Areas which need strengthening/challenges

- There has been no simulation exercise or a real emergency to test public communication mechanisms in the country.

- Media research to determine message reach among target audience members is not conducted.

- There is no monitoring of which communication methods best enabled target audiences to change their behaviour.

- There is no monitoring for rumours and misinformation, and no respective action to address identified issues.

- There is a need to develop a framework to evaluate the effectiveness of communications efforts.

R.5.4 Communication engagement with affected communities – Score 3

Strengths/best practices

- There is a well-developed institutional basis for communication engagement with affected communities, the Public Health Information Center.

- Sufficient stakeholders are involved in a coordinated manner at national, intermediate and local levels for communication with communities.

- There is a system of social mobilization, health promotion and community engagement, as well as dedicated working groups that would be used during an emergency response.

- Social mobilization, health promotion and community engagement are included in the national response plan.

- Community consultation mechanisms (hotlines) are in place.

Areas which need strengthening/challenges

- As there have been no emergency events to test existing mechanisms for communication engagement with affected communities, there is a strong need for a simulation exercise.

- There is insufficient information sharing and exchange of experiences between experienced community engagement experts and volunteers.

- Feedback from the targeted communities on their information needs and perception of communication messages is not systematically collected.

R.5.5 Dynamic listening and rumour management – Score 2

Strengths/best practices

- There is a well-developed institutional basis for the development of a dynamic listening and rumour management function, using the platform of the Public Health Information Center.

- Ad hoc attempts to listen to public perceptions, including through health care workers and volunteers, exist. However, they are not fully used to guide the response.

Areas which need strengthening/challenges

- While the national infrastructure responsible for communication with the public is adequately prepared, currently no established system exists to identify and respond to rumours and misinformation and to understand and analyse public concerns and fears.

- There is no formal communication function to monitor and address rumours and misinformation nor to monitor the effectiveness of methods or messages used to disprove a rumour or correct misinformation.

- There is a need to develop a function for dynamic listening and rumour management.

OTHER

Points of entry

Introduction

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

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

Turkmenistan level of capabilities

The SSES of the MOHMI is present at all three types of points of entry (airports, ports and ground crossings) in Turkmenistan through Sanitary-Quarantine Points (SQPs). This ensures: (a) the presence of trained medical personnel and fulfilment of the surveillance function; (b) coordinated central management through a unified national system; (c) timely reporting of information following established vertical reporting lines; and (d) necessary links with the clinical part of the health system.

Turkmenistan has 28 SQPs located at the airports, ports, and railway and automobile ground crossings: Ashgabat (2 – airport and railway), Ahal (4 – automobile), Balkan (8, including 1 – airport, 1 – railway, 2 – automobile and 4 – seaport), Dashoguz (3, including 2 – automobile and 1 – railway), Lebap (9, including 1 – airport, 3 – railway and 5 – automobile), Mary (1 – automobile).

SQPs operate in coordination with the Sanitary Code of Turkmenistan; Instructions on Organization and Implementation of Cholera and Anti-Plague Activities in Turkmenistan; Order No. 18, Regulations on the Sanitary Protection of the Territory of Turkmenistan; Order No. 48 of 15 February 2016 on the Sanitary Protection of the Territory of Turkmenistan; Order No.202 of 22 June 1996 on the Preventive Measures for Plague and Cholera Among the Population; Order No. 502 of 19 December 2011 and 12 December 1995 Regulations on the Sanitary Protection of the Territory of Turkmenistan; and the instructions of the MOHMI. SQPs operate in accordance with the annual plan of the SSES.

The key task of the SQPs is the prevention of the importation of infectious disease via air and sea. Standard MOHMI staffing is structured around four teams, with each team consisting of three epidemiologists and one disinfection specialist. SPQs are managed by the Head of SQP directly reporting to the appropriate level of the SSES. SQPs – especially the newer ones – are adequately equipped. Requirements include a suite of rooms, including a room for the examination of suspects and an isolation room, communications equipment, kits for personal protection, material sampling, medical personnel protection equipment, and disinfection material in accordance with the Orders Nos. 43, 202, 502 and 18. The airport is equipped with thermal scanners in the international arrival zone and business terminal. Upon arrival, passengers are remotely examined. If a passenger with a high temperature is identified, the necessary measures for isolation and admission to the infectious diseases hospital for further medical care and monitoring are undertaken.

There are SOPs both for medical personnel and other sectors present at the points of entry. SQPs conduct

seminars and training courses among specialists from veterinary inspection, phytosanitary services, customs, border control, medical services and other sectors present at individual points of entry.

Currently Turkmenistan is constructing a sea port on the Caspian Sea at Türkmenbasy to replace the current sea port whose infrastructure is outdated, as well as a new international airport complex at Ashgabat. These new facilities are expected to comply with international requirements.

Recommendations for priority actions

- Finalize the process of equipping the international airport and sea port according to IHR requirements.

- Test existing SOPs including communication plans and revise them if deemed necessary – particularly with regard to the harmonization of coordination and collaboration between the different sectors present at the points of entry in the case of an emergency.

- Conduct simulation exercises for all the sectors present at the point of entry and involved in implementation of the IHR in the country.

- Provide for adequate capacities for the SQP at the sea port at Türkmenbasy, as per the requirements for core capacities at points of entry (Annex 1B, IHR 2005).

Indicators and scores

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

Strengths/best practices

- The national health sector is present at each point of entry into the country, therefore the presence of medical personnel and surveillance is systematically ensured.

- Coordinated central management of public health capacities at all points of entry through a unified national system of the MOHMI is in place.

- Timely reporting of health-related information from points of entry following an established vertical reporting line.

- Necessary links with the clinical part of the health system is ensured (ambulances, infectious diseases hospital).

- SQPs at the airports have access to appropriate medical services including diagnostic facilities for prompt assessment and care of ill travellers and with adequate staff, equipment and premises.

- Points of entry can provide access to equipment and personnel for transporting ill travellers to an appropriate medical facility.

- Comprehensive legislative framework for capacities at the points of entry.

- Presence of SOPs and communication schemes at the points of entry.

- Regular training is conducted for health and non-health sectors present at the point of entry.

Areas which need strengthening/challenges

- None of the points of entry in Turkmenistan have been designated as such as required by the IHR.

- Currently there is minimal capacity for provision of access to medical services at the sea port of Türkmenbasy (construction of a new sea port is expected to be completed by 2018).

- While there are SOPs available for the health sector response at the point of entry, it is unclear how these are aligned with the SOPs of the other sectors present at the point of entry (migration, security, customs, veterinary, media and others).

- Special programmes on vector control in the vicinity of the points of entry should be developed, as per Annex 1B, IHR 2005.

- Responsibility for the transportation of a suspected ill passenger (local infectious diseases hospital or ambulance) should be clarified and revised if necessary.

- Training for the staff responsible for ship inspection specifically, and generally on IHR requirements and procedures in relation to points of entry is recommended.

- Arranging a visit for airport and port staff to a large international airport and port (such as Frankfurt and Hamburg) to learn best practices and benefit from international experience is recommended.

PoE.2 Effective public health response at points of entry – Score 3

Strengths/best practices

- A national public health emergency contingency plan for responding to public health emergencies occurring at points of entry has been developed.

- Facilities for assessing potentially contaminated or infected travellers and animals either onsite or through liaison with local public health services are available, as well as facilities for the assessment and quarantine of suspect travellers.

Areas which need strengthening/challenges

- Development of a comprehensive document on health protection at the points of entry for all national sectors present could be considered.

- Develop several scenarios that are most likely to occur at the point of entry and develop additional SOPs on this basis – to consider different ways that the situation could develop.

- Existing SOPs and sectoral plans need to be tested through multisectoral simulation exercises in order to identify potential gaps, especially as regards a multisectoral response and an all-hazards approach.

- Responsibilities of each sector involved in public health response at the point of entry should be clarified.

- Clarify functions to coordinate efforts of all sectors present at points of entry in the case of a public health emergency.

- Existing SOPs and relevant legislation of non-health sectors present at points of entry need to be revised to ensure intersectoral harmonization.

Chemical events

Introduction

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

Target

State Parties with 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.

Turkmenistan level of capabilities

Turkmenistan has ratified a series of international agreements and conventions on chemical safety and is capable of responding to both routine and sudden chemical events with sufficient resources, highly skilled personnel and adequate protection equipment.

A specific emergency response plan that defines the roles and responsibilities of the relevant agencies is in place and includes an inventory of major hazard sites and facilities. In addition, SOPs for coverage and criteria of when and how to alert are defined.

In the event of a chemical emergency, the Cabinet of Ministers is the national coordinating body and is responsible for coordination between the ministries, agencies and crisis centres involved. The MOD takes responsibility for emergency action implementation.

On the whole, surveillance of sentinel health events, environmental monitoring and the monitoring of consumer products are in place and laboratory capacity to detect and confirm chemical events, intoxication and poisoning is sufficient. Nevertheless, systematic information exchange between appropriate chemical units is not always performed.

Recommendations for priority actions

- Test the emergency response plan to a chemical event through a real unanticipated and unexpected simulation exercise.

- Become involved with international chemical and toxicological networks (such as the INTOX network, set up by WHO's International Programme on Chemical Safety) and gain access to a chemical database (such as INCHEM) available at any time of day.

- Perform an integrated public health survey on citizens' chemical safety in order to receive feedback from the general public and enhance surveillance on this issue.

Indicators and scores

CE.1 Mechanisms are established and functioning for detecting and responding to chemical events or emergencies – Score 3

Strengths/best practices

- Several international chemical conventions and agreements have been ratified and implemented.

- Guidelines or manuals on chemical events surveillance, assessment and management exist and are updated.

OTHER

- Environmental (water, air, soil, sediment) and food contamination monitoring are conducted under strict control.

- Detection and response capacity to chemical events have been tested.

Areas which need strengthening/challenges

- Baseline public health assessments of chemical safety (morbidity, mortality and biomarkers) should be performed.

- Implement the Strategic Approach to International Chemicals Management and become involved in international chemical and toxicological networks.

- Laboratory capacity for systematic analysis should be improved.

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

Strengths/best practices

- Legislation on chemical safety management is in place for both routine and emergency situations.

- SOPs for chemical safety exist and are updated.

- There is strict control and monitoring of land, water, crops and foodstuffs contamination.

- Chemical registration and labelling are strictly regulated.

- Occupational health protocols focused on chemical risks are in accordance with the labour code and sanitary code.

Areas which need strengthening/challenges

- Real-life exercises or simulation testing of multisectoral and interdisciplinary coordination mechanisms in the event of a chemical emergency should be carried out.

- Enhance public empowerment in terms of chemical safety.

- Access to a chemical database or network (such as INCHEM, INTOX or POISINDEX) is not available.

OTHER

Radiation emergencies

Introduction

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

Target

State Parties have surveillance and response capacity for radiological and nuclear hazards, events or emergencies. This requires effective communication and collaboration among the sectors responsible for radiological and nuclear management.

Turkmenistan level of capabilities

The Turkmenistan Nuclear Regulatory Authority operates under the Civil Defense and the MOD. It is the designated agency for radiation safety, surveillance, preparedness and response in collaboration with global authorities in this field. This agency has adequate available resources and international integration with global authorities to regulate response and address radiation threats and events from within and outside the nation. In consultation with and following global standards it performs safety assessments of medical radiation facilities and provides safety reports annually which are reviewed at a higher level of authority. The Nuclear Emergency Management System is in the National Disaster Management Authority Plan and addresses all radiological and nuclear exposure, threats and emergencies. National policies, strategies and plans for the detection, assessment, and response to radiation emergencies are established and a radiation monitoring mechanism exists for radiation emergencies that may constitute a public health event of international concern.

Areas which need to be strengthened include the fact that there are no designated medical facilities for treating contaminated individuals or victims of radiation emergencies and adequacy of resources. In addition, there is a need to update the emergency plans following exercises or drills. Establishment of a mechanism for systematic information exchange between radiological competent authorities and public health surveillance teams for potential hazards and events would be beneficial.

Recommendations for priority actions

- 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 should be established and maintained.

- National authorities responsible for radiological and nuclear events should identify a designated focal point and ensure coordination and communication mechanisms between relevant national competent authorities responsible for nuclear regulatory control and safety, and relevant sectors.

- Allocation of additional human and financial resources are needed due to the expansion of the nuclear power programme and increased use of radiological materials in medical, industrial and other sectors and ensure access to designated health facilities with the capacity to manage patients involved in radiation emergencies.

Indicators and scores

RE.1 Mechanisms are established and functioning for detecting and responding to radiological and nuclear emergencies – Score 3

Strengths/best practices

- Technical guidelines or SOPs have been developed, evaluated and updated for the management of radiological emergencies (including risk assessment, reporting, event confirmation and notification, and investigation).

- The Turkmenistan Radiation and Nuclear Regulatory Body falls under the MOD and Civil Defense and is the designated body for radiation safety, surveillance, preparedness and response; it has adequate available resources.

- This body performs the safety assessment of medical radiation facilities. Nuclear and radiation facilities provide safety reports annually which are reviewed at the Nuclear Regulatory Authority.

- The Nuclear Emergency Management System as part of the National Disaster Management Plan addresses the management of nuclear and other radiological emergencies.

- The MOD radiation and nuclear regulatory body has authority to assess the facilities, set standards and requirements for waste management and regularly monitor them.

- Technical guidelines or SOPs have been developed, evaluated and updated for the management of radiation emergencies (including risk assessment, reporting, event confirmation and notification, and investigation).

Areas which need strengthening/challenges

- Emergency plans need to be regularly revised and updated following exercises or drills.

- A mechanism for systematic information exchange between radiological competent authorities and human health surveillance units concerning urgent radiological events and the potential risks that may constitute a public health emergency of international concern needs to be established.

- The national authorities responsible for coordination and communication with the MOHMI and the National IHR Focal Point during radiological and nuclear events need to be identified.

- Radiation emergency response drills need to be conducted regularly, including the requesting of international assistance (as needed) and international notification.

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

Strengths/best practices

- A radiation emergency response plan exists (could be part of a national emergency response plan) and national policies, strategies or plans for national and international transport of radioactive materials, samples and waste management including those from hospitals and medical services are established.

- Adequate legislation and a strategic plan on radiation protection required for radiation safety is available.

- The national authorities responsible for radiological and nuclear events have a designated focal point for coordination and communication with the Ministry of Health and the National IHR Focal Point.

- The Nuclear Emergency Management System has SOPs with clear delineation of roles and responsibilities, public communication, management of affected population, decontamination and availability of adequate resources.

- Coordination with relevant stakeholders is in place (national and subnational levels of all relevant sectors such as health, environment, emergency services and reference laboratory).

OTHER

- The National Radiation Emergency Response subplan addresses national and international transport of radioactive material, samples and waste management including those from hospitals and medical services.

Areas which need strengthening/challenges

- Allocation of additional human and financial resources are required due to the expansion of the nuclear power programme and increased use of radiological materials in medical, industrial and other sectors.

Appendix 1: JEE background

Mission place and dates

Ashgabat, Turkmenistan, 6–10 June 2016

Mission team members:

- Dr. Karen S Sliter, USA, United States Department of Agriculture (Team Lead)
- Dr. Nirmal Kandel, WHO (Team Co-Lead)
- Mr. Vasily Esenamanov, WHO Regional Office for Europe
- Dr. Andrey Borisov, USA, Centers for Disease Control and Prevention
- Dr. Khalid Abu Haimed, Saudi Arabia, King Fahad Specialist Hospital Dammam
- Dr. Roberto Falvo, Italy, Ministry of Health

Objective

To assess Turkmenistan's capacities and capabilities relevant for the 19 technical areas of the JEE tool in order to provide baseline data to support Turkmenistan's efforts to reform and improve their public health security and support their preparations for the Asian Indoor Games.

The JEE process

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

Preparation and implementation of the mission

Agenda of the JEE mission Ashgabat

Monday, 6 June

- Opening remarks from the Deputy Minister of Health
- Opening remarks from the External Evaluation Team Leaders
- Overview of the Turkmenistan health system
- JEE technical area discussions: National legislation, Policy and financing; IHR coordination, Communication and advocacy; Antimicrobial resistance; Zoonotic disease; Food safety

Tuesday, 7 June

- JEE technical area discussions: Immunization; Biosafety and biosecurity; National laboratory system; Real-time surveillance; Reporting

Wednesday, 8 June

- JEE technical area discussions: Workforce development; Preparedness; Linking public health and security authorities; Emergency response operations; Medical countermeasures and personnel deployment; Risk communication; Chemical events; Radiation emergencies
- Site visit: EOC

Thursday, 9 June

- Site Visit – Ashgabat
- Infectious Disease Hospital
- Infectious Disease Hospital Laboratory
- National Tuberculosis Center
- House of Health, Ashgabat
- Site Visit – Türkmenba y

Friday, 10 June

- JEE technical area discussion: Points of entry
- Review of scores and priority actions for all 19 technical areas with national team
- External Evaluation Team outbrief
- External team lead outbrief
- Outbriefs of each JEE technical area
- Closing remarks from WHO
- Closing remarks from Deputy Health Minister of Health

Limitations and assumptions

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

Key host country participants and institutions

Key persons:

- Mrs. L. A. Shamuradova, Deputy Minister of Health and Medical Industry of Turkmenistan
- Dr. Y. Gaiyypov, Deputy Head, SSES, MOHMI
- Dr. G. Ovliyakylova, Head of Department of Surveillance of Highly Infectious Diseases, SSES, MOHMI
- Dr. K. Mavlanov, Head of Center for the Prevention of Highly Infectious Diseases, SSES, MOHMI
- Dr. A. Nazarov, Head of Scientific Department, Experimental-Industrial Center, SSES, MOHMI
- Dr. S. Nuryyeva, Head of Department of Epidemiological Surveillance and Parasitology, SSES, MOHMI
- Dr.O.Geldiyeva, Director of Health Information Center, MOHMI
- Dr. G. Gazizova, Head of Department of Sanitary Surveillance, SSES, MOHMI
- Dr. D. Saparov, Head of Department of Emergency Medicine, MOHMI

Key institutions:

- Ministry of Health and Medical Industry
- State Sanitary Epidemiological Service
- Experimental-Industrial Center, SSES
- Center of Prevention of Highly Dangerous Diseases
- Turkmen State Medical University
- Center for Registration of Medicines and Medical Products
- Ministry of Defense, Emergency Services
- The State Veterinary Service of Turkmenistan
- The State Migration Service of Turkmenistan
- The State Customs of Turkmenistan
- The State Border Service of Turkmenistan
- The State National Service of Turkmenhowayollary

Supporting documentation provided by the host country

National legislation, policy and financing

Relevant documentation

- Self-Assessment Report of Turkmenistan
- Presentation on Technical Areas
- Legislation

IHR coordination, communication and advocacy

Relevant documentation

- Five-year comprehensive multisectoral plans on Sanitary Protection of the Territory of Turkmenistan
- Operational plans for occurrence of any quarantine or especially dangerous disease have been developed.

Antimicrobial resistance

Relevant documentation

- Copy of actual legislation under approval: National Strategy for Containment of Antimicrobial Resistance in Turkmenistan for 2015–2020
- Copy of the Law of Turkmenistan on Drug Provision published on 12 January 2016
- Reports issued by SSES measuring:
  - the proportion of AMR pathogens among specimens or isolates at central laboratories
  - the incidence of infections caused by AMR pathogens at sentinel sites
  - tuberculosis detection and management in accordance with the Turkmenistan tuberculosis programme of as per the Order No. 412 of 7 November 2010 and N° 109 from 28 March 2012
  - the effectiveness of infection control measures in accordance with Order No. 90 of 24 March 2009 on the Anti-Epidemic Sanitary Control Regime in Maternity Units

- Copy of certificates from participation in international external quality assessment (EQA) rounds of the National Reference Laboratory

- Documentation of review process, including participating agencies or sectors

- Documentation concerning best practices for HCAI: results of the CAESAR assessment

Zoonotic diseases

Relevant documentation

- Self-assessment report of JEE

- Technical Presentation on Immunization

- Presidential Decree (Prikaz) No. 11687 on Sharing Responsibilities between the Veterinary and Epidemiological Inspections

- Plans and instructions on surveillance for brucellosis and rabies

- OIE PVS Evaluation Report of the Veterinary Services of Turkmenistan (2013)

Food safety

Relevant documentation

- 2013–2017 Workplan for periodic activities of harmonization of national standards in accordance with the Codex Alimentarius

- Law of Turkmenistan on the Safety and Quality of Food

- Law of Turkmenistan on Food Safety Standardization Procedures

- Law of Turkmenistan on Licensing Certain Types of Activities

- Law of Turkmenistan on Certification and Labelling

- Law of Turkmenistan on the Protection of Consumers' Rights

- Law of Turkmenistan on Veterinary Activities

- Law of Turkmenistan on Trade

Biosafety and biosecurity

Relevant documentation

- The Sanitary Code of Turkmenistan No. 133 of 1995 (that established the anti-epidemic mode of operation with material infected or possibly infected with infectious agents of pathogenicity groups 1 and 2)

- The SSES of the MOHMI of Turkmenistan on 27 December 2014 approved the Order No. 3-5 / 2800 on the Regulations of the Museum of Living Microorganisms, Especially Dangerous Infections Prevention Center

- MOHMI Order No. 136 on the Safe Disposal of Biowaste

Immunization

Relevant documentation

- Self-assessment report of JEE

- Technical Area Presentation on Immunization

- Turkmenistan EVM Assessment: Findings and Recommendations of the Assessment Team, 2015 (UNICEF conducted).
- Mix 5 Assessment Report

National laboratory system

Relevant documentation

- All available national and MOHMI laboratory legislation, decrees, policies and procedures

Real-time surveillance

Relevant documentation

- MOHMI's presentation: Demonstration of Real-Time Surveillance Capabilities using Examples of Surveillance for Measles and Rubella
- National legislation and MOHMI Decrees (Prikaz) including No. 68 (29 February 2012), No. 104 (18 April 2016), No. 205 (7 July 2009), No. 50 (8 February 2013) and No. 109 (7April 2014)
- Standardized disease notification forms and instructions
- 2014, 2015 quarterly and annual disease surveillance reports produced by the surveillance team of the MOHMI

Reporting

Relevant documentation

- Coordination with non-health sectors. MOHMI Order No. 68 dated 29 February 2012 on Procedure of Registration of Infectious and Parasitic Diseases in Turkmenistan; MOHMI Order No. 109 dated 7 April 2014 on Extraordinary Reports Submitted to the MOHMI of Turkmenistan

Workforce development

Relevant documentation

- MOHMI's presentation Health Sectors Workforce Development
- Core curricula of medical, epidemiology and veterinary programmes of the universities
- Lists and description of continuing education courses
- MOHMI's annual and other human resources reports 2012–2015
- National Workforce Plan documents (2010, 2012)

Preparedness

Relevant documentation

- National Public Health Emergency Preparedness and Response Plan, subplans and supporting decrees
- 2003–2017 National Health Plan and Programs

Emergency response operations

Relevant documentation

- EOC floor plan
- EOC operating manual with all plans, subplans, decrees, job descriptions and SOPs

Linking public health and security authorities

Relevant documentation

- The national emergency response plans and decrees of joint public health and security authority events management
- Decrees and samples of informational reports shared with security authorities

Medical countermeasures and personnel deployment

Relevant documentation

- Self-assessment report
- Presentation on this technical area by MOHMI

Risk communication

Relevant documentation

- Self-assessment report
- Presentation on this technical area by the MOHMI

Points of entry

Relevant documentation

- Self-assessment report
- Presentation on this technical area by the MOHMI

Chemical events

Relevant documentation

- List of Chemicals and Pesticides Commonly Tested in the Laboratories
- The National Plan on Chemical Safety
- The National Emergency Response Plan
- List of inter-agencies SOPs.
- Reports on exercises conducted in chemical emergency scenarios

Radiation emergencies

Relevant documentation

The following should be documented if available and provided:

- The International Atomic Energy Agency evaluation and certification
- Legislation and decrees mentioned
- Nuclear Emergency Management System subplan of the National Emergency Plan.