Joint external evaluation of the International Health Regulations (2005) core capacities and the European Centre for Disease Prevention and Control public health emergency preparedness assessment

the Netherlands

Mission report

27–31 January 2025

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  - Association of Netherlands Municipalities
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  - Biological Safety Officers Platform
  - Central Committee on Research Involving Human Subjects
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  - Dutch College of General Practitioners
  - Dutch Federation of University Medical Centers
  - Dutch Healthcare Authority
  - Dutch Poisons Information Center
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  - Dutch Society for Occupational Hygiene
  - Dutch Society of Infection Prevention in Healthcare
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  - Inspectorate of Justice and Security
  - Leiden University
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  - Major Incident Hospital
  - Medicines Evaluation Board
  - Ministry of Agriculture, Fisheries, Food Security and Nature
  - Ministry of Defence
  - Ministry of Education, Culture and Science
  - Ministry of Finance

- Ministry of Foreign Affairs
- Ministry of Health, Welfare and Sport
- Ministry of Infrastructure and Water Management
- Ministry of Justice and Security
- Ministry of Social Affairs and Employment
- Municipal Health Service Amsterdam
- Municipal Health Service Fryslân
- Municipal Health Service Gelderland Zuid
- Municipal Health Service Haaglanden
- Municipal Health Service Hart voor Brabant
- Municipal Health Service Kennemerland
- Municipal Health Service Rotterdam-Rijnmond
- Municipal Health Service Utrecht
- Municipal Health Service Zaanstreek-Waterland
- Municipal Health Service Zuid-Holland-Zuid
- National Coordination Centre for Patient Distribution
- National Coordinator for Security and Counterterrorism
- National Health Care Institute
- National Institute for Public Health and the Environment (RIVM)
- National Network Acute Care
- Netherlands Food and Consumer Product Safety Authority
- Netherlands Forensic Institute
- Netherlands Institute for Health Services Research
- Netherlands Institute for Public Safety
- Netherlands Labour Authority
- Netherlands Organisation for Applied Scientific Research
- Netherlands Organisation for Health Research and Development
- Netherlands Pharmacovigilance Centre Lareb
- Office for Genetically Modified Organisms (GMO)
- Pandemic and Disaster Preparedness Center
- Port Health Authority Rotterdam
- Radboud
- Radboudumc
- Reference laboratory Erasmus Medical Center
- Reference laboratory Amsterdam
- Reference laboratory Zuyderland Medical Center
- Regional antimicrobial resistance (AMR) care networks
- Rijkswaterstaat
- Royal GD Animal Health
- Royal Netherlands Academy of Arts and Sciences
- Royal Netherlands Marechaussee
- Royal Netherlands Meteorological Institute
- Safety Region Haaglanden
- Safety Region Midden- en West-Brabant
- SEO Amsterdam Economics
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Abbreviations

AMR	antimicrobial resistance
BSL	biosafety level
CBRN	chemical, biological, radiological and nuclear
CIb	Centre for Infectious Disease Control
COVID-19	coronavirus disease
ECDC	European Centre for Disease Prevention and Control
EEA	European Economic Area
EU	European Union
GDPR	General Data Protection Regulation
GGD	municipal public health service
GMO	genetically modified organisms
GRIP	Coordinated Regional Incident Management Procedure
HCAI	healthcare-associated infection
IHR	International Health Regulations
IPC	infection prevention and control
JEE	Joint External Evaluation
LCI	National Coordination Centre for Communicable Disease Control
MCM	medical countermeasures
MDRO	multidrug-resistant organisms
PHEPA	Public Health Emergency Preparedness Assessment
POE	points of entry
PREZIES	prevention of hospital infections through surveillance
RIVM	National Institute for Public Health and the Environment
WHO	World Health Organization

Executive summary

The Netherlands has a well developed and resilient public health security system, characterized by strong institutional frameworks, robust surveillance mechanisms and effective multisectoral collaboration. The country maintains strong global health collaborations, engaging in strategic partnerships, in alignment with European Union (EU) and World Health Organization (WHO) governance frameworks relevant to public health resilience and infectious disease control. Its established laboratory networks, comprehensive risk assessment protocols and rapid response mechanisms contribute to its ability to detect, assess and manage public health threats effectively.

Additionally, the Netherlands benefits from an advanced healthcare infrastructure, a well trained workforce and a culture of continuous learning and adaptation, ensuring that lessons from past health crises are integrated into future preparedness strategies.

The combined Joint External Evaluation (JEE) and Public Health Emergency Preparedness Assessment (PHEPA) process generated seven overarching findings and recommendations that address cross-cutting challenges across many of the technical areas:

1. The Netherlands actively participates in EU and WHO initiatives, demonstrating an elevated level of commitment to global public health security.
2. The assessment process (including the self-assessment phase) benefited from many national experts from different sectors, though representation from certain key sectors on the first day of the mission week was limited, including environmental health, security/civil protection sector and national crisis authorities.
3. Inconsistent and localized interpretation of the General Data Protection Regulation (GDPR) has hindered effective public health functions. A standardized national approach to GDPR compliance in public health is necessary.
4. The Netherlands' reliance on voluntary reporting and informal networks presents, besides a strength, also a potential vulnerability. A more structured legislative framework may be required to ensure reliability and accountability of public health data required for effective threat detection and response.
5. Conducting a comprehensive stakeholder and activity mapping would enhance the Netherlands' ability to strategize, prioritize and effectively engage in national and international health security mechanisms, including EU-level coordination.
6. There is a need for sustained financial investment and long-term funding mechanisms to maintain and improve preparedness and response capacities.
7. Across all technical areas, the importance of continuous training, education and simulation exercises was emphasized as a critical enabler of robust health emergency preparedness and response.

The Netherlands: scores and priority actions

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

Technical areas	Indicator number	Indicator	Score	Priority Actions
Prevent				
P1. Legal instruments **Capacity 1. IHR implementation and coordination**	**P1.1.**	Legal instruments	**4**	• Aim for a more formal and regular legal mapping structure to identify the need for revisions to legal public health instruments, extending beyond the (human/animal) health sector. • Update the Public Health Act and other legal instruments to facilitate the secure and lawful sharing of all necessary (personal) data and samples between relevant stakeholders (private and public) in public health. This should include the ability to link laboratory, clinical and epidemiological data to enhance public health surveillance, prevention and control (recommendation from various technical areas: e.g., from legal, laboratory, surveillance, zoonosis and immunization.)
	P1.2.	Gender equity and equality in health emergencies	**4**	
P2. Financing **Capacity 2. Financing**	**P2.1.**	Financing for IHR implementation	**4**	• Advocate to the central government to limit proposed budget reductions from 2026, ensuring sufficient funding remains for IHR implementation in the coming years. • Strengthen baseline funding for responding to small-scale events. • Develop a procedure for tracking expenditures categorized as capacity strengthening for key IHR programmes. This procedure should be consolidated with the IHR Focal Point and used to justify budget requests and allocations. • Involve financial analysts and planners in the development of emergency preparedness and response plans, utilizing a costing tool. • Regularly test the incidental supplementary budget mechanism, either as a stand-alone exercise or as a part of broader simulation exercises for emergency response.
	P2.2.	Financing for public health emergency response	**4**	

Technical areas	Indicator number	Indicator	Score	Priority Actions
P3. IHR coordination, national IHR focal point functions and advocacy **Capacity 1. IHR implementation and coordination**	**P3.1.**	National IHR focal point functions	**4**	• Develop advocacy mechanisms to strengthen multisectoral engagement for implementing the IHR and Regulation European Union (EU) 2022/2731. This should involve engagement of relevant sectors and levels to ensure coordination in planning, implementation, monitoring and evaluation activities under an all-hazards, whole-of-government approach. • Map simulation exercise and evaluation activities to create an overview and facilitate cross-sectoral learning. This will enable the exchange of best practices, identification of challenges and gap analysis to improve implementation of the IHR and Regulation (EU) 2022/2371. • Identify and list potential legal uncertainties in the notification and verification process, particularly concerning data and information sharing for IHR and Regulation (EU) 2022/2371-related events. These findings should inform updates to the Public Health Act, ensuring compliance with both frameworks. • Establish activities for exercising response to unknown health threats, with a focus on multisectoral engagement and communication. These exercises should assess notification and verification processes for IHR and Regulation (EU) 2022/2371 to health legislation-relevant events.
	P3.2.	Multisectoral coordination mechanisms	**4**	
	P3.3.	Strategic planning for IHR, preparedness or health security	**4**	
P4. Antimicrobial resistance (AMR) **Capacity 12. Antimicrobial resistance (AMR) and healthcare-associated infections (HCAIs)**	**P4.1.**	Multisectoral coordination on AMR	**3**	• Formally establish the functions of the One Health intersectoral coordinating mechanism for AMR, develop a costed operational plan and implement National Action Plan monitoring and evaluation. • Ensure sustainability of human AMR and antimicrobial use surveillance systems through stakeholder engagement and continuous process improvement. • Facilitate efficient epidemiological and laboratory data exchange between healthcare organizations and public health institutions to support AMR prevention and response. • Expand antimicrobial use surveillance in hospitals and long-term care facilities to include prescribing indications, enabling prescriber feedback for prudent antimicrobial use. • Stimulate prudent antimicrobial use in the veterinary sector and develop a funded process for evaluating and updating veterinary antimicrobial use guidelines.
	P4.2.	Surveillance of AMR	**5**	
	P4.3.	Prevention of multidrug-resistant organisms (MDRO)	**5**	
	P4.4.	Optimal use of antimicrobial medicines in human health	**4**	
	P4.5.	Optimal use of antimicrobial medicines in animal health and agriculture	**5**	

Technical areas	Indicator number	Indicator	Score	Priority Actions
P5. Zoonotic disease **Capacity 10. Zoonotic diseases and threats of environmental origin, including those due to the climate**	**P5.1.**	Surveillance of zoonotic diseases	**4**	• Develop and implement a data-sharing platform to facilitate collaboration among environmental, public health and animal health institutions, following the One Health approach in the monitoring, risk analysis and response to zoonotic diseases and threats of environmental origin (link to P1). • Conduct a stakeholder mapping and engagement analysis to define roles and responsibilities within One Health surveillance, particularly regarding the zoonoses structure and its communication flows and decision-making, clarifying the One Health governance for surveillance, prevention, preparedness and response to zoonotic and environmental threats, and facilitating interoperability among the relevant plans (e.g. National Action Plan for Strengthening of the Zoonotic Disease Policy, National Climate Adaptation Strategy and any future all-hazards National Health Emergency Response Plan). • Strengthen environmental expertise within the zoonoses structure and One Health surveillance platform, incorporating, among others, specialists in climate, biodiversity, land use and water management) from public and research entities. • Enhance the process of intersectoral priority setting for zoonotic disease surveillance by involving environmental experts, alongside other relevant disciplines.
	P5.2.	Response to zoonotic diseases	**5**	
	P5.3.	Sanitary animal production practices	**4**	
P6. Food safety	**P6.1.**	Surveillance of foodborne diseases and contamination	**4**	• Explore the possibilities of ensuring data sharing between laboratories and government, including samples and laboratory data for public and animal health, as well as data from private food laboratories. This applies to both infectious disease data and chemical and radiological events. • Ensure continued prioritization, financing and capacity for existing structures related to surveillance, monitoring, preparedness and response. This includes the continuation of detection forums and their activities, conducting plan and procedure reviews, and continuing the review cycle for ongoing improvement across infectious diseases, and chemical and radiological events. • Expand training for response personnel, covering both general response procedures and low-probability, high-impact scenarios affecting food safety, such as nuclear accidents. • Develop an online platform for data sharing on foodborne diseases and events. This platform would enable stakeholders to exchange information during both response and preparedness activities.
	P6.2.	Response and management of food safety emergencies	**5**	

Technical areas	Indicator number	Indicator	Score	Priority Actions
P7. Biosafety and biosecurity	**P7.1.**	Whole-of-government biosafety and biosecurity system is in place for human, animal and agriculture facilities	**2**	• Within one year designate the main responsible ministries for initiating and implementing the different regulatory building blocks for an intersectoral regulatory biosecurity framework and an authority to oversee compliance, ideally within an existing regulatory and supervisory structure. • Develop a regulatory framework for biosecurity to require biosecurity policy implementation in facilities handling high-consequence pathogens. • Establish a national list of high-consequence human pathogens and invest in a national oversight system for laboratories working with these agents. • Enhance the integration of biosecurity and dual-use concepts in academic training programmes, particularly in life sciences education. • Introduce the role of a Biorisk Management Advisor responsible for biosafety, biosecurity and dual-use oversight. This role should expand the mandate of biosafety officer and be extended to facilities where such functions are not well defined. A certified training programme should be developed to support this role.
	P7.2.	Biosafety and biosecurity training and practices in all relevant sectors (including human, animal and agriculture)	**3**	
P8. Immunization	**P8.1.**	Vaccine coverage (measles) as part of national programme	**3**	• Ensure adequate and consistent interpretation of data protection legislation to facilitate vaccination data exchange between vaccine administrators and public health authorities and the pharmacovigilance centre to improve timely and comprehensive vaccination programme monitoring. • Intensify activities to understand differences in vaccination uptake between subpopulations and identify best practices to address such populations. Invest in implementing this knowledge, among others, with customized communication and the training of healthcare professionals. • Prioritize financial and organizational investments in the Youth Health Care Services as a strategy to improve vaccination coverage. Such investments should address accessibility issues and enable tailored approaches, including local initiatives. • Expand the current national electronic vaccination registry, to include adult vaccinations aiming for a lifelong, efficient monitoring. At a minimum, ensure that there is a central registration for adult vaccination which is interoperable and adaptable to the National Immunisation Programme for 0–18 years. • Accelerate the implementation of a basic structure for adult immunization programmes which is scalable for ad hoc immunization in response to an outbreak.
	P8.2.	National vaccine access and delivery	**5**	
	P8.3.	Mass vaccination for epidemics of vaccine-preventable diseases	**4**	

Technical areas	Indicator number	Indicator	Score	Priority Actions
Detect				
D1. National laboratory systems Capacity 3. Laboratory	D1.1.	Specimen referral and transport system	4	• Formalize the network of outbreak assistance laboratories to ensure elevated level of laboratory preparedness and ability to scale up laboratory capacity in the event of a crisis. • Finalize the electronic system for reporting of laboratory data, including sequence information, and ensure that the new system is made operational for surveillance and outbreak preparedness purposes. • Ensure the setting up of a formal agreement with a laboratory offering services that require biosafety level (BSL)-4 facilities.
	D1.2.	Laboratory quality system	4	
	D1.3.	Laboratory testing capacity modalities	5	
	D1.4.	Effective national diagnostic network	5	
D2. Surveillance Capacity 4. Surveillance	D2.1.	Early warning surveillance function	4	• Update the public health act under preparation to ensure the secure sharing of necessary personal data and samples across public and private health systems, allowing the possibility of linking laboratory, clinical and epidemiological data. • Conduct a prioritization exercise to define surveillance priorities. • Ensure that public health surveillance functions are fully integrated into national healthcare digitalization efforts, leveraging lessons learned from the coronavirus disease (COVID-19) pandemic, to enhance routine surveillance, performance and crisis resilience. • Document existing surveillance systems, including protocols for detection and response, and establish a regular system for evaluating and updating their performance.
	D2.2.	Event verification and investigation	4	
	D2.3.	Analysis and information sharing	5	
D3. Human resources Capacity 5. Human resources	D3.1.	Multisectoral workforce strategy	4	• Further develop and implement innovative labour market strategies to ensure a sustainable healthcare workforce in both the public and private sectors. • Enhance pandemic and outbreak preparedness training programmes for healthcare professionals on all levels and across multiple sectors. • Strengthen surge capacity plans by incorporating all relevant sectors into public health emergency response and planning.
	D3.2.	Human resources for implementation of IHR	4	
	D3.3.	Workforce training	4	
	D3.4.	Workforce surge during a public health event	4	

Technical areas	Indicator number	Indicator	Score	Priority Actions
Respond				
R1. Health emergency management **Capacity 6. Health emergency management**	**R1.1.**	Emergency risk assessment and readiness	**4**	• Ensure a coordinated, effective and timely response to health emergencies and events with public health consequences by developing a comprehensive, operational, all-hazards National Health Emergency Response Plan, or equivalent, in alignment with the Regulation (EU) 2022/2371 and the National Crisis Management Handbook that clearly defines the overarching national health emergency structures (e.g., Public Health Emergency Operations Centre), mechanisms (e.g., Incident Management System), and roles and responsibilities of all relevant stakeholders and sectors. • Complement the national multi-hazard risk assessment with a process for a routinely updated (every three years) emergency risk profile and prioritization for serious cross-border threats to health, which could be used to inform a range of emergency planning activities, such as identifying crisis-relevant medical countermeasures (MCMs) to be included in the stockpile through to gap analyses for threat-specific plans, exercises, or case management protocols. • Improve intersectoral coordination and collaboration through the development of a multisectoral governmental strategy which formalizes coordination and collaboration structures and information sharing, and that ensures joint multisectoral training and exercises on intentional release scenarios (link to R2). • Expand and enhance the national plan for surge capacity by strengthening pre-deployment, deployment and post-deployment strategies, through examining health law, considering for instance, integrating animal health or other personnel into certain surge capacity roles for public health events. In addition, consider expanding national engagement with international mechanisms such as European Union Health Task Force, and emergency medical teams for both the sending and receiving of healthcare professionals during crises. • Develop a strategic, all-hazards strategy towards ensuring supply of critical MCMs for various types of health emergencies outlining the MCM-related responsibilities and actions at national and regional level, respectively, with the involvement of relevant stakeholders including in crisis response and health care. This should include provisions on crisis procurement, stockpiling, manufacturing, supply chain management, logistics and crisis allocation as well as MCM-innovation, along with a description of how different interventions complement each other. • Consider developing tools to monitor supply and estimate demand of MCM as well as for early warning, taking into account the reporting requirements that may be applicable in case of a public health emergency at Union level.
	R1.2.	Public health emergency operations centre	**3**	
	R1.3.	Management of health emergency response	**4**	
	R1.4.	Activation and coordination of health personnel in a public health emergency	**3**	
	R1.5.	Emergency logistic and supply chain management	**3**	

Technical areas	Indicator number	Indicator	Score	Priority Actions
	R1.6.	Research, development and innovation	4	• Further define mechanisms to monitor and evaluate the implementation, timeliness and effectiveness of public health and social measures. This may take into account considerations from European Centre for Disease Prevention and Control (ECDC) guidance and World Health Organization (WHO) guidance on this topic. • Create and disseminate a repository which contains the findings from health system assessments, plans, evaluations, simulation exercises, after-action reviews, or similar outputs, so as to more systematically identify gaps and promote a coordinated awareness of the health emergency preparedness landscape within the Netherlands.
R2. Linking public health and security authorities	R2.1.	Public health and security authorities (e.g. law enforcement, border control, customs) are linked during a suspect or confirmed biological, chemical, or radiological event	3	• Convene a multisectoral working group to address coordination challenges between public health and security authorities. • Establish a working group to address the issues in clean up and transport of potentially contaminated evidence, human remains, vehicles and infrastructure. • Plan and conduct simulation exercises focused on on-site collaboration and coordination between public health and security authorities. • Develop a targeted training programme covering key topics such as cooperation between law enforcement and public health, joint investigations, basic chemical, biological, radiological and nuclear (CBRN) awareness, intentional release scenarios, evidence collection, reporting, multi-scenario incidents and incident management.
R3. Health services provision Capacity 7. Health service provision	R3.1.	Case management	4	• Harmonize subnational clinical case management and referral guidelines through national strategic planning to identify and address capacity gaps. • Periodically evaluate health service utilization data across both public and private health providers and integrate findings into a streamlined, bottom-up data flow to enable timely, evidence-based decision-making at all levels of care. • Ensure that health emergency plans describe pre-defined resources to be made available to all healthcare providers.
	R3.2.	Utilization of health services	4	
	R3.3.	Continuity of essential health services	4	

Technical areas	Indicator number	Indicator	Score	Priority Actions
R4. Infection prevention and control (IPC) **Capacity 12. Antimicrobial resistance (AMR) and healthcare-associated infections (HCAIs)**	**R4.1.**	IPC programmes	**4**	• Emphasize the importance of infection prevention and the role of IPC professionals within national policies addressing healthcare staff shortages. • Ensure continuous financial support for development of national IPC guidelines. • Establish national standards for IPC training, including curriculum requirements and retraining frequency for all workers in healthcare settings. • Conduct a national assessment of healthcare worker safety risks related to IPC, identifying personnel groups associated with IPC gaps, and evaluating the impact of outsourcing occupational health and safety expertise. • Optimize surveillance systems for HCAIs in hospitals and long-term care, improving ease of reporting HCAIs and ensuring surveillance data is actionable at local, regional and national levels.
	R4.2.	HCAI surveillance	**4**	
	R4.3.	Safe environment in health facilities	**4**	
R5. Risk communication and community engagement (RCCE) **Capacity 8. Risk communication and community engagement**	**R5.1.**	RCCE systems for emergencies	**3**	• Continue engagement and coordination between the National Institute for Public Health and the Environment (RIVM) and municipal health services communication networks. • Consolidate behavioural science expertise in both the Centre for Infectious Disease Control (CIb) response plan and the National Coordination Centre for Communicable Disease Control (LCI) generic preparedness manual. • Strengthen community engagement within the CIb response plan and LCI generic preparedness manual. • Review all existing population data sources as an alternative to surveys for better demographic targeting in message development. • Integrate RIVM's behavioural research findings into communication materials and targeted community engagement strategies.
	R5.2.	Risk communication	**5**	
	R5.3.	Community engagement	**3**	

Technical areas	Indicator number	Indicator	Score	Priority Actions
IHR-related hazards and points of entry and border health				
POE. Points of entry and border health **Capacity 9. Points of entry and border health**	**POE1.**	Core capacity requirements at all times for POE (airports, ports and ground crossings)	**4**	• Formalize stakeholder collaboration at category A and B POE by establishing cooperation agreements and covenants with relevant stakeholders, and clarify formal responsibilities in accordance with the Public Health Act. • Municipal public health services (GGDs) with designated POE should develop and implement standard procedures to ensure public health staff are routinely involved in port and airport operations such as accompanying conveyance inspections (e.g., cruise and cargo ships). • Expand contingency plans at category A and B POE to cover a wider range of scenarios ranging from early stage responses to severe outbreaks, integrating all-hazard risks (e.g. chemical and radiological threats). Develop standard operating procedures and ensure interoperability with other response plans. • Revise and adjust quarantine arrangements for suspected travellers at category A POE by identifying alternative facilities (e.g., local hospitals, ships, or hotels) as needed. • Develop an overview of regular POE exercises at the national level. Ensure the POE network benefits by fostering cross-POE participation, sharing results and compiling a summary of POE exercises.
	POE2.	Public health response at POE	**4**	
	POE3.	Risk-based approach to international travel-related measures	**4**	
CE. Chemical events **Capacity 11. Chemical events**	**CE1.**	Mechanisms established and functioning for detecting and responding to chemical events or emergencies	**5**	• Enhance multidisciplinary network collaborations to improve communication, coordination and awareness of how stakeholders such as healthcare professionals can contribute to chemical incident responses. • Continue to focus on education, training and simulation exercises to maintain preparedness and readiness across sectors. • Strengthen cross-border coordination mechanism for chemical incidents while maintaining a strong national focus. • Raise awareness among key sectors, such as healthcare, on data-sharing protocols to ensure effective public health responses while remaining compliant with the General Data Protection Regulation (GDPR).
	CE2.	Enabling environment in place for management of chemical event	**5**	
RE. Radiation emergencies	**RE1.**	Mechanisms established and functioning for detecting and responding to radiological and nuclear emergencies	**5**	• Update the National Crisis Plan – Radiation in 2025, incorporating recommendations from the National Nuclear Exercise 2024. • Enhance planning for large-scale evacuations, ensuring a balanced approach that considers both radiological and non-radiological consequences in decision-making. • Invest in training and maintaining a sufficient number of highly qualified technical staff for nuclear and radiological emergency preparedness, in line with plans to expand nuclear power capacity.
	RE2.	Enabling environment in place for management of radiological and nuclear emergencies	**5**	

Technical areas	Indicator number	Indicator	Score	Priority Actions
Additional PHEPA capacities				
		Capacity 13. Union level coordination and support functions	**n/a**	• Explore the further potential of the Netherlands' contribution and connection to relevant EU health security mechanisms and discussions, in particular further building on the EU Plan once available, Early Warning and Response System developments and possible Health Security Committee discussions on interregional and regional cross-border collaboration on health security.
		Capacity 14. Research development and evaluations to inform and accelerate emergency preparedness	**n/a**	• Expand operational research in the general preparedness plan, outlining strategic multi-disciplinary research priorities for outbreak preparedness and response, as well as practical opportunities, challenges and resource needs for sustaining and utilizing available resources. • Identify and address obstacles to the rapid activation of outbreak-related research, e.g., readiness of clinical sites and key stakeholders; ethical approvals; ownership of data and research findings; shared protocols, and public-private partnerships.
		Capacity 15. Recovery elements	**n/a**	• Integrate provisions for downscaling emergencies, conducting lessons learned exercises and providing recovery services into an all-hazards National Health Emergency Response Plan.
		Capacity 16. Actions taken to improve gaps found in the implementation of prevention, preparedness and response plans	**n/a**	• Consider including findings from other relevant evaluations, such as those by the Dutch Safety Board, into the action plan following the JEE-PHEPA so as to ensure a comprehensive approach to addressing identified gaps.

Introduction

The Joint External Evaluation (JEE) and Public Health Emergency Preparedness Assessment (PHEPA) mission assessed the Netherlands' implementation of prevention, preparedness and response capabilities against public health threats within the frameworks of the International Health Regulations (2005) (IHR) and the Regulation (EU) 2022/2371 on serious cross-border threats to health.

The joint JEE-PHEPA mission, held in Utrecht 27–31 January 2025, marked the first integrated assessment of its kind, piloting a joint World Health Organization (WHO) Regional Office for Europe and European Centre for Disease Prevention and Control (ECDC) JEE-PHEPA approach.

Over the course of five days, the Netherlands' capacities and capabilities were assessed across different technical areas. The process brought together a multisectoral group of national subject matter experts from different levels of the Dutch (public) healthcare system, and a multinational, multidisciplinary expert JEE-PHEPA assessment team for interactive dialogues, structured sessions and selected site visits.

While an integrated assessment of capacities can largely serve both the JEE and the PHEPA approaches, additional elements of the respective processes are largely complementary and embraced European Union/European Economic Area (EU/EEA)-specific areas, as well as the wider scope of the IHR. However, the following key differences between the JEE and PHEPA should be noted:

1. The JEE covers 19 technical areas from an all-hazards approach and has a recommended five-year cycle, whereas the PHEPA approach assesses the status of 16 capacities within a three-year cycle, of which four capacity areas are EU/EEA-specific.
2. The PHEPA does not use a scoring system and follows a qualitative methodology with a focus on outbreak response situations, whereas the JEE assigns scores to each indicator, reflecting quantitatively the level of capacity and the wider scope of IHR core capacities.
3. The PHEPA allows a more detailed view of selected capacities where specific recommendations can be made. For the first cycle (2024–2026), ECDC selected four in-depth capacities: i) Capacity 3 – laboratory, ii) Capacity 4 – surveillance, iii) Capacity 6 – health emergency management, and iv) Capacity 12 – antimicrobial resistance (AMR) and healthcare-associated infections (HCAIs). A fifth capacity is selected by the country among the remaining 11 capacities. The Netherlands selected Capacity 10 – zoonotic diseases and threats of environmental origin, including those due to the climate.
4. The JEE is a voluntary mechanism under the IHR Monitoring and Evaluation Framework, whereas the Regulation (EU) 2022/2371 requires EU/EEA Member States to develop a plan addressing the recommendations generated from the assessment (see Annex).

The mission resulted in consensus on JEE-PHEPA recommendations for priority actions across the 23 combined technical areas, which are outlined in this joint JEE-PHEPA report.

Prevent

P1. Legal instruments

Capacity 1a. Policy, legal and normative instruments to implement International Health Regulations (IHR)

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. In addition, policies that identify national structures and responsibilities as well as the allocation of adequate financial resources are also important.

Target

Adequate legal instruments for States Parties to support and enable the implementation of all their obligations and rights created by the IHR. The development of new or modified legal instruments in some States Parties for the implementation of the Regulations. Where new or revised legal instruments may not be specifically required under a State Party's legal system, the State may revise some laws, regulations, or other legal instruments in order to facilitate their implementation in a more efficient, effective, or beneficial manner.

Level of capabilities

The Netherlands is constitutionally a decentralized unitary state, with three levels of governance: national, provincial and local. Laws are made on the national level, but provinces and municipalities have a high degree of autonomy in exercising the powers given to them by law.

The Ministry of Health, Welfare and Sport bears overall responsibility for public health at the national level. It formulates policy objectives relating to prevention and health promotion and oversees the effective implementation of measures. Under the Dutch Public Health Act, responsibility for public health, prevention and health promotion at a local level lies with the 342 local authorities (municipalities). These responsibilities are primarily carried out by their respective 25 municipal public health services (GGDs).

The Public Health Act serves also as the overarching framework for public health emergency response. This act provides the rules, guidelines and responsibilities that all the respective organizations hold during public health emergencies. Infectious disease control is for the largest part the responsibility of the municipalities and GGDs. Furthermore, the Law on the Safety Regions describes on a logistical level the coordination role of relevant government institutions across all levels during a public health emergency. There is no separate national law on the IHR, and its requirements are included in other national laws.

Recently, legal assessments have been conducted to complete a functional review, and it has evaluated the effectiveness of legal instruments during the coronavirus disease (COVID-19) pandemic. Additionally, the Council for Safety has conducted a comprehensive review of the effectiveness of the Dutch government's COVID-19 response. The Dutch Government has taken the review's recommendations into consideration, and a three-tiered revision is under way. Although the implementation of the IHR is still largely seen as a health sector effort, various sectors have contributed and are reflected in the ongoing revisions. This is why the score of indicator P1.1. is 4, as the review extended beyond the health sector.

Furthermore, the IHR National Focal Point and the Ministry of Health, Welfare and Sport also conduct an evaluation after each outbreak or epidemic, involving all relevant stakeholders, to gather lessons learned and provide feedback for regulatory improvements. Legal and normative instruments are being developed and revised to address identified gaps across all sectors and levels of government.

The notification for a list of infectious diseases is regulated under the Public Health Act. However, the exchange of health information from local doctors and laboratories to the GGDs does not cover all necessary aspects of modern surveillance, early warning and response interventions (e.g. epi-information and sequencing data). A key challenge is the varying interpretation of data protection rules by different stakeholders. Article 9 of the General Data Protection Regulation (GDPR) explicitly recognizes public health as a legitimate basis for exemption, provided it is supported by national legislation. Therefore, it is essential that the Public Health Act clearly defines the required data exchanges required and their importance for public health purposes. When these conditions are met, the GDPR's restrictions do not apply due to the specified exemption.

Under the Public Health Act contact tracing and active providing of information, including advising and assisting people in protecting themselves, are key responsibilities of the local health services. The identification of 'groups at risk' is explicitly mentioned. Measures imposed on the general population may be adjusted for specific groups or situations (e.g., based on age or profession). When an individual's fundamental rights must be restricted to protect public health (e.g., through isolation, quarantine, bodily integrity measures), the decision must be endorsed by the public prosecutor's office and/or the court. The responsible legal authority is required to appoint a lawyer for the individual free of charge.

In general, gender equality receives attention. According to the Gender Equality Index, the Netherlands scores high in the domain of health. Regarding infectious disease control, no significant gender gaps in access to services have been identified. The approach focuses on a broader stratification, identifying at-risk target groups based on factors such as gender, age, chronic diseases, occupation, sexual preference and social environment. Existing IHR capacities are not challenged by gender inequalities in the Netherlands.

Indicators and scores

P1.1. Legal instruments – Score 4

Strengths

- The Netherlands has a strong legal framework that covers all aspects of public health emergency preparedness and response. The legal instruments provide clearly assigned responsibilities to relevant stakeholders.

Challenges

- Legal mapping in the Netherlands is still rather reactive than proactive.
- The legal basis of the Public Health Act is not sufficiently extended to facilitate coordination and cooperation with private health care and laboratory facilities. Specifically, the legal framework for data sharing between public health stakeholders, private health care and research institutes, is outdated and does not adequately support modern surveillance, early warning and response interventions. This challenge spans multiple areas, including legal, laboratory, surveillance and zoonosis, and must be addressed.
- The fragmentation of legislative frameworks has resulted in limited connection and coordination with other sectors outside the (human/animal) health sector, including the environment.
- Data sharing of non-notifiable diseases as well as sequence data, remains challenging, since this is non-mandatory and primarily based on voluntary participation.
- The Public Health Act does not clearly address the collection of data for surveillance purposes, particularly for monitoring the health of the population.

P1.2. Gender equity and equality in health emergencies – Score 4

Strengths

- The Netherlands uses broader indicators than gender to implement the IHR core capacities.

Challenges

- Organizations responsible for public health emergency preparedness and response, as well as local physicians and laboratories, are not able to easily share large amounts of personal and privacy-sensitive public health data necessary for surveillance and notification.

Recommended priority actions

- Aim for a more formal and regular legal mapping structure to identify the need for revisions to legal public health instruments, extending beyond the (human/animal) health sector.
- Update the Public Health Act and other legal instruments to facilitate the secure and lawful sharing of all necessary (personal) data and samples between relevant stakeholders (private and public) in public health. This should include the ability to link laboratory, clinical and epidemiological data to enhance public health surveillance, prevention and control (recommendation from various technical areas: e.g., from legal, laboratory, surveillance, zoonosis, immunization).

P2. Financing

Capacity 2. Financing

Introduction

The implementation of the IHR, including development of the core capacities, requires adequate financing. State Parties should ensure sufficient allocation of funds for IHR implementation.

Target

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 routine implementation of IHR capacities and financial resources that can be accessed on time and distributed for readiness and response to public health emergencies, is available.

Level of capabilities

Financial planning is aligned with national priorities. Sufficient budget allocation is provided to relevant ministries and sectors to support IHR implementation at national, regional and local levels. External financing is primarily used for capital expenditures. The budget is predictable, flexible and distributed in a timely manner across all relevant ministries or sectors, with monitoring and accountability mechanisms in place. The incidental supplementary budget is a model for others to follow.

An emergency public financial resources mechanism is in place at national, regional and primary public health levels, allowing for the timely distribution and execution of funds by all relevant sectors during a public health emergency.

Areas for strengthening include tracking expenditures within the Ministry of Health and National Institute of Public Health and Environment for IHR capacity strengthening. Additionally, financial analysts and planners should be involved in the development of emergency preparedness and response plans, and in simulation exercises to test their ability to operate financial systems during a response.

Indicators and scores

P2.1. Financing for IHR implementation – Score 4

Strengths

- There is a solid basis for financing IHR implementation. The financing primarily comes from national government public funds, supported by multi-year budget agreements.
- Following the COVID-19 pandemic, actions have been taken to enhance preparedness for future pandemics, including the development, funding and implementation of a Pandemic Preparedness Plan.
- A legal framework exists for the execution of tasks by partners, such as the National Institute for Public Health and the Environment (RIVM) and GGDs, in preparation for public health emergencies. These partners receive funding from the government.

Challenges

- Government budgets are under pressure at all levels especially from 2026 onwards. This is due to, among other factors, budget cuts in pandemic preparedness (€50 million in 2025 and by up to €300 million in 2029). These cuts have already been incorporated into the national budget. However, a motion adopted by the House of Representatives aims to reverse these cuts as much as possible. Funding for COVID-19 vaccination activities is allocated only for 2025, with no funding yet available for subsequent years. The adjustment of the 2026 budget will be discussed during the Spring Memorandum 2025 process. Additionally, the coalition government is making cuts to civil service personnel and subsidies.
- In the coming years, government spending will be reduced, which will put pressure on the budgets of the Ministry of Health, Welfare and Sport.

P2.2. Financing for public health emergency response – Score 4

Strengths

- There are sufficient opportunities for additional financing from the central government in the event of a public health emergency, coordinated by the Ministry of Health, Welfare and Sport, and the Ministry of Finance.
- A strong network exists that enables partners to support each other and act quickly in the event of a public health emergency. These partnerships can rapidly identify potential financial shortages and alert the Ministry of Health, Welfare and Sport. Additionally, high levels of trust among partners facilitates the initiation of actions while securing additional funding.

Challenges

- Future government spending cuts may make it more difficult to secure additional funding in the event of a public health emergency, particularly for small-scale emergencies.
- During major public health emergencies, such as the COVID-19 pandemic, rapid action is often required, including securing the necessary budget. However, financial accountability for expenditures can be challenging.

Recommended priority actions

- Advocate to the central government to limit proposed budget reductions from 2026, ensuring sufficient funding remains for IHR implementation in the coming years.
- Strengthen baseline funding for responding to small-scale events.
- Develop a procedure for tracking expenditures categorized as capacity strengthening for key IHR programmes. This procedure should be consolidated with the IHR Focal Point and used to justify budget requests and allocations.
- Involve financial analysts and planners in the development of emergency preparedness and response plans, utilizing a costing tool.
- Regularly test the incidental supplementary budget mechanism, either as a stand-alone exercise or as a part of broader simulation exercises for emergency response.

P3. IHR coordination, national IHR focal point functions and advocacy

Capacity 1b. IHR coordination, national IHR focal point functions 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 a national IHR focal point, 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. Coordination of nation-wide resources, including sustainable functioning of a national IHR focal point – 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 national IHR focal points, continuously update and annually confirm them. Timely and accurate reporting of notifiable diseases, including the reporting of any events of potential public health significance according to WHO requirements and consistent relay of information to the Food and Agriculture Organization of the United Nations (FAO) and World Organisation for Animal Health. Planning and capacity development are undertaken and supported through advocacy measures to ensure high-level support for implementation of IHR.

Level of capabilities

In the Netherlands, the Centre for Infectious Disease Control (CIb) of the RIVM serves as the IHR National Focal Point, fulfilling the required functions under the IHR (2005) and the Regulation (EU) 2022/2371. The CIb coordinates the control of infectious diseases, including effective prevention, close surveillance and rapid response in the event of an outbreak.

The National Coordination Centre for Communicable Disease Control (LCI) within the CIb operates the early warning systems, including communication through the IHR system, which involves the WHO Event Information System and the EU Early Warning and Response System. The LCI has a 24/7 on-call duty system that serves, among others at national level, as the notification point for Group A diseases that require immediate reporting, and for coordinating events at the national level, including those attracting media attention. Information-sharing and consultation with senior management and the Ministry of Health, Welfare and Sport are guided by standardized operational procedures.

The IHR National Focal Point is equipped with the necessary administrative, human, technological and financial resources to execute its communication functions. It has a response structure (CIb Response Plan) with response teams and access to multidisciplinary and multisectoral expert groups, including clinical, communication, laboratory and occupational health specialists, as well as veterinarians, environmental health experts and chemical, biological, radiological and nuclear (CBRN) specialists.

Regular epidemic intelligence round-table meetings are held on infectious diseases (weekly), zoonotic diseases (monthly), on AMR (monthly) and on foodborne diseases (quarterly). The CIb also runs the Infact secure e-mail system which guides management of infectious disease events, including zoonotic, AMR and foodborne diseases. Liaison officers within RIVM also connect with the CBRN sectors.

Event notification, assessment and verification for Group A and Group B/C diseases work well. However, challenges to notify and verify other IHR and Regulation (EU) 2022/2371 on serious cross-border threats to health-relevant events may occur due to the voluntary nature of sharing data outside notifiable diseases, which may at times cause delays. Additionally, legal barriers exist, including varying interpretations of the GDPR, which complicates data sharing across sectors, particularly for zoonotic diseases.

Specific preparedness and response structures are in place for zoonotic events, food-borne diseases, environmental health and for high-consequence infectious diseases. Effective coordination examples include the Ebola outbreak in Western Africa (2014–2015), the refugee influx (2015) and the COVID-19 outbreaks among minks (2020). However, a need for stronger collaboration between public health and the security sector in response to deliberate or accidental disease events has been identified (see section R.2).

The Netherlands has a strong culture of institutional learning and evaluation in response to large scale events, which should be maintained. As a designated WHO Collaborating Centre for Infectious Disease Preparedness and IHR monitoring and evaluation, RIVM supports WHO and other countries in strengthening this culture. The Netherlands actively participates in international simulation exercises (e.g., WHO Joint Assessment and Detection of Events (JADE), Pandemic Preparedness and Response Coordination Project (PANDEM-2)) and organizes national exercises. However, securing budgets for these exercises is a challenge, and a comprehensive overview of ongoing activities across various sectors is difficult to maintain.

Several plans are in place (e.g., the National Crisis Management Handbook and the Pandemic Preparedness plan from the COVID-19 evaluation) or under development (e.g., the National Crisis Plan for Infectious Diseases). However, some plans lack clear implementation timelines, and their effectiveness in practice remains uncertain. Adequate resources should be maintained for planning activities, and resources for regularly exercising and updating plans should be ensured.

Dutch experts engage in various EU funded projects (e.g., Joint Action on Strengthened International Health Regulations and Preparedness in the EU

(JA SHARP), PANDEM-2) and expert groups such as the ECDC National Focal Point Preparedness and Response Coordinating Committee. However, the Netherlands lacks an explicit advocacy mechanism to drive the implementation of the IHR (2005) and Regulation (EU) 2022/2371 on serious cross-border threats to health, which could help strengthen multisectoral implementation.

Indicators and scores

P3.1. National IHR focal point functions – Score 4

Strengths

- The Dutch IHR National Focal Point at the RIVM/CIb has a broad range of experts, closely collaborates with GGDs, and maintains strong networks with national and international experts and organizations.
- Main events are evaluated, and lessons learned incorporated with relevant stakeholders (e.g., the 2017 polio spill, the 2022 monkeypox (mpox) response, COVID-19 outbreak management 2020–2022 and external evaluations).

Challenges

- The voluntary nature of data sharing outside notifiable diseases for IHR (2005) and the Regulation (EU) 2022/2371 events can lead to delays in notification and verification processes.
- Regularly exercising and updating plans and ensuring integration of lessons learned to maintain and strengthen capacity, remain a challenge.

P3.2. Multisectoral coordination mechanisms – Score 4

Strengths

- Effective multisectoral preparedness and response structures exist for zoonotic events and for high-consequence infectious diseases.
- The CIb response structure at RIVM includes response teams and expert groups, ensuring multi-disciplinary and multisectoral representation (e.g., veterinarians, environmental health experts, CBRN specialists).

Challenges

- Better integration of the all-hazards approach and whole-of-government approach is needed.
- The National Crisis Plan Infectious Diseases is nearing finalization but has yet to be implemented and exercised (planned for 2025).
- Information exchange between security and public health sector in the case deliberate or accidental threats remains a challenge.

P3.3. Strategic planning for IHR, preparedness or health security – Score 4

Strengths

- The Strengthening National and Regional Structures for Infectious Disease Control Programme enhances pandemic preparedness at the regional and national levels, culminating in the Pandemic Preparedness Plan.
- RIVM is a WHO Collaborating Centre for Infectious Disease Preparedness and IHR monitoring and evaluation.
- Effective multisectoral preparedness and response structures are in place for zoonotic events and for high-consequence infectious diseases.

Challenges

- The Pandemic Preparedness Plan is still under development, and funding for this plan from 2026 onwards is uncertain.

Recommended for priority actions

- Develop advocacy mechanisms to strengthen multisectoral engagement for implementing the IHR (2005) and Regulation (EU) 2022/2731. This should involve engagement of relevant sectors and levels to ensure coordination in planning, implementation, monitoring and evaluation activities under an all-hazards, whole-of-government approach.
- Map simulation exercise and evaluation activities to create an overview and facilitate cross-sectoral learning. This will enable the exchange of best practices, identification of challenges and gap analysis to improve implementation of the IHR (2005) and Regulation (EU) 2022/2371.
- Identify and list potential legal uncertainties in the notification and verification process, particularly concerning data and information sharing for IHR (2005) and Regulation (EU) 2022/2371-related events. These findings should inform updates to the Public Health Act, ensuring compliance with both frameworks.
- Establish activities for exercising response to unknown health threats, with a focus on multisectoral engagement and communication. These exercises should assess notification and verification processes for IHR (2005) and Regulation (EU) 2022/2371 related to health legislation-relevant events.

P4. Antimicrobial resistance (AMR)

Capacity 12.a Antimicrobial resistance

Introduction

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

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

Target

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 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 and the World Organisation for Animal Health global database on use of antimicrobial agents in animals.

c). Prevention of AMR in healthcare facilities, food production and the community, through infection prevention and control (IPC) 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

The Netherlands recently published their second National Action Plan for Antimicrobial Resistance (AMR) 2024–2030. The National Action Plan was developed through a One Health intersectoral collaborating mechanism involving three ministries (Ministry of Health, Welfare and Sport; the Ministry of Agriculture, Fisheries, Food Security and Nature; and the Ministry of Infrastructure and Water Management). The Ministry of Health, Welfare and Sport led the initiative. The National Action Plan outlines actions to address AMR across the human health, animal health and environmental sectors. However, details on budgeting, operational plans and a monitoring and evaluation framework are yet to be finalized.

The Netherlands has been successful in preventing and controlling AMR amidst globally rising rates. AMR rates remain relatively low, with multidrug-resistant organisms (MDRO) such as carbapenemase-producing organisms and Candida auris primarily being imported. One of the factors attributed to this success is effective surveillance of AMR and antimicrobial use in both the human and animal health sectors and long-standing IPC practices in healthcare institutions. Surveillance systems for AMR in human health are largely voluntary and established from the "ground-up," supported by interdisciplinary collaboration between RIVM and medical professional societies. Participation in voluntary reporting is high, and adherence to IPC guidelines is reportedly consistent, due to the involvement of professional societies such as those for medical microbiologists, the Dutch Society for Medical Microbiology, elderly care physicians, and infection prevention experts.

Regional AMR networks facilitate sharing of information about MDRO cases, support regional surveillance initiatives and IPC guideline implementation, and implement stewardship activities. The Health and Youth Care Inspectorate verifies IPC guideline adherence, with facilities required to report outbreaks. Outbreak reports trigger multi-disciplinary support from the Consultation Body for Hospital-Acquired Infections and Antimicrobial Resistance (SO-ZI-AMR) and may result in compensation for additional diagnostics and resources used during outbreaks.

AMR surveillance data inform treatment guidelines and targeted prevention strategies. However, timely collection of epidemiological data at the national level remains challenging, limiting early insights into common risk factors for MDRO cases. With internationally emerging AMR threats and increasing demands in the healthcare sector, continual reassessment and improvement of detection and control systems are needed to maintain high surveillance coverage, rapid MDRO detection and low AMR impact.

Requirements for antimicrobial stewardship teams in hospitals and treatment guidelines in long-term care and primary care sectors have supported prudent antibiotic use. The Netherlands has one of the EU's lowest antibiotic use rates. Primary care physicians receive feedback on prescribing practices, and efforts are underway to collect data on prescribing indications in hospitals and long-term care facilities. While the WHO Access, Watch and Reserve classification of antibiotics is used in reporting of antimicrobial use data, a different approach guides monitoring and antibiotic usage. Public awareness of AMR is high, as shown by Eurobarometer surveys; public awareness campaigns have been intermittent and are included in the National Action Plan.

In the animal health sector, EU regulations are enforced, and veterinary antibiotic use has decreased significantly since 2009. This reduction is mirrored by declining antibiotic resistance in animals, as reported in the annual Monitoring of Antimicrobial Resistance and Antibiotic Usage in Animals in the Netherlands reports, published alongside the NethMap report on AMR and antimicrobial use for the human sector. Efforts are underway to expand One Health actions into the environmental sector and address pathogens beyond bacteria such as triazole-resistant Aspergillus species linked to agricultural triazole use.

Indicators and scores

P4.1. Multisectoral coordination on AMR – Score 3

Strengths

- The National Action Plan was developed collaboratively by the three ministries active in the One Health domain, with stakeholder input from all domains.
- Local stakeholders actively contribute to AMR actions. Regional AMR Networks facilitate cross-sectoral collaboration, creating short communication lines and enabling easier cooperation.

Challenges

- A multisectoral governance mechanism to monitor National Action Plan implementation is in the process of being formalized at the time of writing this report.
- The National Action Plan lacks a time-bounded operational plan, allocated budget for new initiatives, and specific national indicators or targets.
- Many National Action Plan activities, such as those within the Regional AMR Networks, rely on grant funding, posing sustainability risks.

P4.2. Surveillance of AMR – Score 5

Strengths

- The human AMR surveillance system is extensive, nearly nationwide and based on routine diagnostic testing.
- National systems monitor antimicrobial use trends in hospitals, long-term care facilities and primary care.
- AMR monitoring in animals has been ongoing since 1998, providing long-term trend data.
- AMR monitoring includes imported foods.

Challenges

- Voluntary participation in human AMR and antimicrobial use surveillance poses risks to long-term sustainability.
- There are limited data on epidemiological risk factors for AMR and difficulties linking patient data and genotypic data, due to privacy issues.
- The diversity of information, communication and technology systems hinders efficient data exchange between healthcare organizations.
- Lack of information on prescribing indications limits provider feedback on prudent antimicrobial use.
- The database of veterinary antimicrobial use is under development but is not complete for all microbial species.
- Integration of environmental surveillance data with human and veterinary surveillance is challenging.

P4.3. Prevention of multidrug-resistant organisms (MDRO) – Score 5

Strengths

- Strong infection prevention tradition exists in healthcare facilities, that includes national guideline implementation, rapid MDRO detection and effective outbreak containment.
- National reporting on healthcare-associated outbreaks provides a national overview and enables targeted prevention.
- Pathogen surveillance of carbapenemase-producing Gram-negative bacteria and methicillin-resistant Staphylococcus aureus supports prevention measures.
- Regional AMR networks promote interfacility collaboration.

Challenges

- Most surveillance is voluntary, and not all MDRO are included in national programmes.
- Sustaining healthcare workers' motivation for MDRO prevention is challenging due to the low prevalence of AMR cases.
- Older healthcare facilities' infrastructure complicates MDRO prevention measures.
- Globalization and international conflicts increase AMR importation risks, while healthcare shortages hinder IPC adherence.

P4.4. Optimal use of antimicrobial medicines in human health – Score 4

Strengths

- A national committee develops antimicrobial use guidelines collaboratively, with an implementation committee for primary care.
- Surveillance systems monitor antimicrobial use trends and provide data for annual reports alongside AMR data.
- Primary care prescribers receive systematic feedback on their antibiotic use.

Challenges

- Current antimicrobial use surveillance systems cannot assess treatment alignment with guidelines.
- Secondary and long-term care prescribers do not receive systematic feedback on antibiotic prescribing.
- Shortages of both first-line and new antibiotics hamper optimal antibiotic use.

P4.5. Optimal use of antimicrobial medicines in animal health and agriculture – Score 5

Strengths

- A national antibiotic policy for animals has achieved a 76.4% reduction in antimicrobial use since 2009.
- Success is based on good public-private collaboration in animal health.

Challenges

- No structural system or financing exist for updating veterinary guidelines as part of broader quality improvement.
- Large-scale farming systems pose challenges for further antimicrobial use reductions.

Recommended priority actions

- Formally establish the functions of the One Health intersectoral coordinating mechanism for AMR, develop a costed operational plan, and implement National Action Plan monitoring and evaluation.
- Ensure sustainability of human AMR and antimicrobial use surveillance systems through stakeholder engagement and continuous process improvement.
- Facilitate efficient epidemiological and laboratory data exchange between healthcare organizations and public health institutions to support AMR prevention and response.
- Expand antimicrobial use surveillance in hospitals and long-term care facilities to include prescribing indications, enabling prescriber feedback for prudent antimicrobial use.
- Stimulate prudent antimicrobial use in the veterinary sector and develop a funded process for evaluating and updating veterinary antimicrobial use guidelines.

P5. Zoonotic disease

Capacity 10. Zoonotic diseases and threats of environmental origin, including those due to the climate

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

In the Netherlands, a well established early warning, surveillance and risk analysis system for emerging zoonosis is complemented by a strong culture of collaboration and communication enabling technical decision-making by consensus.

Building on the Emerging Zoonoses National Programme (2007–2010) and existing human infectious disease structures, an intersectoral coordination mechanism, the Zoonoses Structure, was established in 2011 to enhance the detection, monitoring and control of emerging zoonoses, following the One Health approach. The structure includes regular meetings of several groups:

- Signalling Forum Zoonoses, responsible for the initial risk assessment of potentially zoonotic infections;
- Response Team Zoonoses, conducting full risk assessments and providing advice on control measures, diagnostics, treatment and communication; and
- Outbreak Management Team Zoonoses, which advises the Administrative Governmental Coordination Meeting Zoonoses.

Public authorities involved in the Zoonoses Structure include:

- Ministry of Health, Welfare and Sport
- Ministry of Agriculture, Nature, Food Security and Food Quality
- National Institute for Public Health and the Environment (RIVM)
- Centre for Infectious Disease Control (RIVM-CIb)
- Netherlands Food and Consumer Product Safety Authority
- Municipal health services (GGDs)
- Faculty of Veterinary Medicine, Utrecht University
- Royal GD Animal Health, Deventer
- Association of Dutch Municipalities

- Wageningen Bioveterinary Research, Lelystad
- Incident and Crisis Centre, University Medical Center Utrecht
- Centrum Monitoring Vectors, Netherlands Food and Consumer Product Safety Authority
- Dutch Wildlife Health Centre, Utrecht University
- Erasmus Medical Centre, Department of Virology (since 2023).

During zoonotic events, an Expert Panel Consultation Zoonoses can be convened to analyse available evidence and knowledge gaps. Various professional groups, including veterinarians, public health municipal services and microbiologists, are informed through curated mailing lists.

The One Health approach is further reinforced by a collaboration agreement between the GGD, Netherlands Food and Consumer Product Safety Authority, RIVM CIb and Royal GD. Roles and responsibilities of the stakeholders are outlined on the national One Health webpage. The Zoonoses Structure relies on the Dutch Wildlife Health Centre and the Centrum Monitoring Vectors for detecting environmental threats, though certain environmental domains (e.g., climate change, biodiversity, land use or water management), are not formally represented.

A priority list of 86 emerging zoonoses has been developed using multi-criteria decision analysis. The web-based Emerging Zoonoses Information and Priority Setting platform enables interactive access to the priority-setting model. This tool supports both professionals in risk assessment and policy makers in prioritization or decision-making. An updated list of high-risk emerging zoonoses is expected in 2025. Comprehensive details on notifiable diseases in animals and protocols for mandatory animal disease control measures are available on the Netherlands Food and Consumer Product Safety Authority website. The annual State of Zoonoses report provides an overview of notifiable zoonoses, incidence in humans and in animals, and long-term trends. A National Symposium on Zoonoses is held in conjunction with its publication.

A joint One Health National Action Plan (2022–2026) was developed to strengthen zoonotic disease prevention, detection and response. The Ministry of Agriculture and the Ministry of Health, Welfare and Sport share accountability for this policy in the Parliament. The plan is based on existing policy, technical guidance from the expert group on zoonoses and the evaluation of the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) outbreak management in mink, followed by stakeholder consultations. Environmental surveillance is an integral part of the plan. A key action in strengthening zoonoses disease policy is the development of a One Health data exchange platform, coordinated by RIVM, though data protection and technical concerns remain challenges. Processes and templates for joint risk assessment of zoonotic events are under development.

A Plan for the Prevention of Highly Pathogenic Avian Influenza has been published to reduce infection risks and impacts. Expert advice was integrated into this multisectoral plan, covering public health, wildlife and animal husbandry.

Regular simulation exercises are conducted using public health emergencies and zoonotic outbreak scenarios. Lessons from past events, such as the 2007–2010 Q fever outbreak, as well as exercises, inform strategic preparedness guidance and action plans. Table-top exercises and serious games are used also for learning purposes. A bachelor's degree in One Health is available, and the Citizen Science initiative contributes to both monitoring and awareness raising.

The Netherlands participates in national and international zoonoses surveillance and research initiatives, further strengthening One Health operationalization and facilitating knowledge exchange.

Provisions related to the effects of climate change on zoonotic diseases or related to impacts of extreme weather events on public health

The Netherlands is highly committed to global climate and biodiversity and has ratified the United Nations Economic Commission for Europe-WHO Protocol on Water and Health. The Ministry of Infrastructure and Water Management is responsible for risk assessment and risk management to water and climate change.

The One Health National Action Plan covers "environment and vectors" in its Prevention section, and it considers the National Climate Adaptation Strategy (2016) currently under revision. The LIFE[1]-Integrated Projects Climate Adaptation (2022–2027) programme, led by the Ministry of Infrastructure and Water management and RIVM, aims to accelerate climate adaptation measures, including zoonotic risk reduction. The National Climate Adaptation Implementation Programme (November 2023) presents the approach to implement the National Climate Adaptation Strategy. Importantly, it refers to the risks from emerging vector-borne disease and zoonoses, mapping the National Action Plan for the strengthening of the Zoonotic Disease Policy among the related plans.

RIVM project leads the European network for medical and veterinary entomology VectorNet, established by ECDC and European Food Safety Authority, applying the One Health approach to improve preparedness for vector-borne diseases in Europe. The Centrum Monitoring Vectors is a key member. RIVM has analysed the impact of climate change on health, including weather-related factors influencing the COVID-19 pandemic and the triple crisis. A report on future risks, incorporating projections on public health scenarios, based on temperature, economy and context, is expected in 2025. The National Heatwave Plan is also undergoing an evaluation.

RIVM has a strong capacity in environmental health and supports GGDs during extreme weather events (e.g., floods) or environmental accidents. In July 2021 floods in Limburg and in neighbouring countries had significant health and social impacts. Given the Netherlands' unique relationship with water, flood preparedness is a national priority. The Delta Programme advocates for integrated water management and spatial planning to address water shortages and surpluses. Opportunities for synergies between climate risk monitoring and infectious disease surveillance are being explored.

Wastewater surveillance is a growing field of investment, with the Netherlands participating in the EU Wastewater Integrated Surveillance for Public Health joint action, under the EU4Health Programme.

Beyond health, climate change significantly impacts agriculture, food security and animal diseases. The Signalling Forum Zoonoses could benefit from incorporating meteorological data and environmental early warning systems to their sources. A cost-benefit analysis of applying the One Health approach to zoonotic disease prevention would be valuable.

Indicators and scores

P5.1. Surveillance of zoonotic diseases – Score 4

Strengths

- A formalized structure for the detection, assessment and response to zoonotic diseases is in place, closely interwoven with existing human and veterinary response systems.
- A multidisciplinary surveillance network operates under One Health principles.
- Strong intersectoral trust among professionals across different domains facilitates information sharing.
- The National Action Plan for the Strengthening of the Zoonotic Disease Policy led by the Ministry of Health, Welfare and Sport, and Ministry of Agriculture, Fisheries, Food Security and Nature, includes a dedicated budget to enhance prevention, preparedness, knowledge sharing and the sustainability of surveillance systems across the human, animal and environmental domains.

[1] LIFE stands for *L'Instrument Financier pour l'Environnement*, a funding programme established by the EU to support projects related to environmental and climate action.

- Dutch institutes and policy-makers proactively engage in international collaborations and partnerships for zoonotic disease surveillance.

Challenges

- While data-sharing initiatives exist, a common platform is lacking due to technical and legal obstacles (e.g., divergent interpretation of GDPR).
- Surveillance of non-notifiable zoonotic diseases (human, veterinary, or both) is largely voluntary, often lacking a clear legal framework, limiting data sharing and sustainability.
- Despite the existence of coordinated surveillance activities, priority setting for non-notifiable zoonotic diseases remains a challenge.
- Multiple institutions with distinct roles, tasks and mandates are involved in One Health surveillance, creating coordination challenges and potential delays in data-sharing.

P5.2. Response to zoonotic diseases – Score 5

Strengths

- Several classical zoonotic animal diseases, including brucellosis, rabies, trichinella, echinococcosis and bovine tuberculosis (TB), have been successfully eradicated in the Netherlands.
- Veterinary and public health experts coordinate and facilitate rapid response to zoonotic events at local and regional level.
- Established networks allow for the rapid dissemination of critical information to public health professionals via multiple communication routes.
- Dedicated response personnel, including the Regional Physician Consultant and Regional Veterinary Consultant, ensure effective coordination of zoonotic disease response efforts.

Challenges

- Environment representation in the Zoonoses Structure is limited. Currently, only institutions responsible for vector-borne diseases and wildlife monitoring are included, while other key environmental stakeholders remain absent.
- For certain diseases, veterinary control measures lack a clear legal basis, requiring reliance on the Public Health Act to justify interventions. This can create ambiguity in stakeholder roles and responsibilities during implementation.

P5.3. Sanitary animal production practices – Score 4

Strengths

- The veterinary health system is well functioning, with regular communication among key actors in the animal health sector.
- Livestock traceability is well regulated.

Challenges

- Identification regulations for certain domestic animals remain incomplete (currently covering only dogs and horses), affecting compliance with traceability requirements.
- While biosecurity measures are in place, monitoring adherence at farms and slaughterhouses is a challenge due to a shortage of qualified personnel.

Recommended priority actions

- Develop and implement a data-sharing platform to facilitate collaboration among environmental, public health and animal health institutions, following the One Health approach in the monitoring, risk analysis and response to zoonotic diseases and threats of environmental origin (link to P1).
- Conduct a stakeholder mapping and engagement analysis to define roles and responsibilities within One Health surveillance, particularly regarding the zoonoses structure and its communication flows and decision-making, clarifying the One Health governance for surveillance, prevention, preparedness and response to zoonotic and environmental threats, and facilitating interoperability among the relevant plans (e.g. National Action Plan for Strengthening of the Zoonotic Disease Policy, National Climate Adaptation Strategy and any future all-hazards National Health Emergency Response Plan).
- Strengthen environmental expertise within the zoonoses structure and One Health surveillance platform, incorporating, among others, specialists in climate, biodiversity, land use and water management from public and research entities.
- Enhance the process of intersectoral priority-setting for zoonotic disease surveillance by involving environmental experts, alongside other relevant disciplines.

P6. Food safety

Introduction

Food- and water-borne diarrhoeal diseases are one of the leading causes of illness and death, particularly children and especially in developing 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 functioning 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

The system of surveillance of foodborne diseases and contamination, and response and management of food safety emergencies, is robust and reliable. This includes both the plant and animal food chains. The organizations involved are aware of their roles and tasks, with clear responsibilities and effective communication between the Ministry of Agriculture, Fisheries, Food Security and Nature, the Ministry of Health, Welfare and Sport, Netherlands Food and Consumer Product Safety Authority, the RIVM, municipal health services, Wageningen Food Safety Research, Wageningen Bioveterinary Research-Wageningen University and Research, and other stakeholders like trade associations.

The responsibilities of the involved organizations are established in the Commodities Act (Warenwet, which includes the rules of the EU General Food Law) and detailed in numerous plans and procedures. In the Commodities Act and the Animals Act, provisions on foodstuffs have been elaborated at national level. Furthermore, both EU and national legislation guide surveillance and monitoring programmes. For instance, Directive 2003/99/EC supports the One Health approach to zoonoses. The systems are continuously reviewed and improved as part of the structured evaluation cycle.

A surveillance system is in place for passive monitoring of foodborne diseases. All positive microbiological cases are reported by GGDs and laboratories to RIVM and the data is assessed weekly. Risk-based sampling by the Netherlands Food and Consumer Product Safety Authority monitors hazards (including chemical hazards). International detection of foodborne disease and hazards are received from the ECDC and through the European Rapid Alert System for Food and Feed network. RIVM has a dedicated team to monitor, assess and act upon foodborne disease events. The Netherlands Food and Consumer Product Safety Authority also has a team responsible for both for animal health and food safety, which is available 24/7 for rapid risk assessments. It conducts outbreak investigations of foodborne diseases, ensuring food traceability back to the source of infection in line with the Netherlands Food and Consumer Product Safety Authority Response Plan for Food Safety Incidents.

For GGDs there are direct communication channels with both the Netherlands Food and Consumer Product Safety Authority and RIVM. For large-scale infectious diseases outbreaks, risk assessment and decision-making regarding response measures are led by a multidisciplinary outbreak management team. For chemical and radiological events, the organizations that cooperate in the crisis expert team combine

their knowledge and advise on possible measures. National coordination mechanisms are outlined in the Policy Manual, which is jointly developed by the Ministry of Agriculture, Fisheries, Food Security and Nature, and the Ministry of Health, Welfare and Sport.

Indicators and scores

P6.1. Surveillance of foodborne diseases and contamination – Score 4

Strengths

- The foodborne disease and food contaminant surveillance system has been tested and is part of a continuous review cycle focused on improvement and training.
- The Netherlands is closely connected to international bodies like the European Food Safety Authority, and ECDC, and contributes to international research projects.

Challenges

- Ensuring the sustainable availability of sufficient capacity to maintain the system's desired quality remains a challenge, particularly due to shortages of resources and personnel.
- Sharing samples and laboratory data for public health and animal health is largely voluntary. Financial pressure on the healthcare system threatens the sustainability of collecting sufficient samples and laboratory data.

P6.2. Response and management of food safety emergencies – Score 5

Strengths

- The response system for foodborne diseases and events has been tried and tested and is part of a structured review cycle focused on continuous improvement.
- The Netherlands Food and Consumer Product Safety Authority tracing team is well trained and highly competent in tracing contaminated food or feed back to its source.

Challenges

- Maintaining sufficient capacity to uphold the system's quality remains a challenge due to the shortage of financial resources and personnel. This affects both response activities and training to ensure system efficiency.
- There is currently no online platform for collaboration where stakeholders can share information.

Recommended priority actions

- Explore the possibilities of ensuring data sharing between laboratories and government, including samples and laboratory data for public and animal health, as well as data from private food laboratories. This applies to both infectious disease data and chemical and radiological events.
- Ensure continued prioritization, financing and capacity for existing structures related to surveillance, monitoring, preparedness and response. This includes the continuation of detection forums and their activities, conducting plan and procedure reviews and continuing the review cycle for ongoing improvement across infectious diseases, and chemical and radiological events.
- Expand training for response personnel, covering both general response procedures and low-probability, high-impact scenarios affecting food safety, such as nuclear accidents.
- Develop an online platform for data sharing on foodborne diseases and events. This platform would enable stakeholders to exchange information during both response and preparedness activities.

P7. Biosafety and biosecurity

Capacity 3. Laboratory

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 high-consequence biological agents 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

The Netherlands has an extensive system in place for biosafety. Biosafety guidelines and regulations are in place and are implemented at the national, regional and local levels. Across different sectors, biosafety regulations fall under various regulatory frameworks covering human, plant and animal pathogens as well as for genetically modified organisms (GMO), under the responsibility of different ministries. Overall, the regulations and guidelines demonstrate a highly developed system, particularly in laboratories handling high-consequence pathogens.

Although laboratory biosecurity and dual use research have been on the implementation agenda for a long period of time, there is no regulatory framework governing these areas. Some biosecurity guidelines exist, but they are not mandatory to follow, and there is no national oversight. Several initiatives aim to strengthen biosecurity, including the establishment of a Biosecurity Office that provides best practices on biosecurity and dual use for researchers and institutions. Additionally, RIVM hosts the WHO Collaborating Centre for Laboratory Preparedness and Response for High-Threat Pathogens and Biorisk.

A comprehensive biosafety system is in place, as well as some elements for biosecurity. The country has an incomplete overview of facilities that possess and use high-consequence agents because information is divided over different inspectorates and ministries, as well as the related responsibilities. The facilities working with notifiable or licensed plant or animal pathogens are known and also the licenses for activities with biosafety level 3 (BSL-3)/microbiological laboratory level III pathogens provide insight, but information is too dispersed to allow national oversight based on the current systems. No comprehensive

national biosecurity regulatory framework that regulates the possession and use of high-consequence agents is in place.

The country has training programmes in place, proportionate to the assessed risks, staff roles and responsibilities, with implementation underway. Most facilities housing or working with high-consequence agents have their own specific training programmes in place. Some, but not all personnel working with such agents have received biosafety training; biosecurity training is less advanced and should receive more attention from most institutes/facilities. Sustained academic training aligned with assessed risks is getting increased attention, including for those handling high-consequence agents. All training aligns with the roles and responsibilities of personnel.

The most urgent action to strengthen biosecurity in the Netherlands is to designate the main responsible ministries to lead, define and collectively coordinate the initiation and implementation of the different regulatory building blocks for an intersectoral biosecurity regulatory framework.

Indicators and scores

P7.1. Whole-of-government biosafety and biosecurity system is in place for human, animal and agriculture facilities – Score 2

Strengths

- Biosafety is addressed through different regulatory frameworks for human, plant and animal pathogens as well as for GMO, administered by different responsible ministries. Although the level of detail and prescriptive nature of these legal frameworks vary, biosafety is generally well implemented, particularly in laboratories handling high-consequence pathogens.
- The handling of human pathogens is regulated under the Working Conditions Act which places the responsibility on employers to ensure safe working conditions for employees. Frequently, more specific biosafety requirements for working with GMO serve as reference standards, along with occupational health and safety information leaflets, such as AI-09 Biological Agents and AI-18 Laboratories.
- For animal pathogens, high-consequence pathogens are listed under Regulation (EU) 2018/1882 of 3 December 2018 on the application of certain disease prevention and control rules to categories of listed diseases and establishing a list of species and groups of species posing a risk for the spread of those diseases. The Regulation (EU) 2016/429 on animal health requires appropriate biosecurity, biosafety and biocontainment measures to prevent environmental release, but does not provide detailed specifications. Laboratories must comply with national legislation, including mandatory notification requirements when working with listed pathogens.
- Export controls on dual-use goods are well regulated and implemented under Regulation (EU) 2021/821 of the European Parliament and of the Council of 20 May 2021, setting up a Union regime for the control of exports, brokering, technical assistance, transit and transfer of dual-use items, with the Ministry of Foreign Affairs as the competent authority.
- Plant pathogens not yet present or widely distributed in the EU are classified as quarantine organisms under the Regulation (EU) 2016/2031 of the European Parliament and of the Council of 26 October 2016 on protective measures against plant pests, restricting their import and use. Exemptions may be granted by the National Plant Protection Organization which maintains a record of approved holders, quarantine organisms and quarantine sites approved. These records are reported to the EU annually.
- In the Netherlands, the Biosecurity Office acts as the national information centre for the government and institutions handling high-consequence pathogens. The Biosecurity Office actively promotes biosecurity awareness and develops assessment and awareness-raising tools for biosecurity and dual-use. It is internationally recognized for its contribution to the field.

Challenges

- There is no regulatory framework for laboratory biosecurity and dual-use research, limiting the enforcement of biosecurity measures to prevent misuse.
- The national overview of facilities possessing and using high-consequence agents is incomplete, with information fragmented across different inspectorates and ministries. While facilities working with notifiable or licensed plant or animal pathogens are known and licenses for activities with BSL3/maximum level three pathogens provide insight, the current system lacks centralized national oversight due to dispersed information.
- Article 16 of the Regulations (EU) 2016/429 requires that facilities working with animal pathogens implement appropriate biosecurity, biosafety and biocontainment measures to prevent environment release. However, biosecurity implementation in these facilities does not differ significantly from those working with human or plant pathogens or GMOs, indicating that in addition to legislation, strengthening of a biosecurity culture is needed, both at national and facility level, requiring a shift in attitudes towards biosecurity.
- Most authorities responsible for biosafety compliance use a risk-based approach to prioritize audit and inspection schemes. In the Netherlands, self-assessments are key compliance monitoring tools. While external validation is infrequent, this system appears to function well. However, a lack of up-to-date national oversight means that laboratory incidents, equipment failures and other non-compliances identified in self-assessments are not systematically recorded at the national level, except for Category A infectious diseases, serious injuries and plant pathogens listed as quarantine organisms.

P7.2. Biosafety and biosecurity training and practices in all relevant sectors (including human, animal and agriculture) – Score 3

Strengths

- The Netherlands Biosecurity Office plays a key role in biosecurity education, awareness-raising and training. It promotes a sense of urgency regarding biosecurity and dual-use concerns across all organizational levels and has developed tools such as a vulnerability assessment tool and a dual-use assessment tool to support these goals. An eLearning module on biosecurity is currently being developed to train students, researchers, biosafety officers and management on various aspects of biosecurity and dual-use.
- At facility level, the biosafety officers are responsible for training employees in biosafety and, in some cases, biosecurity. They provide training to laboratory personnel and third parties, such as facility management, cleaning staff, security personnel and first responders. Training is more comprehensive in high-containment facilities. Training materials for biosafety officers are available on the Biological Safety Officers Platform, and the GMO Office conducts annual training for newly appointed biosafety officers.

Challenges

- There is no nationally agreed set of training topics for biosafety and biosecurity. This results in facility-specific training, potentially leading to inconsistencies in content and focus among facilities conducting similar activities.
- In the absence of a regulatory framework for biosecurity, training on biosecurity and dual-use is less advanced and less systematically implemented than biosafety training. Addressing this gap would require regulatory guidance, including academic and postgraduate education on biosecurity and dual use.
- The role of biosafety officer is formally limited to GMOs under the GMO decree. Responsibilities beyond GMOs, such as biosecurity and dual-use, fall outside their official mandate and remain voluntary. Furthermore, biosafety officers are only appointed in facilities working with GMOs.

Recommended priority actions

- Within one year designate the main responsible ministries for initiating and implementing the different regulatory building blocks for an intersectoral regulatory biosecurity framework and an authority to oversee compliance, ideally within an existing regulatory and supervisory structure.
- Develop a regulatory framework for biosecurity to require biosecurity policy implementation in facilities handling high-consequence pathogens.
- Establish a national list of high-consequence human pathogens and invest in a national oversight system for laboratories working with these agents.
- Enhance the integration of biosecurity and dual-use concepts in academic training programmes, particularly in life sciences education.
- Introduce the role of a Biorisk Management Advisor responsible for biosafety, biosecurity and dual-use oversight. This role should expand the mandate of biosafety officer and be extended to facilities where such functions are not well defined. A certified training programme should be developed to support this role.

P8. Immunization

Introduction

Immunization currently prevents 3.5 million to 5 million deaths every year from diseases like diphtheria, tetanus, pertussis, influenza and measles. Immunization is typically one of the most successful 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). Zoonotic diseases 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

The National Immunisation Programme of the Netherlands is free of charge for the population, funded by public budget and based on central procurement for all vaccines. The National Immunisation Programme for 0–18 years is the most important programme, covering all routine childhood vaccinations, and is provided by Youth Health Care Services. The vaccination schedule has been recently updated based on recommendations from the Dutch Health Council. The National Immunisation Programme for 0–18 years also includes maternal diphtheria, tetanus and pertussis and maternal influenza vaccination as well as human papillomavirus vaccination for boys and girls. Following the recommendation of the Dutch Health Council, the intention is to introduce immunization of newborns against respiratory syncytial virus in the National Immunisation Programme for 0–18 years starting in autumn 2025.

Other vaccination programmes include the vaccination of risk groups against hepatitis B, provided free of charge by the centres for sexual health of the GGDs. Additionally, GGDs provide the vaccination against COVID-19 for people 60 years and older and for medical risk groups free of charge. Moreover, the country offers a yearly vaccination against influenza for people 60 years and older and medical risk groups. Since 2020, the Netherlands has also started with a vaccination against pneumococcal disease for older adults (60+). The vaccination against influenza and pneumococcal disease are provided to patients by their general practitioner, free of charge. Although not included in the National Immunisation Programme for 0–18 years, children under the age of 12 from certain risk groups can get vaccinated free of charge against TB. Structural vaccination against herpes zoster for older adults and vaccination against mpox for specific risk groups has been recommended by the Dutch Health Council but are not (yet) being implemented as a national programme. Systems and processes are in place to monitor vaccine coverage and safety, including an electronic immunization registry for the National Immunisation Programme for 0–18 years, and there is excellent collaboration between the various authorities involved.

Despite these strengths, several challenges remain, including declining rates of vaccination coverage, with suboptimal coverage levels for key vaccines such as measles, mumps and rubella vaccination or human papillomavirus.

The effectiveness of monitoring systems is hampered by overly stringent applications of the GDPR, which for example results in less than 1– 6% of measles, mumps and rubella vaccinations being reported anonymously in the national system depending on the executive organization. These anonymous vaccinations cannot be incorporated in vaccination coverage calculations because information on age, dose and region are missing. In addition to complicating the overall ability of public health authorities to ensure effectiveness of vaccination programmes, this poses risks for safety assurance as it becomes more difficult to relate possible side effects to vaccination and to act timely if needed (i.e., vaccine recall).

There are pockets of low vaccination coverage in the so-called 'Bible Belt' and big cities, particularly among vulnerable populations. It is not easy to define what the reasons for non-vaccination are and who are the groups at the highest risk of missing vaccine doses. Therefore, RIVM has launched the research programme SocioVax. This programme was launched to understand factors influencing vaccination participation among different target groups and translate these insights into actionable strategies for policy and practice.

To tackle these challenges, public health authorities initiated a number of actions, such as a free telephone line that people can call for information on vaccines and extra effort by (youth) healthcare professionals in areas with lower coverage for the National Immunisation Programme for 0–18 years. Regarding adult vaccinations, plans for centralizing adult vaccination registries are proposed, mobile vaccination units are used by GGDs, and pilots for cooperation between the GGDs and general practitioners are conducted. Several of these initiatives are examples of best practices that can be employed by other countries with similar challenges.

Indicators and scores

P8.1. Vaccine coverage (measles) as part of national programme – Score 3

Strengths

- Yearly monitoring of vaccination coverage of the National Immunisation Programme for 0–18 years is conducted based on a national register.
- There is good reach via a personalized invitation system for the National Immunisation Programme for 0–18 years and older adults (60+).
- There is good accessibility via child health clinics for the National Immunisation Programme for 0–4 years.
- The implementation of new vaccines is done meticulously based on recommendations from the Dutch Health Council.
- Vaccinations that are part of the national programme are free of charge.

Challenges

- Since 2022, the RIVM receives part of the vaccination data anonymously based on opt-in legislation. Anonymous vaccinations cannot be included in vaccination coverage calculations. The registered vaccination coverage is therefore lower than the actual vaccination coverage.
- Apart from a small temporary improvement just before the COVID-19 pandemic, vaccination coverage of the National Immunisation Programme for 0–18 years gradually decreased over the past decade, with lower vaccination coverage concentrated in specific areas such as neighbourhoods in large cities that require tailored approaches.
- Implementing new vaccines in a national programme sometimes takes a long time when taking European registration as starting point. This relates to multiple factors, such as the political decision to allocate public budget. For example, herpes zoster vaccination for older adults has been recommended by the Dutch Health Council in 2019, but it is not yet implemented as a national programme.

- Human papillomavirus vaccination coverage remains relatively low.
- There are different locations for the administration of influenza and COVID-19 vaccinations.
- There is limited reach regarding medical risk groups younger than 60 years old for vaccination against COVID-19 (without personal invitation) and influenza (with personal invitation).

P8.2. National vaccine access and delivery – Score 5

Strengths

- Central procurement of vaccines exists for national programmes.
- Fine distribution to all executive parties follows good distribution practice standards.
- Maintaining safety stocks for the National Immunisation Programme for 0–18 years and applying forecasting measures result in no stock-outs.

Challenges

- The presence of few vaccine suppliers per vaccine can, in some cases, create dependencies and restrict potential to change vaccine in case a shortage occurs.
- It can be difficult to correctly predict vaccination uptake before implementation (based on surveys) and thus determine the necessary quantity for procurement accurately.
- The location strategy to bring the National Immunisation Programme for 4–18 years and COVID-19 vaccination closer to citizens remains a point of attention as there are often no structural, finely distributed healthcare locations for these vaccinations, such as the child health clinics for the National Immunisation Programme for 0–4 years.
- It can be difficult to determine the executive party (e.g., municipal health services, general practitioners) for new national vaccination programmes for adults when taking the needs of the target group, storage conditions, capacity issues and registration options into account.

P8.3. Mass vaccination for epidemics of vaccine-preventable diseases – Score 4

Strengths

- There are existing detection, advisory and coordination structures for outbreak response at the RIVM.
- A generic preparedness guideline exists in the event of an infectious disease outbreak, which includes information on vaccination as intervention. Moreover, specific guidelines are available, e.g., vaccination in case of an introduction of polio and vaccination with an unregistered vaccine.
- The country is able to build upon existing structures and experiences in case of vaccination in response to outbreaks, as proven with COVID-19, mpox, measles etc.
- There is an existing infectious disease control structure with the GGDs as the executive party for response measures.
- The National Immunisation Programme for 0–18 years is delivered through a structured collaboration with Youth Health Care Services.
- Pandemic preparedness is supported by joint European initiatives to tackle issues together via the European Medicines Agency, ECDC and the Health Emergency Preparedness and Response Authority.

Challenges

- Availability of a (new) vaccine, in case of an outbreak, can increase demand and create supply shortages.
- There is a need for repackaging for fine distribution, especially in case of vaccine shortages.
- A solid structure for adult immunization which is scalable is required in case of an outbreak.
- In case of large-scale vaccination with a new vaccine for adults, a new registration system must be built. This complicates the introduction of new vaccines and makes timely monitoring of vaccine coverage and vaccine safety difficult.
- The National Functionality for Upscaling Infectious Disease Control is under development; however, funding for pandemic preparedness is uncertain (see P2. Financing).
- The country lacks sufficient numbers of immediately employable trained staff in the basic structure that can handle upscaling in case of an outbreak.

Recommended priority actions

- Ensure adequate and consistent interpretation of data protection legislation to facilitate vaccination data exchange between vaccine administrators and public health authorities and the pharmacovigilance centre to improve timely and comprehensive vaccination programme monitoring.
- Intensify activities to understand differences in vaccination uptake between subpopulations and identify best practices to address such populations. Invest in implementing this knowledge, among others, with customized communication and the training of healthcare professionals.
- Prioritize financial and organizational investments in the Youth Health Care Services as a strategy to improve vaccination coverage. Such investments should address accessibility issues and enable tailored approaches, including local initiatives.
- Expand the current national electronic vaccination registry, to include adult vaccinations aiming for a lifelong, efficient monitoring. At a minimum, ensure that there is a central registration for adult vaccination which is interoperable and adaptable to the National Immunisation Programme for 0–18 years.
- Accelerate the implementation of a basic structure for adult immunization programmes which is scalable for ad hoc immunization in response to an outbreak.

Detect

D1. National laboratory systems

Capacity 3. Laboratory

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.

Capacity 3. Ability of laboratory system to deploy new diagnostic tests and scale up testing capacity in response to an emerging threat.

Level of capabilities

The Netherlands has a strong tier-based laboratory system with capacity for delivering data for surveillance and outbreak purposes. The system includes approximately 55 medical microbiological laboratories distributed over the country and with RIVM in a coordinating function in terms of offering reference functions and diagnostics services for uncommon diseases. The reference laboratories' tasks are either performed by RIVM (n=14), together with (n=6) or without (n=8) an external laboratory, or by an external laboratory (n=54). RIVM also coordinates a network of outbreak assistance laboratories that can rapidly be deployed in crisis situations. These outbreak assistance laboratories can contribute with a significant capacity in crisis situations. Should surge capacity for laboratory services be needed, additional laboratories can be mobilized or contracted through the medical microbiological laboratories or other laboratories with sufficient competence. The National Functionality for Upscaling Infectious Disease Control has the task of contracting these additional laboratories in a crisis. The plan for scale-up of laboratory capacity is documented in relevant documents for outbreak preparedness and response.

Experiences from the COVID-19 pandemic indicated that this system was effective and could deliver necessary capacity. However, detailed descriptions of participants in the outbreak assistance laboratories are outdated and would benefit from being formalized. The public health laboratory system is closely linked to research functions and the diagnostic preparedness for including new or additional diagnostic tests is high. Experiences from the COVID-19 pandemic confirmed that clinical diagnostics could rapidly be adapted and new tests introduced into the laboratory system in response to a threat.

Quality of the laboratory system is ensured by a system of professional guidelines and International Organization for Standardization (ISO) standards. Although licencing of laboratories is not mandatory for operating a laboratory that offers human diagnostic services, there is a selection of laboratories adhering to quality standards for clinical diagnostic services. It was confirmed that all laboratory data informing clinical diagnostics and public health comes from laboratories adhering to the agreed quality standards and professional guidelines. Reporting of laboratory data for national surveillance purposes is hampered by the lack of legal framework for data reporting, local interpretations of GDPR legislation and the absence of a modern electronic reporting system and the voluntary basis of reporting. There is also absence of renumeration.

Legal aspects of data reporting, as well as complexity for efficient sharing of isolates and laboratory samples for further characterization will be addressed in the legal and surveillance sections in this evaluation. With regard to the electronic reporting system, a range of disease-specific solutions are being used for the routine reporting of laboratory data for central analysis. A new electronic reporting system that can be applied across diseases and allow for the reporting of sequencing data is being constructed.

The laboratory system in the Netherlands includes capacities for conducting activities in high-containment laboratories, including BSL-3 and inactivation of samples that would require BSL-4 facilities for further analysis by culture. There is redundancy in facilities for BSL-3 diagnostic services and a strong collaboration with research, which could potentially add capacity should this be needed. No BSL-4 facilities are operational but working solutions exist for accessing such functions in neighbouring EU countries. Formalization of this working arrangement should be prioritized for preparedness purposes.

The laboratory system routinely offers advanced analytical services, including whole genome sequencing.

The following strengths were observed:

- The laboratory system is strong with trained personnel and experts operating in national networks, available at all levels.
- The laboratory system has the capacity and capability to generate data for national surveillance and outbreak support.
- Plans and capacity to adapt the laboratory system in response to an emerging threat are in place and have proven effective under the COVID-19 pandemic.
- Laboratories generating data for clinical diagnostic purposes and public health adhere to agreed quality standards.
- The laboratory system offers facilities and competence to handle high-risk microbiological agents up to risk class BSL-3.
- RIVM has long-standing expertise in preparedness and response and in scientific research in the field of infectious diseases, strengthening public health tasks.
- Medical Microbiological Laboratories, especially reference laboratories and those located at academic medical centres, have extensive records of accomplishment in both basic and applied research in infectious disease and preparedness, which benefits the field of public health and diagnostic preparedness.

The following challenges were observed:

- Sharing samples and laboratory data for public health is voluntary for many diseases, which threatens surveillance and outbreak detection functions.
- Strict and diverse national interpretation of privacy regulations (GDPR) hampers sharing of data for public health with RIVM and between partners. In addition, there is no legislation that allows continuous linking of different healthcare data at the individual level (see capacity D2. Surveillance).
- The documentation and agreements defining the network of outbreak assistance laboratories are outdated and need revision.

- The current available electronic systems for reporting data for public health purposes are not fit for purpose and finalizing a new system capable of supporting all reportable diseases and conditions should be finalized.
- There is a working solution operational for BSL-4 services from another EU country. However, no formal agreement for such services is in place.
- The European In Vitro Diagnostics Regulation is a risk for sustaining sufficient expertise and equipment for rapidly developing diagnostics in response to outbreaks or crises.
- This capacity is undergoing strengthening as part of the national plan on pandemic preparedness. Funding for this plan from 2026 onwards is uncertain (see P2. Financing for more details). This challenge applies to all indicators in this section.

Indicators and scores

D1.1. Specimen referral and transport system – Score 4

Strengths

- A system for transportation of specimens between different layers of the national tier-based laboratory system is in place.
- The system includes aspects of coordination, guidelines and fit-for purpose infrastructure.
- The transportation system is capable of shipping high-containment samples according to international standards, to laboratories in other countries for reference testing and characterization.

Challenges

- The transportation system is in routine use, but is not exercised, reviewed, evaluated and updated.

D1.2. Laboratory quality system – Score 4

Strengths

- A strong quality system for laboratories performing clinical and public health microbiology testing and characterization is in place and consists of adherence to ISO standards or professional guidelines.

Challenges

- Adherence to agreed quality standards is not mandatory and the quality of the system relies on the fact that laboratories selected to perform clinical testing have implemented and follow quality standards.

D1.3. Laboratory testing capacity modalities – Score 5

Strengths

- The laboratory system is strong with trained personnel and experts operating in national networks, available at all levels.
- The laboratory system has a strong link to research, something that enhances the capacity to keep updated and maintaining strong diagnostic preparedness to new threats.
- The laboratory system offers routinely capacities for all levels of testing, from basic to highly advanced.

Challenges

- The Netherlands has no BSL-4 laboratory that could be needed for culturing and culture-based characterization of high-containment infectious agents. A working solution for collaborative services from other EU countries is, however, in place for this purpose.

D1.4. Effective national diagnostic network – Score 5

Strengths

- Tier-specific diagnostic testing strategies are in place and a laboratory system ranging from primary testing to highly advanced tertiary services is in place.
- The testing strategies have been reviewed and implemented into practical use and there is a plan for frequent review of the system.

Challenges

- Effective sample sharing can be hampered because of local, inconsistent and inadequate interpretation of data and patient confidentiality legislations.

Recommended priority actions

- Formalize the network of outbreak assistance laboratories to ensure elevated level of laboratory preparedness and ability to scale up laboratory capacity in the event of a crisis.
- Finalize the electronic system for reporting of laboratory data, including sequence information, and ensure that the new system is made operational for surveillance and outbreak preparedness purposes.
- Ensure the setting up of a formal agreement with a laboratory offering services that require BSL-4 facilities.

D2. Surveillance

Capacity 4. 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 early warning surveillance systems that are able to detect events of significance for public health and health security; (2) improved communication and collaboration across sectors and between national, intermediate and primary public health response levels of authority regarding surveillance of events of public health significance; and (3) improved national and intermediate level capacity to analyse data. This could include epidemiological, 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.

Level of capabilities

Surveillance activities in the Netherlands are coordinated by the RIVM in close collaboration with local authorities. There is a strong tradition of effective communication within the surveillance network with regular meetings and collaborative assessment of ongoing events and threats.

Indicator-based surveillance is supported by a legal framework listing notifiable diseases, grouped by type and urgency of the triggered public health actions. Although the list represents the legal basis for surveillance, there is no dedicated process for its regular update. For a disease to be included in the list of notifiable diseases, several stakeholders need to be consulted, and it can therefore be a time-consuming effort. Notifications should primarily support health policy decisions for the municipal health authorities, and are not necessarily intended to inform surveillance per se. Besides notifiable diseases, surveillance of infectious diseases is a mostly voluntary activity in the Netherlands. However, the system is flexible, i.e. the inclusion of SARS-CoV-2 in the list of notifiable diseases did, however, happen very quickly. Surveillance systems are set up to monitor specific disease (groups), such as sexually transmitted infections or respiratory infections, and systems for different diseases are not integrated in a central database, which results in some inefficiencies in terms of data collection, collation, analysis and dissemination. Notification and surveillance systems are mostly separate from patient health records, requiring reporting doctors and nurses to manually extract and report information on cases. In addition, due to data protection limitations (privacy legislation) and specifically restrictions on using a universally applied unique personal identifier (such as the citizen service number) for surveillance, it is not possible to routinely link microbiological, clinical and epidemiological data. However, data at the (near) individual level can be obtained when matching entries are combined by probability matching by postal codes (four-digit), gender, date of diagnosis and age. Despite the above shortcomings, the Dutch surveillance system incorporates monitoring of health data at nearly all levels of the infectious disease pyramid (from citizen radar to primary and secondary care to mortality).

One important limitation of the surveillance system in the Netherlands is that different interpretations of the data protection and privacy regulation may affect data sharing and therefore data completeness and representativeness. Health professionals tend to be very cautious in providing data for surveillance, in their aim to adhere to the law. This issue is particularly relevant for hospital-based reporting. Currently, hospital-based surveillance is fully implemented for surgical site infections and bloodstream infections. Hospital data are also collected for surveillance of HIV/AIDS and TB, as well as for surveillance of some invasive bacterial infections, although not in a comprehensive manner.

As a result, the surveillance system appears complex, with different mandates between diseases and no centrally integrated data infrastructure. Currently, several initiatives are ongoing to address such limitations, including a new legal act that should redefine the scope of surveillance and a new information system that should enable integrated reporting.

Despite these limitations, the Dutch surveillance system continues to provide timely and actionable information, thanks to a strong network of dedicated professionals at national and municipal level, robust laboratory capacity, and established data sharing agreements in place. However, maintaining this system is costly, and with expected reductions in funding, this may become a critical issue.

One significant strength of the Dutch surveillance system is the regular exchange of public health intelligence with health professionals through the electronic weekly early-warning-monitoring-reporting for infectious diseases. The early warning infrastructure around this electronic reporting has operated for 26 years with weekly meetings assessing signals and potential health threats, led by RIVM. Within this network, public health staff at all levels maintain strong communication channels with RIVM. The system integrates both national and international epidemic intelligence. However, introducing a legal provision allowing for reporting of suspected cases or unusual events in a GDPR-compliant manner, could enhance the timeliness of signal detection.

Concerning surveillance of respiratory infections, the Netherlands has a robust primary care network involving around 140 sentinel general practices covering 1% of the Dutch population. They report weekly the number of patients with flu-like symptoms. For some of these patients with flu-like symptoms or symptoms with another respiratory infection, the general practitioners collect a throat and nasal swab for virological confirmation. This is done in approximately 140 sentinel practices. Severe acute respiratory infection surveillance is not in place yet, but two initiatives for the establishing of such surveillance activities are currently in the process of being established, in collaboration with partners outside the RIVM. The first initiative concerns the collection of syndromic intensive care unit data based on an intensive care unit-severity of disease classification system (Apache). The second one concerns the collection of syndromic data (based on financial/insurance data from all wards linked to case-based laboratory data. For both initiatives, several technical and legal challenges have to be solved.

Regarding the ability of the surveillance system to cope with surges in data collection and sample processing during a public health crisis, COVID-19 demonstrated that it could respond effectively, although significant legal issues had to be resolved and caused delays. Linking data by probability matching and achieving the required completeness and timeliness took time. However, the surveillance team believes they are better prepared now due to lessons learned from the pandemic.

Regarding real-time monitoring of hospital capacity and bed availability by type of ward, the Netherlands has significant capacity, and this monitoring system was operational during the pandemic (and continuation is in process).

Furthermore, the country maintains an established wastewater-based monitoring system for respiratory pathogens. This serves as an early warning mechanism and has a good (near-complete) population coverage. In addition to SARS-CoV-2 and AMR monitoring, it may (in future) include monitoring on influenza, polio, measles and mpox, depending on pilots; systematic reporting of these diseases is not yet operational.

The Netherlands has excellent infrastructure for timely and comprehensive assessment of pandemic threats, including modelling capabilities for transmissibility and key epidemiological parameters. Epidemiologist and analytical capacity are well represented at RIVM and other institutions. The RIVM can also rely on a highly skilled modelling team supporting public health decision-making. There is also strong contact tracing at all levels, with a defined early pandemic assessment protocol (the First Few X cases and contacts investigation protocol). Additional strengths include sero-surveillance capacity, behavioural research and contact monitoring studies. Vaccine effectiveness studies are also possible, though data linkage challenges caused delays during the COVID-19 pandemic, particularly due to the lack of direct access to the electronic immunization registry.

Indicators and scores

D2.1. Early warning surveillance function – Score 4

Strengths

- Experts and trained personnel are involved in an array of disciplines across all levels.
- There is an established early warning infrastructure, which is also widely known among (a selection of) health professionals.
- Ongoing active outreach is conducted from national level to other levels through internships and educational sessions.
- Comprehensive review and renewal of (early warning) surveillance infrastructure for infectious diseases at CIb is ongoing.

Challenges

- Review, evaluation and updating of processes does not occur on regular basis, so documentation may not always be up to date.
- This capacity is undergoing strengthening as part of the national plan on pandemic preparedness. Funding for this plan from 2026 onwards is uncertain (see P2. Financing for more details). Please note this challenge applies to all indicators in this section.

D2.2. Event verification and investigation – Score 4

Strengths

- Experts and trained personnel are involved at all levels.
- Mechanisms for verifying, investigating and risk assessment are developed and implemented at all levels.
- There is ongoing evaluation of data sharing, reporting and visualization processes at the central level.

Challenges

- There is a relative lack of synchronization, review and updating of processes at and between different levels of administration.
- GDPR regulations pose challenges to swiftly linking data for further investigation.

D2.3. Analysis and information sharing – Score 5

Strengths

- Significant effort has been made to automate analysis pipelines for epidemiological surveillance at the RIVM, facilitating upscaling in outbreak situations and improved quality of surveillance.
- Historical and baseline surveillance data are readily available, of high quality and can be accessed in various formats (raw, dashboards) by various professional audiences and the public.
- A multidisciplinary team of experts collaborates on infectious disease surveillance.
- For influenza surveillance, data sharing on influenza-like illness incidence is fully automated by the Netherlands Institute for Health Services Research with RIVM.
- An agreement between the Netherlands Institute for Health Services Research and RIVM is in place to share data for early warning, upon request.

Challenges

- Strict interpretation of GDPR regulations in the Netherlands, combined with varying interpretations across healthcare institutions, significantly hampers data sharing for public health purposes. There is no legislation that allowing continuous linkage of different healthcare datasets at the individual level.
- Sharing samples and laboratory data for public health is mostly voluntary. While laboratories currently participate in many national surveillance programmes, financial pressures on the healthcare system, including medical microbiological laboratories, may threaten the sustainability of sample and data collection.
- Severe acute respiratory infection surveillance is being established but faces many technical and legal challenges.
- Local GGD patient systems are not integrated with the national notification system Osiris-AIZ. As a result, the GGDs must manually copy and re-enter relevant information into the national system, which is labour intensive. During an outbreak, this significantly increases the workload and limits the ability to scale up effectively. A future GGD system should be fully integrated with the national system; however, designing and implementing such a system is a complex process.
- The Dutch list of notifiable diseases does not fully align with the mandatory list under the Regulation (EU) 2022/2371. It remains unclear what data must be collected and shared for both event-based and indicator-based surveillance per disease, raising concerns about the Netherlands' ability to meet this obligation within the current surveillance framework.

Recommended priority actions

- Update the public health act under preparation to ensure the secure sharing of necessary personal data and samples across public and private health systems, allowing the possibility of linking laboratory, clinical and epidemiological data.
- Conduct a prioritization exercise to define surveillance priorities.
- Ensure that public health surveillance functions are fully integrated into national healthcare digitalization efforts, leveraging lessons learned from the COVID-19 pandemic, to enhance routine surveillance, performance and crisis resilience.
- Document existing surveillance systems, including protocols for detection and response, and establish a regular system for evaluating and updating their performance.

D3. Human resources

Capacity 5. 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 include nurses and midwives, physicians, public health and environmental specialists, social scientists, communication, occupational health, laboratory scientists/technicians, biostatisticians, information technology specialists and biomedical technicians and a corresponding workforce in the animal sector, such as veterinarians, animal health professionals, para-veterinarians, epidemiologists, information technology specialists, etc.

The recommended density of doctors, nurses and midwives per 1000 population 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 population who can systematically cooperate to meet relevant IHR and performance of veterinary services 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

The Netherlands has a well developed and comprehensive approach to managing human resources in healthcare, focusing on ensuring a sustainable and adequately skilled workforce capable of meeting both routine and emergency healthcare demands. The country employs a range of strategies to address workforce needs, maintain preparedness and respond to public health challenges. This includes capacity planning, training programmes, surge staffing systems and a commitment to ensuring workforce welfare. Despite the country's successes, challenges related to workforce shortages, geographic disparities and sector-specific gaps persist, necessitating continued adaptation and innovation.

The Netherlands employs comprehensive multisectoral strategies to ensure a sustainable and adequate health workforce across public and private sectors. Key initiatives include capacity planning by the Advisory Committee on Medical Manpower Planning (Capaciteitsorgaan), which assesses workforce needs based on demographic and occupational trends, and GGD, which addresses local workforce shortages. Regional networks and national accords, such as the Integral Health Care Accord, aim to improve workforce retention, labour conditions and ongoing education. The workforce strategies span a wide array of roles, including doctors, nurses, epidemiologists, veterinarians and laboratory staff, with well defined career paths, particularly in areas critical to infectious disease control, but might need also to consider data scientists and social scientists. Challenges in this area also include workforce attrition driven by work-life balance concerns and high workloads, despite retention efforts. There are also persistent shortages in specialized roles such as laboratory staff and veterinarians, compounded by increased demand due to factors like rising pet ownership and disease outbreaks.

To implement the IHR (2005), the Netherlands has a well established public health workforce. Continuous training and education are prioritized through systems such as the Dutch Healthcare Professionals Register, which ensures professionals' skills remain up to date in accordance with national and international guidelines. Institutions like the RIVM and GGDs offer specialized training to ensure preparedness for infectious disease outbreaks. However, challenges persist in addressing shortages in key specialized roles, particularly in the animal health sector and certain areas of public health. This is further complicated by geographical disparities in workforce distribution, which affect the country's overall ability to respond effectively to health emergencies.

The Netherlands has robust systems for workforce training, with continuing professional education programmes aimed at preparing health professionals for public health emergencies, such as infectious disease outbreaks and pandemics. These programmes focus on outbreak management, infectious diseases, zoonotic outbreaks and crisis management. Interdisciplinary continuing professional education programmes support a One Health approach, fostering collaboration between public health, veterinary and other sectors. Despite these extensive programmes, many healthcare professionals feel their pandemic preparedness is "just sufficient," with a desire for further training. The integration of these training programmes into the broader workforce strategy remains a challenge, especially in terms of ensuring they reach all relevant sectors effectively.

The Netherlands has established the National Health Care Reserve and a national crisis organization to manage workforce surge during public health emergencies. These systems link healthcare reservists to organizations in need of additional staff during crises. Surge staffing is also supported by regional networks that facilitate the redistribution of workforce resources. The National Health Care Reserve ensures that reservists are well prepared through online training programmes, which help maintain readiness for emergency deployment. However, separate surge staffing systems exist for sectors such as chemicals, radiation and animal health, leading to some fragmentation. While the overall surge capacity is managed through regional cooperation, coordination challenges remain, especially in ensuring equitable distribution of personnel across regions. Additionally, the need to comply with various labour laws, agreements and welfare standards adds complexity to the implementation of surge staffing policies.

Indicators and scores

D3.1. Multisectoral workforce strategy – Score 4

Strengths

- The Netherlands has many strategies and organizations that focus on workforce strategies and capacity planning, considering a multisectoral approach and including many functions within the healthcare sector.

Challenges

- The number of strategies does not seem to cover all functions in the healthcare sector, including data scientists and social scientists.

D3.2. Human resources for implementation of IHR – Score 4

Strengths

- To implement the IHR, the Netherlands has a well established public health workforce.
- The Netherlands has clear communication and emergency communication structures among professionals for public health emergency preparedness and response.

Challenges

- The labour market within the healthcare sector, public and private, shows increasing signs of personnel and financial shortages. With an ageing general population expectations are that staff shortages will further increase in the future. The national government and the Minister of Health are aware of this challenge and have developed plans to ensure a future-proof labour market, including plans to increase and improve labour conditions and make use of technical innovations such artificial intelligence.

D3.3. Workforce training – Score 4

Strengths

- The Netherlands has robust systems for workforce training, with continuing professional education programmes aimed at preparing health professionals for public health emergencies, such as infectious disease outbreaks and pandemics
- Many organizations and institutions provide training programmes to keep relevant healthcare personnel up to date.

Challenges

- Not all professions are included in the training programmes and studies have shown that healthcare professionals score their pandemic preparedness capabilities as 'just sufficient.'

D3.4. Workforce surge during a public health event – Score 4

Strengths

- The Netherlands has comprehensive plans in case of a national crisis, including a public health emergency.
- The Netherlands can call on healthcare workforce surge capacity via the national crisis structure and the national healthcare reserve.

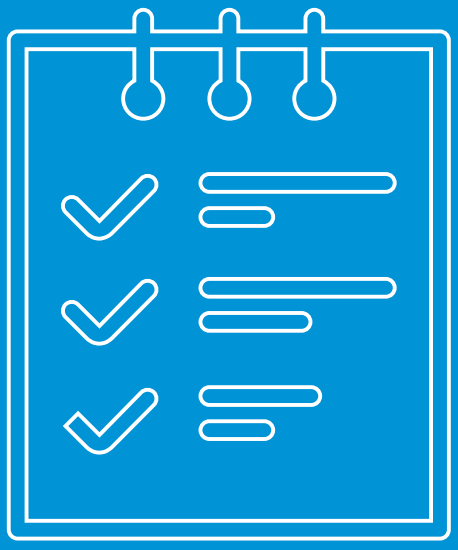
Challenges

- Some plans are still in development, so are not fully ready for implementation yet.
- Overall surge capacity is managed through regional cooperation; however, coordination challenges remain, especially in ensuring equitable distribution of personnel across regions.

Recommended priority actions

- Further develop and implement innovative labour market strategies to ensure a sustainable healthcare workforce in both the public and private sectors.
- Enhance pandemic and outbreak preparedness training programmes for healthcare professionals on all levels and across multiple sectors.
- Strengthen surge capacity plans by incorporating all relevant sectors into public health emergency response and planning.

Respond



R1. Health emergency management

Capacity 6. Health emergency management

Introduction

This capacity focuses on management of health emergency and systems for enabling countries to be prepared and operationally ready for response to any public health event, including emergencies, as per the all-hazard requirement of IHR. Ensuring risk-based plans for emergency preparedness, readiness and response, robust emergency management structures and mobilization of resources during an emergency is critical for a timely response to public health emergencies.

Target

(1) Existence of national strategic multi-hazard emergency assessments (risk profiles) and resource mapping. (2) Existence of emergency readiness assessment. (3) Development of national health emergency operations centre plans and procedures. (4) Establishment of an emergency response coordination mechanism or incident management system. (5) Evidence of at least one response to a public health emergency within the previous year that demonstrates that the country sent or received medical countermeasures (MCMs) and personnel according to written national or international protocols. (6) Existence of an emergency logistic and supply chain management system/mechanism. (7) Existence of policies and procedures for research, development and innovation for emergency preparedness and response.

Level of capabilities

The Netherlands has extensive expertise, guidance, protocols and institutions for managing a diverse range of health-related emergencies, from infectious diseases to CBRN events.

The country has established a comprehensive and robust multi-hazard crisis management system, relying on inputs from numerous entities at both national and regional levels. This system necessitates rapid and efficient coordination across all actors.

At the national level, crisis management is coordinated by the Ministry of Justice and Security, implemented by the National Coordinator for Security and Counterterrorism, which includes the National Crisis Centre. The National Crisis Centre collaborates with interdepartmental crisis coordination bodies, including the Interdepartmental Coordination Consultation, the Interdepartmental Committee on Crisis Management and the Ministerial Committee for Crisis Management.

The Departmental Crisis Centre of the Ministry of Health, Welfare and Sport serves as the central coordination point for health crisis preparedness and response. The Ministry of Health, Welfare and Sport is represented in the national crisis structure through the Interdepartmental Coordination Consultation and the Interdepartmental Committee on Crisis Management.

For infectious disease outbreaks with national implications, the Ministry of Health, Welfare and Sport leads the response, with coordination by the CIb. Outbreak management teams provide expert advice to the ministry, comprising specialists from both the national level and affected regional municipal health services. The Administrative Coordination Consultation assesses Outbreak Management Team recommendations for feasibility, among other aspects.

The Coordinated Regional Incident Management Procedure (GRIP) is the primary framework for emergency management. This protocol, used nationwide by emergency services and government agencies, is structured into several escalating phases (GRIP 1–4), based on the severity and geographical impact of an incident. The National Crisis Management Information System facilitates information sharing across agencies at regional and national levels.

In response to the COVID-19 pandemic, the Netherlands formalized its capacity to assess social impact of response measures. This perspective is now integrated into multisectoral decision-making mechanisms, providing a structured approach to public health and social measures.

For CBRN events, the Netherlands has an intersectoral response plan, the Protocol for Suspicious Objects, which outlines joint response across emergency services and other relevant organizations. However, this protocol is limited to the detection and analysis and does not include detailed response procedures. Coordination standard operating procedures between public health first responders and with juridical investigation teams for intentional CBRN incidents remain largely undefined, relying on the GRIP framework. Awareness and coordination among health professionals regarding intentional release scenarios could be strengthened.

While the Netherlands has developed multiple national crisis plans addressing threats such as infectious diseases, terrorism, military threats and radiation emergencies, it lacks a consolidated emergency plan encompassing all hazards with common guidelines for emergency management. Informal coordination arrangements exist among actors. Further formalization of roles, responsibilities and collaboration would be beneficial.

The emergency response infrastructure incudes advanced systems for early warning, detection and incident management. Coordination between first responders and hospitals ensures capacity management, and a specialized major incident hospital is available for both civilian and military purposes. As a United Nations and EU Member State, the Netherlands actively participates in international health emergency management fora, such as the EU Health Security Committee, and takes part in multinational simulation exercises.

MCMs are not explicitly recognized as key response measures within existing health emergency frameworks. While a dedicated MCM plan is not in place, protocols exist for the deployment, reception and distribution of MCMs, both through national structures, including municipal public health institutions, safety regions and university hospitals, and in coordination with other countries.

In 2023, the National Functionality for Upscaling Infectious Disease Control was founded to coordinate medical-operational processes during national-scale Class A infectious disease outbreaks. It collaborates closely with the RIVM's Department of Vaccine Supply and the GGDs, and is currently developing a plan to address logistical challenges related to MCM distribution.

A key feature of the Dutch preparedness framework is the delineation of responsibilities for MCMs. The national government, through RIVM, the Netherlands Food and Consumer Product Safety Authority, and safety regions, ensures the availability of MCMs for public health emergencies, including epidemics, pandemics and CBRN incidents. However, responsibility for securing MCMs for healthcare provision, including curative and long-term care, rests primarily with private healthcare providers. The government, in principle, does not procure MCMs for hospitals and other healthcare institutions, but functions have been designated for the monitoring of supply and demand for critical medical devices and that may be expanded to other MCM categories.

To mitigate supply chain vulnerabilities, the Netherlands has implemented various but limited mechanisms, including strategic stockpiles, supply chain reserves within the healthcare sector, and advanced purchasing or production agreements, including those at EU-level. In flexible manufacturing, the Netherlands has secured agreements with manufacturers of filtering facepiece class 2 masks to ensure scalable production capacity, including stockpiles designed to bridge the gap between the onset of an emergency and full-scale production.

The Netherlands maintains strategic MCM stockpiles of primarily medicinal products, including vaccines and antivirals, to address a range of public health emergencies, from incidental poisonings and infectious disease outbreaks to CBRN incidents. These stockpiles are primarily managed by RIVM's Department of Vaccine Supply, the National Poisons Information Centre, Sanquin (the national blood bank), safety regions and contracted private entities. However, challenges persist, including the absence of structural planning, the lack of comprehensive qualitative and quantitative stockpile strategies, and concerns regarding the long-term sustainability of stockpiles.

Indicators and scores

R1.1. Emergency risk and readiness assessment – Score 4

Strengths

- A strong culture of anticipatory risk assessment exists at the national level.
- Key risks are regularly profiled, assessed and exercised.
- Routine monitoring is conducted for new and emerging risks across sectors, with risk assessments conducted, as necessary.

Challenges

- An all-hazard, all sector national risk assessment is performed, but actual, continuous reprioritization of emerging risk is not done through national risk assessment at all levels or in the field.
- Fragmented and/or overlapping areas of expertise and responsibility can hinder intersectoral coordination in developing multi-hazard risk assessments.

R1.2. Public health emergency operations centre – Score 3

Strengths

- The National Crisis Centre is an interdepartmental coordination centre that facilitates cross-sectoral linkages during emergencies.
- A flexible emergency operations centre structure is implemented, combining standard operating procedures with crisis adaptability.

Challenges

- There is currently no designated physical emergency operations centre facility for health emergencies, though this may be addressed with the completion of the new RIVM building.
- The EU/EEA Early Warning and Response System is primarily used for infectious disease control, while other sectors, such as radiation and chemical hazards, rely on separate communication systems.

R1.3. Management of health emergency response – Score: 4

Strengths

- The country's strong tradition of cross-sectoral and regional coordination is supported by the National Crisis Management Information System.
- A new operational department at RIVM has been established to support medical-operational processes during large-scale infectious disease emergencies.
- Routine participation in simulation exercises and after-action reviews strengthens preparedness.

Challenges

- Intersectoral coordination and information exchange can be challenging between certain sectors (e.g., medical and security sectors).
- Information exchange between regional GRIP structures and national levels, as well as between safety regions, can be inconsistent.

R1.4. Activation and coordination of health personnel in a public health emergency – Score 3

Strengths

- A strong nationwide structure for education, training and practice exists, both in administrative and healthcare contexts, with high-quality medical and epidemiological training at universities.
- Clear protocols for scaling up are under development, through the foundation of the National Functionality for Upscaling Infectious Disease Control.
- There is access to international mechanisms for surge capacity strengthening through United Nations and EU networks and systems.

Challenges

- Scaling up during emergencies is challenging due to a shortage of medical personnel. Demographic trends may further exacerbate workforce shortages.
- Legal and regulatory frameworks for quality assurance in healthcare can hinder the rapid deployment of medical personnel.

R1.5. Emergency logistic and supply chain management – Score 3

Strengths

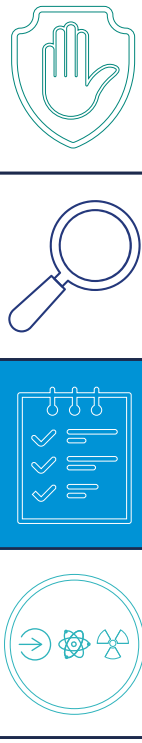
- Stockpiles exist for some infectious disease outbreaks and CBRN incidents.
- There is professional management of strategic stockpiles for vaccines and antivirals, and other prophylaxis (e.g., radiation) with extensive logistical experience in distribution and planning.

Challenges

- No structural planning exists for MCM stockpiles for public health emergencies; stockpiles are mostly established based on incidents or emerging risks. Benefits can be obtained by clarifying tasks, roles and responsibilities regarding MCM stockpiles and availability of MCM, and by identifying the vulnerability of supply chains.
- No dedicated MCM plan is in place and MCMs are not specifically addressed in national crisis plans.

Recommended priority actions

- Ensure a coordinated, effective and timely response to health emergencies and events with public health consequences by developing a comprehensive, operational, all-hazards National Health Emergency Response Plan, or equivalent, in alignment with the Regulation (EU) 2022/2371 and the National Crisis Management Handbook that clearly defines the overarching national health emergency structures (e.g., Public Health Emergency Operations Centre), mechanisms (e.g., Incident Management System), and roles and responsibilities of all relevant stakeholders and sectors.
- Complement the national multi-hazard risk assessment with a process for a routinely updated (every three years) emergency risk profile and prioritization for serious cross-border threats to health, which could be used to inform a range of emergency planning activities, such as identifying crisis-relevant MCMs to be included in the stockpile through to gap analyses for threat-specific plans, exercises, or case management protocols.
- Improve intersectoral coordination and collaboration through the development of a multisectoral governmental strategy which formalizes coordination and collaboration structures, information sharing, and ensures joint multisectoral training and exercising on intentional release scenarios (link to R2).
- Expand and enhance the national plan for surge capacity by strengthening pre-deployment, deployment and post-deployment strategies, through examining health law, considering for instance integrating animal health or other personnel into certain surge capacity roles for public health events. In addition, consider expanding national engagement with international mechanisms such as EU Health Task Force, and emergency medical teams for both the sending and receiving of healthcare professionals during crises.
- Develop a strategic, all-hazards strategy towards ensuring supply of critical MCMs for various types of health emergencies outlining the MCM-related responsibilities and actions at national and regional level, respectively, with the involvement of relevant stakeholders including in crisis response and health care. This should include provisions on crisis procurement, stockpiling, manufacturing, supply chain management, logistics and crisis allocation as well as MCM-innovation, along with a description of how different interventions complement each other.
- Consider developing tools to monitor supply and estimate demand of MCM as well as for early warning, considering the reporting requirements that may be applicable in case of a public health emergency at Union level.
- Further define mechanisms to monitor and evaluate the implementation, timeliness and effectiveness of public health and social measures. This may take into account considerations from ECDC guidance and WHO guidance on this topic.
- Create and disseminate a repository which contains the findings from health system assessments, plans, evaluations, simulation exercises, after-action reviews, or similar outputs, so as to more systematically identify gaps and promote a coordinated awareness of the health emergency preparedness landscape within the Netherlands.



R2. Linking public health and security authorities

Introduction

Public health emergencies pose special challenges for law enforcement, whether the threat is human-caused 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

At least one public health emergency response or exercise was conducted in the past year, including information sharing with security authorities. This exercise took place within the formal national crisis structure and with related procedures (i.e. all-hazard national crisis handbook). Public health and security authorities engage in a joint training programme on a limited scale only, and only in relation to the Protocol for Suspicious Objects. This is limited to exploration, sample taking and detection.

the Netherlands has conducted a couple of joint exercises in the past, with reports available for review. Identified areas for improvement include the absence of formal data-sharing agreements, limited partner access to the National Crisis Management System, and procedural differences across the safety regions.

Indicators and scores

R2.1. Public health and security authorities, (e.g., law enforcement, border control, customs) are involved during a suspect or confirmed biological, chemical, or radiological event – Score 3

Strengths

- There is an established all-hazards approach to crisis management, including the Protocol for Suspicious Objects, GRIP, and National Crisis Management Information System.

Challenges

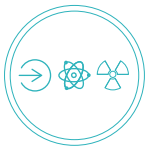
- Information sharing between public health and security authorities remains a challenge. Justice departments and technical investigators are often reluctant to share information with public health authorities.
- The recovery phase following an incident, particularly the clean-up and transport of potentially contaminated evidence, human remains, vehicles and infrastructure, has received limited attention.

- There is a need for more operational-level exercises that address cross-sectoral collaboration. While large-scale field exercises are not always necessary, scenario-based discussions could improve cross-sectoral understanding of roles and responsibilities.

Recommended priority actions

- Convene a multisectoral working group to address coordination challenges between public health and security authorities.
- Establish a working group to address the issues in clean up and transport of potentially contaminated evidence, human remains, vehicles and infrastructure.
- Plan and conduct simulation exercises focused on on-site collaboration and coordination between public health and security authorities.
- Develop a targeted training programme covering key topics such as cooperation between law enforcement and public health, joint investigations, basic CBRN awareness, intentional release scenarios, evidence collection, reporting, multi-scenario incidents and incident management.



R3. Health services provision

Capacity 7. Health service provision

Introduction

Resilient national health systems are essential for countries to prevent, detect, respond to, and recover from public health events, while ensuring the maintenance of health systems functions, including the continued delivery of essential health services at all levels. Particularly in emergencies, health services provision for both event-related case management and routine health services are equally as important. Moreover, ensuring minimal disruption in health service utilization before, during and beyond an emergency and across the varied contexts within a country is also a critical aspect of a resilient health system.

Target

(1) Evidence of demonstrated application of case management procedures for events caused by IHR-relevant hazards. (2) Optimal utilization of health services, including during emergencies. (3) Ensuring continuity of essential health services in emergencies.

Level of capabilities

the Netherlands has a strong resilient mixed social health insurance and free market healthcare system, demonstrating well developed capacity in providing health services during both peacetime and emergencies. A comprehensive legal framework and a continuous quality health management system ensure the health system's ability to deliver both routine care and event-related case management during emergencies. Additionally, the Dutch Health and Youth Inspectorate provides ongoing supervision of health facilities, including major trauma centres, primary care and municipal public health facilities.

A national policy framework is in place for health emergency management. The Ministry of Health, Welfare and Sport has designated ten hospitals as trauma centres, each responsible for coordinating a Regional Consultation for Acute Care Chain. Together, the ten regions form the National Acute Care Network, the mission of which, alongside the national Risk Management and Crisis Management platform, is to ensure the healthcare sector is adequately prepared for disasters and crises. Additionally, the National Network Acute Care oversees and activates the National Coordination Centre for Patient Distribution during crises.

The National Coordination Centre for Patient Distribution monitors and manages data on acute care resources, operates a central patient registration system and coordinates patient referral within and across regions to ensure access to essential health services. If medical evacuations are required across regions, supra-regional distribution is facilitated by the Patient Evacuation Coordination Centre.

Following the quality framework for Risk Management, Crisis Management and education, training and exercises, every care facility conducts regular risk assessments. Every region aligns its programme with a broader multi-year strategy, ensuring a structured approach to evaluation, continuous improvement, post-event reviews and simulation exercises.

A priority health conditions list exists and risk assessments for notifiable health threats are regularly performed at the national level. For example, weekly assessments of infectious diseases and monthly zoonoses assessments further strengthen early detection and preparedness.

Health sector guidelines and standards are developed by professional bodies and tested by national institutions, such as the National Health Care Institute, to determine whether they should be added to the national registry. As a result, there is no single update process for national guidelines; rather, they are iteratively revised and improved. The scope of these guidelines is extensive, covering IHR-relevant hazards. the Netherlands follows an all-hazards approach to health emergency response, relying on a coordinated regional incident response structure.

National referral protocols are established which cover the entire health system, from primary care to tertiary and quaternary facilities. These protocols are distributed to all healthcare facilities and staff. Ambulance referral protocols are streamlined with hospitals to optimize patient admissions.

Regular training exercises, including ambulance services, are conducted at the hospital level. Referral protocols have been tested in clinical case management scenarios. Tertiary hospitals are designated for triage and admission of patients with suspected high-consequence diseases.

Indicators and scores

R3.1. Case management – Score 4

Strengths

- Strong cooperation between different levels of care ensures that incident care guidelines, referral systems and partnerships are well integrated across the entire healthcare chain, from hospitals to general practitioners.
- Different levels of care work closely on guideline development and incident response, such as the structural participation of general practitioners in high-consequence infectious disease platform meetings and the GRIP structure.
- Since COVID-19, the healthcare system has demonstrated adaptability in incident response and learning. A notable example is the establishment and continuation of the National Coordination Centre for Patient Distribution since 2020.
- Guidelines and standards are developed by the healthcare sector itself, ensuring alignment with real-world practices, and allowing iterative updates without waiting for centrally determined evaluations.

Challenges

- Stockpile shortages (e.g., intensive care unit beds, critical medical products and blood) may arise in prolonged crises, particularly due to the market-based healthcare system. Shortages at all levels of care might be an issue and limit the capacity to provide proper care to many patients.
- Limited flexibility and scalability of care result from a lack of reserve healthcare personnel and rigid governance on care quality.
- Absence of a legal framework enabling the mobilization of additional healthcare personnel during crises could hinder emergency response capacity.
- Anticipatory strategic planning and implementation for the case management of priority health risks are not harmonized at the national level.

R3.2. Utilization of health services – Score 4

Strengths

- Patient involvement in healthcare implementation and evaluation foster high public trust. In 2023, 77% of the population expressed confidence in hospitals, increasing to 92% confidence in general practitioners, making healthcare one of the most trusted public institutions in the Netherlands.
- Close collaboration between healthcare and research institutions positions the Netherlands as a leader in technology-driven and data-driven healthcare innovation.
- Highly developed data exchange standards ensure strictly privacy protection for patient data.

Challenges

- The fragmented healthcare data landscape limits data integration and accessibility.
- There is limited use of health service data for policy development and evaluation.
- There is limited integration of health utilization data sharing between different levels of care and across public and private providers, reducing efficiency and coordination.
- The country lacks reliable, case-mix-adjusted data (reflecting patient and disease characteristics) which hinders effective decision-making and efficiency within the health sector.

R3.3. Continuity of essential health services – Score 4

Strengths

- Subsidiarity is a preparedness strength of the Dutch healthcare system. While a national crisis plan exists (including the National Coordination Centre for Patient Distribution), the 10 Regional Consultation for Acute Care Chain regions play a key role in emergency planning and response.
- Regional healthcare risk profiles allow each region to tailor emergency plans based on local demographics and geography, leading to more efficient and effective responses.
- Multisectoral collaboration within the GRIP structure enhances response coordination by integrating the fire department, ambulance services, police and healthcare providers into a scalable emergency response framework. This approach accelerates coordination and action during the critical early phase of crises.

Challenges

- Due to the great independence of regions and the Dutch healthcare system in general, it can be difficult to set up a national coordination structure and bundle all necessary information on service utilization capable of enhancing targeted health policies and planning.
- The obstacles surrounding data sharing based on different interpretation of the GDPR are relevant.
- Limited stockpiles and a lack of reserve healthcare personnel may challenge the maintenance of essential care and restrict emergency response scalability.

Recommended priority actions

- Harmonize subnational clinical case management and referral guidelines through national strategic planning to identify and address capacity gaps.
- Periodically evaluate health service utilization data across both public and private health providers and integrate findings into a streamlined, bottom-up data flow to enable timely, evidence-based decision-making at all levels of care.
- Ensure that health emergency plans describe pre-defined resources to be made available to all healthcare providers.

R4. Infection prevention and control

Introduction

To have strong, effective infection prevention and control (IPC) programmes that enable safe health care and essential services delivery, and prevention and control of healthcare-associated infections (HCAIs), it is critical to initially ensure that at least the minimum requirements for IPC are in place, both at the national and facility level, and to gradually progress to the full achievement of all requirements within the WHO IPC core components recommendations.

Target

(1) National IPC programme strategy has been developed and disseminated. (2) Implementation of the national IPC programme plans, with monitoring and reporting of HCAIs. (3) Established national standards and resources for safe health facilities.

Level of capabilities

Safe and high-quality care in healthcare facilities is mandated by law. Healthcare facilities are responsible for implementing IPC measures to prevent HCAIs. In hospitals, the Dutch Society for Medical Microbiology and the National Association of IPC Specialists in Healthcare have developed the Quality Guideline for Infection Prevention in Hospitals. This comprehensive hospital IPC guideline aligns with the WHO core components of IPC programmes and includes requirements for multidisciplinary IPC teams. Additionally, the Dutch Collaborative Partnership for Infection Prevention Guidelines, a group of medical experts and IPC experts, develops guidelines on specific IPC topics.

Implementation of IPC practices is supported by nine regional AMR networks, facilitating interdisciplinary collaboration among professionals in hospitals, long-term care, primary care and public health at national and regional levels. Regulatory oversight of IPC in healthcare facilities is conducted by the Health and Youth Care Inspectorate. Some hospitals also pursue external accreditation through Qualicor or the Joint Commission International.

Implementation of IPC in long-term care varies greatly. While some long-term care facilities partner with hospital IPC departments, or have in-house IPC experts, others rely on self-employed or outsourced IPC staff. Engagement with the regional AMR networks and national initiatives, such as a recent IPC coaching programme, also varies across facilities.

Surveillance of HCAIs is voluntary in both hospitals, via prevention of hospital infections through surveillance (PREZIES), and in long-term care facilities via the surveillance network for infectious diseases in nursing homes. While hospital participation in national HCAI surveillance remains high, it is declining, and participation from long-term care facilities is low. HCAI rates have remained stable in recent years, but surveillance data have been underutilized for targeted HCAI prevention. Surveillance of IPC process measures is not commonly conducted, as its added value is considered limited in settings with high adherence to IPC guidelines.

A key challenge in optimizing IPC implementation is the variation in supervision across different staff groups, particularly among contracted and outsourced workers who fall outside direct facility oversight. For example, environmental cleaning staff and occupational safety and health personnel may be outsourced, making their integration into a facility's IPC programmes more complex. Inconsistent IPC training is also identified as a risk, prompting discussions on establishing national IPC education standards.

Indicators and scores

R4.1. IPC programmes – Score 4

Strengths

- National IPC guidelines are available across various healthcare sectors. Guideline development is centrally organized with inputs from experts from professional societies. Core components of IPC are embedded within guidelines, programmes and implementation tools.
- Hospitals have highly trained infection prevention staff and IPC teams, in line with the Quality Guideline for Infection Prevention in Hospitals guideline.
- National IPC programmes for long-term care are beginning to show results.

Challenges

- Structural funding for Dutch Collaborative Partnership for Infection Prevention Guidelines guideline development remains uncertain.
- Healthcare sectors face human resource constraints, with high workloads limiting IPC experts' ability to train new professionals, challenging the long-term sustainability of IPC capabilities.
- Environmental sustainability policies, now a core IPC component, require additional training and time for IPC professionals.
- IPC is not permanently integrated into healthcare worker training curricula.
- Sustainable IPC implementation and behavioural change in long-term care facilities require further strengthening.

R4.2. HCAI surveillance – Score 4

Strengths

- Nationally coordinated HCAI surveillance networks are established for hospitals (PREZIES) and nursing homes (surveillance network for infectious diseases in nursing homes). The PREZIES network has fostered strong collaboration between public health, hospitals and professional associations of medical specialists.
- PREZIES includes an automated surveillance module that is currently being upscaled. Further automation of surveillance of HCAIs, IPC procedures and infrastructure is in development, aiming for a more sustainable, less resource-intensive and high-quality surveillance system.
- Strong international collaboration exists with the ECDC and through participation in the PRAISE network (European network for coordinated development of automated HCAI surveillance).
- Surveillance of infections, antibiotic use and hand hygiene in nursing homes is possible through a surveillance network for infectious diseases in nursing homes.

Challenges

- Participation in national HCAI surveillance remains voluntary for both hospitals and nursing homes. Due to the substantial workload involved, participation is not prioritized by many facilities, leading to suboptimal participation. Encouraging participation could be incorporated into IPC guidelines.
- Responsibility for IPC lies entirely with individual hospitals and nursing homes, and it is unclear to the national IPC programme whether surveillance data has translated into action.

R4.3. Safe environment in health facilities – Score 4

Strengths

- Water, sanitation and hygiene standards are embedded in national IPC guidelines.
- Sterilization services in hospitals are staffed by qualified personnel and are also available to other healthcare facilities.
- Training tools for IPC measures and safety protocols are available for healthcare workers across multiple sectors.

Challenges

- Occupational health and safety experts are sometimes outsourced, making availability and integration with facility IPC activities challenging.
- Certain staff groups face a higher risk of non-compliance with IPC standards. These might include self-employed workers, outsourced staff, labour migrants and volunteers, as training and oversight are more complex.
- There is no national-level educational programming for safety in healthcare environments and IPC measures.
- Long-term care professionals receive less IPC training than hospital staff, due to staffing and budget limitations.
- Coordination between different inspectorates responsible for health and safety in healthcare (e.g., the Dutch Labor Inspectorate and the Health and Youth Care Inspectorate) can be challenging.

Recommended priority actions

- Emphasize the importance of infection prevention and the role of IPC professionals within national policies addressing healthcare staff shortages.
- Ensure continuous financial support for development of national IPC guidelines.
- Establish national standards for IPC training, including curriculum requirements and retraining frequency for all workers in healthcare settings.
- Conduct a national assessment of healthcare worker safety risks related to IPC, identifying personnel groups associated with IPC gaps, and evaluating the impact of outsourcing occupational health and safety expertise.
- Optimize surveillance systems for HCAIs in hospitals and long-term care by improving ease of reporting HCAIs and ensuring surveillance data is actionable at local, regional and national levels.

R5. Risk communication and community engagement

Capacity 8. Risk communications and community engagement

Introduction

Risk communication and community engagement (RCCE) 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

States Parties use multilevel, multisectoral and multifaceted RCCE capacity for public health emergencies. Real-time exchange of information, advice and opinions during unusual and unexpected events and emergencies so that informed decisions to mitigate the effects of threats, and protective and preventive action can be made. 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 community engagement and infodemic management.

Level of capabilities

National RCCE functions are established and being implemented, alongside relevant aspects of infodemic management, behavioural and cultural insights. However, human and financial resources remain insufficient, and multisectoral coordination across technical areas, while occurring, is limited.

Risk communication activities are implemented through a whole-of-government approach, involving all relevant actors, including international and national partners, media and influencers. Communication is conducted through online and offline channels in a timely, accessible and understandable manner. Evidence and data gathered through measurement and evaluation are systematically used for continuous learning and improvement of RCCE interventions.

Communities are actively involved in emergency response and co-design emergency response initiatives. Stakeholders such as community leaders, faith-based organizations and civil society groups are mapped, but engagement occurs only on an ad hoc basis. Formal or informal community feedback mechanisms, such as hotlines and social-behavioural research, are in place and inform emergency responses. Community engagement coordination mechanisms exist at national and intermediate and community levels.

Indicators and scores

R5.1. RCCE systems for emergencies – Score 3

Strengths

- Response plans exist at all levels. Most municipal health services have emergency response plans, while RIVM has supra-regional plans, and the National Coordinator for Counterterrorism and Security has plans for nationwide or international large-scale emergencies.
- Community engagement structures are in place within most organizations.
- RIVM has a dedicated research unit on community engagement. During COVID-19, this unit conducted ongoing behavioural insights research, which continues and can be scaled up during crises.
- The network of communication experts is well established, with efficient coordination channels.

Challenges

- Experts providing contradictory information, whether intentionally or unintentionally, remains a challenge.
- Stakeholder management could be improved for better oversight, but this will remain a complex challenge.
- Training for communication partners needs to be strengthened and conducted more frequently.

R5.2. Risk communication – Score 5

Strengths

- Most networks are well organized, with regular engagement among communication professionals, even during non-emergency periods. This allows for rapid coordination in crises.
- Monitoring systems are in place, network journalists are well integrated and toolkits support communication professionals.

Challenges

- Enhancing communication evaluation for faster, high-quality assessment remans a challenge.
- Maintaining networks is difficult due to frequent staff turnover, and the pace of communication methods is evolving rapidly.

R5.3. Community engagement – Score 3

Strengths

- Public engagement structures exist at the regional level and have been in place for an extended period.
- One-to-one engagement helps identify small target groups, allowing tailored messaging based on community insights.
- RIVM's behavioural department is expanding, with ongoing research into its potential applications.
- National initiatives, such as social media monitoring and information-sharing between departments, are actively used and deployed.

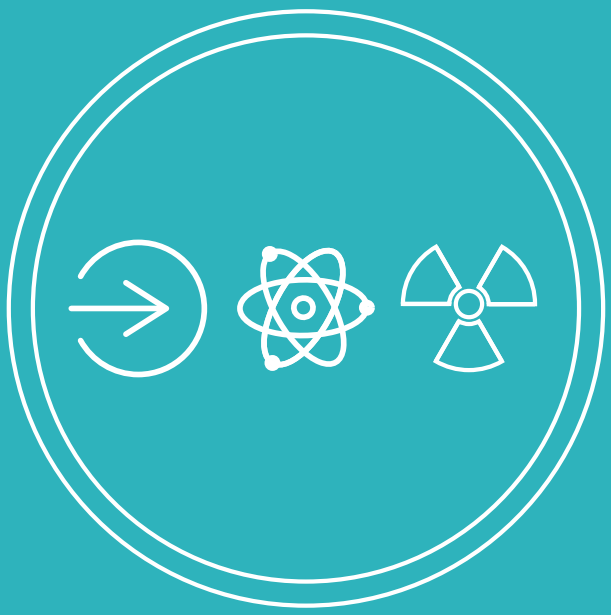
Challenges

- Defining target groups for communication is increasingly difficult, as audiences are becoming more fragmented.
- Significant differences between neighbouring regions make information-sharing across regions challenging.
- While behavioural research insights were used during COVID-19, it remains difficult to generate public engagement insights for smaller-scale emergencies.

Recommended priority actions

- Continue engagement and coordination between RIVM and municipal health services communication networks.
- Consolidate behavioural science expertise in both the CIb response plan and the LCI generic preparedness manual.
- Strengthen community engagement within the CIb response plan and LCI generic preparedness manual.
- Review all existing population data sources as an alternative to surveys for better demographic targeting in message development.
- Integrate RIVM's behavioural research findings into communication materials and targeted community engagement strategies.
- IHR-related hazards and points of entry and border health

IHR-related hazards and points of entry and border health



POE. Points of entry and border health

Capacity 9. Points of entry and border health

Introduction

All core capacities and potential hazards apply to points of entry (POE) 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 were 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

In the Netherlands, two POE are IHR-designated under the Public Health Act – the Port of Rotterdam and Amsterdam Airport Schiphol.

Under the Public Health Regulation, POE are categorized as Category A or Category B. The two IHR-designated POE (Port of Rotterdam and Amsterdam Airport Schiphol) are Category A. Additionally, 15 ports and four airports fall into the Category B POE.

The Public Health Decree specifies the required capacities for Category A and B POE. Both must have public health emergency contingency plans for communicable disease control. Category A POE have two additional requirements: a 24/7 emergency service, and a designated space with sanitary facilities for quarantine or medical assessment. Aircraft and vessels can be redirected to category A POE in a public health event.

The responsible GGDs are prepared to respond to public health events at POE. CBRN capacities are managed by the Safety Regions responsible for the Port of Rotterdam and Schiphol. POE authorities and GGDs collaborate in public health contingency plans through their development, as well as through exercises and implementation.

During COVID-19, an intra-action review identified strengths and challenges at POE. Based on lessons learned, the RIVM established a POE public health expertise network to enhance cooperation and knowledge-sharing across Category A and B POE.

Routine core capacities are implemented at the Port of Rotterdam and Amsterdam Airport Schiphol and are regularly exercised. Inspection programmes for vector control, sanitation and food safety are in place. However, stakeholder collaboration at POE could benefit from further formalization through cooperation agreements. Joint inspections and exercises should be expanded.

Public health emergency contingency plans at IHR-designated POE are regularly tested and largely aligned with the LCI IHR guideline. Plans should be expanded to scenarios covering larger disease outbreaks and linked to plans with all-hazards threats (e.g., chemical and radionuclear threats). COVID-19 highlighted challenges in quarantining suspected travellers, indicating a need for revised arrangements.

Processes for travel-related measures are embedded in national and regional plans. Training and exercises are regularly conducted, and the POE expertise network can be utilized for consultation of practical implications of measures. However, its integration into existing response structures remains incomplete. An assessment framework for international travel measures is planned but lacks secure funding.

Indicators and scores

POE1. Core capacity requirements at all times for POE (airports, ports and ground crossings) – Score 4

Strengths

- Access to medical and diagnostic facilities is well organized or arranged at designated POE.
- The IHR required core capacities for POE are embedded in the Public Health Act.
- Vector monitoring at POE is implemented.

Challenges

- Further strengthening of education, training and exercises at national level and smaller POE is needed.
- Contingency plans should cover a wider variety of scenarios.
- Maritime Declaration of Health data should be integrated into the GGD surveillance system.

POE2. Public health response at POE – Score 4

Strengths

- The Public Health Act mandates that all category A and B POE have a public health emergency contingency plan in place.
- The national pandemic preparedness programme includes POE preparedness as a key component.
- Local education, training and exercise plans are executed to test plans at IHR-designated POE.

Challenges

- The all-hazards approach is not standard in all POE contingency plans.
- While responsibilities for IHR capacities are well defined in legislation, they are however, sometimes unclear in local collaboration agreements among POE stakeholders.
- POE contingency plans lack sufficient scenarios for larger-scale outbreaks and should be expanded.
- Quarantine arrangements at POE are established for short-term use, but long-term solutions remain challenging.
- The relative distance between (air)port authorities and public health services at smaller POE makes oversight difficult.
- Funding for pandemic preparedness, including POE-related activities, beyond 2026 remains uncertain.

POE3. Risk-based approach to international travel-related measures – Score 4

Strengths

- Decision-making structures for crises are well defined through an interdepartmental crisis framework and Outbreak Management Team guidance.

Challenges

- Effective coordination among stakeholders during crises remains a challenge.
- The national POE network's advisory role has yet to be formalized within existing decision-making structures.
- Early stage response measures are often handled in an ad hoc manner, with unclear coordination and responsibilities for implementing travel-related measures.
- A risk assessment framework for international travel-related measures is intended for development.

Recommended priority actions

- Formalize stakeholder collaboration at category A and B POE by establishing cooperation agreements and covenants with relevant stakeholders, and clarify formal responsibilities in accordance with the Public Health Act.
- GGDs with designated POE should develop and implement standard procedures to ensure public health staff are routinely involved in port and airport operations such as accompanying conveyance inspections (e.g., cruise and cargo ships).
- Expand contingency plans at category A and B POE to cover a wider range of scenarios ranging from early stage responses to severe outbreaks, integrating all-hazard risks (e.g. chemical and radiological threats). Develop standard operating procedures and ensure interoperability with other response plans.
- Revise and adjust quarantine arrangements for suspected travellers at category A POE by identifying alternative facilities (e.g., local hospitals, ships, or hotels) as needed.
- Develop an overview of regular POE exercises at the national level. Ensure the POE network benefits by fostering cross-POE participation, sharing results and compiling a summary of POE exercises.

CE. Chemical events

Introduction

Timely detection and effective response to 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 capacity for chemical risks or events. This requires effective communication and collaboration among the sectors responsible for chemical safety, including health, occupational health, emergencies, environment, transportation and safe disposal, agriculture/veterinary, as well as industries.

Level of capabilities

The Netherlands has substantial preparedness and response capacity for chemical incidents, with well established, functioning and sustainable mechanisms to detect and respond to chemical events and emergencies. Responsibility for responding to chemical incidents lies with the 25 safety regions. The fire department is the primary responder to chemical incidents within these regions and is fully equipped and trained for such events. Incidents are assessed and categorized according to the GRIP, ensuring the orderly scaling of emergency services as needed.

While the national government does not oversee local or regional disaster response, safety regions can request specialized assistance from the Environmental Incident Service of RIVM for analytical measurements or from the Crisis Expert Team Environment and Drinking Water Incidents for expert advice on risks and mitigation measures. Crisis Expert Team Environment and Drinking Water Incidents activation occurs independently of the GRIP level. Although information on incidents, knowledge and best practice is gathered at the local and regional level by the safety regions, there is a formal mechanism for scaling up operational and strategic issues during and after a crisis, ensuring national access to regional information.

Several 24/7 monitoring and laboratory resources are available in the Netherlands to address chemical events, including air quality monitoring, an expert response team for environmental and drinking safety and a national laboratory network capable of responding to deliberate chemical threats. The Netherlands Food and Consumer Product Safety Authority ensures food and consumer product safety by monitoring chemical substances in food and feed, such as pesticide and veterinary drug residues. The Netherlands Food and Consumer Product Safety Authority also implements surveillance programmes and standard procedures for assessing and managing chemical incidents.

In the event of deliberate or suspicious chemical releases, the Protocol for Suspicious Objects is activated. This protocol outlines the coordination and command structure between first responders including the police, fire department, military and medical teams. The police or military police leads the response in such situations and can call upon specialized experts to assess and manage chemical intoxication or poisoning.

The Netherlands has a national Poisons Information Centre which provides information exclusively to healthcare professionals. The public can access the Poisons Information Centre services through consultations with their physicians. The country has 24/7 access to general physician care. The Poisons Information Centre compiles substance monographs in Dutch, containing guidelines on dose-effect relationships, symptoms and treatment options, based on clinical toxicological literature.

Surveillance mechanisms for chemical incidents are well established, and any signals are followed up by environmental health specialists. However, awareness can be further strengthened, particularly highlighting the institutional roles, and encouraging incident reporting. There is a Public Warning System (NL-Alert) which notifies the population of harmful and life-threatening situations, such as major fires, terrorist attacks or extreme weather events. Alerts are sent to mobile phones in affected areas and are tested periodically.

Indicators and scores

CE1. Mechanisms established and functioning for detecting and responding to chemical events or emergencies – Score 5

Strengths

- The Netherlands has well defined multisectoral structures for the assessment and management of chemical events, ensuring a coordinated and effective response.
- Incidents are assessed and categorized under the GRIP, which facilitates scalable emergency response within security regions. This ensures systematic upscaling during chemical emergencies.
- Additional national resources can be mobilized upon request to support response efforts.

Challenges

- Information-sharing barriers exist, as not all organizations involved have access to the National Crisis Management System, potentially hindering effective communication and coordination during chemical events.
- The diversity of organizations involved complicates the organization of multisectoral simulation exercises, making comprehensive participation and coordination more challenging.
- Budget constraints limit the scope of chemical monitoring programmes, reducing their ability to track all relevant parameters and potentially impacting the effectiveness of surveillance and response.

CE2. Enabling environment in place for management of chemical events – Score 5

Strengths

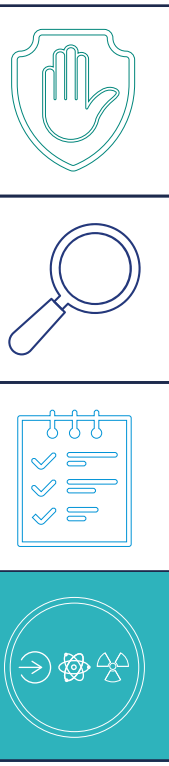
- Legislation and preparedness frameworks for chemical events are comprehensive and well structured, covering a wide range of scenarios and ensuring high standards of readiness.
- Safety regions and GGDs have strong emergency planning capabilities, ensuring effective response capacity.
- Regular evaluations help maintain a high level of preparedness and response effectiveness for chemical incidents.

Challenges

- Since the Moerdijk chemical plant fire (2011), evaluations have led to adjustments in the GRIP structure and government roles. However, the revised structure has not been extensively tested in major chemical incidents.
- Despite strong interdisciplinary collaboration, challenges remain in coordinating information flows during the preparedness phase. The diversity of organizations involved necessitates efficient and timely information exchange.

Recommended priority actions

- Enhance multidisciplinary network collaborations to improve communication, coordination and awareness of how stakeholders such as healthcare professionals can contribute to chemical incident responses.
- Continue to focus on education, training and simulation exercises to maintain preparedness and readiness across sectors.
- Strengthen cross-border coordination mechanism for chemical incidents while maintaining a strong national focus.
- Raise awareness among key sectors, such as healthcare, on data-sharing protocols to ensure effective public health responses while remaining compliant with GDPR.



RE. 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

The Ministry of Infrastructure and Water Management is primarily responsible for nuclear safety, security and radiation protection legislation and coordinates national preparedness and response for radiological and nuclear emergencies. The Netherlands has a generic National Handbook on Crisis Control and a specific National Crisis Plan – Radiation. The Authority for Nuclear Safety and Radiation Protection regulates on-site emergency preparedness and response arrangements and leads the Crisis Expert Team – Radiation and Nuclear, to support national decision-making during emergencies.

Other key ministries involved include: the Ministry of Health, Welfare and Sport, and the Ministry of Agriculture, Nature and Food Quality, for sector-specific emergency response roles; the Ministry of Justice and Security, which oversees national crisis coordination and general response actions; and regional mayors, who are responsible for local response coordination in radiological emergencies.

At the regional level, regional policy plans provide guidance for radiological emergency response.

The RIVM operates the National Radioactivity Monitoring Network, continuously measuring radiation levels across the Netherlands. It also has laboratory capacity for radionuclide analysis and deployable field teams, in coordination with defence forces and regional fire departments, as a part of a national measurement strategy. Further development of this strategy could enhance capabilities for analysing complex samples requiring laboratory measurement.

Ensuring food safety during radiation emergency will always be a challenging task. The national authorities have identified key aspects for improving emergency arrangements, with ongoing efforts to update arrangements.

Hospitals with emergency departments must maintain the capability to decontaminate victims. Expertise in nuclear medicine, haematology and radiation therapy is available to support medical management. The Netherlands Defence Forces assist civilian authorities during CBRN events by providing detection, identification, measurement and advisory support. Additionally, the RIVM has capability to perform field measurements and sampling.

The Netherlands has signed and ratified relevant international agreements including Early Notification and Assistance Conventions and maintains bilateral agreements on emergency preparedness response with Germany, Belgium, Norway, the United Kingdom and the United States of America. In 2023, the International Atomic Energy Agency's Integrated Regulatory Review Service evaluated the Dutch regulatory system. The Netherlands has committed to hosting an International Atomic Energy Agency Peer Review Mission on Emergency Preparedness in 2027.

Indicators and scores

RE1. Mechanisms established and functioning for detecting and responding to radiological and nuclear emergencies – Score 5

Strengths

- Strong national coordination is in place for emergency response, supported by detailed emergency plans. The all-hazards approach and coordination mechanism ensures well organized emergency preparedness arrangements across different organizations and levels of government.
- A real-time information-sharing platform facilitates rapid situational awareness and decision-making among response agencies. The National Crisis Management System further supports efficient emergency management and information sharing.

Challenges

- No national-level guidance exists for mental health and psychosocial support in radiological and nuclear emergencies. While regional capacities exist, national coordination and integration into emergency planning could be strengthened.

RE2. Enabling environment in place for management of radiological and nuclear emergencies – Score 5

Strengths

- National level coordination is well organized with comprehensive documentation, including national risk assessments, national coordination handbook and radiation emergency plans at national and regional levels.

Challenges

- The Netherlands has indicated that use of nuclear power may be expanding. This would require enhanced emergency preparedness capabilities, including additional technical expertise.
- National nuclear exercises highlight areas for improvement, yet some findings lack appropriate implementation mechanisms. Complex topics, such as large-scale evacuations and the non-radiological consequences of the emergency response, require coordinated efforts for systematic improvements.

Recommended priority actions

- Update the National Crisis Plan – Radiation in 2025, incorporating recommendations from the National Nuclear Exercise 2024.
- Enhance planning for large-scale evacuations, ensuring a balanced approach that considers both radiological and non-radiological consequences in decision-making.
- Invest in training and maintaining a sufficient number of highly qualified technical staff for nuclear and radiological emergency preparedness, in line with plans to expand nuclear power capacity.

Additional PHEPA capacities

Capacity 13. Union level coordination and support functions

The Netherlands incorporates the Health Security Committee representatives/liaisons into national level coordination structures and facilitates information exchange between the Member State and the Health Security Committee, ensuring a bidirectional flow of information.

The Netherlands has demonstrated active coordination with the Health Security Committee and involvement in support functions. Key elements include:

- two liaison officers ensuring direct links with the national crisis structure;
- close cooperation with other departments including Justice and Security and Foreign Affairs, as well as Agriculture;
- a direct and close working relationship with the RIVM; and
- incorporation of Health Security Committee opinions and ECDC Risk Assessment into national policy, parliamentary briefings and national recommendations.

In addition, Union level support functions are incorporated into national processes, including:

- health Security Committee opinions and guidance on the prevention and control of serious cross-border threats to health;
- European Commission recommendations on common temporary public health measures; and
- ECDC rapid risk assessments and response recommendations to health threats.

Challenges

- The Netherlands has identified areas for further collaboration at the Health Security Committee, especially in relation to climate change and the need for the Health Security Committee to take a proactive role, particularly in peace time. Allocating dedicated time for discussions on prevention and preparedness measures would enhance alignment across Member States. While cross-sectoral topics are important, discussion should maintain a health focus to ensure relevance.
- Additionally, while the national crisis structure is well established, further clarification of roles at the EU level is needed, particularly in the relationship between the Health Security Committee and the Health Crisis Board that will be activated during public health emergencies at EU level. The future Union Plan will be helpful in this regard.

Recommendations

- Explore the further potential of the Netherlands' contribution and connection to relevant EU health security mechanisms and discussions, in particular further building on the EU Plan once available, Early Warning and Response System developments and possible Health Security Committee discussions on interregional and regional cross-border collaboration on health security.

Capacity 14. Research development and evaluations to inform and accelerate emergency preparedness

The Netherlands has a well developed research, development and innovation ecosystem to inform and accelerate emergency preparedness. A knowledge base, infrastructure frameworks and research projects are in place, with integration into preparedness across relevant sectors.

Operational research is also included in the national research agendas and is indirectly referred to in the pandemic preparedness plan. Many public health functions incorporate research activities into routine clinical or public health activities, such as exploratory microbiological activities.

RIVM manages a strategic programme for research, innovation and knowledge development, with some resources available to scale up research activities in emergency situations.

National networks of clinical trial sites or cohorts have been established, enabling participation in large-scale trials during health crises. Standardized reporting templates and agreed-upon protocols are under development.

Challenges

- Barriers to the rapid deployment of research activities for preparedness and response support include inflexibility and time delays linked to funding and contracts, and lack of stable structured funding for long-term research readiness, cohorts and clinical trials.

Recommendations

- Expand operational research in the general preparedness plan, outlining strategic multi-disciplinary research priorities for outbreak preparedness and response, as well as practical opportunities, challenges and resource needs for sustaining and utilizing available resources.
- Identify and address obstacles to the rapid activation of outbreak-related research, e.g., readiness of clinical sites and key stakeholders, ethical approvals, ownership of data and research findings, shared protocols and public-private partnerships.

Capacity 15. Recovery elements

The National Crisis Management Handbook provides guidance on the recovery phase of crises, outlining 26 thematic areas for follow-up and recovery, including healthcare and psychosocial care, which fall under the remit of the Ministry of Health, Welfare and Sport, and RIVM. The Departmental Crisis Management Handbook addresses downscaling, while the National Crisis Plan for Infectious Disease specifically addresses recovery elements.

The Netherlands routinely conducts simulation exercises; lessons learned evaluations; and after-action reviews. These are conducted across national and regional layers of government.

Following the COVID-19 pandemic, recovery activities were undertaken at both societal and organization levels: a temporary Directorate for Recovery was established; commemoration activities were organized for the public; and at organizational levels, internal reviews informed the development of psychosocial care and staff wellbeing, such as those implemented at RIVM.

Recommendations

- Integrate provisions for downscaling emergencies, conducting lessons learned exercises, and providing recovery services into an all-hazards National Health Emergency Response Plan.

Capacity 16. Actions taken to improve gaps found in the implementation of prevention, preparedness and response plans

Evaluations such as those conducted by the Dutch Safety Board on the COVID-19 pandemic, have led to specific areas for improvement for national agencies, which should be addressed and implemented.

The Netherlands will work on an action plan drawing upon the JEE-PHEPA from January 2025.

Recommendations

- Consider including findings from other relevant evaluations, such as those by the Dutch Safety Board, into the action plan following the JEE-PHEPA so as to ensure a comprehensive approach to addressing identified gaps.

Annex: JEE-PHEPA background

Mission location and duration

Utrecht, the Netherlands, 27–31 January 2025

Mission team members including technical areas

Team Lead and Co-leads			
Raquel Duarte-Davidson, UK Health Security Agency, United Kingdom (Lead)			
Thomas Hofmann, ECDC (Co-lead)			
Frederik Copper, WHO Regional Office for Europe (Co-lead)			
	IHR core capacity (JEE) Capacity area (PHEPA)	**Lead**	**Co-lead**
P1 Cap.1	Legal instruments IHR implementation and coordination	Andreas Gilsdorf, Robert Koch Institute, Germany	Frederik Copper, WHO Regional Office for Europe
P2 Cap.2	Financing Financing	Jim Banaski, Independent Consultant, United States	Thomas Hofmann, ECDC
P3 Cap.1	IHR coordination, national focal point functions IHR implementation and coordination	Maria an der Heiden, Robert Koch Institute, Germany	Sandra Lindmark, WHO Regional Office for Europe
P4 Cap.12	AMR AMR and HCAIs	Vivian Leung, ECDC	Ago Pärtel, World Organisation for Animal Health Consultant, Republic of Estonia
P5 Cap.10	Zoonotic disease Zoonotic diseases and threats of environmental origin, including those due to the climate	Carmen Varela Santos, ECDC	Ago Pärtel, World Organisation for Animal Health Consultant, Estonia
P6	Food safety	Ago Pärtel, World Organisation for Animal Health Consultant, Estonia	Vivian Leung, ECDC
P7 Cap.3	Biosafety and biosecurity Laboratory	Daniel Palm, ECDC	Jim Banaski, Independent Consultant, United States
P8	Immunization	Bruno Ciancio, ECDC	Andreas Gilsdorf, Robert Koch Institute, Germany
D1 Cap.3	National laboratory systems Laboratory	Daniel Palm, ECDC	Jim Banaski, Independent Consultant, United States
D2 Cap.4	Surveillance Surveillance	Bruno Ciancio, ECDC	Jim Banaski, Independent Consultant, United States
D3 Cap.5	Human resources Human resources	Andreas Gilsdorf, Robert Koch Institute, Germany	Bruno Ciancio, ECDC

	IHR core capacity (JEE) Capacity area (PHEPA)	Lead	Co-lead
R1 Cap.6	Health emergency management Health emergency management	Jonathan Suk, ECDC	Sebastiano Lustig, Directorate-General for Health Emergency Preparedness and Response Yoline Kuipers, Directorate-General for Health and Food Safety Gábor Belák, Directorate-General for Health and Food Safety
R2	Linking public health and security authorities	Jim Banaski, Independent Consultant, United States	Frederik Copper, WHO Regional Office for Europe
R3 Cap.7	Health services provision Health service provision	Roberto Falvo, Ministry of Health, Italy	Jonathan Suk, ECDC
R4 Cap.12	IPC AMR and HCAIs	Vivian Leung, ECDC	Ago Pärtel, World Organisation for Animal Health Consultant, Estonia
R5 Cap.8	RCCE RCCE	James Banaski, Independent Consultant, United States	Sandra Lindmark, WHO Regional Office for Europe
POE Cap.9	POE and border health POE and border health	Maria an den Heiden, Robert Koch Institute, Germany	Thomas Hofmann, ECDC
CE Cap.11	Chemical events Chemical events	Raquel Duarte-Davidson, United Kingdom Health Security Agency, United Kingdom	Jukka Kupila, Radiation and Nuclear Safety Authority, Finland
RE	Radiation emergencies	Jukka Kupila, Radiation and Nuclear Safety Authority in Finland	Raquel Duarte-Davidson, United Kingdom Health Security Agency, United Kingdom
Cap.13	Union level coordination and support functions	Thomas Hofmann, ECDC	Yoline Kuipers, Directorate-General for Health and Food Safety Gábor Belák, Directorate-General for Health and Food Safety
Cap.14	Research development and evaluations to inform and accelerate emergency preparedness	Daniel Palm, ECDC	Thomas Hofmann, ECDC
Cap.15	Recovery elements	Jonathan Suk, ECDC	Thomas Hofmann, ECDC
Cap.16	Actions taken to improve gaps found in the implementation of prevention, preparedness and response plans	Jonathan Suk, ECDC	Thomas Hofmann, ECDC

Joint JEE and PHEPA mission to the Netherlands

Background

The International Health Regulations (2005) (IHR)

In May 2005, the Fifty-eighth World Health Assembly adopted the revised the IHR which requires all States Parties to develop core public health capacities to detect, assess, notify, report and respond to events of domestic and international concern. The IHR (2005) is legally binding on its 196 States Parties, including the 194 WHO Member States. IHR States Parties through the WHO Director-General are required to report annually to the World Health Assembly on the implementation of the Regulations (Article 54 and resolution WHA61.2).

To support countries in assessing IHR core capacities, the IHR Monitoring and Evaluation Framework was adopted by the Sixty-eighth World Health Assembly in 2015, through resolution WHA68.17. The IHR Monitoring and Evaluation Framework ensures mutual accountability of States Parties and the Secretariat for global public health security through transparent reporting and dialogue. The IHR Monitoring and Evaluation Framework comprises the States Parties Self-assessment Annual Reporting tool for mandatory annual reporting (Decision WHA71.15), and three voluntary components, including the JEE, intra/after action reviews and simulation exercises for assessing and testing IHR core capacities. Since 2016, over 170 JEEs have been conducted globally in more than 125 countries. The JEE tool is now in its third edition and includes 19 different capacities with 56 indicators that are scored from 1 to 5.

Regulation (EU) 2022/2371 of the European Parliament and of the Council, on serious cross-border threats to health

The Regulation (EU) 2022/2371 on serious cross-border threats to health was adopted on 23 November 2022.

As stated in Article 8 of the Regulation (EU) 2022/2371, the ECDC has the responsibility, in coordination with relevant Union agencies and bodies, to conduct PHEPAs of all 30 EU/EEA countries. The PHEPA is conducted every three years and assesses the state of implementation of countries' national prevention, preparedness and response planning.

The aim of the PHEPA is to improve prevention, preparedness and response planning in EU/EEA countries through the implementation of recommendations following individual country assessments. Within nine months of the receipt of the ECDC assessment report, countries are requested to provide an action plan addressing the proposed recommendations.

Additionally, Regulation (EU) 2022/2371 states:

> *"To avoid an administrative burden and the duplication of efforts, overlap of reporting and reviewing activities with existing structures and mechanisms for prevention, preparedness and response planning and implementation at national level in relation to serious cross-border threats to health should be avoided as far as possible. To that end, Member States should not be requested to report data and information if already required by the Commission or other Union agencies and bodies, pursuant to applicable Union legislation. In addition, the Union should further enhance its cooperation with the World Health Organization, in particular under the IHR reporting, monitoring and evaluation frameworks."*[2]

[2] Belgium is the first country to have completed the ECDC PHEPA under the Regulation (EU) 2022/2371. The assessment took place in May 2024, marking the beginning of the first cycle (2024–2026).

To this end, a self-assessment template, described under the Article 7 of the Regulation (EU) 2022/2371 and detailed under the Implementing Regulation (EU) 2023/1808, was developed to be complementary to the States Parties Self-assessment Annual Reporting. This assessment is based on the 16 capacities included in the template to be used by countries when providing information on their prevention, preparedness and response planning.

Following a request from EU/EEA Member States, WHO and ECDC are offering the option to choose a joint assessment approach. The Netherlands is the first Member State to opt for the joint assessment approach.

Mission objective

The objective is to assess the Netherlands' implementation of national prevention, preparedness and response plans across the 19 technical areas of the JEE tool and the 16 capacities of the PHEPA, while piloting a joint assessment approach.

Joint JEE-PHEPA[3] process

A joint assessment approach involves 23 capacity areas, reflecting the overlap and complementarity of the 19 technical areas of the IHR JEE and the 16 capacities of the PHEPA Article 8 assessment. Since the Article 8 assessment is based on the Article 7 self-assessment template, which is aligned with the annual IHR core capacity assessment of the States Parties Self-assessment Annual Reporting, it is conceptually aligned with the JEE. An integrated assessment covering the technical areas of both the JEE and PHEPA can therefore largely serve both approaches.

The external evaluation during the mission week is collaborative, involving discussions on strengths, best practices, challenges and opportunities for capacity development through recommendations. Documentation and responses provided by the host country, including JEE scoring where applicable, are reviewed by the assessors, and discussed with host country experts using a consensus-based approach. The final report includes narratives that document existing capacities, gaps, challenges and recommendations for strengthening the relevant capacity. For the 19 capacity areas included in the JEE, scoring according to the JEE methodology is included, while the additional PHEPA-specific capacities (13, 14, 15 and 16) will not be scored.

Should there be significant and irreconcilable disagreements between the external team members and the host country experts, the JEE/PHEPA team lead and co-leads will decide the outcome. This will be noted in the final report along with the justification for each party's position.

The process includes the following phases:

1. Preparatory period – initiation, coordination and communication
2. Completion of the JEE country self-assessment questions by host country experts
3. Desk review by the assessment team
4. Preparatory online meetings on the five in-depth PHEPA capacities (further details below)
5. A five-day country visit by the assessment team, including half or full-day site visits (composition outlined below)
6. Assessment team presentation of recommendations on the last day of country visit
7. Preparation of a joint JEE-PHEPA report
8. Country review of the JEE-PHEPA report and recommendations
9. Finalization of the JEE-PHEPA report for publication, and PHEPA report for upload to the Early Warning and Response System (and online, should the country so decide)
10. Country development of the action plan

[3] Please note that the outlined joint approach refers to the first cycle of PHEPA assessments (2024–2026).

While most aspects of the JEE and PHEPA are well aligned, there are important differences that should be noted.

Scoring system – The JEE tool uses a scoring system, where each indicator is attributed a score that reflects a level of capacity. Level 1 indicates no capacity, level 2 indicates limited capacity, level 3 indicates developed capacity, level 4 indicates demonstrated capacity and level 5 indicates sustainable capacity. The PHEPA does not use a scoring system.

Assessment outcome and priority actions – The Regulation (EU) 2022/2371 requires Member States to develop and submit an action plan for implementing all recommendations included in the assessment report. The action plan should specify the timeline and intended actions to address the recommendations. The JEE is a voluntary mechanism, and there is no such requirement for the recommended priority actions. Both the PHEPA and the JEE approach recommend countries use the WHO National Action Plan for Health Security concept for the development of an action plan following an assessment.

Assessment cycle – The PHEPA has a mandatory three-year cycle. The JEE has a recommended five-year cycle.

PHEPA In-depth assessment – The PHEPA approach allows for an assessment of the status of all 16 capacities in each three-year assessment cycle while also offering a detailed evaluation of selected capacities where more specific recommendations can be made. The capacities assessed in-depth will vary for each cycle.[4] For the first cycle (2024–2026), four capacities have been selected by the ECDC, i) Capacity 3 – laboratory, ii) Capacity 4 – surveillance, iii) Capacity 6 – health emergency management and, iv) Capacity 12 – AMR and HCAIs. A fifth capacity is selected by the country among the remaining 12 capacities. The Netherlands selected Capacity 10 – zoonotic diseases and threats of environmental origin, including those due to the climate.

Joint assessment team composition

WHO and the ECDC will identify and select the joint assessment team and assign Lead and Co-lead roles following their regular procedure. The overall approach of JEE will be applied except that the experts from ECDC, Commission Services, and/or EU agencies shall be the technical leads for the assessment of each of the five in-depth capacities, as well as the PHEPA-specific capacities 13, 14, 15 and 16.

For a joint JEE/PHEPA approach, any external expert familiar with both processes can be proposed as the overall mission Lead, with Co-leads from each organization.

Country data information sharing

When a country agrees to the joint assessment approach, the country acknowledges that all data shared during the assessment can be used simultaneously for both the JEE and PHEPA (while adhering to GDPR and other data protection regulations).

The assessment team visits the country for facilitated in-depth discussions and review of the self-assessment data, structured site visits and meetings organized by the host country. Other data sources, including reports from various relevant evaluations and assessments (e.g. the Article 7 self-assessment template and States Parties Self-assessment Annual Reporting), analytical reports, legal documents, preparedness and response plans, and standard operating procedures will be collated and reviewed. All data collected during the joint JEE and PHEPA will be shared with all members of the joint assessment team. A dedicated mission folder will be set up by WHO and the ECDC to collate and share all relevant documentation.

[4] The identification of the capacities to be assessed in-depth in each assessment cycle will be done by ECDC based on outcomes of the first/previous assessment cycle(s), lessons learned from past disease outbreaks and health emergencies, and consultations with countries and international partners.

According to the JEE and PHEPA principles, confidential or sensitive information does not need to be shared with the team and acknowledgement of its existence (e.g., response plans related to security authorities) is trust-based. All experts selected for assessment mission are bound by Confidentiality Agreements.

Final Reports

A JEE-PHEPA report follows the JEE standard format and includes the common and specific elements from both the assessment approaches. In addition, a separate PHEPA report will be prepared and uploaded to the Early Warning and Response System, as per established process. This PHEPA report will be an extraction of the joint JEE-PHEPA report, but it will only be limited to the PHEPA-specific reporting requirements. The final JEE-PHEPA report will be published on the WHO website and therefore will be in the public domain. The PHEPA report will not be made public by the ECDC unless the host country chooses to make it available.

Comparison of features of the JEE and PHEPA

Features	JEE of the IHR (2005)	PHEPA (Article 8 of Regulation (EU) 2022/2371), first cycle of assessments (2024–2026)
Objectives	To assess Member States´ status and progress in developing the capacity to prevent, detect and rapidly respond to public health risks whether occurring naturally or due to deliberate or accidental events.	To assess Member States' state of implementation of their national prevention, preparedness and response plans and their relationship with the Union prevention, preparedness and response plan.
Legal basis	Voluntary mechanism as part of the IHR Monitoring and Evaluation Framework.	Mandatory under the regulation on serious cross-border threats to health (Regulation (EU) 2022/2371).
Duration	Member States self-evaluation phase minimum 3–6 months, external mission five days.	The assessment process will be initiated 6 months before the assessment mission The in-country part of the assessment is planned for five days. *Note: No further self-evaluation by the Member State is needed. The self-assessment part is conducted in the context of the reporting every three years under Article 7 Implementing Regulation (EU) 2023/1808.*
Process	JEE process would maintain the comprehensive multisectoral and collaborative peer-to-peer assessments nature and field visits leading to indicator-level scoring and recommendations for priority actions. The JEE has the following process: 1. a multisectoral self-evaluation using the self-evaluation workbook, or the JEE platform; and 2. a five-day external expert mission to review the self-evaluation, scores and priority actions per technical area.	The assessment will have a four-phase approach: 1. a desk review by ECDC, 2. a country visit; 3. the development of an assessment report by ECDC with recommendations; and 4. the development or update of an action plan by the assessed country, with possible support from WHO.
Scope	19 technical areas outlined in the JEE tool.	16 capacities, as per the Article 7 of the Regulation (EU) with a specific focus on five capacities to be assessed in-depth and different in each cycle.
Assessment team composition	External team consisting of Member State experts, ECDC (when relevant), WHO experts, other United Nations agency experts (such as FAO and International Atomic Energy Agency), World Organisation for Animal Health, academic institutions and independent expert consultants. The team is often led by a non-WHO expert.	Assessment team (approximately ten experts) includes an ECDC team leader, one expert per area to be assessed in depth, including other experts from Commission services and EU agencies where relevant and, if desired by the country, an expert from another country, and from the WHO Regional Office for Europe.
Report publication	JEE reports are published online (WHO website).	The decision to publicly disclose fully or partially ECDC's assessment report shall be left to the discretion of the assessed country.

Mapping of JEE and PHEPA capacities, highlighting in-depth areas

JEE capacities	PHEPA capacities
P1. Legal instruments	Capacity 1. IHR implementation and coordination
P2. Financing	Capacity 2. Financing
P3. IHR coordination, national IHR focal point functions and advocacy	Capacity 1. IHR implementation and coordination
P4. AMR	Capacity 12. AMR and HCAIs*
P5. Zoonotic disease	Capacity 10. Zoonotic diseases and threats of environmental origin, including those due to the climate**
P6. Food safety	n/a
P7. Biosafety and biosecurity	n/a
P8. Immunization	n/a
D1. National laboratory systems	Capacity 3. Laboratory*
D2. Surveillance	Capacity 4. Surveillance*
D3. Human resources	Capacity 5. Human resources
R1. Health emergency management	Capacity 6. Health emergency management*
R2. Linking public health and security authorities	Throughout Article 7 of Regulation (EU) 2022/2371
R3. Health services provision	Capacity 7. Health service provision
R4. IPC	Capacity 12. AMR and HCAIs*
R5. RCCE	Capacity 8. RCCE
POE. POE and border health	Capacity 9. POE and border health
CE. Chemical events	Capacity 11. Chemical events
RE. Radiation emergencies	n/a
n/a	Capacity 13. Union level coordination and support functions
n/a	Capacity 14. Research development and evaluations to inform and accelerate emergency preparedness
n/a	Capacity 15. Recovery elements
n/a	Capacity 16. Actions taken to improve gaps found in the implementation of prevention, preparedness and response plans

* ECDC in-depth areas for PHEPA assessment cycle 2024–2026.

** PHEPA in-depth area chosen by the Netherlands.

Field visits on 28 January 2025

Group one: POE and health emergency management

- Port Health Authority, Rotterdam
- GGD Rotterdam
- GGD Kennemerland
- RIVM, Bilthoven

Group two: Chemical events, radiation emergencies, health emergency management and health services provision

- Major incident hospital, Utrecht
- CBRN Defence Centre, Vught

Group three: IHR coordination, health emergency management, health services provision, IPC and risk communication

- Radboud Medical Centre
- GGD Gelderland-Zuid
- RIVM, Bilthoven

Group four: Laboratories, zoonotic diseases, surveillance

- Erasmus Medical Centre
- RIVM, Bilthoven

Mission 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 the Netherlands will not be independently verified but will be discussed and the evaluation rating mutually agreed by the host country and the evaluation team.

Key host participants and institutions

Overall

Members of the organizing team:

Laurien Rook, Corine van Lingen, Josje Beentjes (Ministry of Health, Welfare and Sport), Anne de Fijter, Anoek Backx and Corien Swaan (RIVM)

	IHR core capacity (JEE) Capacity area (PHEPA)	Capacity lead	Institution
P1. Cap.1	Legal instruments IHR implementation and coordination	Sam Verhagen	Ministry of Health, Welfare and Sport
P2. Cap.2	Financing Financing	Dick Mans	Ministry of Health, Welfare and Sport
P3. Cap.1	IHR coordination, national focal point functions IHR implementation and coordination	Corien Swaan	RIVM
P4. Cap.12	AMR AMR and HCAIs	Jorrit Kabel	RIVM
P5. Cap.10	Zoonotic disease Zoonotic diseases and threats of environmental origin, including those due to the climate	Joke van der Giessen, Cindy Dierikx (zoonoses) Michiel Hoorweg (environmental origin/ climate)	RIVM
P6.	Food safety	Teetske van Gorcum	Netherlands Food and Consumer Product Safety Authority
P7. Cap.3	Biosafety and biosecurity Laboratory	Saskia Rutjes	RIVM
P8.	Immunization	Layla van Nieuwenhuizen	RIVM
D1. Cap.3	National laboratory systems Laboratory	Riny Janssen	RIVM
D2. Cap.4	Surveillance Surveillance	Loes Soetens Jeannet Bos	RIVM RIVM
D3. Cap.5	Human resources Human resources	Sam Verhagen	Ministry of Health, Welfare and Sport
R1. Cap.6	Health emergency management Health emergency management	Michelle Stadlander/ Toos Waegemaekers (6a) Maurice Galla (6b)	RIVM Ministry of Health, Welfare and Sport
R2.	Linking public health and security authorities	Leonie Leliveld	Ministry of Health, Welfare and Sport
R3. Cap.7	Health services provision Health service provision	Peer Jetten	Ministry of Health, Welfare and Sport
R4. Cap.12	IPC AMR and HCAIs	Klaartje Weijdema	RIVM
R5. Cap.8	RCCE RCCE	Kevin Kosterman	RIVM

	IHR core capacity (JEE) Capacity area (PHEPA)	Capacity lead	Institution
POE. Cap.9	POE and border health POE and border health	Anne de Fijter	RIVM
CE. Cap.11	Chemical events Chemical events	Rik Bleijs	RIVM
RE.	Radiation emergencies	Machiel Kleemans	Ministry of Infrastructure and Water Management
Cap.13	Union level coordination and support functions	Corine van Lingen	Ministry of Health, Welfare and Sport
Cap.14	Research development and evaluations to inform and accelerate emergency preparedness	Eline van der Hoek	Ministry of Health, Welfare and Sport
Cap.15	Recovery elements	Stephanie Wiessenhaan	Ministry of Health, Welfare and Sport
Cap.16	Actions taken to improve gaps found in the implementation of prevention, preparedness and response plans	Toos van den Born-Oudenaarden	Ministry of Health, Welfare and Sport

Supporting documentation provided by the Netherlands

All links accessed on 1 July 2025.

01. Legal instruments

- Constitution of the Netherlands. Government of the Netherlands (https://www.overheid.nl).
- COVID-19 crisis approach, part 1: up to September 2020. Dutch Safety Board (https://onderzoeksraad.nl/en/onderzoek/approach-to-covid-19-crisis/).
- COVID-19 crisis approach, part 2: September 2020–July 2021. Dutch Safety Board (https://onderzoeksraad.nl/en/onderzoek/approach-to-covid-19-crisis-part-2-september-2020-july-2021/).
- COVID-19 crisis approach, part 3. Dutch Safety Board (https://onderzoeksraad.nl/en/onderzoek/approach-to-covid-19-crisis-part-3/).
- Definitions and explanation of all notifiable diseases for practitioners, laboratories, and laymen. RIVM (https://www.rivm.nl/bibliotheek/rapporten/215072001.pdf).
- Gender equality index, Netherlands, 2023. European Institute for Gender Equality (https://data.europa.eu/data/datasets/gender-equality-index?locale=en).
- Public Health Act. Government of the Netherlands (https://www.overheid.nl).
- Safety Regions Act. Government of the Netherlands (https://www.overheid.nl).

02. Financing

- Budget details. Ministry of Finance (https://www.rijksfinancien.nl).
- Budget proposal. Ministry of Finance (https://www.rijksfinancien.nl).
- Financing public health emergencies. Ministry of Finance; 2023.
- National budget process. Government of the Netherlands (https://www.government.nl/topics/budget-day/budget-process).

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