JOINT EXTERNAL EVALUATION
OF IHR CORE CAPACITIES
of

NEW ZEALAND

Mission report:
26-30 November 2018

World Health
Organization

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ACKNOWLEDGEMENTS

ABBREVIATIONS

24/7	24 hours a day, 7 days a week
AAR	after action review
AMR	antimicrobial resistance
APSED	Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies
BFSN	Binational Food Safety Network
CDEM	Civil Defence and Emergency Management
CFSERP	Critical Food Safety Event Response Protocol
CIMS	Coordinated Incident Management System
DHB	district health board
EMIS	Emergency Management Information System (a national MS SharePoint collaborative workspace)
EMT	emergency medical team
EOC	emergency operations centre
EPA	Environmental Protection Authority
EQA	external quality assessment
ESR	Environmental Science and Research
FAO	Food and Agriculture Organization of the United Nations
FENZ	Fire and Emergency New Zealand
FETP	Field epidemiology training programme
FSANZ	Food Standards Australia New Zealand
GAP	Global Action Plan
GIA	Government Industry Agreement
GLASS	Global Antimicrobial Resistance Surveillance System
GVAP	Global Vaccine Action Plan
HPO	health protection officer
HSNO	Hazardous Substances and New Organisms
IAEA	International Atomic Energy Agency
IANZ	International Accreditation New Zealand
IHR	International Health Regulations
INFOSAN	International Food Safety Authorities Network
IPC	infection, prevention and control
IT	information technology

JEE	joint external evaluation
MFAT	Ministry of Foreign Affairs and Trade
MOH	Ministry of Health
MOU	memorandum of understanding
MPI	Ministry for Primary Industries
NCMC	National Crisis Management Centre
NCRS	National Centre of Radiation Science
NFP	National Focal Point
NHCC	National Health Coordination Centre
NRIRP	National Radiation Incident Response Plan
NRR	National Risk Register
NZAMRAP	New Zealand AMR Action Plan
NZDF	New Zealand Defence Force
NZMAT	New Zealand Medical Assistance Team
NZMN	New Zealand Microbiology Network
OIE	World Organisation for Animal Health
PCR	polymerase chain reaction
PHARMAC	Pharmaceutical Management Agency
PHEIC	Public health emergency of international concern
PHU	Public Health Units
PIF	Performance Improvement Framework
POCT	point-of-care testing
POE	points of entry
PVS	performance of veterinary services
RMA	Resource Management Act 1991
SIMS	Surveillance and Information Management System
SOP	standard operating procedures
SPOC	single point of contact
SSC	State Services Commission
WAHIS	World Animal Health Information System
WAND	Web Assisted Notification of Devices
WHO	World Health Organization

EXECUTIVE SUMMARY

Findings from the joint external evaluation

Background

The International Health Regulations (IHR) (2005) are the legal framework for protecting global health security through collective international public health action. They outline the minimum core capacities that all WHO Member States must develop to detect, assess, report and respond to acute public health events and emergencies.

In the Western Pacific Region, the Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies (APSED III) serves as a common action framework for Member States to advance IHR (2005) implementation for health security.

The JEE is one of the four components of the updated IHR (2005) monitoring and evaluation framework, along with mandatory State Party self-assessment annual reporting, after action reviews (AARs), and simulation exercises. The JEE provides a unique, voluntary opportunity for multisectoral teamwork within a country, supported by international collaboration, to assess IHR implementation. It promotes transparency, mutual accountability and international collaboration and confidence.

Early engagement at the 2017 World Health Assembly set the conditions for domestic support for the JEE process. Informal discussions with the WHO Regional Office for the Western Pacific in late 2017 determined suitable dates. In February 2018, the New Zealand Ministry of Health (MOH) sought a mandate from the Hazard Risk Board Senior Officials Group within New Zealand's National Security System to engage with agencies and commence the JEE self-assessment process.

This mandate was granted, and work commenced in March 2018. The self-assessment was developed with input from relevant agencies across the health sector and National Security System. In August 2018 the Minister of Health shared a briefing with his colleagues that outlined the JEE process and strengths and thematic issues for New Zealand. A briefing was also provided to the Hazard Risk Board. The final self-assessment document was signed off by the Director-General of Health in early November 2018. The JEE team was provided with the final self-assessment report, along with just under 600 supporting documents, prior to the JEE mission in late November 2018.

This report documents the JEE mission that took place in Wellington and Christchurch, New Zealand, from 26 to 30 November 2018. The members of the JEE team wish to extend their deepest appreciation to their national counterparts for taking the time to share their knowledge and experiences.

Findings

During the JEE mission, New Zealand's capacities in 19 technical areas were evaluated through a peer-to-peer, collaborative process that brought national subject matter experts together with members of the JEE team for a week of collaborative discussion and field visits. This process led to consensus on scores and priority actions in those 19 technical areas.

Using the second edition of the JEE tool, the JEE team assessed New Zealand's capacity to meet IHR core functions across 49 specific indicators within those technical areas. New Zealand demonstrated "sustainable capacity" (the highest level) for half the indicators (49%) and "demonstrated capacity" (37%) or "developed capacity" (14%) for the remainder.

The Government of New Zealand has demonstrated great commitment to implementing the IHR (2005) not only nationally, but also regionally. New Zealand has comprehensive legislation in line with IHR requirements, and benefits from a system and culture of continuous, collaborative improvement through learning from exercises and real-world events that has led to continued investment in preparedness. Events that have influenced New Zealand include the 2009 influenza pandemic, major earthquakes in Christchurch (2011) and Hurunui/Kaikōura (2016), domestic preparedness and response to the 2014–2016 Ebola outbreak in West Africa, and a 2014–15 threat of deliberate contamination of infant formula with pesticide.

Although New Zealand has achieved a high level of IHR (2005) core capacity, it is important to remain vigilant. Recent global health threats such as Middle East respiratory syndrome, Ebola virus disease and pandemic influenza are clear reminders to the world that all countries – regardless of how highly developed their health systems may be – are at risk from health security threats. In the following document, the JEE team describes the evaluation findings and priority actions, agreed by consensus with national counterparts, for each of the 19 technical areas in the JEE tool.

Four overarching recommendations emerged from the week. These are intended to address cross-cutting challenges affecting New Zealand's capacities across many of the different technical areas that are explored in greater depth in the JEE process and are outlined below.

1. Sustain and continue strengthening existing multisectoral, multidisciplinary coordination and collaboration around IHR-related activities at all levels, including through formalizing current arrangements where appropriate.
2. Build on the momentum of the JEE process in New Zealand to strengthen implementation of the IHR (2005) and coordinate monitoring and evaluation across agencies through the IHR National Focal Point (NFP).
3. Allocate increased, sustained funding and resources for advancing implementation of the IHR (2005) through APSED III, with a focus on strengthening national action around antimicrobial resistance (AMR), enhancing surveillance and risk assessment, addressing critical human resource needs and building risk communication capacity.
4. Given New Zealand's strong capability, consider formalizing existing arrangements and devising new ones where relevant, to support sustainable IHR implementation in Pacific Island countries and territories.

Conclusion

Health security threats are increasingly complex to manage. All countries are vulnerable to the importation and exportation of public health threats of international concern, and the international community has a shared responsibility to prevent, detect and respond to health security threats. This can be achieved through continued investment in preparedness to minimize loss of life, social disruption and economic impact.

New Zealand has an important role on the world stage and as a regional reference point, in demonstrating strong capacity by setting high domestic standards and continuing its commitment to, and investment in, regional and global health security.

Once again, the JEE team would like to thank its New Zealand colleagues for their extensive preparation and the exceptionally warm welcome extended to the team during the mission. The team has appreciated the mutual learning process and looks forward to seeing New Zealand embrace the opportunities to enhance health security that are outlined in this report.

New Zealand scores and priority actions

The table below is the summary of the final scores for each technical area (further details are shown in the respective report chapters), as agreed by the national and external JEE teams. The principles of the scoring system are described in the JEE tool, available from: http://www.who.int/ihr/publications/WHO_HSE_GCR_2016_2/en/

Briefly, the scoring is a 5-step Likert scale in which a score of 1 designates no capacity and incremental obligatory criteria for each indicator must be fulfilled to reach the next level. A score of 5 designates that the country has the required capacity and is able to sustain it. Indicators are proxies and are chosen with the aim of representing a probable wider capability than the actual measured factor.

For ease of overview, a "traffic light" colouring system is used, whereby scores of 1 are shown as red; scores of 2 and 3 are yellow; and 4 and 5 are green.

SCORES AND PRIORITY ACTIONS

Technical areas	Indicator no.	Indicator	Score	Priority Actions
PREVENT				
National legislation, policy and financing	**P.1.1**	The State has assessed, adjusted and aligned its domestic legislation, policies and administrative arrangements in all relevant sectors to enable compliance with the IHR	**5**	Enhance collaboration and coordination linkages in national legislation and policy development processes and response operations, particularly between the animal and human health sectors, to enable greater cross-governmental efficiencies in maintaining and enhancing the ability to meet IHR obligations. Review current emergency funding mechanisms through a cross-government process to identify areas for improvement, in particular for events with a higher likelihood of occurring.
	P.1.2	Financing is available for the implementation of IHR capacities	**5**	
	P.1.3	A financing mechanism and funds are available for timely response to public health emergencies	**4**	
IHR coordination, communication and advocacy	**P.2.1**	A functional mechanism established for the coordination and integration of relevant sectors in the implementation of IHR	**4**	Continue to advocate for and communicate the value of sustaining and enhancing investment in health security through the implementation of APSED III. Consider reviewing and upgrading the functions of the IHR NFP to include supporting and coordinating the monitoring and evaluation of IHR implementation, including through annual reporting, JEEs, simulation exercises and AARs. Enhance the functional mechanisms for multisectoral and stakeholder communication, coordination and collaboration, with particular focus on operational linkages between the animal and human health sectors, including public health, clinical services and food safety.
Antimicrobial resistance	**P.3.1**	Effective multisectoral coordination on AMR	**3**	Ensure adequate resourcing to allow continued implementation of the national AMR Action Plan. Develop national consistency in IPC programmes. Assess antimicrobial stewardship programmes, including treatment guidelines, to determine whether a multiregional or a singular national approach is best. Establish regular AMR surveillance and reporting in animal health and agriculture, and ensure this is coordinated with human AMR surveillance. Establish coordinated reporting for surveillance of human AMR and antimicrobial use.
	P.3.2	Surveillance of AMR	**3**	
	P.3.3	Infection prevention and control	**3**	
	P.3.4	Optimize use of antimicrobial medicines in human and animal health and agriculture	**4**	

Technical areas	Indicator no.	Indicator	Score	Priority Actions
Zoonotic disease	P.4.1	Coordinated surveillance systems in place in the animal health and public health sectors for zoonotic diseases/ pathogens identified as joint priorities	4	Explore a more structured approach to information sharing between the OIE and the IHR NFPs and comparing their surveillance database information in order to identify gaps. Establish a cross-agency initiative – such as a national multisectoral zoonoses governance arrangement, including the environment sector – in order to achieve a more coordinated, robust approach to management and communication regarding zoonotic diseases/events of public health concern. The MOH and the MPI should introduce an integrated process for regular reviews and updates of their joint list of priority zoonotic diseases.
	P.4.2	Mechanisms for responding to infectious and potential zoonotic diseases established and functional	4	
Food safety	P.5.1	Surveillance systems in place for the detection and monitoring of foodborne diseases and food contamination	5	Ensure that relevant agencies – individually and jointly – train and exercise regularly in both technical capacities (e.g. diagnostic testing, methodologies, etc.) and soft skills and processes (e.g. communication, partner engagement, etc.). Enhance regional consistency in responses, identifying how the MOH and the MPI can support local responses. Formalize existing ad hoc and informal relationships and processes for information sharing and collaboration between agencies (e.g. the MOH, the MPI, DHBs, industry, etc.), and particularly those related to fulfilling global obligations (e.g. under the IHR and to OIE and FAO) and regional strategies (e.g. APSED III). Explore the establishment of a national joint food industry/cross-government forum for food incidents.
	P.5.2	Mechanisms are established and functioning for the response and management of food safety emergencies	4	
Biosafety and bios- ecurity	P.6.1	Whole-of-government biosafety and biosecurity system in place for all sectors (including human, animal and agriculture facilities)	5	Conduct periodic reviews of the biosafety and biosecurity regulatory system in order to ensure it remains fit for purpose, including with regard to genetic technology and synthetic biology advances.
	P.6.2	Biosafety and biosecurity training and practices in all relevant sectors (including human, animal and agriculture)	5	

Technical areas	Indicator no.	Indicator	Score	Priority Actions
Immuni-zation	P.7.1	Vaccine coverage (measles) as part of national programme	4	Further develop, resource and implement a plan for improving equity of coverage in vulnerable populations, with a focus on reducing the equity gap for Māori children. Ensure the communicable diseases framework includes surveillance of all vaccine-preventable diseases.
	P.7.2	National vaccine access and delivery	5	Upgrade the national immunization register so that it provides a comprehensive solution for monitoring delivery of immunizations for all ages that can identify high-risk groups and can interface with other information systems.
DETECT				
National laboratory system	D.1.1	Laboratory testing for detection of priority diseases	5	Review and optimize the public health laboratory services to ensure public health surveillance, outbreak detection and response needs continue to be addressed, taking into account system changes and emerging technologies. Consider whether national approach for point-of-care testing (POCT) is needed. Include regulation of in vitro diagnostic testing devices in new legislation to formally regulate these products.
	D.1.2	Specimen referral and transport system	5	
	D.1.3	Effective national diagnostic network	5	
	D.1.4	Laboratory quality system	5	
Surveil-lance	D.2.1	Surveillance systems	4	Develop a forward-looking communicable diseases framework, reviewing current indicator and event-based surveillance mechanisms, to be supported by an interoperable information and communications platform. Explore automated data sharing between EpiSurv and SIMS. Undertake regular reviews and update documentation relevant to the national notification of diseases. Fully implement direct reporting to EpiSurv. Improve national alignment in contact management systems.
	D.2.2	Use of electronic tools	4	
	D.2.3	Analysis of surveillance data	4	
Reporting	D.3.1	System for efficient reporting to FAO, OIE and WHO	5	Consider a formal mechanism for timely and routine information sharing on potential public health risks between the OIE and the IHR NFPs and finalize a protocol for coordinating the interface between IHR and INFOSAN reporting.
	D.3.2	Reporting network and protocols in country	5	

Technical areas	Indicator no.	Indicator	Score	Priority Actions
Human resources (animal and human health sectors)	D.4.1	An up-to-date multi-sectoral workforce strategy is in place	4	Ensure that resources are available for regular reviews of *Te Uru Kahikatea*. Ensure that *Te Uru Kahikatea* prioritizes the development of a public health workforce that reflects New Zealand's demographic profile, with a particular emphasis on Māori and Pacific communities. Ensure there is consistent support for HPOs, public health nurses, public health physicians, veterinarians and other related disciplines to undertake applied epidemiology training at the appropriate levels. Build linkages and data sharing to strengthen public health workforce data collection, including the non-medical workforce, to enable robust monitoring and forecasting to ensure the workforce remains fit for purpose and responsive to future needs.
	D.4.2	Human resources are available to effectively implement IHR	5	
	D.4.3	In-service trainings are available	4	
	D.4.4	FETP or other applied epidemiology training programme in place	5	
RESPOND				
Emergency preparedness	R.1.1	Strategic emergency risk assessments conducted and emergency resources identified and mapped	4	Develop and maintain an ongoing national risk review cycle to support and inform the National Security System and Emergency Management System, including those related to IHR implementation. Enhance existing IHR-related emergency preparedness activity to support and align with the Emergency Management System policy reforms following the 2017 Ministerial Review Continue to implement corrective actions identified in exercises and responses in timely and systematic way. Continue emergency management training for the multidisciplinary health workforce and relevant partners.
	R.1.2	National multisectoral multi-hazard emergency preparedness measures, including emergency response plans, are developed, implemented and tested	5	
Emergency response operations	R.2.1	Emergency response coordination	5	Resource the development of resilient alternative National Health Coordination Centre arrangements in Auckland in support of the NCMC function. Work across agencies to improve the information and intelligence systems that support decision-making in emergencies, including through increasing access to relevant information on health and IHR hazards.
	R.2.2	Emergency Operations Centre (EOC) capacities, procedures and plans	5	
	R.2.3	Emergency Exercise Management Programme	4	
Linking public health and security authorities	R.3.1	Public health and security authorities (e.g. law enforcement, border control, customs) linked during a suspect or confirmed biological, chemical or radiological event	5	Enhance public health participation in relevant National Security System training at all levels. Enhance the current arrangements which support the effective engagement of public health within the National Security System.

Technical areas	Indicator no.	Indicator	Score	Priority Actions
Medical counter-measures and per-sonnel deploy-ment	R.4.1	System in place for activating and coordinating medical countermeasures during a public health emergency	5	Maintain arrangements for procuring, storing and distributing medical countermeasures and regularly review the composition of the National Reserve Supply to ensure readiness for public health emergencies. Explore opportunities to enhance personnel and resource support for public health events or emergencies in the Pacific region through existing (e.g. emergency medical teams (EMTs), the Global Outbreak Alert and Response Network, etc.) and new mechanisms.
	R.4.2	System in place for activating and coordinating health personnel during a public health emergency	5	
	R.4.3	Case management procedures implemented for IHR relevant hazards	4	
Risk com-munica-tion	R.5.1	Risk communication systems for unusual/ unexpected events and emergencies	3	Move quickly to implement the communications-related recommendations to the MOH from the State Services Commission's Performance Improvement Framework by developing and implementing a formal communication plan for stakeholder engagement and management, including sharing resources and joint emergency response exercises. Identify sustainable financing to strengthen and retain an expanded pool of experienced risk communicators in the health and disability sector, and a related information and communication systems capability, to deliver a forward-looking risk communications work programme that includes strengthening community engagement, dynamic listening and the management of miscommunication during routine operations and emergency responses. Implement a best practices toolkit that identifies appropriate cross-sectoral communication channels for specific cultures, vulnerable populations and geographical locations.
	R.5.2	Internal and partner coordination for emergency risk communication	4	
	R.5.3	Public communication for emergencies	3	
	R.5.4	Communication engagement with affected communities	3	
	R.5.5	Addressing perceptions, risky behaviours and misinformation	3	
IHR-RELATED HAZARDS AND POINTS OF ENTRY				
Points of entry (PoEs)	PoE.1	Routine capacities established at points of entry	5	Enhance core capacities for responding to public health emergencies at designated POEs by strengthening readiness for chemical and ionizing radiation events, alongside existing communicable diseases and exotic pests capabilities. Strengthen the standardization and interoperability of the public health emergency contingency plan across POEs and public health units by increasing the frequency and scope of exercises including AARs.
	PoE.2	Effective public health response at points of entry	5	

Technical areas	Indicator no.	Indicator	Score	Priority Actions
Chemical events	CE.1	Mechanisms established and functioning for detecting and responding to chemical events or emergencies	5	Develop a national strategic framework for chemical incident surveillance and response. Enhance on-site and laboratory reach-back capabilities for identification/quantification of chemical substances.
	CE.2	Enabling environment in place for management of chemical events	5	
Radiation emergencies	RE.1	Mechanisms established and functioning for detecting and responding to radiological and nuclear emergencies	4	Undertake a review of the National Radiation Incident Response Plan (NRIRP) and update to take account of the new legislation (Radiation Safety Act 2016) and the requirements in IAEA General Safety Requirements Part 7. Develop national guidance on medical management of radiation emergencies, public health risk assessment and risk communications, then test implementation through full-scale exercises.
	RE.2	Enabling environment in place for management of radiological and nuclear emergencies	4	Explore developing relevant expertise and capacity for monitoring internal radiation contamination and performing internal radiation dose assessment.

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

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. Implementing legislation could serve to institutionalize and strengthen the role of IHR (2005) and operations within the State Party. It can also facilitate coordination among the different entities involved in their implementation. See detailed guidance on IHR (2005) implementation in national legislation at http://www.who.int/ihr/legal_issues/legislation/en/index.html. In addition, policies that identify national structures and responsibilities as well as the allocation of adequate financial resources are also important.

> ### Target
>
> *Adequate legal framework for States Parties to support and enable the implementation of all their obligations and rights made by the IHR. Development of new or modified legislation in some States Parties for the implementation of the Regulations. Where new or revised legislation may not be specifically required under a State Party's legal system, the State may revise some legislation, regulations or other instruments in order to facilitate their implementation in a more efficient, effective or beneficial manner. States Parties ensure provision of adequate funding for IHR implementation through the national budget or other mechanisms. Country has access to financial resources for the implementation of IHR capacities. Financing that can be accessed on time and distributed in response to public health emergencies, is available.*

LEVEL OF CAPABILITIES

New Zealand has a comprehensive and robust legislative framework to facilitate and support its capacities for public health and medical emergency preparedness and response.

While the IHR (2005) are not referred to explicitly in existing national legislation, the capacities and capabilities it mandates align with and assure IHR implementation. This includes compliance with other international agreements and obligations under APSED III, the Sendai Framework for Disaster Risk Reduction and the Sustainable Development Goals, as well as with the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE).

Similarly, while dedicated IHR funding lines are not specifically identified within the budgets of the health sector or other sectors, adequate finances are currently available to assure that IHR obligations are met. Central government funding for IHR-relevant capacities is distributed annually to ministries. Special provisions for funding through emergency government processes, should additional resources be required, allow for timely action in the event of a public health emergency.

The legislative and financing frameworks enabling IHR implementation are further supported by strong cross-government policy and processes for coordinating and administrating responses – for example, the National Security System, wherein at least one agency (sometimes two) is given lead responsibility for planning and responding to security threats.

In both the human and animal health sectors various IHR-relevant capabilities and capacities are implemented and delivered through a decentralized model of statutory activities and contracted service providers both in steady state and in emergencies.

Opportunities exist to strengthen IHR-relevant coordination and collaboration linkages between ministries, especially between the MOH and the Ministry for Primary Industries (MPI). Enhancing linkages both in steady state- and emergency-focused national legislation and in policy development processes could enable greater cross-governmental efficiencies in maintaining IHR obligations.

Finally, there is a functioning emergency financing mechanism, but no national emergency fund. Exploring cross-sectoral emergency funding options, to include enhancements of administrative readiness and forecasting for emergency funding requests, could strengthen and expedite the provision of resources in an emergency.

Indicators and scores

P.1.1 The State has assessed, adjusted and aligned its domestic legislation, policies and administrative arrangements in all relevant sectors to enable compliance with the IHR – Score 5

Strengths and best practices

- The National Security System provides a strong framework for cross-government collaboration and coordination in planning for and responding to security threats (including public health emergencies of international concern).

- The MOH has contracts with the health sector and Environmental Science and Research Limited (ESR)[1], as well as arrangements with some other agencies (such as NZ Customs and the MPI), to ensure that IHR functions are carried out.

Areas that need strengthening and challenges

- There are opportunities to strengthen joint/collaborative legislative and policy review and maintenance linkages between key IHR-relevant agencies – in particular the animal/human health interface between the MOH and the MPI.

P.1.2 Financing is available for the implementation of IHR capacities – Score 5

Strengths and best practices

- Adequate finances are currently available to deliver IHR implementation efficiently and effectively, even though IHR implementation does not have an explicitly identified or dedicated funding line.

- Central government funding is decentralized and distributed annually to ministries, allowing them to act in a timely manner should a public health emergency arise.

- The MOH has mechanisms to access additional funding for any major emergency within New Zealand that requires immediate activation of health emergency plans.

Areas that need strengthening and challenges

- Health and other responding agencies are expected to absorb the initial costs of responding to an emergency from annual appropriations. Not having dedicated funding lines for IHR-related activity means that these capacities may not be prioritized or sustained at current levels in future budgets.

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1   See detailed guidance on IHR (2005) implementation in national legislation at
    http://www.who.int/ihr/legal_issues/legislation/en/index.html.

PREVENT

P. 1.3 A financing mechanism and funds are available for the timely response to public health emergencies – Score 4

Strengths and best practices

- The Minister of Finance has adequate authority (under the Public Finance Act (PFA) 1989) to approve the incurrence of expenses or capital expenditure necessary in the event of a defined emergency.

- The MOH has special provisions for financing responses to major emergencies within New Zealand.

- Mechanisms are available to reimburse the expenses incurred by local authorities that meet the criteria for reimbursement – for example, a district health board (DHB) exceeding its baseline funding by more than 0.1%, or for civil defence emergency management activities (under the Civil Defence and Emergency Management (CDEM) Act 2002).

Areas that need strengthening and challenges

- There is no cross-sectoral emergency fund. Enhancements of administrative readiness, to include forecasting for emergency funding requests, could strengthen and expedite the provision of resources in an emergency.

Recommendations for priority actions

- Enhance collaboration and coordination linkages in national legislation and policy development processes and response operations, particularly between the animal and human health sectors, to enable greater cross-governmental efficiencies in maintaining and enhancing the ability to meet IHR obligations.

- Review current emergency funding mechanisms through a cross-government process to identify areas for improvement, in particular for events with a higher likelihood of occurring.

IHR COORDINATION, COMMUNICATION AND ADVOCACY

INTRODUCTION

The effective implementation of the IHR requires multisectoral/multidisciplinary approaches through national partnerships for efficient alert and response systems. Coordination of nationwide resources, including the designation of an IHR NFP, and adequate resources for IHR implementation and communication, is a key requisite for a functioning IHR mechanism at country level.

> ### Target
>
> *Multisectoral/multidisciplinary approaches through national partnerships that allow efficient, alert and response systems for effective implementation of the IHR. Coordinate nationwide resources, including sustainable functioning of an IHR NFP – a national centre for IHR communications which is a key obligation of the IHR – that is accessible at all times. States Parties provide WHO with contact details of IHR NFPs, continuously update and annually confirm them.*

LEVEL OF CAPABILITIES

New Zealand has built a strong National Security System based on an all-hazards, all-risks approach, with active involvement of the health system. This National Security System is the high-level mechanism for coordination across government in the case of a significant crisis or event, including IHR-related events. It has been tested multiple times by real-life events, and has demonstrated its effectiveness.

New Zealand shows a high level of commitment to IHR implementation. New Zealand's IHR NFP function resides with the Public Health Group at the MOH. The Ministry participates actively in the IHR NFP network and communicates regularly with WHO and international colleagues on matters related to the IHR. There are standard operating procedures (SOPs) in place for the operation of the IHR NFP, and mechanisms for communication and reporting, and updating relevant sectors when a public health threat exists.

In general, there is a good level of communication and collaboration between the sectors and agencies involved in IHR implementation. This includes between border agencies, between and within the animal and human health sectors and laboratories, and among the agencies planning for and responding to other hazards (such as deliberate contamination, food safety events and chemical and radiation events).

Communication and collaboration is realized through a range of formal and informal mechanisms. The Coordinated Incident Management System (CIMS) is used by response agencies as the coordination structure for multiagency responses. Emergency Operations Centres (EOCs) are set up with liaison officers from external agencies as required by the nature and scale of the response. However, because priorities for government agencies depend on their core business, there is not always sufficient alignment of priorities between the agencies.

The MOH, the MPI and laboratory and public health networks all work collaboratively, sharing information on disease surveillance and on specific disease notifications where relevant, and in outbreak responses.

There are national-level documents detailing relevant processes, including a Communicable disease control manual and the Guidelines for the investigation and control of disease outbreaks. These documents, along with the Biosecurity Act 1993, include a requirement to notify the MPI of the identification of a zoonotic disease of significance and/or any organism not normally seen in New Zealand. Similarly, the MPI's own processes include a requirement to notify the MOH of any notifiable zoonotic diseases.

PREVENT

Coordination and communication mechanisms are tested constantly through exercises (national, regional and agency-specific), and have been further tested in actual events such as domestic preparedness activities related to the 2014–2016 Ebola outbreak in West Africa, responding to an incident of criminal threat to contaminate infant formula and products in 2014 and managing a drinking water contamination event in Havelock North in 2016. IHR NFP functions were most recently tested in 2018 through the IHR Crystal Exercise, an annual simulation exercise run by the WHO Regional Office for the Western Pacific.

Indicators and scores

P.2.1 A functional mechanism established for the coordination and integration of relevant sectors in the implementation of IHR – Score 4

Strengths and best practices

- A notifiable disease surveillance system and direct laboratory notification systems enable timely and systematic information gathering for a wide range of diseases of public health concern.
- The MOH, DHBs and Public Health Units (PHUs) have well-established communication channels, including a single point of contact (SPOC) email address and telephone number. This system is used for business as usual communications as well as for rare disease and outbreak notifications. The MOH uses the IHR NFP for notifications of public health risks, such as ill travellers, and for information sharing.
- The National Security System provides the framework for coordinating agencies during a nationally significant response. This coordination and communication has been demonstrated through a range of nationally significant responses.
- AARs are always conducted to evaluate responses to public health events, and risk and action plans are updated based on gaps identified in these reviews. The MOH strengthened its approach to conducting AARs in a methodical way over the 18 months preceding the JEE. Action planning takes a variety of formats, and includes internal and external reviews.
- The MOH regularly participates in Exercise Crystal, run by the WHO Regional Office for the Western Pacific.

Areas that need strengthening and challenges

- There are mechanisms for coordination and communication across sectors, and regular communications between some sectors, but an annual update on IHR-related coordination, communication and advocacy arrangements is not provided across all relevant sectors.
- Coordination and communication between the IHR NFP and actors outside the health sector could be strengthened.

Recommendations for priority actions

- Continue to advocate for and communicate the value of sustaining and enhancing investment in health security through the implementation of APSED III.

- Consider reviewing and upgrading the functions of the IHR NFP to include supporting and coordinating the monitoring and evaluation of IHR implementation, including through annual reporting, JEEs, simulation exercises and AARs.

- Enhance the functional mechanisms for multisectoral and stakeholder communication, coordination and collaboration, with particular focus on operational linkages between the animal and human health sectors, including public health, clinical services and food safety.

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**
>
> *A functional system in place for the national response to combat AMR with a One-Health approach, including:*
>
> *a) Multisectoral work spanning human, animal, crops, food safety and environmental aspects. This comprises developing and implementing a national action plan to combat AMR, consistent with the Global Action Plan (GAP) on AMR.*
>
> *b) Surveillance capacity for AMR and antimicrobial use at the national level, following and using internationally agreed systems such as the WHO Global Antimicrobial Resistance Surveillance System (GLASS) and the OIE global database on use of antimicrobial agents in animals.*
>
> *c) Prevention of AMR in health care facilities, food production and the community, through infection prevention and control measures.*
>
> *d) Ensuring appropriate use of antimicrobials, including assuring quality of available medicines, conservation of existing treatments and access to appropriate antimicrobials when needed, while reducing inappropriate use.*

LEVEL OF CAPABILITIES

Activities to reduce AMR are guided by the New Zealand Antimicrobial Resistance Action Plan, which is fully aligned with the WHO GAP on Antimicrobial Resistance. The New Zealand plan was jointly developed by the MOH, MPI and representatives from across the human health, animal health and agriculture sectors. It recognizes that responsibility for this area lies with both the MOH and the MPI.

National AMR surveillance among humans is coordinated by ESR and uses susceptibility testing data from all hospitals and community medical diagnostic laboratories. AMR surveillance monitors a number of nationally-prioritized organisms as well as rare and emerging resistance patterns, such as carbapenemase-producing Enterobacteriaceae, vancomycin-resistant enterococci and vancomycin non-susceptible S. aureus. The scope of national AMR surveillance is reviewed annually by the NZ Microbiology Network. AMR surveillance informs national policy, decision-making and planning as well as local outbreak responses.

Under New Zealand Infection Prevention and Control Standard 8134.3.2008, all 23 public hospitals and private hospitals must have established infection, prevention and control (IPC) committees and developed local IPC plans. The IPC committees are staffed by dedicated, trained health care professionals supported by link staff within individual clinical areas. Compliance with national IPC standards is ensured through periodic certification of health care facilities under the Health and Disability Services (Safety) Act 2001,

and through accreditation of laboratories. Surgical site infection data for cardiac and orthopaedic procedures are collected by all 20 DHBs and reported quarterly, while S. aureus bacteraemia data are designated as an outcome measure for hand hygiene and reported quarterly. These data inform and support AMR-related planning and activities.

Consumption of antimicrobials in humans is monitored by ESR based on information from national pharmaceutical databases. Consumption of antimicrobials in animals and food crops is monitored by MPI using antibiotic sales data. Antibiotics of human health importance are restricted by MPI and require a veterinary prescription before sale or use. No antibiotics of human health importance can be used for animal growth promotion.

Regional antimicrobial stewardship plans exist in each DHB. In December 2017, the MPI released a directive on Prudent Use of Antimicrobials on Animals and Plants.

Indicators and scores

P.3.1 Effective multisector coordination on AMR – Score 3

Strengths and best practices

- The New Zealand AMR Action Plan (NZAMRAP) was formally approved in May 2017, and implementation for year one activities was underway at the time of the JEE. The plan is based on a One-Health integrated approach with representation from the human, animal and agricultural sectors and is fully aligned with WHO's GAP on AMR.

- New Zealand has established an AMR governance group to oversee the delivery of the NZAMRAP. This group is jointly chaired by the MOH and the MPI.

- Each Ministry has an AMR Coordination Group made up of key stakeholders and partners who share information and expertise, and support delivery of specific activities in the NZAMRAP.

- Each key objective under the Plan has leads from the MOH and the MPI who meet at regular intervals to progress work relating to this objective. Smaller working groups focus on specific objectives of the plan. This structure enables work to be reported back to the governance group.

Areas that need strengthening and challenges

- There is only sufficient funding to complete some of the identified and agreed priority actions for year one of the NZAMRAP. Additional budget and resources are needed to implement all aspects and deliverables in the plan beyond year one.

P.3.2 Surveillance of AMR – Score 3

Strengths and best practices

- In the health sector, the list of priority organisms for AMR surveillance and reporting has been updated. This list will continue to be reviewed periodically, taking into account international guidance and the New Zealand context.

- New Zealand has a National Antimicrobial Susceptibility Testing Committee to provide expert advice on antimicrobial susceptibility testing.

- In the animal health sector, further data collection is underway to identify bacteria sensitivity to antibiotics in animal commodities. The survey protocol has been modified to carry out testing on animal species over a two to three year period rather than a one year period.

- The yearly reporting of sales of antibiotic-based veterinary medicines and pesticides has moved to the calendar year in order to align with reporting requirements set out by the OIE.

- The MOH is undertaking a review of wider surveillance systems to ensure they are fit for purpose, and this includes further review and integration of AMR surveillance.

Areas that need strengthening and challenges

- Human and animal surveillance data are not routinely integrated. Strengthening of this area will enable potential links to be identified and investigated.

- There is limited information on the AMR burden in New Zealand.

- There is limited information on human usage of antimicrobials across the health sector.

- There is limited availability of antibiograms.

- There is limited knowledge around surveillance of resistant pathogens in effluent discharges.

P.3.3 Infection prevention and control – Score 3

Strengths and best practices

- Individual hospital IPC programmes are guided by the New Zealand Health and Disability Services Infection Prevention and Control Standard: 8134.3.2008. Hospitals are required to have an IPC programme (including an IPC team and committee) and to review their plan annually.

- The Health and Disability Services Standards also include a standard on antimicrobial usage. This requires acute and surgical hospitals to have procedures for the use of antibiotics in line with accepted guidelines.

- Hand hygiene compliance in DHBs is audited through the Health Quality and Safety Commission's hand hygiene programme. Quarterly reporting on individual health care facilities is published online.

- The Health Quality and Safety Commission's National Surgical Site Infection Improvement Programme measures compliance for the use of surgical antimicrobial prophylaxis for orthopaedic and cardiac procedures. Quarterly reporting on individual health care facilities is published online.

- The OIE Performance of Veterinary Services (PVS) tool is used for regular evaluation of the effectiveness of IPC results.

- There is widespread compliance with relevant legislation concerning food hygiene practices for collection and processing of foods.

- Animal welfare policy and practice is well facilitated.

- There is a national plan for preventing infectious diseases in animals, for biosecurity purposes.

- Systems are in place to monitor infectious diseases of importance to New Zealand agriculture. The MPI uses its AMR Coordination Group to facilitate the implementation of related activities. Monitoring includes supporting industry initiatives, such as work on prudent use and antimicrobial stewardship programmes. The MPI also utilizes its networks, such as those in OIE, to monitor international trends.

Areas that need strengthening and challenges

- Although each DHB has its individual IPC plan, these are not consistent across regions or nationally. Consideration should be given to the development of a National IPC plan to improve consistency.

- The IPC component of the New Zealand Health and Disability Services Standards is 10 years old and needs to be reviewed and updated.

- Individual agricultural sectors have developed IPC guidance plans, but they are not consistent. Consideration should be given to developing a national IPC plan in the agricultural sector in order to improve consistency.

P.3.4 Optimize use of antimicrobial medicines in human and animal health and agriculture – Score 4

Strengths and best practices

- Any antimicrobials used in animals must be authorized under the Agricultural Compounds and Veterinary Medicines Act 1997 and related Regulations. Veterinary medicine manufacturers need good manufacturing practice approval. Audits are undertaken to monitor compliance with the law.

- Systems are in place at the border to prevent illegal importation of antimicrobials. A range of offences and penalties is established for illegal activities.

- Any medicines that will be used by humans in New Zealand (including antimicrobials) must be registered and approved by the New Zealand Medicines and Medical Devices Safety Authority (Medsafe).

- Antimicrobial prescription guidelines are in place at both hospital and community level.

- A regulatory body exists to protect consumers and ensure that medicines are available either only with a prescription, or over the counter with advice from a pharmacist.

- The MPI has produced a prudent use directive for antimicrobials, and the Veterinary Council of New Zealand is currently reviewing the section of its Code of Professional Conduct that deals with veterinary medicines. The code includes AMR management for antimicrobials.

- A number of animal industry sectors have developed guidance on the prudent use of antimicrobials.

- While no veterinary medicine antimicrobials of human health importance are allowed to make growth promotion claims, the MPI has commenced a reassessment of the controls and labelling of antimicrobials, based on the establishment of categories for antimicrobials of importance to human health.

- Information is regularly provided to the global monitoring questionnaire.

Areas that need strengthening and challenges

- Agreement is needed on whether a multiregional or a singular national approach is best for antimicrobial stewardship programmes. The first step for this would be to assess current programmes, including regional antimicrobial guidelines.

- Prescriber practices are not well understood.

- There is a lack of antimicrobial prescribing policies in veterinary practices.

Recommendations for priority actions

- Work towards sustainable resourcing for continued implementation of the national AMR Action Plan.

- Develop national consistency in IPC programmes.

- Assess antimicrobial stewardship programmes, including treatment guidelines, to determine whether a multi-regional or a singular national approach is best.

- Establish regular AMR surveillance and reporting in animal health and agriculture, and ensure this is coordinated with human AMR surveillance.

- Establish coordinated reporting for surveillance of human AMR and antimicrobial use.

ZOONOTIC DISEASES

INTRODUCTION

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

> **Target**
>
> *Functional multisectoral, multidisciplinary mechanisms, policies, systems and practices are in place to minimize the transmission of zoonotic diseases from animals to human populations.*

LEVEL OF CAPABILITIES

New Zealand has robust biosecurity systems and quarantine procedures that minimize the risk of zoonotic disease emergence and importation. Both the MPI and the MOH conduct routine surveillance for zoonoses.

Selected information from the MPI's Surveillance and Information Management System (SIMS) is regularly published online in its Surveillance Magazine, and the MOH reports surveillance information from EpiSurv, a centralized, web-based national notifiable disease surveillance database. At present there is no interoperability for immediate electronic sharing of this information.

The MPI and the MOH each have lists of zoonotic diseases that are legally notifiable, and have established cooperation on priority zoonotic diseases, although there is no formalized structure for this process. Diseases of major concern at the time of the JEE mission include salmonellosis, Campylobacter, leptospirosis, bovine tuberculosis and diseases transmitted by mosquitoes.

Occurrence of emergency animal diseases and diseases of important significance are immediately reported internationally to WHO and the OIE as required, although there is currently no formal mechanism for communicating potential zoonotic public health risks between the OIE NFP (within the MPI) and the IHR NFP(within the MOH).

New Zealand has strong national laboratory capacity to detect cases of zoonotic diseases, with the MPI operating laboratories accredited to ISO 17025 for veterinary and zoonotic pathogens. For zoonotic diseases there is routine sharing of specimens and information between human and animal health laboratories.

In the event of a potentially zoonotic animal disease emergency, the CIMS provides clear guidelines that specify responsibilities and coordinate responses between the MOH and the MPI. The MPI is the lead agency at regional and national levels for animal diseases/biosecurity response situations, and works together with the MOH to inform risk, and to control or prevent particular zoonotic diseases of significance. There are some exceptions, such as human-to-human zoonosis transmissions, where the MOH assumes the lead role.

Although annual One-Health symposiums have historically taken place, there is no national coordinating committee to formalize interagency networks to address One-Health issues, nor have there been any integrated One-Health reviews (such as the IHR-PVS National Bridging Workshops) to address gaps identified by the JEE and PVS Pathway self-evaluations. Stakeholders in human health, animal health and other government agencies do, however, routinely collaborate in case studies and readiness activities for emerging and re-emerging diseases. This helps ensure robust control and management of potential zoonotic public health risks.

PREVENT

Indicators and scores

P.4.1 Coordinated surveillance systems in place in the animal health and public health sectors for zoonotic diseases/pathogens identified as joint priorities – Score 4

Strengths and best practices

- The MOH and the MPI both conduct ongoing surveillance of all high priority zoonotic diseases in humans and animals, including wildlife, livestock and domestic animals. There are joint reviews of some programmes to address these diseases.

- Zoonotic disease events are entered into MPI and MOH databases and reports are published and shared between the animal and human health sectors, with disease events of important significance immediately reported internationally as required to WHO and the OIE.

- A joint list of priority zoonotic diseases/pathogens of greatest public health concern has been agreed between the MOH and MPI, with surveillance systems in place for five or more of these.

- Guidelines for the Investigation and Control of Disease Outbreaks provide guidance for the surveillance and investigation of zoonotic disease outbreaks or zoonotic events of importance, and define agency roles and responsibilities for outbreak management.

- Strong biosecurity systems and quarantine procedures reduce the risk of importing zoonotic diseases through animals or their products, and/or from people arriving from overseas.

- Joint risk assessments are conducted for national biosecurity and some animal disease risks to human health.

- There is strong national laboratory capacity to detect cases of zoonotic diseases, with sharing of specimens and information between human and animal health laboratories.

Areas that need strengthening and challenges

- The MOH and the MPI do not have structured approaches to information sharing and comparing their surveillance database information.

- The OIE NFP and the IHR NFP have no formal mechanism for reporting potential public health risks.

- The MOH and the MPI do not have an integrated system to review and update a joint list of priority zoonotic diseases.

- The MOH and the MPI do not have a joint programme to review existing surveillance and identify gaps.

P.4.2 Mechanisms for responding to infectious and potential zoonotic diseases established and functional – Score 4

Strengths and best practices

- The MPI has a generic biosecurity response plan in place for rapid response to an emerging or re-emerging zoonotic disease or event, the efficacy of which has been proven during several national responses.

- In the case of an emergency animal disease outbreak, the MPI leads planned emergency responses and relevant services, programmes and communications. If necessary, diseases can quickly be made notifiable.

- The ability of private veterinarians to assist during emergency animal disease responses is maximized by initiatives such as the National Biosecurity Capability Network, overseas training on exotic diseases, and a recently introduced epidemiology training course for veterinarians.

- There are plans for multisectoral management of important zoonotic foodborne events/outbreaks of various risk levels, with agreed (MPI and MOH) protocols for critical food and biosecurity responses, and national response plans specifying the agencies' respective roles.

- If a foodborne or zoonotic event is significant, the CIMS will be used to manage the incident.

Areas that need strengthening and challenges

- There is no formalized, regularly-tested multisectoral mechanism for responding to zoonotic events and emerging diseases.

Recommendations for priority actions

- Explore a more structured approach to information sharing between the OIE NFP and the IHR NFP and comparing their surveillance database information in order to identify gaps.

- Establish a cross-agency initiative – such as a national multisectoral zoonoses governance arrangement, including the environment sector – in order to achieve a more coordinated, robust approach to management and communication regarding zoonotic diseases/events of public health concern.

- The MOH and the MPI should introduce an integrated process for regular reviews and updates of their joint list of priority zoonotic diseases.

PREVENT

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
> *A functional system is in place for surveillance and response capacity of States Parties for foodborne disease and food contamination risks or events with effective communication and collaboration among the sectors responsible for food safety.*

LEVEL OF CAPABILITIES

New Zealand has well-established surveillance and monitoring systems for detecting and monitoring foodborne diseases and food contamination. These systems are supported by a sound legislative framework and a system of codes and standards for monitoring and managing foodborne diseases and food contamination.

The MPI provides most of New Zealand's food safety system capability and is responsible for leading the management and investigations of food incidents and outbreaks if they are associated with a commercial foodborne source. The MOH is responsible for leading the management of outbreaks and incidents when they become an issue for national public health, with PHUs managing outbreaks and incidents locally.

The MPI and MOH have joint arrangements for identifying, notifying and responding to food safety events. These are outlined in a Critical Food Safety Event Response Protocol (CFSERP). The MPI also has a memorandum of understanding (MOU) with PHUs that describes reporting and referral pathways, and specifies regular meetings to share information on food-related issues.

Augmenting national capability, the MPI is a member of the Binational Food Safety Network (BFSN) coordinated by Food Standards Australia New Zealand (FSANZ). The BFSN allows for coordination, communication and information sharing between Australian and New Zealand agencies during food incidents, and works to an associated, agreed binational food incident response protocol. Through the MPI, New Zealand is an active member of the International Food Safety Authorities Network (INFOSAN), and uses this communication channel frequently, including for information exchange during foodborne disease outbreaks (see chapter on Reporting).

New Zealand has a substantive community of practice for food safety collaboration and coordination. However, some information sharing and collaboration between the MOH and other government agencies (e.g. the MPI), and between agencies, DHBs and PHUs, occurs via ad hoc, informal bilateral relationships – or is not agreed by all partners. While routine operations are sustainable, this variability in pathways and practices, especially around notification and investigation of diseases, can create challenges in standardized national information gathering, awareness, reporting and coordination, especially during emergencies.

Some agencies are also missing opportunities to train and test capabilities in workshops, seminars and training sessions. Specifically, the MPI has not held any food-related workshops, seminars, training sessions or other types of exercises, or any other activities aimed at preparing effective communications for food safety responses, since 2016.

All relevant food safety stakeholders could explore establishing a joint food industry-government forum around food incidents.

Indicators and scores

P.5.1 Surveillance systems in place for the detection and monitoring of foodborne diseases and food contamination – Score 5

Strengths and best practices

- Surveillance and monitoring systems for foodborne diseases and food contamination are well established, with well-organized staff trained to identify and respond when necessary. The surveillance system is well supported by a laboratory network that can provide the required testing.

- The MPI undertakes surveillance of foodborne hazards through the Food Residues Survey Programme, the National Microbiological Database programme, and the 5-yearly Total Diet Survey.

- The MPI's Food Compliance Services Group works closely with the food industry, national and international agencies and the health sector.

- New Zealand, and specifically the MPI, is a member of the BFSN coordinated by FSANZ, and is an active member of INFOSAN.

- The MPI trains and approves staff responsible for reporting foodborne illnesses and related matters (e.g. critical non-compliance), such as verifiers or auditors of food businesses, and enforcement officers. Training includes correct procedures for collecting and transporting specimens, investigative techniques, process reviews, product trace-back, legislation, microbiological standards and risk mitigation.

Areas that need strengthening and challenges

- Some information sharing and collaboration between agencies (e.g. the MOH, the MPI, DHBs, etc.) occurs via ad hoc, informal bilateral relationships and could be strengthened with more formal arrangements.

- Public health unit investigation and reporting of human enteric disease has shown regional variation. A 2010 report showed variability among PHUs in practices around notification and investigation.

- New Zealand lacks a joint food industry/government forum for food incidents similar to the industry-government forum run by FSANZ in Australia.

P.5.2 Mechanisms are established and functioning for the response and management of food safety emergencies – Score 4

Strengths and best practices

- Joint arrangements between the MPI and the MOH are outlined in a CFSERP, which was jointly reviewed in 2017 and authorized in 2018.

- The MPI and MOH both use New Zealand's CIMS to manage critical food safety events, and the MPI has contextualized this as the Single Scalable Response Model to standardize the determination of, and communication response to, an event.

- The CIMS, the response model, Food Compliance Operational Procedures documents and other instruments are used to ensure coordination between public health, food safety, laboratories, customs, quarantine and agricultural agencies.

PREVENT

- To ensure that identified lessons are incorporated into future responses, the MPI has developed, and is testing, a food safety response feedback, evaluation and improvement process.
- The MPI's Response People Capability Programme runs simulations as part of introductory response training for staff in response roles.

Areas that need strengthening and challenges

- The MPI has not held any food-related workshops, seminars, training sessions or other types of exercises, or any other activities aimed at preparing effective communications for food safety responses, since 2016. These activities should be run to ensure that stakeholders have an up to date understanding of communications practice and procedures in the event of a food emergency.
- There is currently no exercise schedule for the Food Safety System, and the system is not engaged in the whole-of-government exercise planned for 2020.

Recommendations for priority actions

- Ensure that relevant agencies – individually and jointly – train and exercise regularly in both technical capacities (e.g. diagnostic testing, methodologies, etc.) and soft skills and processes (e.g. communication, partner engagement, etc.).

- Enhance regional consistency in responses, identifying how the MOH and the MPI can support local responses.

- Formalize existing ad hoc and informal relationships and processes for information sharing and collaboration between agencies (e.g. the MOH, the MPI, DHBs, industry, etc.), and particularly those related to fulfilling global obligations (e.g. under the IHR and to OIE and FAO) and regional strategies (e.g. APSED III).

- Explore the establishment of a national joint food industry/cross-government forum for food incidents.

BIOSAFETY AND BIOSECURITY

INTRODUCTION

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

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

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

LEVEL OF CAPABILITIES

Biosafety and biosecurity are well regulated in New Zealand, with a multisectoral, whole-of-government national system in place. The New Zealand biosecurity system identifies animal pathogens, zoonotic pathogens and pests as unwanted organisms and regulates all "new" organisms (including genetically modified ones).

The national biosafety and biosecurity system includes a regulatory framework that covers pathogen biosafety and biosecurity, transport of infectious substances, containment laboratories and risk management. This framework is supported by a comprehensive system of oversight and monitoring through training, accreditation and auditing.

National-level resources are secured to operate these biosecurity and biosafety schemes and several government agencies, including MPI, IANZ (International Accreditation New Zealand) and WorkSafe NZ (New Zealand's primary workplace health and safety regulator), have responsibility for implementing and monitoring biosafety and biosecurity requirements.

Pathogenic organisms regulated under the Biosecurity Act and Hazardous Substances and New Organisms Act are held in facilities approved for containment levels in accordance with the risk grouping under the AS/NZS2243.3 standard. Culturing and propagating unwanted organisms requires permission from the MPI. Each facility is required to maintain an inventory register of receipt, transfer and disposal of pathogens. This inventory register is reviewed as part of the MPI facility assessment.

Facilities are required to have effective systems of waste management in order to ensure that regulated organisms are destroyed. These systems must meet national and regional waste management requirements.

All laboratories must comply with the Health and Safety at Work Act, which is enforced by WorkSafe NZ.

PREVENT

New Zealand laboratories are increasingly moving towards culture independent testing, where available.

New Zealand's biosafety and biosecurity systems are underpinned by comprehensive and sustainable training programmes. Training is required under laboratory and containment standards and compliance with the training requirements is audited internally and verified externally by MPI and – where appropriate – IANZ.

Training needs assessments are conducted regularly both by facility operators (at least annually) and by MPI as part of daily business operations to ensure continuous improvement. Laboratories undertake risk assessments when introducing new methods, or when there are changes in the reagents they are using.

Biological science programmes at tertiary institutions incorporate aspects of biosafety and biosecurity into the curriculum. MPI contributes to these programmes to ensure consistency.

Indicators and scores

P.6.1 Whole-of-government biosafety and biosecurity system in place for all sectors (including human, animal and agriculture facilities) – Score 5

Strengths and best practices
- National-level resources are secured to operate the biosecurity and biosafety schemes, and several government agencies – including the MPI, IANZ and WorkSafe NZ – are responsible for implementing and monitoring biosafety and biosecurity requirements.
- New Zealand laboratories are licenced and audited and operate under standards for containment and safety in laboratories. These standards set out the requirements, responsibilities and general guidelines for safe handling and containment of microorganisms, including around training; handling of pathogens and risk organisms; storage; transport; security; and access.

Areas that need strengthening and challenges
- The New Zealand biosecurity system identifies animal pathogens, zoonotic pathogens and pests as unwanted organisms, and regulates all new organisms (including genetically modified ones). The system does not specifically include potentially high-risk human pathogens or toxins. The system could be strengthened by including high-risk human pathogens.

P.6.2 Biosafety and biosecurity training and practices in all relevant sectors (including human, animal and agriculture) – Score 5

Strengths and best practices
- New Zealand's biosafety and biosecurity systems are underpinned by comprehensive and sustainable training programmes.
- Regular training is required under laboratory and containment standards and compliance with training requirements is audited internally and verified externally by the MPI and – where appropriate – IANZ.
- Training includes emergency response procedures.

Areas that need strengthening and challenges
- Ongoing review of the current biosafety and biosecurity system is necessary to ensure it remains fit for purpose and recognizes changes in practice, particularly with regard to advances in genetic technology and synthetic biology.

Recommendations for priority actions
- Conduct periodic reviews of the biosafety and biosecurity regulatory system in order to ensure it remains fit for purpose, including with regard to genetic technology and synthetic biology advances.

IMMUNIZATION

INTRODUCTION

Immunizations are estimated to prevent more than two million deaths a year globally. Immunization is one of the most successful global health interventions and cost-effective ways to save lives and prevent disease. Measles immunization is emphasized because it is widely recognized as a proxy indicator for overall immunization against vaccine-preventable diseases. Countries will also identify and target immunization to populations at risk of other epidemic-prone vaccine-preventable diseases of national importance (e.g. cholera, Japanese encephalitis, meningococcal disease, typhoid and yellow fever). Diseases that are transferable from cattle to humans, such as anthrax and rabies, are also included.

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

LEVEL OF CAPABILITIES

New Zealand provides a well-functioning immunization programme that delivers comprehensive services to people of all ages, nationwide. All vaccines on the national immunization schedule are publicly funded regardless of immigration or citizenship status, with most immunizations delivered in general practices or school-based programmes.

Access for marginalized populations is supported by free outreach immunization programmes and alternative delivery settings. Vaccines added to the national immunization schedule in the last 10 years include universal pneumococcal, rotavirus, varicella zoster and human papillomavirus vaccines, and influenza and pertussis vaccines in pregnancy.

The national immunization programme of New Zealand aligns with the WHO Global Vaccine Action Plan (GVAP), and New Zealand has eliminated polio, measles, rubella and maternal and neonatal tetanus. As of 30 June 2018, 92% of the population aged two years is fully immunized, including with the first dose of measles vaccine.

Immunization in New Zealand is voluntary. Early childhood centres and primary schools are required to document immunization status on enrolment, but lack of immunization does not affect the right of the child to be enrolled.

The national immunization register records all childhood immunization events as they occur, so timely immunization can be tracked. Comprehensive recording of adult vaccines is limited by capacity issues.

Quality is ensured by authorized vaccinator training and implementation of clinical guidelines on safe and effective use of vaccines. All vaccinators are required to meet national standards for vaccine cold chain management. Vaccinators are supported by immunization coordinators and a helpline.

Monitoring and management of adverse events following immunization is well established.

Immunization health targets with an explicit equity focus have supported increases in childhood immunization coverage across all ethnic groups, with greater gains made for Māori. However, there remains an equity gap of 2–5% in childhood immunization coverage between the Māori population and the total population.

An annual plan for immunization communication and promotion is in place and implemented. Publicity materials are available in a range of languages, along with a consumer helpline.

New Zealand carries out surveillance for vaccine-preventable diseases, and local programmes of immunization can be implemented in cases of an outbreak. New vaccines are introduced to the national immunization schedule after consideration of a range of factors including need, health benefits, suitability, costs and savings.

Indicators and scores

P.7.1 Vaccine coverage (measles) as part of national programme – Score 4

Strengths and best practices

- The New Zealand national immunization programme aligns with the WHO GVAP, and New Zealand has eliminated polio, measles, rubella and maternal and neonatal tetanus.

- Uptake of the primary series of childhood vaccines (including the first measles dose) is over 90% (92% of the population aged two years is fully immunized, including with the first dose of measles vaccine).

- All children have access to free immunization regardless of immigration or citizenship status, and barriers to access are addressed by a free outreach programme.

- Health providers are incentivized to deliver the immunization programme through performance requirements and financial incentives. Vaccinators are supported by training, resources, access to advice from immunization coordinators and a helpline. A post-introduction evaluation of the varicella vaccine conducted in 2017 found that vaccinator training and communications and resources for vaccinators and the public exceeded expectations.

- A national immunization register was established in 2005; all children born in New Zealand are registered at birth and immigrant children are registered when they enrol with a primary health organization or when they receive an immunization. The MOH uses the national immunization register to monitor and report coverage of childhood vaccinations on a quarterly basis. Coverage figures for human papillomavirus (HPV) and influenza vaccinations are reported annually.

Areas that need strengthening and challenges

- Achieving equity of coverage is a current challenge, with vaccine coverage rates lower for Māori. More work needs to be done to understand factors contributing to the lower coverage rates for Māori.

- Monitoring and surveillance is in place for all vaccine-preventable diseases on the immunization schedule (as well as other notifiable diseases), and high-level data are reported regularly and available on request. There are, however, often delays in the production of comprehensive reports that could inform immunization planning. Production of more timely comprehensive reports could be strengthened and should be considered as part of an overarching review of disease surveillance in New Zealand.

- The national immunization register was initially set up to record childhood immunizations. Not all immunizations given to adults are currently entered into the system due to capacity constraints, and the system is not able to identify eligible high-risk patients.

P.7.2 National vaccine access and delivery – Score 5

Strengths and best practices

- The Pharmaceutical Management Agency (PHARMAC) is responsible for procurement, supply and distribution of funded vaccines on behalf of DHBs. PHARMAC works closely with vaccine manufacturers in forecasting and maintaining a forward order schedule to ensure a sustainable supply of vaccines.

- Suppliers deliver vaccines into the national vaccines store under cold chain conditions. Regional vaccine warehouses are licenced pharmaceutical wholesalers that are subject to good manufacturing practice audits for the integrity of cold chain storage. Distribution of vaccines uses validated packaging that is capable of maintaining cold chain conditions for the periods specified.

- All immunization providers must achieve the requirements of the National Standards for Vaccine Storage and Transportation for Immunization Providers 2017. A key requirement of these standards is that 100% of the target population is expected to receive vaccines stored under effective cold chain conditions. All cold chain failures requiring re-vaccination are reported to the MOH.

- Improvements have been implemented in response to a 2015 national review of cold chain management practices. A national cold chain audit was conducted in 2017-18 in which data loggers were placed in approximately 10% of vaccine orders. The rate of cold chain breaches necessitating vaccine destruction was 0.6% in the audited vaccine orders.

Areas that need strengthening and challenges

- New Zealand is affected by global vaccine shortages, which sometimes impact immunization programmes. PHARMAC and the MOH work together to manage supply issues and minimize disruption to affected programmes.

Recommendations for priority actions

- Further develop, resource and implement a plan for improving equity of coverage in vulnerable populations, with a focus on reducing the equity gap for Māori children.

- Ensure the communicable diseases framework includes surveillance of all vaccine preventable diseases.

- Upgrade the national immunization register so that it provides a comprehensive solution for monitoring delivery of immunizations for all ages that can identify high-risk groups and can interface with other information systems.

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
>
> *Surveillance with a national laboratory system, including all relevant sectors, particularly human and animal health, and effective modern point-of-care and laboratory-based diagnostics.*

LEVEL OF CAPABILITIES

New Zealand has a comprehensive network of microbiology laboratories and 61 medical testing laboratories are accredited under ISO 15189 for medical and microbiological testing. These laboratories are distributed across the country and service all areas of New Zealand. In addition, 70 food laboratories are accredited to ISO 17025 by IANZ and are part of the MPI's recognized laboratory programme. The MPI also operates ISO 17025 accredited laboratories for veterinary and zoonotic pathogens (the National Animal Health Laboratory at Wallaceville) and plant pathogens and environment-related diseases (the Plant Health and Environment Laboratories in Auckland and Christchurch). A National Biocontainment Laboratory, also under MPI, is currently in the final stages of construction and will have PC2+ and PC3+ laboratory facilities.

New Zealand laboratories can test, or have access to testing, for all diseases which are notifiable in New Zealand, including the 10 core tests (specifically, polymerase chain reaction (PCR) testing for influenza virus; virus culture for poliovirus; serology for HIV; microscopy for M. tuberculosis; rapid diagnostic testing for Plasmodium spp.; bacterial culture for Salmonella enteritidis serotype Typhi; characterization of Neisseria meningitidis; Bordetella pertussis; PCR and genotyping of measles virus; and PCR for Haemophilus influenzae (Hib) gene detection).

New Zealand has extensive national reference laboratory services, which are mostly hosted by ESR. These services include, among other things, an AMR reference laboratory; reference laboratories for Legionella, Leptospira and norovirus; an arbovirus laboratory; an environmental and food virology laboratory; an environmental microbiology laboratory; and a virus identification reference laboratory (which serves as one of the national influenza centres). These services are developing capacity for using newer technology, such as whole genome sequencing.

The New Zealand Microbiology Network (NZMN) was established in 2014 to connect the clinical microbiology laboratories together in order to provide timely, consistent responses to issues relating to laboratory testing, and to ensure regular communication between microbiology laboratories in New Zealand.

The few years prior to the JEE have seen an increase in the privatization of laboratory services in New Zealand. This has been driven by attempts to improve efficiency and reduce costs, and has probably contributed to the rapid implementation of culture independent diagnostic testing in New Zealand – and, in some cases, may also have contributed to a reduction in laboratory testing undertaken specifically for public health surveillance purposes. It remains to be seen how reliable the public health function of the privatized laboratory services will be during a health emergency.

An instant automated electronic reporting system is available. There are algorithms in place for direct laboratory notification of notifiable diseases, and the electronic automated system is linked to the national notifiable disease surveillance system. A communicable disease control manual outlines the notification process for each notifiable disease, including when the MOH needs to be informed and when notification should occur on suspicion rather than after having waited for a diagnostic test result.

The human and animal health laboratory systems are not interoperable. However, the communicable disease control manual and ESR processes include a requirement to notify MPI upon identification of zoonotic diseases of significance; and MPI processes include a requirement to notify MOH of notifiable zoonotic diseases. There are regular and emergency communication arrangements in place between the MOH and the MPI.

Specimen collection, transport and testing services span the entire country and the entire population has access to diagnostic laboratory testing. Courier systems are in place to transport specimens from collection centres to testing laboratories. Where additional testing is required, specimens will be referred to the appropriate reference laboratory. Detailed guidelines have been developed for testing and referral of samples for emerging threats, such as H7N9 influenza viruses and Ebola virus. In case of need, arrangements are in place to refer specimens for testing outside New Zealand (mostly to Australia and the United States of America).

As required by the accreditation standards, all laboratories in New Zealand participate in the appropriate external quality assessment (EQA) programmes.

Anyone who is suspected of having a notifiable infectious disease, and who may be infectious, has access to certain publicly-funded health services regardless of whether or not they meet the usual eligibility criteria. This includes access to diagnostic and other tests relevant to the disease, to ensure that the cost to patients is not a barrier to access. There is a system in place to provide for specimen collection and couriers to ensure access to laboratory testing for populations in more rural areas.

Indicators and scores

D.1.1 Laboratory testing for detection of priority diseases – Score 5

Strengths and best practices

- All 10 of the core tests for priority diseases and testing for other diseases on the notifiable diseases schedule are implemented effectively across the New Zealand laboratory network.

- National reference services for human and animal health provide advanced typing for referred samples and confirmation of diagnoses. Specimen referral arrangements are in place with international reference laboratories for advanced pathogen confirmation and characterization that may not be available in New Zealand (e.g. for Ebola virus).

- Algorithms are in place for direct laboratory notification of notifiable diseases. This electronic automated system is linked to the national notifiable disease surveillance system.

Areas that need strengthening and challenges

- There is no clear overview of public health laboratory testing capability in New Zealand, which sometimes means that laboratories are not used as effectively as they could be for the analysis of some samples. A project was underway at the time of the JEE to review this capability in New Zealand, and to examine the implications of changes in laboratory process for existing public health surveillance systems. This review could inform the development of a strategy/framework to ensure efficient and effective use of laboratory capabilities in New Zealand.

D.1.2 Specimen referral and transport system – Score 5

Strengths and best practices

- Specimen collection, transport and laboratory services span the country and the entire population has access to diagnostic laboratory testing. Courier systems are in place to transport specimens from collection centres to testing laboratories. Where additional testing is required, systems are in place for specimen referral to the appropriate reference laboratory.

- Laboratories are required to have SOPs for specimen collection, handling, receipting and transport. These procedures are audited for approved transitional and containment facilities, in external reviews by IANZ and the MPI. Laboratories use appropriate biocontainment procedures to transport samples to reference laboratories by land or air couriers.

D.1.3 Effective national diagnostic network – Score 5

Strengths and best practices

- There is an effective national diagnostic network in New Zealand.

- Diagnostic laboratories are increasingly using culture independent methods for diagnostic testing.

- New Zealand has a Microbiology Network made up of representatives from all laboratories as well as the MOH, medical officers of health and the MPI. This network meets monthly and provides advice on diagnostic testing. The network also has links with the Public Health Laboratory Network of Australia.

Areas that need strengthening and challenges

- Although there is no national programme for implementing POCT, New Zealand does have POCT best practice guidelines. These include requirements for programme selection, validation and quality management. New Zealand should consider whether a national approach is needed.

D.1.4 Laboratory quality system – Score 5

Strengths and best practices

- A comprehensive laboratory accreditation and quality management system is in place across human, animal health and food laboratories.

- Accreditation and quality systems include EQA programmes. As part of IANZ accreditation, medical laboratories take part in relevant quality assurance programmes within their scope of practice. These programmes come from the Royal College of Pathologists of Australasia.

- IANZ is a signatory to the Asia Pacific Laboratory Accreditation Cooperation. On receipt of an invitation to participate in a specific programme, IANZ will nominate appropriate laboratories to participate.

Areas that need strengthening and challenges

- In vitro diagnostic devices meet the definition of a medical device under the Medicines Act 1981 and Medicines Regulations 1984. However, under current legislation, such devices are exempt from mandatory notification to the Web Assisted Notification of Devices (WAND) database[2] and therefore are not regulated, although they still have to comply with all other requirements of the Medicines Act and its associated regulations. New legislation is currently being drafted and it is envisaged that this will provide more robust regulation of therapeutic products including medical devices.

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2 The WAND database was established by the Medicines (Database of Medical Devices) Regulations 2003 to collect information about medical devices supplied in New Zealand. It is a mandatory requirement for importers, exporters and local manufacturers to notify their medical devices to the database. WAND is not an approval system for medical devices. The WAND database holds information about all medical devices supplied in New Zealand and is used by Medsafe to respond to information about medical device safety issues. If there is a safety issue with a device the WAND database is used to identify all sponsors of that device.

Recommendations for priority actions

- Review and optimize the public health laboratory services to ensure public health surveillance, outbreak detection and response needs continue to be addressed, taking into account system changes and emerging technologies.

- Consider whether a national approach to POCT is needed.

- Include regulation of in vitro diagnostic testing devices in new legislation to formally regulate these products.

DETECT

SURVEILLANCE

INTRODUCTION

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

> ### Target
>
> *(1) Strengthened foundational indicator- and event-based surveillance that are able to detect events of significance for public health and health security; (2) improved communication and collaboration across sectors and between subnational (local and intermediate), national and international levels of authority regarding surveillance of events of public health significance; and (3) improved national and intermediate level regional capacity to analyse and link data from and between, strengthened, early-warning surveillance, including interoperable, interconnected electronic tools. This would include epidemiologic, clinical, laboratory, environmental testing, product safety and quality and bioinformatics data; and advancement in fulfilling the core capacity requirements for surveillance in accordance with the IHR and OIE guidelines.*

LEVEL OF CAPABILITIES

New Zealand has a comprehensive, well-established indicator- and event-based surveillance system for communicable diseases of public health importance in humans, and for zoonotic diseases in animals. Certain noncommunicable diseases are also notifiable.

For human communicable diseases, the indicator-based surveillance system has been built around a list of diseases that are notifiable to a medical officer of health under the Health Act 1956, backed by a strong laboratory system.

Influenza is not notifiable, but a general practitioner sentinel surveillance system for influenza-like illness does exist. Other syndromic surveillance systems are in place for gastrointestinal illness and rare paediatric conditions. Surveillance for adverse events following immunization is coordinated by PHARMAC and relies on passive reporting by clinicians and regular expert analysis of the data.

The notifiable disease surveillance system is integrated in EpiSurv, a centralized, web-based surveillance database that is managed by ESR on behalf of the MOH. EpiSurv receives electronic notifications of positive test results from public and private laboratories, and notifications from PHUs of any defined notifiable diseases reported to them by clinicians "on suspicion". Laboratory test denominator data is not routinely reported.

Event-based surveillance methods include monitoring of information from overseas, through formal and informal networks; weekly national briefings and reports on national and international event-based surveillance; reporting of unusual disease patterns from alert clinicians; and certain types of presentations of acute gastroenteritis (a notifiable disease).

The MOH contracts Massey University to undertake environmental health surveillance. The university produces periodic online reports on a range of indicators, including air, recreational water and drinking water quality.

The MPI manages SIMS, a centralized national database for animal health surveillance. SIMS is web-based and enables collection, analysis and reporting of animal health information (biosecurity notifiable organisms and unwanted organisms under the Biosecurity Act 1993) from the national and regional animal health laboratory network. Procedures are in place enabling animal laboratories or the MPI to inform PHUs of the detection of certain zoonotic diseases and foodborne pathogens.

The information captured by the human and animal health surveillance systems is distributed on a regular basis (and as needed) among key stakeholders. National surveillance data are reported at a weekly emerging health threats and National Security System briefing between teams that have health protection functions in ESR and the MOH, where important emerging public health disease issues are considered. PHUs, ESR and the MOH staff have direct access to real-time reports on EpiSurv, and ESR produces publicly-available notifiable disease reports fortnightly, quarterly and annually. Ad hoc reporting for emerging issues also occurs.

New Zealand's communicable disease control manual outlines standard practice for public health services to follow for surveillance, investigation, prevention and control of notifiable diseases, including case definitions. The manual is updated as needed. Various other disease control guidelines, policies and SOPs exist.

New Zealand contributes to the WHO Global Influenza Surveillance and Response System by sending influenza isolates to the WHO Collaborating Centre for Reference and Research on Influenza in Melbourne, Australia.

Indicators and scores

D.2.1 Surveillance systems – Score 4

Strengths and best practices
- A comprehensive surveillance programme for diseases of public health significance is in place at national and regional levels.
- There is a list of notifiable human diseases under the Health Act 1956, and a list of (non-human) biosecurity notifiable organisms and unwanted organisms under the Biosecurity Act 1993.
- The surveillance system is well supported by a sound policy framework, adequate operational capability, a strong laboratory system and a robust reporting framework.
- The MOH has a well-established and tested SPOC system via a free telephone number to receive exception reporting, and a weekly emerging health threats and National Security System briefings.
- The surveillance system is largely in real time, and most information collected by its different components can be accessed directly from online reports.

Areas that need strengthening and challenges
- There is no overarching strategy guiding current work and/or new initiatives on communicable disease surveillance and related areas at national, regional and local levels.
- There is limited capacity to incorporate whole genome sequencing information into the surveillance system.
- Although some components of the surveillance system have been evaluated, there has been no formal technical and systematic review of the surveillance system or its components.
- Improvements to event-based surveillance methods could lead to earlier reporting and identification of a significant public health event, such as for a disease caused by a novel pathogen, or conditions with mild symptoms for which people may not seek health care.

D.2.2 Use of electronic tools – Score 4

Strengths and best practices

- The EpiSurv and SIMS databases allow collection, analysis and reporting of human and animal health information on a real-time basis. The EpiSurv database also has functionality that allows outbreak reporting for linked cases. Both systems enable automatic electronic data submission.

- There is a comprehensive quality programme for collection and reporting of notifiable disease data that includes:
    - Validation on data entry;
    - Publishing and maintaining standards and manuals for reporting disease (e.g. case definitions in the communicable disease control manual; EpiSurv case report forms and instructions; and a direct laboratory notification national guideline);
    - Regular analysis and follow-up with PHU staff to ensure timeliness, completeness and national consistency of key surveillance data fields; and
    - Regular training programmes at PHUs on how to report and complete case data collection.

Areas that need strengthening and challenges

- Some PHUs continue to use paper-based forms for data collection and manually enter the results of their investigations into the EpiSurv database, leading to a high risk of errors in the transfer of information. Automated reporting processes in all PHUs should be standardized.

- Procedures are in place so animal laboratories or the MPI can inform PHUs of the detection of zoonotic diseases or foodborne pathogens. However, interoperability of the surveillance system could be improved by enabling information sharing between the EpiSurv and SIMS databases, which would allow a more coordinated approach to the management of public health events that cross the human/animal health interface.

D.2.3 Analysis of surveillance data – Score 4

Strengths and best practices

- There are competent staff (clinicians, public health medicine specialists, senior laboratory scientists, epidemiologists and analysts) in the key agencies that are able regularly to review and analyse reported diseases at national and local levels.

- ESR runs the Epidemiological Skills Development Programme, which provides training and development to enhance New Zealand's ability to investigate and respond to infectious disease events.

- Epidemiological and laboratory data for notifiable diseases are recorded in the EpiSurv database. This enables real-time access and analysis of these combined data at national and local levels. Periodic reports are also produced.

- For animal health, publicly-available information on the investigation of, and response to, zoonotic events is reported through the MPI's Surveillance Magazine. For human health, surveillance reporting occurs in weekly, monthly, quarterly and annual surveillance reports by ESR.

Areas that need strengthening and challenges

- Although monitoring and surveillance data for priority communicable diseases are reported regularly, as well as being available on request, there are often delays in the production of comprehensive reports that could be used to inform planning to respond to emerging issues. The production of more timely comprehensive reports is an area that could be strengthened and should be considered as part of an overarching review of disease surveillance in New Zealand.

Recommendations for priority actions

- Develop a forward-looking communicable diseases framework, reviewing current indicator and event-based surveillance mechanisms, to be supported by an interoperable information and communications platform.

- Explore automated data sharing between EpiSurv and SIMS.

- Undertake regular reviews and update documentation relevant to the national notification of diseases.

- Fully implement direct reporting to EpiSurv.

- Improve national alignment in contact management systems.

DETECT

DETECT

REPORTING

INTRODUCTION

Health threats at the human–animal–ecosystem interface have increased over the past decades, as pathogens continue to evolve and adapt to new hosts and environments, imposing a burden on human and animal health systems. Collaborative multidisciplinary reporting on the health of humans, animals and ecosystems reduces the risk of diseases at the interfaces between them. The IHR NFPs, the OIE delegate, and the World Animal Health Information System (WAHIS) NFP should have access to a toolkit of best practices, model procedures, reporting templates, and training materials to facilitate rapid (within 24 hours) notification of events that may constitute a public health emergency of international concern (PHEIC) to WHO and listed diseases to OIE, and will be able to rapidly (within 24/48 hours) respond to communications from these organizations.

> ### Target
>
> *Timely and accurate disease reporting according to WHO requirements and consistent reporting to/information of FAO and OIE.*

LEVEL OF CAPABILITIES

New Zealand has demonstrated strong communication between the MOH, the MPI and related agencies, and reports diseases internationally in a timely manner according to WHO and OIE requirements.

The Public Health Group within the MOH is the IHR NFP for New Zealand, and addresses all public health events.

There are well-established systems for national surveillance and risk assessment core capacities, as described in Annex 1 of the IHR (2005). The MOH has an established and proven SPOC system to receive reports of exceptional events, and is able to disseminate disease event information promptly to and from all relevant government departments and agencies.

On occasion, the MOH has efficiently used the IHR (2005) Annex 2 Decision Instrument to assess emerging public health events. Potential PHEICs can be notified to WHO under Article 6 of the IHR (2005) within 24 hours. The MOH also cooperates in regional information exchange through its participation in a fortnightly information-sharing network for infectious disease events, the Communicable Diseases Network Australia.

The MPI is responsible for food safety, zoonoses, and biosecurity related to pest exclusion, eradication and control. Within the MPI, the designated National Delegate to the OIE is the operational contact point with the OIE, and has capacities and procedures in place for rapid reporting of listed animal diseases to the OIE for inclusion in its WAHIS database. The MPI is also the lead agency for INFOSAN communications with a designated INFOSAN Emergency Contact Point, and participates actively in this international network to manage food safety risks, ensure rapid sharing of information during food safety emergencies, and stop the spread of contaminated food from one country to another.

Within New Zealand, there is no formalized agreed mechanism for routine information sharing between the OIE National Delegate and the IHR NFP.

Indicators and scores

D.3.1 System for efficient reporting to FAO, OIE and WHO – Score 5

Strengths and best practices

- New Zealand has established SOPs for the implementation of national functions under the WHO IHR (2005), including NFP notifications to the WHO. These were revised in 2017.
- New Zealand has comprehensive and proven surveillance systems for collating information for identification of potential PHEICs within 24 hours.
- Human and animal diseases of important significance are immediately reported internationally as required to WHO, OIE and FAO.

Areas that need strengthening and challenges

- While information is shared, there is no formalized agreed mechanism for routine information sharing between the OIE National Delegate and IHR NFP, and there needs to be greater clarity around their respective roles and responsibilities.

D.3.2 Reporting network and protocols in country – Score 5

Strengths and best practices

- The MOH has an established and proven SPOC system to receive reports of exceptional events, and can disseminate disease event information promptly to and from all relevant government departments and agencies.
- The MOH and the MPI have established mechanisms to exchange information on zoonoses, including a weekly health threats and National Security System briefing.
- The use of INFOSAN communication channels is documented within the SOPs of the MPI. This provides additional information to the MOH about human health aspects of food safety risks.
- The MOH uses the IHR (2005) Annex 2 Decision Instrument to assess emerging public health events, as informed by various surveillance systems, and provides for the use of appropriate expertise and interagency coordination.

Areas that need strengthening and challenges

- There is currently no protocol relating to interfaces between IHR and INFOSAN reporting, although this is under development.

Recommendations for priority actions

- Consider a formal mechanism for timely and routine information sharing on potential public health risks between the OIE NFP and the IHR NFP and finalize a protocol for coordinating the interface between IHR and INFOSAN reporting.

DETECT

DETECT

HUMAN RESOURCES

INTRODUCTION

Human resources are 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. Human resources includes nurses and midwives, physicians, public health and environmental specialists, social scientists, communication, occupational health, laboratory scientists/technicians, biostatisticians, IT specialists and biomedical technicians and a corresponding workforce in the animal sector: veterinarians, animal health professionals, para-veterinarians, epidemiologists, IT specialists etc.

The recommended density of doctors, nurses and midwives per 1000 populations for operational routine services is 4.45 plus 30% surge capacity. The optimal target for surveillance is one trained (field) epidemiologist (or equivalent) per 200 000 populations who can systematically cooperate to meet relevant IHR and PVS core competencies. One trained epidemiologist is needed per rapid response team.

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

LEVEL OF CAPABILITIES

New Zealand operates a market model for employment, and has well-established competency-based programmes to develop and retain a multidisciplinary public health workforce at national and regional levels. The Health Workforce Directorate in the MOH is responsible for workforce development and regulation, related statistics, workforce needs forecasting (maintenance of the health workforce pipeline) and training.

The New Zealand public health workforce includes a wide range of disciplines, including public health medicine specialists, public health nurses, health promoters, health protection officers (HPOs), community health workers, public health dietitians, policy analysts, demographers, social scientists, planners, epidemiologists, environmental health officers and researchers. Community health workers form part of the unregulated health workforce. New Zealand exceeds WHO-recommended density for clinical staff and epidemiologists.

The public health workforce plan (*Te Uru Kahikatea 2007–2016*) is currently being reviewed. Following this review it is intended that a new version will be available. There are also Māori and Pacific public health workforce plans that aim to increase the number of Māori and Pacific health professionals so that the workforce better reflects New Zealand's demographic profile.

Although the animal health sector does not have a strategic workforce plan, the NZ Veterinary Association has partnered with Massey University to provide a continuing professional development pathway for veterinarians. Health workforce monitoring and forecasting is less developed for public health disciplines beyond medical and nursing professionals.

All health sector employers have position descriptions that include technical and cultural competencies, performance agreements, regular performance appraisals and, when necessary, performance improvement plans. The MOH operates training courses, forums and workshops for public health staff

to update them on policies, legislation and strategies.

Each region is covered by a PHU, which has capacity for epidemiology and case management (training completed by medical officers of health, HPOs and public health nurses). All regions have capacity to provide some laboratory services, with specimen referral pathways to specialist laboratories if required.

New Zealand has a strong animal health and veterinary workforce, with 2813 practising veterinarians (approximately 60 veterinarians per 100 000 head of population) in 2016. In 2010 New Zealand initiated its National Biosecurity Capability Network, the aim of which is to sign up organizations with the expertise to provide assistance in biosecurity events. The network includes a number of veterinary practices.

There is a comprehensive training and accreditation system for most disciplines within the public health workforce, including for doctors, nurses and veterinarians.

New Zealand has recently accredited its national emergency medical team (NZMAT) for both Type 1 fixed and Type 1 mobile teams. This means that their teams have the capacity to provide outpatient care in both a fixed health facility that can serve over a hundred patients a day, and through mobile teams that can access remote areas and provide outpatient services to over 50 patients a day. New Zealand has also demonstrated the capacity to accept international teams in large-scale emergencies.

The country is contributing its public health expertise as a regional public good, particularly in the Pacific, and has the potential to strengthen and expand those investments subject to funding.

In order to sustain and further develop a public health workforce that is fit for purpose in the future, New Zealand should retain and strengthen its forward-looking work programme of workforce monitoring and forecasting, high professional standards and financing for health.

Indicators and scores

D.4.1 An up to date multisectoral workforce strategy is in place – Score 4

Strengths and best practices
- *Te Uru Kahikatea* takes a broad, intersectoral, coordinated approach to workforce development.
- Public health service providers are required to have workforce development plans that specifically address the development of cultural as well as technical competencies.
- New Zealand has the ability to monitor and report on the regulated workforce.

Areas that need strengthening and challenges
- *Te Uru Kahikatea* has not been regularly reviewed, tracked and reported.
- New Zealand has only limited ability to monitor the unregulated health workforce.
- There is no centrally managed animal health workforce strategy (though there are schemes in place to develop and retain the workforce, such as a voluntary rural bonding scheme for veterinarians).

D.4.2 Human resources are available to effectively implement IHR – Score 5

Strengths and best practices
- New Zealand has sufficient resourcing for national and regional public health staff, and a comprehensive training and accreditation system for health professionals.
- DHBs, including PHUs, are expected to mobilize staff to respond to emerging issues in other regions.
- The MOH maintains a database of statutory officers.
- Multidisciplinary taskforces are formed proactively and reactively to respond to emerging issues.
- New Zealand is a partner in the International Animal Health Emergency Reserve and has a WHO classified emergency medical team.

- The small size of New Zealand leads to a sense of collegiality and collective responsibility.

Areas that need strengthening and challenges
- The demographics of the public health workforce could better reflect the overall demographic of New Zealand.

D.4.3. In-service trainings are available – Score 4

Strengths and best practices
- Professional bodies set and audit the continuing professional education requirements for registered health professionals.
- New Zealand offers a comprehensive range of undergraduate and post-graduate training programmes.
- Human and animal health staff involved in outbreak responses receive appropriate training.

Areas that need strengthening and challenges
- Funding for continuing professional education can vary by role and employer.
- For some roles (e.g. those of public health nurses) funding for professional development can be difficult to obtain.

D.4.4 FETP or other applied epidemiology training programme in place – Score 5

Strengths and best practices
- New Zealand's Epidemiological Skills Development Programme provides training on investigation of, and response to, infectious diseases.
- Massey University offers the only veterinary epidemiology programme in Australasia.

Areas that need strengthening and challenges
- New Zealand does not have a field epidemiology training programme (FETP). Field epidemiology is largely undertaken by HPOs, communicable disease nurses, public health physicians, medical officers and some public health nurses.
- Applied field epidemiology capacity varies by region.
- PHUs decide who attends applied epidemiology training.
- Outbreaks requiring epidemiological analysis are relatively rare, which limits opportunities for PHU staff to practice and maintain skills.

Recommendations for priority actions

- Ensure that resources are available for regular reviews of *Te Uru Kahikatea.*

- Ensure that *Te Uru Kahikatea* prioritizes the development of a public health workforce that reflects New Zealand's demographic profile, with a particular emphasis on Māori and Pacific communities.

- Ensure there is consistent support for HPOs, public health nurses, public health physicians, veterinarians and other related disciplines to undertake applied epidemiology training at the appropriate levels.

- Build linkages and data sharing to strengthen public health workforce data collection, including the non-medical workforce, to enable robust monitoring and forecasting to ensure the workforce remains fit for purpose and responsive to future needs.

RESPOND

EMERGENCY PREPAREDNESS

INTRODUCTION

Emergency preparedness is defined as "the knowledge and capacities and organizational systems developed by governments, response and recovery organizations, communities and individuals to effectively anticipate, respond to and recover from the impacts of likely, imminent, emerging or current emergencies". A state of preparedness is the combination of planning, allocation of resources, training, exercising and organizing to build, sustain, and improve operational capabilities at national, intermediate and local or primary response level based on strategic risk assessments. A strategic risk assessment identifies, analyses and evaluates the range of risks in a country and enables risks to be assigned a level of priority. Strategic risk assessments include analyses of potential hazards, exposures and vulnerabilities, identification and mapping of available resources, and analyses of capacities (routine and surge) at the national, intermediate and local or primary levels to manage the risks of outbreaks and other emergencies. Emergency preparedness applies to any hazard that may cause an emergency, including relevant biological, chemical, radiological and nuclear hazards, natural hazards, other technological hazards and societal hazards.

> ### Target
>
> *(1) Existence of national strategic multihazard emergency risk assessments, risk profiles, and resource mapping (2) Existence of multihazard emergency response plans, (3) Evidence, from after action and other reviews, of effective and efficient multisectoral emergency response operations for outbreaks and other public health emergencies.*

LEVEL OF CAPABILITIES

New Zealand has established multiple well-coordinated multisectoral preparedness and response plans for emergencies based on a risk-based, multihazard collaborative approach at national, regional and district levels. These preparedness and response plans have been tested through exercises and real-world events at all jurisdictional levels. The actions taken during these events are then reviewed, and the lessons identified are reflected in ongoing plans and response development.

The Civil Defence Emergency Act 2002 stipulates an all-hazards, risk-based approach to comprehensive, integrated emergency management. The National Civil Defence Emergency Management Plan Order 2015 provides a generic response framework and legislates the roles and responsibilities of key agencies, sectors and functional areas. In conjunction with the order, collaborative and linked national-level plans, such as the National Health Emergency Plan, are developed and maintained by the ministries responsible for managing that risk. Similarly, the DHBs, PHUs and wider health sector agencies have developed, implemented and tested their own preparedness and response plans for public health emergencies.

The National Health Emergency Plan has a number of consequence-specific subplans that can be applied to different hazards. These include the Multiple Complex Burn Action Plan, the Mass Casualty Action Plan and the Framework for Psychosocial Support in Emergencies.

RESPOND

The New Zealand Influenza Pandemic Action Plan is a national, multisectoral, all-of-government, hazard-specific plan that was developed and is maintained by the MOH. It describes the agreed and scalable roles and responsibilities for a range of central and local government agencies in the event of a pandemic, as well as the potential mitigation strategies available.

An extensive range of risks has been assessed and profiled strategically. Assessment of national risks is led by the National Risk Unit within the Department of the Prime Minister and Cabinet, and strategic, system-level governance of these risks is provided at the chief executive level by the Hazard Risk Board and the Security Intelligence Board. The routine, daily work of assessing and understanding individual risks is undertaken by the agencies responsible for managing that risk, in cooperation with their partner agencies and stakeholders.

Associated resources are managed at the national and local levels by the appropriate agencies. For example, within the Health sector, in order to prepare for pandemic influenza, the MOH manages a National Reserve Supply of medical countermeasures (such as antivirals and PPE), while DHBs and other medical pharmaceutical providers must maintain minimum reserves of prescribed medicines and medical devices, as mandated by the MOH and PHARMAC, in order to serve local need.

Indicators and scores

R.1.1 Strategic emergency risk assessments conducted and emergency resources identified and mapped – Score 4

Strengths and best practices

- Assessment of national risks is led by the National Risk Unit within the Department of the Prime Minister and Cabinet, and strategic system-level governance of these risks is provided at chief executive level by the Hazard Risk Board and the Security Intelligence Board.
- The day-to-day work of assessing and understanding individual risks (e.g. earthquakes) is undertaken by the agencies responsible for managing that risk and their partner agencies and stakeholders.
- The updated National Risk Register (NRR) Framework will enable agencies to prioritize the development of resource mapping by different types of hazards.
- The NRR Framework will inform the ongoing management of risks across the "4Rs" (risk reduction, readiness, response and recovery).

Areas that need strengthening and challenges

- Maintaining multisectoral, system-level cohesion across New Zealand's devolved system of risk and emergency management is an ongoing challenge.
- A number of the recommendations in the Ministerial Review: Better Responses to Natural Disaster and Other Emergencies relate to enhanced information sharing and the further development of a common operating picture. Enhanced information sharing between agencies will facilitate the identification of vulnerable communities and vulnerable clients in a disaster.
- There is a need to continue to develop and link resource maps across all sectors (including health) and to maintain this information in a nationally accessible, real-time, "single source of truth" database. The NRR Framework is intended to enable agencies to prioritize the development of resource mapping.

RESPOND

R.1.2 National multisectoral multihazard emergency preparedness measures, including emergency response plans, are developed, implemented and tested – Score 5

Strengths and best practices

- The national multisectoral emergency management sector is supported by a broad range of legislation and guidelines and national, regional and local plans.

- Regular simulation exercises are held at all levels, with a focus on a wide variety of hazards.

- The MOH (and on occasion the wider health sector) participates in the multisectoral National Exercise Programme, coordinated by the Department of the Prime Minister and Cabinet. Under this programme, the MOH recently developed and led Exercise Pomare, a four-phase agency-level national pandemic exercise that ran from October 2017 to May 2018.

- Over the past two years, the New Zealand National Security System has been activated on multiple occasions. Examples include the November 2016 Hurunui/Kaikōura earthquake response, the 2017 Auckland fuel disruption event, and the 2018 Taranaki extreme weather event. For these responses the MOH, and the wider health and disability sector, acted as a support agency to the lead agency (the Ministry of CDEM).

- The MOH has also led the responses to various public health emergencies, including regional responses to the 2016 Havelock North drinking water event and the 2017 Dunedin water contamination event.

Areas that need strengthening and challenges

- The health and disability sector needs to ensure that lessons identified from exercises and responses are embedded into practice. A formal after action reporting process has been developed and utilized for several events and is continuing to be embedded.

- There is a continued need to build and maintain surge capacity for individual and multisectoral responses.

- The MOH will continue to engage with and implement the outcomes of the policy decisions in response to the Ministerial Review of emergency management, as well as the revision of the National CDEM Strategy.

Recommendations for priority actions

- Develop and maintain an ongoing national risk review cycle to support and inform the National Security System and Emergency Management System, including those related to the IHR implementation.

- Enhance existing IHR-related emergency preparedness activity to support and align with the Emergency Management System policy reforms following the 2017 Ministerial Review.

- Continue to implement corrective actions identified in exercises and responses in timely and systematic way.

- Continue emergency management training for the multidisciplinary health workforce and relevant partners.

RESPOND

EMERGENCY RESPONSE OPERATIONS

INTRODUCTION

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

> **Target**
>
> *Countries will have a coordination mechanism, incident management systems, exercise management programmes and public health EOC functioning according to minimum common standards; maintaining trained, functioning, multisectoral rapid response teams, and trained EOC staff capable of activating a coordinated emergency response within 120 minutes of the identification of an emergency.*

LEVEL OF CAPABILITIES

The National Civil Defence Emergency Management Plan Order 2015 outlines agencies' roles and responsibilities in responding to a wide range of hazards and threats. This plan allocates the lead and support agency roles across a number of major hazards. The National Security System provides the framework for all-of-government support to a lead agency.

The MOH has a legislative requirement to lead and coordinate the health sector response to and recovery from emergencies. This is undertaken through the National Health Coordination Centre (NHCC). The MOH's coordinating role in a cross-government human health emergency would be undertaken through the National Crisis Management Centre (NCMC). Both centres operate as 'warm' EOCs – i.e. with dedicated facilities and equipment that allow rapid activation. The NHCC has been stood up three times in the last five years.

The MOH acts as a coordinating agency for the entire health and disability sector in all aspects of emergency management. Under national security arrangements, it is the lead agency in the response to health emergencies such as emerging infectious diseases or a pandemic, and a support agency for all-of-government emergency management. In the latter role the MOH ensures that health functions are coordinated with, and within, wider responses and pre- and post-incident emergency management.

The NHCC is linked to all the health EOCs in each DHB region; PHUs; ambulance providers; and other health agencies. All DHBs, PHUs and other health agencies are able to stand up EOCs. Not all health emergency responses require the physical activation of the NHCC. Many responses have been managed within business as usual activities of the MOH, but with EOCs being operated at a local level.

Across all levels of the health sector, identified core teams of staff likely to be involved in incident management are trained in the New Zealand CIMS, Health EMIS3 (an online tool used to coordinate and share information during a response), and local plans and protocols.

The MOH and each DHB, PHU and health agency maintain a SPOC system that is available on a 24/7 basis. The purpose of the system is to enable effective, rapid communications and notification in all directions of any potential or actual emergency with appreciable health implications. The MOH maintains the SPOC lists and regularly tests and reviews the integrity of the system. Each organization on the SPOC system is also expected to regularly test and review internal systems. The system supplements, but does not replace, normal day-to-day communication channels and processes.

RESPOND

Health emergency exercises are conducted regularly at national, regional and local levels within the health and disability sector and in combination with other agencies, in order to fulfil individual agencies' readiness activities, and under the National Exercise Programme. The aim of the National Exercise Programme is to prepare New Zealand's National Security System to conduct effective responses incorporating recovery planning for a significant incident or emerging threats on- or offshore. Exercise Pomare, a national multisectoral table-top pandemic exercise run across 2017 and 2018 as part of the National Exercise Programme, involved over 20 government agencies. Specific funding for conducting some exercising is provided by an ongoing Crown Funding Agreement and allocated to DHBs on a population basis.

Since 2014, NZMAT has been deployed to support the government response to four overseas events, and has participated in six all-of-government exercises.

Indicators and scores

R.2.1 Emergency response coordination – Score 5

Strengths and best practices

- The SPOC system minimizes the risk of communication errors in times of emergency.

- The high level of CIMS training across all levels of the health sector allows ready integration with all other emergency management systems (at local, regional and national levels), due to shared civil defence emergency management, CIMS and National Security System structures.

- All levels of the health and emergency management sectors are required to plan for surge capacity. Training provided to MOH volunteer surge staff includes CIMS, Health EMIS and NHCC training, as well as training on specific hazard and response types. These volunteer staff support the scalability and flexibility of the NHCC's functions.

- Over the last two years, emergency response coordination mechanisms at all levels across the health and disability sector and the National Security System have been tested in exercises and real events.

- In an emergency requiring international assistance, the MOH provides specialist personnel to the International Assistance Cell within the NCMC to assess and coordinate the required health assistance. This is supported by an EMT coordination function located within health sector emergency operations.

Areas that need strengthening and challenges

- There is growing recognition of the need to consider approaches such as Unified Control and truly multiagency resourced coordination centres to deal with multiple concurrent and cascading hazards. This is particularly important for long duration national events, such as a pandemic during which it is likely that several concurrent regional geological or meteorological events will also occur.

- The sharing of restricted documents between national agencies and DHBs can be difficult to achieve systematically due to differing IT system requirements across the health and disability sector and the security classification of some information.

- There is a need to continuously review and improve information collection and management systems used by the MOH and the wider health and disability sector, including through creating and refining a defined standardized data set that can be used before, during and after a response. This will enhance the development of consistently applied (and therefore comparable) national health needs assessments across the health sector.

RESPOND

R.2.2 Emergency operations centre capacities, procedures and plans – Score 5

Strengths and best practices

- The NHCC facilities are in a purpose-built building that aligns with the WHO public health EOC guidelines. The building exceeds seismic standards for office accommodation and has full generator coverage for approximately 72 hours.

- The NHCC can be stood up immediately and made fully functional within two hours. The NHCC continuously maintains 10 operational desks, two communications desks and meeting areas that can seat an additional 22 personnel. The work environment in the Ministry, based on flexible activity, allows the NHCC or specialist functions to expand as required.

- The MOH has the ability to manage responses remotely through a "virtual NHCC" process if required.

- The MOH maintains a skeleton secondary NHCC capability at Wellington Regional Hospital and is developing an alternative NHCC in Auckland to mitigate the impact of a major Wellington earthquake.

- Over the past two years, NHCC plans, activation and functions at a national level have been tested by, and updated in response to, exercises and real-life events.

- All NHCC plans and SOPs are based on the New Zealand National Security System and CIMS. Each DHB is responsible for developing its own SOPs. Standardized forms and templates are used to help ensure consistency of reporting across the health and wider government sector.

- The NHCC is linked to all health sector EOCs by online crisis management software, Health EMIS and supporting technology and tools. Specialized modules have been developed for critical information requirements such as clinical capacity, health care facility status and deployment and management of surge staff.

- Operations can be sustained for large-scale events due to a pool of trained volunteer staff.

- All national, regional and local health EOCs use CIMS to ensure consistent approaches when managing emergency response activities.

- The MOH has the ability rapidly to deploy Ministry liaison personnel to impacted DHBs to support local responses and ensure communication between the NHCC and health EOC is robust.

Areas that need strengthening and challenges

- Alternative NHCC arrangements are at an early stage of development. Establishing these arrangements requires the development of revised procedures and enhanced training for non-Wellington-based staff who do not routinely deal with national-level events.

- Maintaining sufficient numbers of trained incident management staff remains a constant challenge due to natural attrition across the sector. Further professional development is needed for controllers in emergency management teams.

R.2.3 Emergency exercise management programme – Score 4

Strengths and best practices

- Health emergency exercises are conducted regularly at national, regional and local levels to help ensure the readiness of the system to respond to emergencies. This means that relationships across and between agencies remain strong, and are not just created during emergency events.

- Lead and support agencies are required to develop AARs following every exercise or response. Responsible organizations are then required to implement and test the recommendations of those reports when and where appropriate.

Areas that need strengthening and challenges

- There is no centralized system in place to ensure that corrective actions identified in reviews of exercises and responses are implemented in a timely manner, but agencies are expected to have robust internal regimes. The new National Exercise Programme objectives have been developed to help ensure the integration of identified lessons and the creation of continuous improvement processes. These objectives and supporting methodologies could be shared across government to help ensure the implementation of corrective mechanisms in a timely manner.

RESPOND

Recommendations for priority actions

- Resource the development of resilient alternative NHCC arrangements in Auckland in support of the NCMC function.

- Work across agencies to improve the information and intelligence systems that support decision-making in emergencies, including through increasing access to relevant information on health and IHR hazards.

LINKING PUBLIC HEALTH AND SECURITY AUTHORITIES

INTRODUCTION

Public health emergencies pose special challenges for law enforcement, whether the threat is man-made or naturally occurring. In a public health emergency, law enforcement will need to quickly coordinate its response with public health and medical officials.

> **Target**
>
> *Country conducts a rapid, multisectoral response for any event of suspected or confirmed deliberate origin, including the capacity to link public health and law enforcement, and to provide timely international assistance.*

LEVEL OF CAPABILITIES

The National Security System provides for an all-hazards, all-risks environment for responding to broad national security challenges. Health is a key player in this process. Health sector representatives sit on the Hazard Risk Board, and participate in the work of the Security Intelligence Board on relevant specific issues.

The health sector recognizes that it plays a critical role supporting government entities in responding to a national threat. In case of need, or when health may be primarily affected, the MOH assumes a lead role in dealing with threat issues, coordinated within the National Security System.

Codification of responses has been helped by the development of the National Security System Handbook in August 2016, and subsequent National Security System trainings at senior official level.

Operation Concord is an example of a recent response involving both public health and national security authorities. It involved a deliberate public health threat to an infant food product, and the response was led by New Zealand Police and the MPI.

Indicators and scores

R.3.1 Public health and security authorities (e.g. law enforcement, border control, customs) linked during a suspect or confirmed biological, chemical or radiological event – Score 5

Strengths and best practices

- Routine and regular communications are shared across the wider National Security System. These briefs include information from public health, emergency management and communications teams in the MOH, and epidemiological surveillance teams.

- Reports on emerging and developing threats are provided to the formal security mechanisms within the National Security System. These are provided semi-regularly and on a "when required" or "when requested" basis, and are shared with the appropriate agencies and personnel as required or when available.

- An interagency National Exercise Programme builds capability through a coordinated series of interagency readiness activities. These activities are measured against a set of national objectives. This exercise programme simulates a wide variety of hazards, including pandemic influenza (Exercise Pomare 2017 and 2018), biosecurity threats and hazards addressing other security topics.

RESPOND

- Operation Concord showed that New Zealand's National Security System can provide a robust and comprehensive response to a deliberate public health threat.

- New Zealand relies on routine surveillance mechanisms and epidemiological and environmental testing to identify any unusual clusters of biological, chemical or radiological activity. Investigative procedures are started if a potential threat is identified.

- In the event of a low-level radiological event, Fire and Emergency New Zealand (FENZ) would respond with assistance from the MOH Office of Radiation Safety. Explosives Ordnance Disposal teams from the New Zealand Defence Force (NZDF) are available to provide enhanced detection, identification and monitoring capability as well as advanced equipment (such as remotely operated vehicles), to manage a radiological source safely. In the event of a national radiological threat, the National Security System is activated.

- The MOH reports annually on the New Zealand Biological and Toxin Weapons Convention. If required, the National Security System may include Biological and Toxin Weapons Convention planning and response.

- INTERPOL Wellington is located at the New Zealand Police national headquarters and sits structurally within the International Services Group. This group is mandated to provide a conduit for the exchange of information and the provision of investigative assistance between the New Zealand Police and law enforcement agencies in INTERPOL Member countries.

Areas that need strengthening and challenges

- New Zealand has demonstrated capability to mount multisectoral responses to health threats. In order to strengthen collaboration with security forces – including the police force, border control and defence forces – continued interaction through regular training programmes should be considered.

- Continued training on public health and security aspects, combined with AARs and/or simulation exercises, would enhance the abilities of public health personnel in their roles of support, and when leading a response.

- A review of existing epidemiological and environmental testing and surveillance measures should be carried out to enhance the ability of public health personnel to identify any unusual activity of biological, chemical or radiological origin that may require the involvement of security authorities.

Recommendations for priority actions

- Enhance public health participation in relevant national security system training at all levels.

- Enhance the current arrangements that support the effective engagement of public health within the national security system.

RESPOND

MEDICAL COUNTERMEASURES AND PERSONNEL DEPLOYMENT

INTRODUCTION

Medical countermeasures are vital to national security and protect nations from potentially catastrophic infectious disease threats. Investments in medical countermeasures create opportunities to improve overall public health. In addition, it is important to have trained personnel who can be deployed in case of a public health emergency for response. Regional (international) collaboration will assist countries in overcoming the legal, logistic and regulatory challenges to deployment of public health and medical personnel from one country to another. Case management procedures should be available to all staff, and implemented across the system during health emergencies due to IHR-related hazards.

> ### Target
>
> *National framework for transferring (sending and receiving) medical countermeasures, and public health and medical personnel from international partners during public health emergencies and procedures for case management of events due to IHR-related hazards.*

LEVEL OF CAPABILITIES

In the event of a public health emergency the business continuity plans of the MOH and the relevant DHBs will be activated. In normal circumstances each DHB directly purchases and holds the medicines and devices they require. In addition, the MOH maintains national reserve supplies (a critical contingency capability).

Processes and procedures are in place to help mitigate and manage shortages through Medsafe and PHARMAC, via contracts with private industry across all product lines. Processes for distributing medical countermeasures and other resources during emergencies are outlined in the National Health Emergency Plan and its subplans, such as the National Reserve Supply Management and Usage Policy.

Over the past two years a variety of cross-agency national exercises and real-life events have provided opportunities to test New Zealand's national capability to send and receive medical countermeasures and medical personnel in the event of an emergency. Furthermore, the responses to the 2016 Hurunui/Kaikōura earthquake and the 2016 Havelock North drinking water contamination event required the distribution of medical countermeasures (including surge staff), and the earthquake also involved the transfer of patients outside the affected region for critical medical care.

Internationally, the Ministry of Foreign Affairs and Trade (MFAT) acts as the lead agency if a national response is required for an international public health event or emergency. New Zealand regularly supplies aid to the Pacific region, both on a routine basis through the New Zealand Aid Programme and in emergency situations.

There are ongoing reviews of authorities and systems to support the national receipt and international deployment of medical countermeasures and personnel. Specifically, the Medicines Act 1981 does not include medical devices. New legislation for therapeutic products is being drafted and will include medical drugs and will modernize regulation of medical devices, allowing for greater flexibility around procurement in times of emergency.

The MOH needs to continue developing activation and distribution plans in collaboration with the contracted distribution company and DHBs. There is discussion at the time of the JEE about pre-approving Australia's medical assistance teams and their medical cache as well as developing detailed SOPs for incoming public health and medical assistance. NZMAT and MFAT work programmes need to be maintained and their alignment enhanced (e.g. by aligning technical standards) in order to fulfil response support responsibilities to the Pacific and surrounding region. For case management, challenges include maintaining standards and knowledge across sectors as well as rapidly developing and implementing new or updated protocols for an emerging infectious disease.

Indicators and scores

R.4.1 System in place for activating and coordinating medical countermeasures during a public health emergency – Score 5

Strengths and best practices

- Minimum national stock levels provide in-country reserves of medical countermeasures across all product lines in a public health emergency. A variety of processes may be used to import medicines.

- The MOH maintains the National Pandemic Reserve Supplies, which are accessible 24/7 and nationally distributable at short notice through a contract with a medical logistics company.

- DHBs and the MOH have shared responsibilities for maintaining national medical reserve supplies.

- Established processes and procedures ensure a supply of approved and funded medicines and methods to both prevent and mitigate shortages.

- The New Zealand Influenza Pandemic Plan provides detailed descriptions of the different types of countermeasures (e.g. medical, social, economic, etc.) considered during a pandemic or other public health emergency.

- If medicines are brought into the country by an international medical assistance team, the team is required to have import and export lists for those medications as part of their incoming team paperwork.

Areas that need strengthening and challenges

- The Medicines Act 1981 provides only limited regulation of medical devices. New therapeutic products legislation is being drafted that will include medical drugs and will modernize regulation of medical devices, and will allow for greater flexibility in procurement in times of emergency.

- The composition and maintenance of the national pandemic reserve supply requires continuous review, and the MOH should continue to develop activation and distribution plans in collaboration with the contracted distribution company and DHBs.

- Consideration is currently being given to pre-approving Australia's medical assistance teams and their medical cache. Medsafe and NZMAT are working together to develop detailed SOPs for incoming medical assistance teams whose medical cache includes medications not approved for use in New Zealand.

R.4.2 System in place for activating and coordinating health personnel during a public health emergency – Score 5

Strengths and best practices

- New Zealand has established a WHO verified Type 1 fixed and mobile medical assistance team (NZMAT), maintained by the MOH and linked with the New Zealand Aid Programme. NZMAT can be deployed to support local health services in the event of a major emergency within New Zealand or the south-west Pacific. NZMAT capability was recently expanded to include trained public health specialists and HPOs.

- The MOH has a service agreement and programme of work with MFAT to support the ongoing development and enhancement of NZMAT, including support for capacity-building in the South Pacific. This capacity-building is focused on enhancing the coordination of EMTs, and strengthens the MOH's capacity to respond to public health emergencies under APSED III.

- The value of deploying public health resources in an acute emergency was demonstrated during the response to the Solomon Islands flash floods in 2015, where teams were able to conduct rapid surveillance and identify a community point source of transmission which was mitigated through the water, sanitation and health sector.

- NZAID has well-established programmes, mechanisms, partnerships and protocols in place for providing support internationally for public health events/emergencies.

- The MFAT-led New Zealand emergency task force (which includes representation from the MOH) will coordinate and lead offshore responses in public health emergencies or natural disasters, and can fund UN assistance donation groups and/or respected international partners (such as the Red Cross) to purchase supplies.

- Protocols to request and coordinate international assistance to New Zealand Work have been strengthened through ongoing earthquake response planning in Wellington and through expertise acquired in developing the NZMAT.

Areas that need strengthening and challenges

- NZMAT and MFAT work programmes need to be maintained and enhanced in alignment with technical standards so that New Zealand can continue to fulfil its responsibilities to the Pacific and surrounding region.

R.4.3 Case management procedures implemented for IHR-relevant hazards – Score 4

Strengths and best practices

- Each DHB and ambulance provider is responsible for developing SOPs for managing and transporting infectious patients at the local level, and for local POEs. This includes designating patient referral and transportation mechanisms and associated resources.

- These mechanisms are supported by the MOH's overarching national management and transport protocols for that specific disease threat.

- In the event of a new threat emerging, guidelines are developed by a technical team within the MOH as and when required. For example, during the 2014 Ebola threat, an appropriate case management protocol was developed specifically for potential Ebola cases.

- The communicable disease control manual provides national case management guidelines for communicable disease threats. These are supported by the clinical protocols developed within each supporting health care facility. Public health and clinical guidance on chemical and radiological events is available from appropriate scientific and expert advisors. This is supported by MOH guidance for PHUs and the hazardous substances subplan of the National Health Emergency Plan.

Areas that need strengthening and challenges

- Challenges include continuing to maintain standards and knowledge across all necessary sectors, as well as rapidly developing and implementing new or updated protocols when a new or modified infectious disease threat emerges.

Recommendations for priority actions

- Maintain arrangements for procuring, storing and distributing medical countermeasures and regularly review the composition of the National Reserve Supply to ensure readiness for public health emergencies.

- Explore opportunities to enhance personnel and resource support for public health events or emergencies in the Pacific region through existing (e.g. EMTs, the Global Outbreak Alert and Response Network, etc.) and new mechanisms.

RISK COMMUNICATION

INTRODUCTION

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

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 made to mitigate the effects of the threat or hazard and protective and preventive action can be taken. This includes a mix of communication and engagement strategies, such as media and social media communications, mass awareness campaigns, health promotion, social mobilization, stakeholder engagement and community engagement.

LEVEL OF CAPABILITIES

The foundations of good risk communications are in place in New Zealand, which enjoys an open approach to sharing information. New Zealand has well-established approaches to providing information to the public during emergencies, including the use of credible spokespeople and a variety of media platforms. At government level this is reinforced through the portfolio of the Minister for Open Government and the role of the Office of the Ombudsman. In engaging with communities and designing services, the actions of government agencies are underpinned by their responsibilities to partnership, participation and protection under the Treaty of Waitangi. New Zealand has slightly higher levels of public trust in government than the international average, and the New Zealand community shows a higher level of support than average for the government's public mandate.

The National Health Emergency Plan (2015) includes a risk communication function that specifies roles and responsibilities. During an emergency, communication staff can be seconded between agencies to deal with a surge in demand. This has been demonstrated in recent emergency responses. The MOH has a range of formal and informal mechanisms to coordinate internal communication during an emergency, as well as mechanisms to communicate with the wider health and disability sector, other agencies and international stakeholders. Teams within the MOH, DHBs and PHUs understand and have strong linkages with their local communities (e.g. Māori, Pacific, LGBT and refugee communities and the disability sector).

The respective operating environments for risk communication in the MOH and the MPI are at different levels of operational development, implementation and maturity. Both agencies are well used to dealing with the media and providing information to the public during outbreaks, disasters and other threats to human and animal health and security, but the MOH has identified gaps in risk communication capacity. However, risk communication delivery is not always consistent within the health sector; training and experience in risk communication varies between DHBs; and there is no programme to ensure a sustainable workforce pipeline for risk communication within the MOH.

In late 2017 the State Services Commission (SSC) published the Performance Improvement Framework (PIF) Review of the MOH. The review incorporated the views of central government agencies, other Crown agencies, DHBs, public and private health care providers, training and research institutions and the public. It highlighted the importance of engaging health stakeholders, and outreach to people and families/whānau. The organizational change envisioned by the SSC requires the MOH to develop different ways of working and new approaches to planning and resource allocation, which are needed in order to improve support for rapid and agile responses to existing and new challenges. The MOH was tasked with the urgent development of a communication and engagement plan for emergencies. Another key focus area was community empowerment to help individuals, families and populations make informed choices for risk reduction and healthy outcomes, especially among vulnerable populations (including Māori and Pacific peoples). The PIF report also highlighted the need to strengthen partnerships between the MOH and the DHBs, design joint responses to emerging issues and strategic challenges, and turn small-scale and ad hoc engagement between the Ministry and the broader health system into a more systematic approach.

In April 2018 the MOH provided a formal response to the SSC and put in place an immediate response to the findings of the review, including an approach to strengthening collaboration and effective two-way communication.

Indicators and scores
Note: Across all of the indicators for this technical area, the risk communications capacity of the MPI alone would merit scores of 4 or 5. The lower scores reflect a gap between the respective risk communications capacities of the MPI and MOH. Taking action to bridge this gap would be a simple way of raising these scores.

R.5.1 Risk communication systems for unusual/unexpected events and emergencies – Score 3

Strengths and best practices
- The CIMS means that agencies responding to emergencies take a common approach to risk communication planning and operations. Risk communication is included in agency and multiagency emergency exercises.
- The MPI has communications staff well practised in risk and emergency communications and tested in multiple real-life responses (such as Operation Concord).
- The MPI has developed and implemented a risk communications framework following a recommendation of the independent review of the response to the contamination of whey protein concentrate in 2013. Staff have been trained in its use through an online training module and a nationwide series of workshops.
- The Department of the Prime Minister and Cabinet coordinates the mobilization of risk communication surge staff to support response agencies during emergencies by sourcing risk communicators from agencies not involved in the response. This mechanism was used to mobilize risk communication staff during the Rena oil spill and the Canterbury earthquake, both of which occurred in 2011.

Areas that need strengthening and challenges
- The media provides real-time information and this often informs government agencies and the public at the same time. The speed and churn of modern media presents challenges for government agencies in providing timely responses and ensuring key stakeholders are well-informed about the impact of any event, and the on-the-ground response.
- Role descriptions for risk communication in the MOH and other health sector agencies need to be updated regularly, recognizing rapid changes in the media and technology landscape, and stakeholders' expectations for transparent and timely communication.

- The number of trained and experienced risk communication staff in the MOH is currently insufficient to meet needs, and there is a lack of a risk communication pipeline and/or succession planning.
- Coordinated risk communication training within the health and disability sector and across sectors should be encouraged, in order to build capacity and capability and strengthen linkages within and between organizational levels and sectors.

R.5.2 Internal and partner coordination for emergency risk communication – Score 4

Strengths and best practices

- Within the health and disability sector, the MOH is the hub that provides information to DHB communication teams, which are well-versed in messaging their communities through a range of networks and public information channels. DHBs are well connected within their communities and in turn provide intelligence back to the Ministry.
- Recent responses to regional and national emergencies have tested interagency coordination of communications. DHBs regularly carry out and participate in exercises that include coordination and testing of communications with partner organizations.
- Under the Government Industry Agreement (GIA) for biosecurity response, the MPI works closely with industry signatories to the agreement on risk communication, using agreed and established protocols.

Areas that need strengthening and challenges

- There is a need for clear delineation of roles for risk communication, sharing of resources and formalized working arrangements between risk communication staff within and between sectors. This could strengthen stakeholder relationships.

R.5.3 Public communication for emergencies – Score 3

Strengths and best practices

- The MOH has a communication strategy and a dedicated media team. All MOH spokespeople are media trained.
- DHBs have their own communication strategies tailored to local audiences. DHBs have a strong focus on social media and some have designated staff working with social media.
- AARs of recent emergencies have shown that current media management arrangements generally work well, and have provided useful guidance on messaging and engagement.
- The MOH has recently implemented Citizen Space, an online engagement tool to help the Ministry manage public engagement more effectively, and which supports improved dynamic listening and feedback.
- The MPI has developed a comprehensive Communications Framework for Response – "The First 24 Hours of Response" – which sets out a field-tested process for a communications cascade and provides templates for communication plans, media releases and other communication products for food safety, biosecurity and responses to adverse events.

Areas that need strengthening and challenges

- Media management frameworks and policies in the MOH would benefit from regular reviews to ensure they reflect the rapidly changing communications environment.
- More detailed analysis is needed of desired stakeholder outcomes, risks and issues.

R.5.4 Communication engagement with affected communities – Score 3

Strengths and best practices

- New Zealand's Health Promotion Agency monitors key health indicators, behaviours and attitudes; informs and evaluates programmes and initiatives; and identifies emerging health trends. Homecare Medical runs a free Healthline. These communication channels can be scaled up in an emergency.

RESPOND

- The risk communications work of the MPI following detection of Queensland fruit fly in Auckland in 2015, which ran over 10 months and used social media, direct community liaison and managed use of the news media, won an award for excellence in public engagement.
- The publication of the New Zealand NRR Framework will help align agencies' risk communication management work to the top five risks and the priorities of affected communities.

Areas that need strengthening and challenges

- A risk communication stakeholder management framework will assist the MOH and DHBs in targeting and mobilizing affected communities and monitoring and managing feedback.

R.5.5 Addressing perceptions, risky behaviours and misinformation – Score 3

Strengths and best practices

- The MOH has successfully introduced a stakeholder engagement analysis tool to identify desired outcomes and communications risks, and is working with other agencies to align methodologies for stakeholder management and communication.
- The MPI has a social media team that monitors and analyses social media activity on a daily basis, providing quantitative and qualitative reporting using monitoring software. This allows the Ministry to correct misinformation swiftly and/or adapt messaging in real time.

Areas that need strengthening and challenges

- The capacity of the MOH and DHBs to identify, triage and manage misinformation in a systematic way would benefit from agreed procedures, shared training and exercises rather than relying on the expertise of individuals.
- The MOH should consider implementing operating procedures for managing risk perception, risky behaviours and misinformation. These should be linked with the Ministry's wider risk management processes.

Recommendations for priority actions

- Move quickly to implement the communications-related recommendations to the Ministry of Health from the State Services Commission's PIF by developing and implementing a formal communication plan for stakeholder engagement and management, including sharing resources and joint emergency response exercises.

- Identify sustainable financing to strengthen and retain an expanded pool of experienced risk communicators in the health and disability sector, and a related information and communication systems capability, to deliver a forward-looking risk communications work programme that includes strengthening community engagement, dynamic listening, and the management of miscommunication during routine operations and emergency responses.

- Implement a best practices toolkit that identifies appropriate cross-sectoral communication channels for specific cultures, vulnerable populations and geographical locations.

RESPOND

IHR-RELATED HAZARDS AND POINTS OF ENTRY

POINTS OF ENTRY

INTRODUCTION

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

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

LEVEL OF CAPABILITIES

New Zealand has 38 international places of first arrival: 25 seaports and 13 airports. The MOH has designated 22 of these places of first arrival – 16 seaports[3] and six airports[4] – as points of entry (POE) under the IHR (2005).

New Zealand has systems to prevent or manage risks posed by harmful organisms, including pests and diseases. Activities at POEs related to the IHR core capacities are supported by a range of New Zealand legislation, including the Health Act 1956; the Hazardous Substances and New Organisms Act 1996; the Radiation Safety Act 2016; the Biosecurity Act 1993; and the Food Act 2014.

The operational delivery of border health services is the responsibility of PHUs, which are designated as the competent authorities. The MOH requires competent authorities to work with port/airport authorities and border agencies to ensure core capacities are being maintained and improved at all times. PHUs provide annual reports to the MOH on the status of the core capacities at their POEs.

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3   Opua, Northport, Marsden Point Oil Refinery, Marsden Cove Marina, Auckland, Tauranga, Gisborne, Napier, New Plymouth, Wellington, Picton, Nelson, Christchurch (Lyttelton), Timaru, Dunedin (Port Chalmers) and Invercargill (Bluff).

4   Whenuapai RNZAF Airbase (Auckland), Auckland, Ohakea RNZAF Airbase, Wellington, Christchurch and Dunedin.

OTHER

All vessels and aircraft arriving into New Zealand must comply with New Zealand requirements for pratique/health clearance, including early reporting of unwell passengers and/or crew in order to ensure an appropriate and timely health response. All POEs have access to appropriate medical services, with first responders on call to provide immediate first aid on-site and safe transport and transfer of passengers within and from the point of entry.

Early detection of exotic mosquitoes and the prevention of their establishment is a high priority. Vector surveillance and control within the premises and regular control of the perimeters, are in place at each point of entry. The extent to which this is provided is based on a risk assessment of each point of entry, and measures are adjusted accordingly. At the time of the JEE, annual border health reports confirm either that public health emergency contingency plans are in place at each point of entry, or that they have been prioritized for completion in the next year.

All border health protection personnel are required to undergo training at least once every three years in the implementation of the IHR, including in mosquito surveillance/control and ship sanitation certification.

Public health and MPI staff are trained to carry out inspection of conveyances. They are able to disinsect, derat, disinfect, decontaminate or otherwise treat baggage, cargo, containers, conveyances, goods or postal parcels. MPI staff will also ensure animal welfare measures are in place at POEs, including for the quarantine and care of affected animals.

Indicators and scores

PoE.1 Routine capacities established at points of entry – Score 5

Strengths and best practices
- All routine core capacities at POEs are achieved using risk-based and all-hazards approaches.
- There is a robust health clearance process, understood by all border agencies, airlines and shipping agencies, to ensure early identification of unwell passengers entering New Zealand.
- Multiagency response capacity is available for the effective management of unwell passengers entering New Zealand.
- There are well-established mosquito surveillance programmes at each point of entry.
- The border health annual reporting programme allows for continuous improvement of core capacities at each point of entry.

Areas that need strengthening and challenges
- Current border health protection programmes use an all-hazards, all-risks approach. To ensure maintenance and/or succession of core capacities, it is recommended that refresher trainings be developed on risks at POEs.
- The programme for annual border health reporting should include information on the effectiveness of the "on call" first responders mechanism at designated POEs.
- Application of IHR-related measures could be maintained or strengthened in non-designated POEs.

PoE.2 Effective public health response at points of entry – Score 5

Strengths and best practices
- All emergency core capacities at designated POEs use risk-based, all-hazards approaches.
- All designated POEs consider public health emergencies as part of their emergency contingency plans.

Areas that need strengthening and challenges
- The MOH provides general guidance on public health emergency contingency plans, but the format and structure of these plans vary across designated POEs.

OTHER

- While POEs do exercise their plans and conduct AARs, there are opportunities to strengthen the frequency and scope of exercises including chemical and ionizing radiation events as well as communicable diseases and pest responses.

- There is a need to enhance core capacities for responding to public health emergencies at designated POEs by strengthening readiness for chemical and ionizing radiation events, alongside existing communicable diseases and exotic pest capabilities.

- AARs should be used to improve the interoperability of PHUs and point of entry plans.

Recommendations for priority actions

- Enhance core capacities for responding to public health emergencies at designated points of entry by strengthening readiness for chemical and ionising radiation events, alongside existing communicable diseases and exotic pest capabilities.

- Strengthen the standardization and interoperability of the public health emergency contingency plan across POE and PHUs by increasing the frequency and scope of exercises including AARs.

OTHER

CHEMICAL EVENTS

INTRODUCTION

Timely detection and effective response of potential chemical risks and/or events requires 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 chemical safety.

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

LEVEL OF CAPABILITIES

New Zealand has comprehensive legislation and functioning arrangements to manage chemical risks and respond to chemical events. Responding sectors – including law enforcement, intelligence, fire, hazmat, paramedics and public health – collaborate well in responding to chemical events. This has been well demonstrated in the past.

Hazardous substances within New Zealand are mainly regulated under the Hazardous Substances and New Organisms (HSNO) Act 1996. Under this legislation the Environmental Protection Authority (EPA) is responsible for regulating hazardous substances in New Zealand in order to safeguard people and the environment. The EPA approves the importation and manufacture of chemicals in New Zealand, and details the controls and conditions for their use. It assesses the risks of new hazardous substances and reassesses the risks of existing ones (including the public health and environmental risks), and sets controls to manage those risks. The EPA also has a supervisory and leadership role around compliance with hazardous substances controls.

The EPA maintains a record of all notifications it receives of incidents, and copies of all permissions issued for the aerial application of vertebrate toxic agents (e.g. sodium fluoroacetate or 1080) and non-aerial applications of other relevant materials (e.g. aquatic herbicides).

The MOH has statutory duties and functions in relation to hazardous substances and products under two pieces of legislation: the Health Act 1956 and the HSNO Act 1996. Under the Health Act, the MOH is responsible for minimizing harm to the public from exposures to hazardous substances, products and activities. Under the HSNO Act 1996, the MOH is an enforcement agency responsible for ensuring that the provisions of this Act are enforced where necessary to protect public health. The HSNO Act 1996 also requires medical practitioners to report any chemical injuries to health authorities.

The Health and Safety at Work Act 2015 is administered by WorkSafe New Zealand, along with any regulations made under that Act. The control of workplace risks, including risks from storing, handling and using hazardous substances, is regulated under this legislation. The Health and Safety at Work (Hazardous Substances) Regulations 2017 set specific controls for hazardous substances, depending on their classification. WorkSafe New Zealand maintains a register of facilities that store certain substances exceeding defined quantity thresholds. These facilities are subject to greater control under the Health and Safety at Work (Major Hazard Facilities) Regulations 2016.

The Fire and Emergency New Zealand Act 2017 provides the regulatory framework for managing chemical events. FENZ's capacity to respond to major chemical events has been improved by, and well demonstrated in, responses to past events. The MOH has a National Hazmat Public Health Emergency Response Plan, which is updated following feedback from real events or discussions at the National Hazardous Substances Coordinating Committee.

Under the Resource Management Act 1991 (RMA) local authorities (councils) are responsible for environmental monitoring to ensure activities meet the requirements of the RMA, regional and district council plan rules, and resource consent conditions. Environmental monitoring consists of discharges to air, land or water, which covers chemical hazards. Under the Health Act 1956, local authorities are responsible for managing nuisances, which includes managing situations related to hazardous substances that are not covered by the HSNO Act 1996.

The Waste Minimisation Act 2008 provides for the reduction, reuse and recycling of all waste, including chemical waste. It includes a fund that supports waste minimization and in the past has been used to support hazardous chemical waste recovery programmes and the disposal of specific hazardous waste.

International networks are maintained within the different agencies responsible for managing, monitoring and responding to chemical risk. New Zealand is a signatory to all relevant international conventions and agreements.

The JEE evaluation process identified the need to improve the surveillance programme for chemical event monitoring and reporting, and the need to strengthen collaboration among the sectors that may be involved in responding to chemical events. It was also recognized that improved capabilities for on-site detection and laboratory quantification are needed, especially for priority chemicals that are highly relevant to New Zealand but for which the necessary capabilities are currently lacking.

Indicators and scores

CE.1 Mechanisms established and functioning for detecting[5] and responding to chemical events or emergencies – Score 5

Strengths and best practices

- New Zealand has very clear legislation, structures and processes to detect and respond to chemical events that may pose environmental, workplace or public health risks.

- There is a clearly defined single lead agency (FENZ) for responding to hazmat events, with support systems in place with other key agencies. There are key SOPs, guidelines and emergency plans to support the necessary processes and collaboration both within and between the key agencies.

- The national hazardous substances plans provide advice and recommendations to guide DHBs and hospital facilities in planning responses to hazardous substances events. These plans cover intentional and unintentional biological, radiological and chemical threats, and are linked to response plans developed by other New Zealand government agencies within the National Security System.

- A number of databases and agencies support emergency services personnel, public health staff, medical professionals and the public when responding to an event or poisoning. These agencies and databases include ESR, the National Poisons Centre, Responsible Care New Zealand, Healthline, the EPA, Queensland Fire and Emergency Scientific Branch, and the Massey University Centre for Public Health Research. There is a multiagency approach providing this service/response function, which works well in the New Zealand context.

- Responding agencies have access to analytical capacities and/or offsite laboratories.

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3   Detection capacity also includes not only surveillance, but also the laboratory capacity required to verify any events.

Areas that need strengthening and challenges

- Comprehensive hospitalization and coronial data on chemical injuries are collected, as is information from calls to the Ministry's relevant free phone numbers (Healthline and the National Poisons Centre); but these data are limited, as a relatively small proportion of the chemical injury cases seen by medical practitioners and emergency departments are notified. Promoting systems by which medical practitioners and emergency departments can notify chemical injuries will ensure more comprehensive surveillance of chemical events.

CE.2 Enabling environment in place for management of chemical events – Score 5

Strengths and best practices

- A suite of legislation is in place to manage chemicals risks in New Zealand, supported by policies and plans that provide all functions necessary to detect, respond to and manage risks from hazmat incidents.

- There is a national process for reporting disease and injury caused by hazardous substances. Relevant data are analysed and annual and ad hoc reports on hazardous substances injuries are published. The MOH also commissions occasional biomonitoring surveys of chemicals in the New Zealand population.

- New Zealand does not have a single strategic plan for managing chemicals, but the HSNO Act enforcement agencies provide the EPA with annual reports detailing their activities for the previous year and their intentions for the forthcoming year, which the EPA collates in an annual report to the Minister for the Environment. The EPA also reports to the Minister for the Environment on the effectiveness of the HSNO regime in managing risks from hazardous substances.

- An evaluation of the current hazardous substance compliance system is underway to comment on whether it remains fit for purpose.

- All agencies work within the CIMS, ensuring that all functional areas are aligned within a response.

Areas that need strengthening and challenges

- Because New Zealand has a multiagency approach for managing chemicals, there are opportunities to improve collaboration between agencies – for example, through establishing regular meetings between EPA and MOH officials to share information, discuss priorities and ensure planning is joined up.

Recommendations for priority actions

- Develop a national strategic framework for chemical incident surveillance and response.

- Enhance on-site and laboratory reach-back capabilities for identification/quantification of chemical substances.

RADIATION EMERGENCIES

INTRODUCTION

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

> ### Target
>
> *States Parties should have surveillance and response capacity for radiological emergencies and nuclear accidents. This requires effective coordination among all sectors involved in radiation emergencies preparedness and response.*

LEVEL OF CAPABILITIES

New Zealand does not have a nuclear power industry or a nuclear weapons programme. Nuclear powered vessels have been banned from New Zealand territorial waters under the New Zealand Nuclear Free Zone, Disarmament, and Arms Control Act (1987). New Zealand does, however, have a full range of radiation sources used for medicine, industry and scientific research that is comparable to other modern nations of similar size. A radiological event could arise from a civilian accident involving radiation sources, or from malicious use of radioactive materials in an attack on the general public or targeted individuals.

New Zealand is a signatory to the Convention on Early Notification of a Nuclear Accident (1986) and the Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency (1986). New national legislation on radiation safety came into force in March 2017 (the Radiation Safety Act and Regulations 2016). This provides the legal framework for radiation safety and establishes national radiation emergency arrangements.

The MOH is the New Zealand government's radiation safety regulator and is responsible for licensing entities managing or controlling radiation sources in accordance with the Radiation Safety Act and Regulations 2016. Each PHU has an officer trained in the use of, and equipped with, radiation survey meters. The National Centre of Radiation Science (NCRS) within ESR is the key national centre of expertise in radiation safety, and the lead agency for radiological assessment in an emergency.

The NCRS has well-established expertise and capacity in detecting and measuring radiation in environmental and food/water samples, and in monitoring responders and the general public for potential radiation exposure or radioactive contamination. Responders from FENZ are trained in and equipped with radiation detectors and survey meters. The NZDF has experience of using live radioactive sources in training. All these resources can be mobilized to respond to radiation emergencies under the NRIRP, which defines the roles and responsibilities of all the above agencies.

Assessing radiation doses to exposed/contaminated individuals – including doses from external exposure and/or internal contamination – is an important aspect of responding to a radiation emergency. During the JEE it was recognized that New Zealand has limited capacity to assess internal radiation contamination and perform internal dose assessment. A moderate investment in developing such expertise would improve New Zealand's preparation for responding to radiation emergencies involving internal contamination.

During the joint evaluation process, it was also recognized that New Zealand has no national guidelines/protocols for medical management of radiation emergencies, and that there is scope to seek further opportunities for collaboration/assistance arrangements with neighbouring countries.

OTHER

Indicators and scores

RE.1 Mechanisms established and functioning for detecting and responding to radiological and nuclear emergencies – Score 4

Strengths and best practices

- New Zealand has an NRIRP, which has been in place since 2000 and which provides a framework for detecting and managing radiation emergencies.

- The NCRS provides on call expert advice 24/7 as part of the NRIRP, and maintains the capability to dispatch field response teams to perform radiological assessments and remedial radiation safety actions.

- The NCRS operates an environmental radioactivity laboratory with gamma spectrometry, liquid scintillation counting and alpha spectrometry. This laboratory is set up for routine assessments of environmental samples, food and drinking water testing, and in the event of an emergency would be used to perform environmental radionuclide assessments.

- A national network of HPOs performs initial radiological assessments. Every PHU has an on call HPO trained and equipped with radiation and contamination monitoring instruments, so that radiological assessments can be performed in a timely manner anywhere in the country and reported to the MOH within 24 hours.

- The MOH and NCRS maintain strong international collaboration with the International Atomic Energy Agency (IAEA) and Member States, as well as with Australian counterparts. The MOH is also currently increasing its radiation safety expertise and capacity by restructuring the group responsible for this work programme.

Areas that need strengthening and challenges

- The NRIRP needs to be reviewed and revised to ensure it is in line with the new Radiation Safety Act (2016) and the revised IAEA General Safety Requirements Part 7, ensuring all government requirements are met.

- There are no national protocols on managing individuals exposed to radiation, including for defining the roles and responsibilities of responding agencies and/or ensuring that formal arrangements are in place to undertake this component of radiation management.

RE.2 Enabling environment in place for management of radiation emergencies – Score 4

Strengths and best practices

- The NRIRP describes different agencies' roles and responsibilities in responses to radiation incidents and emergencies. The NRIRP also includes provisions for escalating local radiation emergencies to national emergencies.

- Licence holders are responsible for having plans and arrangements in place to respond to a radiation emergency.

- Regular radiation emergency drills and exercises are carried out with key agencies. Exercises using "live agents" are performed annually with the NZDF and NCRS. Other exercises are performed on an ad hoc basis when requested through quarterly national and regional hazardous substances committees chaired by FENZ. Radiation incidents are a standing item at these committee meetings, in order to ensure communication among and between key agencies and to ensure that lessons can be learnt.

- Systems are in place to manage radioactive waste. The MOH owns a national radioactive waste store, which is operated by ESR. In addition to taking redundant sealed radioactive sources from industry for safe and secure long-term storage, the store is used as the emergency store for orphaned sources and those outside regulatory control.

Areas that need strengthening and challenges

- Emergency exercises are carried out regularly but tend to focus on the initial response phase. There are opportunities to extend these exercises to test short-term measures and longer-term impacts.

- Participation of key agencies such as FENZ in these exercises is ad hoc and could be improved.

Recommendations for priority actions

- Undertake a review of the NRIRP and update to take account of the new legislation (Radiation Safety Act 2016) and the requirements in IAEA General Safety Requirements Part 7.

- Develop national guidance on medical management of radiation emergencies, public health risk assessment and risk communications, then test implementation through full-scale exercises.

- Explore developing relevant expertise and capacity for monitoring internal radiation contamination and performing internal radiation dose assessment.

OTHER

APPENDIX 1: JEE BACKGROUND

Mission place and dates

Wellington, New Zealand and Christchurch, New Zealand; 26 to 30 November 2018

Mission team members:

- Mr Peter Mertens, Senior Expert, Global Health Security and International Cooperation Initiatives, the Kingdom of the Netherlands (team lead)
- Dr Paul Armstrong, Director, Communicable Disease Control Directorate, Australian Government Department of Health
- Dr Susan Corning, Senior Advisor to the Deputy Director General International Standards and Science, World Organisation for Animal Health
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- Dr Angela Merianos, Team Coordinator, Pacific Health Security, Communicable Disease and Climate Change, WHO Division of Pacific Technical Support
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- Mr Cody Thornton, Chief, Operational Intelligence Branch, U.S. Department of Health and Human Services, United States of America.

Observers

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Objective

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

The JEE process

The JEE process is a peer-to-peer review. The entire external evaluation, including discussions around the priority actions, the strengths, the areas that need strengthening, best practices, challenges and the scores are collaborative, with JEE team members and host country experts seeking full agreement on all aspects of the final report findings and recommendations.

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

Limitations and assumptions

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

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- Toni Tana, NZ Ministry for Primary Industries (MPI)
- Mike Thomason, Fire and Emergency NZ (FENZ)
- James Thompson, Canterbury CDEM Group
- Alan Thomson, NZ Customs Service
- Nick Tolan, Christchurch International Airport Limited
- Andrew Tollison, Fire and Emergency NZ (FENZ)
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JOINT EXTERNAL EVALUATION
OF IHR CORE CAPACITIES
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NEW ZEALAND

Mission report:
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