Joint external evaluation of the International Health Regulations (2005) core capacities for

Estonia

Mission report:
9–13 October 2023
Joint external evaluation of the International Health Regulations (2005) core capacities for Estonia

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Acknowledgements

The Joint External Evaluation (JEE) WHO Secretariat would like to acknowledge the following entities and people, whose support and commitment to the principles of the International Health Regulations (2005) have ensured a successful outcome to this mission.

- The Government and national experts of Estonia for their work and support in preparation for the JEE mission: the Agriculture and Food Board; the Environmental Board; the Estonian Accreditation Centre; the Estonian Society for Infectious Diseases; the Estonian Society for Laboratory Medicine; the Health Board; the Health Insurance Fund; Ministry of Climate; Ministry of Economic Affairs and Communications; Ministry of the Interior; Ministry of Regional Affairs and Agriculture; Ministry of Social Affairs; the National Centre for Laboratory Research and Risk Assessment; the North Estonian Medical Centre; Pärnu Hospital; the Police and Border Guard Board; the Port of Tallinn; the Rescue Board; the State Agency of Medicines; Tallinn Airport; the Tax and Customs Board; the Transport Administration

- The Governments of Finland, Germany, Latvia; the Kingdom of the Netherlands; Sweden; the United Kingdom of Great Britain and Northern Ireland.

- The Governments of Armenia and Slovakia for sending observers.

- The European Centre for Disease Prevention and Control for their contribution of experts.

- The Food and Agriculture Organization of the United Nations for their contribution of experts.

- The following WHO entities: the WHO Country Office for Estonia, the WHO Regional Office for Europe and WHO headquarters Department of Health Security Preparedness of the WHO Health Emergencies Programme for supporting the mission.
## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AMR</td>
<td>Antimicrobial resistance</td>
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<tr>
<td>BSL-3</td>
<td>Biosafety level 3</td>
</tr>
<tr>
<td>CBRN</td>
<td>Chemical, biological, radiological and nuclear materials or weapons</td>
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<td>COVID-19</td>
<td>Coronavirus disease 2019</td>
</tr>
<tr>
<td>EARS-Net</td>
<td>European Antimicrobial Resistance Surveillance Network</td>
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<tr>
<td>ESAC-Net</td>
<td>European Surveillance of Antimicrobial Consumption Network</td>
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<tr>
<td>ECDC</td>
<td>European Centre for Disease Prevention and Control</td>
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<tr>
<td>EQA</td>
<td>External quality assessment</td>
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<td>EPIET</td>
<td>European Programme for Intervention Epidemiology Training</td>
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<tr>
<td>EUPHEM</td>
<td>European Programme for Public Health Microbiology</td>
</tr>
<tr>
<td>EURATOM</td>
<td>European Atomic Energy Community</td>
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<td>GLASS</td>
<td>Global Antimicrobial Resistance and Use Surveillance System</td>
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<tr>
<td>HCAI</td>
<td>Healthcare-acquired infection</td>
</tr>
<tr>
<td>IAEA</td>
<td>International Atomic Energy Agency</td>
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<tr>
<td>ICT</td>
<td>Information and communication technology</td>
</tr>
<tr>
<td>IHR</td>
<td>International Health Regulations (2005)</td>
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<tr>
<td>IPC</td>
<td>Infection prevention and control</td>
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<tr>
<td>JEE</td>
<td>Joint External Evaluation</td>
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<td>LABRIS</td>
<td>National Centre for Laboratory Research and Risk Assessment</td>
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<tr>
<td>LTCFs</td>
<td>Long-term care facilities</td>
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<tr>
<td>MDRO</td>
<td>Multidrug-resistant organism</td>
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<td>NAPHS</td>
<td>National Action Plan for Health Security</td>
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<tr>
<td>NFP</td>
<td>National IHR Focal Point</td>
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<tr>
<td>PoE</td>
<td>Points of entry</td>
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<tr>
<td>PPS</td>
<td>Point prevalence study</td>
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<tr>
<td>RCCE</td>
<td>Risk communication and community engagement</td>
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<tr>
<td>WHO</td>
<td>World Health Organization</td>
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<td>WGS</td>
<td>Whole genome sequencing</td>
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Executive summary

Since its independence was restored in 1991, Estonia has restructured its public health and health security landscape, and joined the European Union (EU) in 2004. Since this, and despite its relatively small geographical size and population, the country’s economic growth and the importance of Estonia and Estonians in the development of the information and communication technology (ICT) sector has been much remarked upon. This has brought about interest in the development and uptake of ICT solutions within the health sector, and considerable upgrades to health provision and infrastructure. Due to Estonia’s geographical position, health security will always be of significant interest to the country and much has been achieved in the last 20 years. With this combination of factors, the WHO Joint External Evaluation (JEE) in Estonia was deemed of interest not only to Estonia but also as an example of how a small, now highly developed country can work to improve its health security. A further point of interest is that Estonia has, in general, a widely spaced population with low density; another challenge to providing services which needs to be overcome.

During the JEE mission to Estonia, capacities in 19 technical areas were evaluated through a peer-to-peer collaborative process that brought subject matter experts together with members of the external assessment team. The team was composed of representatives from 10 Member States, international organizations or academic institutions, engaged in a week-long series of technical discussions and on-site visits. The primary objective of the assessment was to compile a comprehensive array of evidence, encapsulating evaluations, reviews and other relevant insights. The aim was to equip Estonian authorities with actionable information for improving implementation of the International Health Regulations (IHR) 2005, encompassing cost estimates, high-level commitment and accountability.

While the assessment itself can facilitate knowledge exchange and networking, it does not improve health security capacities per se. Therefore, identified priority recommendations should be captured in a National Action Plan for Health Security (NAPHS), which in turn drives translation of priorities into concrete technical activities. The external team acknowledges that many recommendations deal with establishing committees, action plans and strategies, all of which may be crucial steps for capacity development, but nevertheless need to be streamlined given constraints on human resource capacity.

Four cross-cutting and overarching recommendations emerged from the week-long evaluation. These are designed to tackle challenges that impact Estonia’s capabilities across various technical areas, thoroughly examined during the assessment process. The recommendations are listed below.

- There is an impressive level of professionalism, energy and commitment within the relevant IHR multisectoral workforce, which includes a strong culture of preparedness. However, as Estonia has a small population, there is a tendency to rely on strong informal systems and person-dependency rather than written plans and standard operating procedures (SOPs). A formal plan, including timings, that covers a firm timeline for the creation of plans and SOPs is imperative.
- There were some instances in the discussions where difficulties in the training and career development of Estonian experts was discussed. For some specialisms this is difficult within Estonia, either due to a lack of suitable courses in country or the issues raised when already scarce staff need to train overseas for an extended period. Discussions with the European Commission, the European Centre for Disease Prevention and Control (ECDC), WHO, and other providers about which training modalities would fit best given the Estonian context. This may be of interest to other smaller countries in Europe.
• Estonia is a highly ICT-competent society and is recognized internationally as such. The SitRep system allowing multisectoral situational awareness is a good example of recent developments. There was, however, a recurring theme of multiple systems of limited interoperability and difficulties in data transfer in both health and public health and between sectors. Further streamlining should be a considered a priority for future ICT development.

• There has been considerable investment in (public) health and other relevant institutions in Estonia, which is to be commended. However, there should be more explicit discussion on how some of these investments in staff and material can be funded and managed going forward. There also were concerns expressed about the length of time taken to have budgets agreed, which makes service planning difficult.

To translate recommendations from the JEE and other reviews and evaluations, Estonia should develop and implement a prioritized, costed NAPHS as a basis for national planning. Estonia should investigate investment into preparedness, advocating for finance both domestically and externally; for example, from the EU. Such a plan will help to maintain multisectoral alignment and include high-level (e.g. 5–7 years) strategic priorities broken down into shorter-term operational plans, with concrete activities allowing trackable implementation and ensuring accountability. All action plans specific to a technical area such as antimicrobial resistance (AMR), biosafety or biosecurity should fall under the umbrella of the national action plan as specific priority activities.

The external assessment team is grateful for the transparent and honest discussions that took place in Estonia and the Government of Estonia’s willingness to engage with this comprehensive process.

Thanks are extended to all experts from Estonia who participated in the assessment for their hard work in preparing, presenting and hosting the external team.
Estonia: scores and priority actions

The table below is the summary of the final scores for each technical area (details and priority actions are shown in the respective report chapters), as agreed by the national and external JEE teams. The principles of the scoring system are described in the JEE tool, available from:

https://www.who.int/emergencies/operations/international-health-regulations/joint-external-evaluations

While there is overlap among the capacity sections of the tool, each capacity is considered separately in the evaluation exercise. The following describes the level of advancement using JEE scoring.

1. No capacity: attributes of a capacity are not in place.
2. Limited capacity: attributes of a capacity are in development stage (implementation has started with some attributes achieved and others commenced).
3. Developed capacity: attributes of a capacity are in place; however, sustainability has not been ensured (such as through inclusion in the operational plan of the national health sector plan with a secure funding source).
4. Demonstrated capacity: attributes are in place and sustainable for a few years and can be measured by the inclusion of attributes or IHR core capacities in the national health sector plan and a secure funding source.
5. Sustainable capacity: all attributes are functional and sustainable and the country is supporting one or more other countries in their implementation. This is the highest level of the achievement of implementation of IHR core capacities.

For ease of overview, a traffic light colouring system is used, where scores of one are shown as red; scores of two and three are yellow; and four and five are green.

This evaluation was conducted using version three of the JEE tool. It is important to note that the third edition of the tool reflects the key lessons of COVID-19, in which experiences around the world raised the bar for what can be considered sufficient capacity to prevent, detect and respond to a public health threat. A capacity score using the third edition of the JEE tool is not, therefore, directly comparable with scores achieved using any other version of the JEE tool. Likewise, if a country undergoing a second JEE achieves a lower score for a given technical area than it did on a previous JEE, this does not necessarily mean that country has lost capacity.

Scores: 1=no capacity; 2=limited capacity; 3=developed capacity; 4=demonstrated capacity; 5=sustainable capacity.Scores and priority actions
## Technical areas

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<tr>
<th>Indicator number</th>
<th>Indicator</th>
<th>Score</th>
<th>Priority Actions</th>
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<tbody>
<tr>
<td><strong>Prevent</strong></td>
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<td><strong>P1. Legal instruments</strong></td>
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</table>
| P1.1 | Legal instruments | 4 | • Undertake a robust legal analysis (legal mapping and legal assessment) to determine gaps in legislative tools including identifying all responsible authorities for implementing the requirements in line with the IHR in all relevant sectors. This legal analysis and eventual revision of legislations could involve relevant professional organizations such as medical associations and civil society organizations.  
• Revise the Communicable Diseases Prevention and Control Act to strengthen mandates for surveillance, reporting and management of communicable diseases.  
• Develop an approach for legal surveillance to enable changes (improvements) in legal instruments related to three to five core capacities that are based on exercises, reviews and evaluations at the IHR Focal Point.  
• Undertake a gender-based diversity analysis which considers gender norms and roles in the country to support an action plan to address gender gaps for one IHR core capacity. |
| P1.2 | Gender equity and equality in health emergencies | 3 | |
| **P2. Financing** | | | |
| P2.1 | Financing for IHR implementation | 4 | • Undertake a financial overview which is connected to responsibilities for IHR implementation and financing mechanisms coupled to responsibilities to determine the possible areas for improved financing.  
• Undertake outreach activities to engage additional individuals in health professional roles such as fellowship trainings, at health professional schools and in the medical and public health sciences.  
• Utilize the spending review possibility in the State Budget Act to analyse the use of public funds regarding IHR implementation and develop a specific proposal regarding comprehensive and thereby efficient use of funding IHR core capacities. |
<p>| P2.2 | Financial resources for public health emergency response | 4 | |</p>
<table>
<thead>
<tr>
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<th>Score</th>
<th>Priority Actions</th>
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<tbody>
<tr>
<td>P3. IHR coordination, NFP functions and advocacy</td>
<td>P3.1</td>
<td>IHR NFP functions</td>
<td>3</td>
<td>• Develop and implement a prioritized and costed NAPHS or similar comprehensive and consolidated capacity development plan with strategic objectives; e.g. for the next 5–7 years, broken down into 1–2-year operational plans where implementation roles and responsibilities of different agencies and ministries is described. The plan should be informed by the JEE recommendations and other potential reviews and evaluations with a clear monitoring and evaluation scheme.</td>
</tr>
<tr>
<td></td>
<td>P3.2</td>
<td>Multisectoral coordination mechanisms</td>
<td>4</td>
<td>• Review and supplement existing legal documents by determine the responsibilities of other sectors besides the Health Board with special attention to a clear structure on information exchange among all sectors should be addressed and implemented.</td>
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<tr>
<td></td>
<td></td>
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<td></td>
<td>• Establish a multilevel multisectoral coordination group on the scope of the IHR (2005) with clear terms of reference that ensures operational communication, collaboration and awareness between sectors.</td>
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<td></td>
<td></td>
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<td></td>
<td>• Streamline the role of existing operational/duty specialists in the health sector that coordinate and communicate with other sectors in case of threat or emergency.</td>
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<tr>
<td></td>
<td>P3.3</td>
<td>Strategic planning for IHR preparedness or health security</td>
<td>1</td>
<td></td>
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<td></td>
<td>P4.1</td>
<td>Multisectoral coordination on AMR</td>
<td>2</td>
<td>• Organize regular meetings of the intersectoral steering committee including all relevant stakeholders to develop a One Health AMR strategy to be submitted and approved by all sectors (multisectoral collaboration strengthening).</td>
</tr>
<tr>
<td></td>
<td>P4.2</td>
<td>AMR surveillance</td>
<td>4</td>
<td>• Finalize, approve and implement (including budget) the National Action Plan on AMR and IPC for the human sector.</td>
</tr>
<tr>
<td></td>
<td>P4.3</td>
<td>Prevention of MDRO transmission in healthcare facilities</td>
<td>3</td>
<td>• Work with the Health and Welfare Information Systems Centre and the Estonian Society for Laboratory Medicine to implement automated (integrated) AMR and Antimicrobial use (AMU) surveillance systems (including feedback mechanisms to data providers and data submission to EARS-Net, the ESAC-Net and WHO GLASS) covering the hospital and community setting.</td>
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<tr>
<td></td>
<td>P4.4</td>
<td>Optimize use of antimicrobial medicines in human health</td>
<td>3</td>
<td>• Develop a roadmap with the reference laboratory to monitoring AMR trends and unusual events at national level (including criteria for isolates to be submitted for confirmatory/further testing (incl. whole genome sequencing), protocols for risk assessment and outbreak investigation and integrated surveillance across sectors).</td>
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<tr>
<td></td>
<td>P4.5</td>
<td>Optimize use of antimicrobial medicines in human and animal health and agriculture</td>
<td>3</td>
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### Technical areas

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<tbody>
<tr>
<td>P5.1</td>
<td>Surveillance of zoonotic diseases</td>
<td>4</td>
<td>• Based on review of existing scientific and epidemiological evidence and the current public health risks, update the national legal framework for zoonotic diseases and following on, revamp the national control programme based on revised legislation.</td>
</tr>
<tr>
<td>P5.2</td>
<td>Responding to zoonotic diseases</td>
<td>4</td>
<td>• Establish a multisectoral coordination group for zoonoses with clear terms of reference that formalises information sharing and communication between food, veterinary and human health sectors.</td>
</tr>
<tr>
<td>P5.3</td>
<td>Sanitary animal production practices</td>
<td>5</td>
<td>• Develop guidance and advice for zoonoses prevention and control measures for primary producers, starting with salmonella in the first instance.</td>
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<td></td>
<td>• Conduct a simulation exercise for a non-foodborne scenario.</td>
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<td></td>
<td>• Develop entomology capacity and establish a vector surveillance programme to prepare for future climate change related infectious disease threats and potential changes to distribution of vectors and vector borne diseases.</td>
</tr>
<tr>
<td>P6.1</td>
<td>Surveillance of foodborne diseases and contamination</td>
<td>4</td>
<td>• Update and adopt the cooperation agreement between the Health Board and the Agriculture and Food Board to ensure all aspects from data generation to data sharing and use in the framework of surveillance and response to foodborne events including contaminations, are included.</td>
</tr>
<tr>
<td>P6.2</td>
<td>Response and management of food safety emergencies</td>
<td>4</td>
<td>• Health Board and Agriculture and Food Board to jointly work to provide regular training opportunities and simulation exercises concerning the detection and management of nation-wide foodborne emergencies.</td>
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<tr>
<td></td>
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<td></td>
<td>• Work with policy-makers to develop and enforce national policy and regulations on the notification of detection of infectious disease agents in food of non-animal origin.</td>
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<td></td>
<td>• Work with policy-makers to allocate funds to adequately support for the development and implementation of risk analysis and evaluation concerning foodborne hazards.</td>
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<td>Technical areas</td>
<td>Indicator number</td>
<td>Indicator</td>
<td>Score</td>
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| **P7. Biosafety and biosecurity** | P7.1 | Whole-of-government biosafety and biosecurity system in place for all sectors (including human, animal and agriculture facilities) | 2 | • Review of and analysis of gaps in, current legislation with regards to available measures for strengthening biosafety and biosecurity. The assessment can be the first step to developing a national multisectoral plan on biosafety and biosecurity.  
• The analysis should be made jointly between sectors (e.g. human health, animal health, food safety, security/law enforcement, civil protection, customs, armed forces, academia).  
• The assessment should specifically address legislations to increase security measures for staff before granted access to high containment laboratories, priority pathogens collection and/or access to sensitive information regarding pathogens.  
• The assessment should also consider the issue of dual use research of concern and identify what awareness measures that needs to be taken and how the universities should address the issue.  
• The assessment should also specifically address the legal support for establishing a national list of pathogens of concern and conduct national inventory of pathogens.  
• Strengthen biorisk management training. To increase competence for biorisk management the following actions are suggested:  
• A training programme for laboratory biorisk management could be developed jointly between human and veterinary sector, potentially with the support from national academic partners as well as international partners. LABRIS and the Health Board as national reference labs would be the suggested responsible authorities for developing the programme and primarily the focus can be on training of trainers’ other laboratories in the country.  
• Include biorisk management in basic training and consider developing a specific academic course on biorisk management. |
| | P7.2 | Biosafety and biosecurity training and practices in all relevant sectors (including human, animal and agriculture) | 2 | |
| **P8. Immunization** | P8.1 | Vaccine coverage (measles) as part of national programme | 3 | • Update the national immunization information system to improve immunization data capture and quality. |
| | P8.2 | National vaccine access and delivery | 4 | • Introduce regular tracking of public attitudes towards immunization to better target vaccination strategies. |
| | P8.3 | Mass vaccination for epidemics of vaccine-preventable diseases | 4 | • Increase vaccination demand and uptake by better understanding perception and behavioural issues related to immunization.  
• Improve knowledge of the general population and healthcare workers in immunization, also improve awareness in schools.  
• Update and consolidate legislation on immunization. |
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<tr>
<th>Technical areas</th>
<th>Indicator number</th>
<th>Indicator</th>
<th>Score</th>
<th>Priority Actions</th>
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<tr>
<td><strong>Detect</strong></td>
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<tr>
<td><strong>D1. National laboratory systems laboratory</strong></td>
<td></td>
<td>Specimen referral and transport system</td>
<td>5</td>
<td>• Develop national standards for laboratory diagnosis of human priority/notifiable diseases and AMR. The standards provide guidelines for all microbiological labs that perform laboratory diagnostics of communicable diseases.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Laboratory quality system</td>
<td>2</td>
<td>• Develop national EQA programme for priority human communicable diseases and AMR. This programme should be part of the tasks of the national reference laboratories. (For veterinary medicine, the laboratory service is consolidated to the laboratories of LABRIS so the need for a national EQA programme is not a priority).</td>
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<td></td>
<td></td>
<td>Laboratory testing capacity modalities</td>
<td>4</td>
<td>• Increase the collaboration between laboratories in health and vet/food-sector through development of joint protocols for data sharing, including sequencing data and laboratory training. Consider developing collaboration for cross-sectoral support during emergencies that require increase of laboratory capacity.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Effective national diagnostic network</td>
<td>3</td>
<td>• Develop a long-term plan for sustainable programme, including mechanisms for funding, for the use of WGS for surveillance of selected pathogens and for detection of pathogens (metagenomics approach).</td>
</tr>
<tr>
<td><strong>D2. Surveillance</strong></td>
<td></td>
<td>Early warning surveillance function</td>
<td>4</td>
<td>• Design a roadmap for the development of the integrated infectious disease reporting system that, in addition to data from laboratories and clinicians, also includes data on, for example, demographics. This road map should be based on a thorough evaluation of the current surveillance system. High level requirements are drafted and data protection aspects, e.g. related to data linkage, are laid out in a dedicated document.</td>
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|                | D2.3             | Analysis and information sharing | 4     | • Map funding and human resource needs and make resources available for the development, maintenance and performance of the integrated surveillance system, including the IT solutions.  
• Design a dashboard to dynamically query, tabulate and visualize data on infectious disease surveillance, including the creation of case reports, lab reports and display data analysis results. Make the dashboard available for use by the Health Board and as epidemiological resource for the reporting physicians and laboratories.  
• Design an information exchange platform between the Health Board and the Agriculture and Food Board, to facilitate the epidemiological investigation of zoonotic diseases and food- and waterborne outbreaks and the collaboration on risk assessments and genomic surveillance data exchange.  
• Make the results of WGS data analysis available for epidemiological surveillance and assess the effectiveness and efficiency of the integration of these new molecular methods. Increase the capacity of the national reference laboratory in terms of equipment and trained staff, as well as the training of epidemiologists in molecular and modern epidemiology. |
| D3. Human resources | D3.1            | Multisectoral workforce strategy | 3     | • Develop, implement and monitor a strategy to increase the workforce for animal health in relation to the One Health policy. |
|                | D3.2             | Human resources for implementation of IHR | 4     | • Analyse the current public health workforce situation, make recommendations for futureproofing and establish time-bound and measurable targets to strengthen the public health workforce. |
|                | D3.3             | Workforce training | 3     | • Include (field) epidemiologists in workforce action plans and strategies by increasing awareness and access of Estonian experts (from diverse disciplines) to the two-year EPIET or EUPHEM paths. Assess the possibility to re-establish a recognized Training Site of the Fellowship programme with Member State track fellows in Estonia. |
|                | D3.4             | Workforce surge during a public health event | 4     | • Develop a clear career structure within the workforce strategy to ensure effective replacement and retention of eligible and qualified public health professionals.  
• Explore options to enhance collaboration in field epidemiology and operational research between the Epidemiology Department of the Estonian Health Board and academia. |
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<td>Respond</td>
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| R1.1 Health emergency management | R1.1 | Emergency risk and readiness assessment | 4 | • Appoint and define in legal acts primary healthcare providers who would engage in emergency preparedness and response with well-defined and required tasks and responsibilities that are supported with sufficient financial resources.  
• Review logistic and stockpile capacity particularly for primary healthcare providers based on the national multi-hazard response plan and develop strategy for increasing capacities based on risk assessment.  
• Adopt national SOPs and legal provisions to allow deployment and as well accept health care personnel during the emergency situations. |
<p>| R1.2 | Public health emergency operations centre | 3 | • Strengthen operational research preparedness in Estonian Governmental institutions, in close collaboration with the academia, by promoting the importance of evidence-informed public health in emergencies with appropriate resourcing. |
| R1.3 | Management of health emergency response | 5 | | |
| R1.4 | Activation and coordination of health personnel in a public health emergency | 4 | | |
| R1.5 | Emergency logistic and supply chain management | 3 | | |
| R1.6 | Research, development and innovation | 3 | | |</p>
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| **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 | 2 | • Agree on the modalities for enhancing collaboration and coordination between public health and security authorities, either through a memorandum of understanding or another high-level agreement, as deemed appropriate in Estonia.  
• Given the agreement, collaboratively develop with public health and security authorities, CBRN-relevant scenarios to further test the preparedness and response gaps.  
• Conduct regular (at least once every 2 years) tabletop and/or field exercises based on developed scenarios.  
• Develop practical standard operating procedures focusing on defining communication lines between the generic points of contacts (duty officers from respective stakeholders) to facilitate timely information sharing and risk assessment capability for potential real-life events.  
• Clearly define CBRN in Estonia’s context in the ongoing development of the CBRN handbook and build on existing bilateral knowledge exchange with countries and organization with well-developed and tested collaboration linking public health and security authorities. |
<p>| <strong>R3. Health services provision</strong> | <strong>R3.1</strong> | Case management | 4 | • Finalize and document case management guidelines for priority health events identified based on strategic risk assessment (e.g. epidemic prone diseases, trauma, chemical events, radiation emergencies, etc) including standard operating procedures with a list of designated referral healthcare facilities, referral procedures, field triage, safe transportation and treatment of pathologies resulting from events included. As well as guideline dissemination orientation and training of health workers at all levels. |
| | <strong>R3.2</strong> | Utilization of essential health services | 4 | |</p>
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| R3.3           | R3.3            | Continuity of essential health services | 4     | • Expand the stockpile of medicine, medical products and supplies, equipment and vaccines according to assessed needs, both at the level of health service providers at primary, secondary and tertiary level and at national level. Ensure capacity to receive and store Medical Counter Measures donations, including legal provisions.  
• Specify the role of the public healthcare providers in all relevant national preparedness and response plans as a vital service provider on emergency response and continuity of the essential health services. Enhance monitoring of the primary care services continuity more comprehensibly.  
• Explicitly include the continuity of the emergency health services during emergencies in the relevant national preparedness and response plans. Establish the prioritization criteria (to define country context specific high priority health services) to ensure continuity of the essential quality health services during emergencies including: emergency care, promotion, prevention, diagnosis, treatment, rehabilitative and palliative care that are safe, equitable, effective and people-centred and are based on primary health care principles, including essential public health functions and addressing priority determinants of health.  
• Document and further build and strengthen investment on proven effective innovative digital health solutions both for improving access to medicine and health services and bridging the inequity gap. |
| R4. IPC        | R4.1            | IPC programmes | 3     | • Finalize, approve and implement the National Action Plan on IPC policies with clear responsibilities and defined roles by the Health Board in collaboration with the Estonia Society for Infectious Diseases and with relevant stakeholders in 2024. WHO national IPC assessment tool (IPCAT2) can be used.  
• Set up a national IPC focal point responsible for implementation of the National Action Plan.  
• Make a proposal to review and update IPC related policies and legislation by the Health Board in 2024.  
• Develop a protocol to conduct surveillance on HCAI on national level in hospitals and LTCF’s.  
• Ensure adequate staffing and assure allocate additional budget for hospitals and LTCFs for planned IPC activities and support. |
| R4.2           | R4.2            | HCAI surveillance | 2     | |
| R4.3           | R4.3            | Safe environment in health facilities | 3     | |
| R5. RCCE       | R5.1            | RCCE systems for emergencies | 3     | • Develop scenarios for diverse types of health crises in order to be prepared for multi-hazard crises  
• Develop a plan for specifying the coordination and cooperation between government agencies in the field of RCCE and infodemic management. |
<p>| R5.2           | R5.2            | Risk communication | 4     | |</p>
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| R5.3           | Community engagement | 3 | • Develop and implement a training programme for RCCE and infodemic management that can be adapted to the needs of staff, spokespeople and media.  
• Identify stakeholders in communities and plan together the next steps to codevelop and codesign emergency response initiatives.  
• Work with policy-makers to establish a dedicated and sufficient budget for RCCE and infodemic management. |

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<td>PoE: PoEs and border health</td>
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| PoE.1 Core capacity requirements at all times for PoEs (airports, ports and ground crossings) | 3 | • Amend the legal basis for IHR implementation at points of in Estonia (including designation of the PoEs and core capacity development).  
• Optimize preparedness planning at PoEs via strengthening of multi-agency approach and appropriate risk assessment.  
• Raise awareness of travellers and collaborating partners about communicable disease risk areas and others travel-related public health risks (developing and systematic updating of the information at websites).  
• Develop core capacities in other priority PoEs.  
• Strengthen all hazard approach training/exercises.  
• Recommended to designate appropriate space, separate from other travellers to interview suspect or affected people according to IHR 2005 1 Annex B (capacities for public health emergency) |
| PoE.2 Public health response at PoEs |
| PoE.3 A risk-based approach to international travel-related measures |

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<tr>
<th>CE. Chemical events</th>
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<td>CE.1 Mechanisms established and functioning for detecting and responding to chemical events or emergencies</td>
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## Joint External Evaluation of the International Health Regulations (2005) core capacities for Estonia

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</table>
| CE.2            |                  | Enabling environment in place for management of chemical events | 5     | • In cooperation with other agencies, develop standard operating procedures and other relevant document on the public health management of chemical events for different scenarios, not only industrial accidents; this should include information exchange mechanism, decontamination of patients and medical staff, procedures for the investigation of unknown disease outbreaks with potential chemical origins.  
• Establish a mechanism allowing timely and systematic information exchange between appropriate chemical units, surveillance units and other relevant sectors about acute chemical events, potential chemical risks and their response.  
• Consider strengthening laboratory capacities for the identification of priority chemical agents in human samples.  
• Organize regular trainings and education campaigns for medical staff, in hospitals and for first responders, on triage, decontamination and other health-related topics relating to chemical emergencies.  |
| RE.1            |                  | Mechanisms established and functioning for detecting and responding to radiological and nuclear emergencies | 4     | • Strengthen the capacity of laboratories to ensure monitoring in large-scale radiation emergencies by strengthening the national laboratory and signing agreements with laboratories in other countries. The possibility of nationally developing the capacity to assess doses from internal radiation should be considered.  
• To ensure the sustainability of interagency communication and workflow coordination in emergency situations, the procedure and information flows between agencies must be updated and formalized.  
• To build capacity and provide expertise in the field, designate at least one hospital that diagnoses and treats people overexposed to radiation.  
• Follow CBRN manuals to ensure the best possible protection of first responders and hospital personnel from the hazards of radioactivity and contamination, including initial handling and treatment of contaminated patients.  
• Further investigation to find out what are the country’s needs for different types of pharmaceutical drugs related to radiation emergency related patient treatment. For some cases also consider having agreement with neighbouring countries on the provision of pharmaceutical agents that can be used as countermeasures in the case of a radiation emergency or consider the creation of a national stockpile.  |
| RE.2            |                  | Enabling environment in place for management of radiological and nuclear emergencies | 5     |  |
Prevent
P1. Legal instruments

Introduction

The IHR (2005) provide obligations and rights for States Parties. In some States Parties, implementation of the IHR 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 to facilitate IHR implementation and maintenance. Implementing legislation could serve to institutionalize and strengthen the role of the IHR 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 to facilitate their implementation in a more efficient, effective or beneficial manner.

Level of capabilities

In Estonia, implementation of the IHR is enabled through broad health and emergency management legislation. The IHR requirements in Estonia is a shared responsibility among multiple sectors at the federal and local government levels. The NFP is legally established at the Estonian Health Board.

The most important sources of law are legal instruments such as the Constitution, EU law, international agreements, Acts and Regulations as well as an Anti-Corruption Act. There is a continual legislative process in place which involves drafting, consultation, approval, adoption and implementation. Government agencies and officials interpret and provide guidance on the legal instruments to ensure consistent understanding and application and individuals, businesses and organizations are expected to comply with the legal instruments’ requirements which are monitored by relevant administrative bodies. It is during the drafting stage that impact analyses are conducted to determine, for example, the needs for new legislation or revisions of existing legislation as well as economic implications.

The main legal instruments for which provide the foundation for public health are the Public Health Act, the Communicable Diseases Prevention and Control Act, Health Services Organization Act and the Emergency and Rescue Acts. The Federal legislation also governs sectors that affect public health, such as chemical safety, water safety, radiation protection, food safety and animal health.

The National Public Health Act is the overarching legal framework for public health setting out responsibilities and coordination mechanisms for public health actions at national and subnational levels. The Health Services Organization Act and its corresponding regulations govern the organization and provision of health services in Estonia and include provisions for emergency preparedness and response within the health sector. The Communicable Diseases Prevention and Control Act and its corresponding regulations provide the legal framework for the prevention and control of communicable diseases, including provisions for emergency declarations and response measures and coordination between relevant authorities to protect Estonia’s against health risks and the spread of disease; this Act also
mandates requirements and procedures for international cooperation and communication. The national mandate for disease surveillance and notification from various health professionals of public health events are legally required in the Estonian Communicable Diseases Prevention and Control Act and the Estonian Health Services Organization Act. The Veterinary Act regulates the bases of monitoring zoonoses and foodborne outbreak of a disease, as well as the bases of prevention and control of an animal disease required for protection of animal and human health. Finally, the Emergency Act and its regulations stipulate the responsibility for national and local authorities and corresponding vital services to develop preparedness plans, exercise and respond.

Estonia has a strategic health document, the National Health Plan 2020–2030, which aims to reduce inequalities in health and strengthen areas of vaccination, infection prevention and control and AMR as well as prevention and control of hepatitis and HIV. This plan is coordinated by the Ministry of Social Affairs and the plan’s corresponding programmes are approved annually by a Directive of the Minister of Social Affairs after the adoption of the state budget. Notably, there are ongoing revisions to the Communicable Diseases Prevention and Control Act and preparations for a pandemic preparedness plan.

The Equity Act and the Gender Equality Act make up the fundamental legislation that promotes equity in Estonia. These legislative acts are overarching and should be applied within all areas including health, emergency preparedness and social services.

The Equal Treatment Act prohibits direct and indirect discrimination in areas such as employment, education, social protection and provision of goods and services and promotes equal treatment regardless of an individual's characteristics. The Gender Equality Act aims to ensure equal rights and opportunities for women and men in all areas of life, including employment, education and participation in decision-making processes. The Act prohibits gender-based discrimination and promotes gender mainstreaming in policies and practices. The Commissioner for Gender Equality and Equal Treatment is an independent and impartial expert who monitors compliance with the requirements of both the Equity Act and the Gender Equality Act.

The distribution of women and men in different sectors of the labour market is such that 25% of women work in education, health and social work, compared with 4% of men. Women work significantly less (10%) than men (40%) in science, technology, engineering and mathematics-related professions. Specifically, a large majority of the healthcare workforce in Estonia are women. In Estonia men on average live 8.5 years less than women, and the prevalence of alcohol and tobacco use is higher among men. Notably, there is a large gap in how the population considers themselves to be in good health, where three quarters of people in the highest income quintile considered themselves to be in good health compared with only one third in the lowest.¹

### Indicators and scores

**P1.1 Legal instruments: score 4**

**Strengths**

- There are a broad range of legal tools to protect Estonians from communicable diseases and promote equity and access to health care.
- The legislative process is consultative and transparent and requires an impact assessment within its drafting stage to continually introduce new legal instruments. As well, there are authorities empowered to oversee compliance to laws.
- There is a funded long-term strategic plan for public health priorities which is funded by the federal government and its implementation is monitored on an annual basis.

¹ Most of the data presented in this report are taken from the Health statistics and health research database (tai.ee) or the Estonian health system review that was published last year in December accessible here https://iris.who.int/bitstream/handle/10665/374315/9789289059527-eng.pdf.
Challenges
• Estonia has conducted a legal analysis and identified and reviewed gaps in all sectors and across government levels, yet the revision is ongoing.
• Systematic legal surveillance is sporadic and is unable to comprehensively monitor and propose legal changes from the recommendations from recent reviews and evaluations that have taken place.

P1.2 Gender equity and equality in health emergencies: score 3

Strengths
• Estonia has fundamental legislation for equity and equality in the country as well as a Commissioner for Gender Equality and Equal Treatment who monitors compliance with the requirements of these Acts.
• Estonia has a strategic plan to promote equitable access to health care in the country which has been financed, and most of the Estonian population (90%) is covered by the state health insurance fund.

Challenges
• Although Estonia has legislation for equity and equality and a Commissioner for gender equality and equal treatment, a gender an action plan to address at least one IHR capacity using a gender analysis is lacking.
• The health workforce in Estonia is composed largely of women and women are also the main caregivers in the family which has the potential to over exceed the capacities of these individuals (main caregiver plus healthcare worker) to fulfil their duties should the health system is stressed in a crisis.

Recommendations for priority actions
• Undertake a robust legal analysis (legal mapping and legal assessment) to determine gaps in legislative tools including identifying all responsible authorities for implementing the requirements in line with the IHR in all relevant sectors. This legal analysis and eventual revision of legislations could involve relevant professional organizations such as medical associations and civil society organizations.
• Revise the Communicable Diseases Prevention and Control Act to strengthen mandates for surveillance, reporting and management of communicable diseases.
• Develop an approach for legal surveillance to enable changes (improvements) in legal instruments related to three to five core capacities that are based on exercises, reviews and evaluations at the IHR Focal Point.
• Undertake a gender-based diversity analysis which considers gender norms and roles in the country to support an action plan to address gender gaps for one IHR core capacity.
P2. 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. The 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 are available.

Level of capabilities

The Estonian government allocates funds from its national budget to sustain essential public health infrastructure, surveillance systems, emergency response mechanisms and health workforce training required to comply with the IHR.

Programmes, systems and public agencies that deliver IHR requirements are funded through the government annual budgeting process established in the State Budget Act. The budget is approved by the Parliament after a budgetary process which involves budget proposals by ministries, budget preparation and review. Annual financial reports on plans and priorities are obliged to show budget allocations to the ministries and resulting use of funds are publicly available online. The National Audit Office of Estonia verifies whether public funds have been used efficiently, effectively and lawfully.

The state budget for 2023 is approximately €17 billion, domestic funding sources account for €15 billion (89% of the budget) and the remaining €1 billion 11% is from domestic sources. Health related expenditures totalled 2.3 billion allocated for 2023, with approximately €81 million estimated to have been spent on IHR functions across the health, interior, climate, police and border guard board, rescue board, emergency response centre, agricultural and food board sectors. Notably, 90% of the population is covered by the national health insurance fund and out-of-pocket health care spending occurs to a lesser extent.

International support may occasionally be sought for specific projects or initiatives, i.e. Recovery Assistance for Cohesion and the Territories of Europe (REACT-EU) funds, yet domestic government funding remains the main source of financing to ensure the country’s ongoing readiness to effectively respond to public health threats and emergencies in accordance with IHR requirements.

Estonia has several mechanisms to allow for resources to be distributed in a timely manner for operational readiness and responding to a public health emergency. These mechanisms include legislation, plans and coordination structures that enable rapid resource allocation to deploy essential resources, including medical supplies, personnel and finances during crises.

The government of Estonia can make specific funds available rapidly to support emergency response enabled by the regulatory procedures for allocating funds from the Reserve using allocated resources in the State Budget Act. Additionally, a regulation exists defining conditions and procedure for the utilization of resources required for resolving healthcare events in areas including ambulance, specialized medical care and general practitioner service providers, both during an emergency or threat of emergency. Lastly, during the fiscal year, budget reallocations can be made as the annual budget is executed.
The State Budget Act allows for a spending review in planning of the state budget funds for productive and efficient use of public funds and enhancing flexibility whereby specific proposals for efficient and economic use of state funds are proposed. In addition, resources can be obtained by external partners in an emergency by way of a decision coordinated by the Ministry of Social Affairs.

**Indicators and scores**

**P2.1  Financing for IHR implementation: score 4**

**Strengths**

- Financial planning is aligned with national priorities on an annual basis through the budgetary process but also through the annual implementation of the National Health Plan 2020–2030.
- The majority (89%) of health funding is from domestic sources, and external funding is acquired as a supplement for short-term initiatives.
- The budget is transparent, predictable and distributed in a timely way at all levels and sectors. There is also flexibility for reallocating finances in the budget. Auditing structures and legislation enable monitoring the use of public finances.

**Challenges**

- Funding is merely sufficient to just meet IHR core requirements. Due to this, activities to continually strengthen individual IHR core capacities and strategic planning and formalizing multisectoral collaborations may not be proactively occurring.
- Human resources to fulfil IHR core capacities is a current challenge and a challenge for coming years due to factors such as individuals retiring and attrition to other employment opportunities or lack of students choosing these professions.

**P2.2  Financing for public health emergency response: score 4**

**Strengths**

- Special funds are available to support emergency response in addition to emergency preparedness requirements for health services to be able to be able to rapidly respond to an emergency or threat of an emergency.
- There is legislation with procedures to support with supplementary funding, or to reallocate funding for, emergency response and preparedness in the country.
- Financial planning and implementation is transparent and monitored by relevant government authorities.

**Challenges**

- Preparedness planners need to have thorough awareness of financial structures and include and test these preparedness plans.
- The overarching National Health Plan 2020–2030 has allocated financing for specific IHR core capacities yet a general financial strategy for all IHR core capacities is lacking.

**Recommendations for priority actions**

- Undertake a financial overview which is connected to responsibilities for IHR implementation and financing mechanisms coupled to responsibilities to determine the possible areas for improved financing.
- Undertake outreach activities to engage additional individuals in health professional roles such as fellowship training, at health professional schools and in the medical and public health sciences.
- Utilize the spending review possibility in the State Budget Act to analyse the use of public funds regarding IHR implementation and develop a specific proposal regarding comprehensive and thereby efficient use of funding IHR core capacities.
P3. IHR coordination, IHR NFP 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 an IHR NFP and adequate resources for IHR implementation and communication, is a key requisite for a functioning IHR mechanism at country level.

Target

Multisectoral and multidisciplinary approaches through national partnerships that allow efficient, alert and response systems for effective implementation of the IHR coordinating nationwide resources, including sustainable functioning of an NFP – a national centre for IHR communications which is a key obligation of the IHR – that is always accessible. States Parties provide WHO with contact details of IHR NFPs, 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) 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

Estonia ratified the IHR in 2007. The designated IHR NFP is the Health Board which is accessible around-the-clock both nationally and internationally. The NFP is equipped with adequate administrative, human, technological and financial resources to carry out its functions.

According to the Communicable Diseases Prevention and Control Act and the Emergency Act the Health Board, as the NFP, is the competent authority in the field of prevention, monitoring and control of infectious diseases and a cooperation agreement with the Agriculture and Food Board has been signed. It also provides the mechanisms for multisectoral collaboration, however the structures for collaboration with other sectors are not formalized and awareness of the IHR as a global legal instrument is limited. Collaboration between sectors is well established although based on personal contacts and an ad-hoc basis.

Indicators and scores

P3.1  IHR NFP functions: score 3

Strengths

• The IHR was ratified in 2007.
• The designated IHR NFP is the Health Board, which is accessible round-the-clock nationally and internationally and is sufficiently equipped and organized.

Challenges

• Structures for collaboration, that describe and define real time management of information and communication between the National Focal Point for IHR and other relevant sectors, are lacking.
Joint External Evaluation of the International Health Regulations (2005) core capacities for Estonia

- The training system for public health specialists at regional level to fulfil core capacity requirements for surveillance and response activities to enhance detection of public health threats and timely reporting to national level could be enhanced.
- Limited availability of well-trained public health specialists in long lasting emergency situations.

**P3.2. Multisectoral coordination mechanisms: score 4**

**Strengths**
- The Health Board collaborates with other sectors according to their responsibilities for risk assessment of public health events, any events of potential public health significance and implementation of control measures.
- Well established cooperation between different departments within the Health Board and collaboration with Agriculture and Food Board on events related with infectious disease pathogens.

**Challenges**
- Existing national legislation does not cover the IHR roles and responsibilities of any sectors beyond the Health Board, particularly for sectors responsible for managing chemical and radio-nuclear threats.
- Some sector plans for addressing emergency situations do not necessarily include cooperation mechanisms or linkages to other agencies and sectors.
- Lack of formalized information exchange between sectors.

**P3.3. Strategic planning for IHR, preparedness or health security: score 1**

**Strengths**
- National simulation exercises to test readiness to respond are organized biennially and smaller scale exercises (for example, within one agency) are performed for frequently.
- After-Action Reports for the distinct phases of the COVID-19 response were performed.
- Regular emergency risk analyses are prepared to systematically assess which events might evolve into an emergency and what might be the level of consequences.

**Challenges**
- Lack of an NAPHS that would include priority actions for IHR implementation and strengthening of health preparedness with multisectoral dimension.
- Follow-up processes for the implementation of lessons learned and strategic IHR developments are not in place.

**Recommendations for priority actions**
- Develop and implement a prioritized and costed NAPHS (WHO terminology) or similar comprehensive and consolidated capacity development plan with strategic objectives e.g. for the next 5–7 years broken down into 1–2-year operational plans where implementation roles and responsibilities of different agencies and ministries is described. The plan should be informed by the JEE recommendations and other potential reviews and evaluations with a clear monitoring and evaluation scheme.
- Review and supplement existing legal documents by determine the responsibilities of other sectors besides the Health Board with special attention to a clear structure on information exchange among all sectors should be addressed and implemented.
- Establish a multilevel multisectoral coordination group on the scope of the IHR with clear terms of reference that ensures operational communication, collaboration and awareness between sectors.
- Streamline the role of existing operational/duty specialists in the health sector that coordinate and communicate with other sectors in case of threat or emergency.
P4. Antimicrobial resistance (AMR)

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, this problem was manageable as the growth of resistance was slow and the pharmaceutical industry continued to create new antibiotics.

Over the past decade; however, this problem has become a crisis. AMR is evolving at an alarming rate and 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:
- 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.
- Surveillance capacity for AMR and antimicrobial use at national level, following and using internationally agreed systems such as GLASS and the World Organisation for Animal Health global database on use of antimicrobial agents in animals.
- Prevention of AMR in healthcare facilities, food production and the community, through IPC measures.
- 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

According to EARS-Net data, Estonia has low resistance proportions compared with the EU/European Economic Area population weighted mean; also, antibiotic use is low when compared with other European countries. Healthcare providers are legally obliged to implement IPC and antibiotic stewardship components and measures to prevent and control health care associated infections and AMR at local level. Visited facilities (central and regional level) were adequately equipped, including access to microbiological diagnostics (pathogen identification, antimicrobial susceptibility testing and some resistance mechanisms), to fulfil the legal requirements.

Medical societies and the university are among others actively engaged stakeholders in the context of IPC and AMR control.

However, the national reference laboratory for AMR was appointed only recently. A more strategic and mandated coordination at national level (Health Board) was established only in recent years and AMR has been included in the Estonian Population Health Development Plan 2022–2030. Activities were hampered by the COVID-19 pandemic and lack of human resources at national level.

The Estonian e-health and digitalization strategy will facilitate automated surveillance at national level (AMR, antimicrobial use/consumption and health care related infections, such as bloodstream infections) to inform sector-specific and multisectoral policy and actions. However, currently automated data extraction from the central database for further analysis is not implemented and EARS-Net data are still collected manually.
A national One Health Action strategy lead by the Ministry of Social Affairs with multisector involvement is under development and a sector specific national action plan on AMR and IPC is to be adopted by the first quarter 2024. Funding for implementation and actions will come from various sources.

National coordination in the food and veterinary sector and frameworks according to EU regulations are implemented, such as AMR monitoring in food-producing animals and food and the prudent use of antimicrobials. The National Centre for Laboratory Research and Risk Assessment serves as AMR reference laboratory. In 2022 an updated national sector-specific action plan on AMR has been adopted by the Ministry of Regional Affairs and Agriculture and in 2023 a new database to collect AMU data has been launched.

The new EU Water Framework Directive may provide the opportunity for further environmental sector involvement, which to date has been limited.

**Indicators and scores**

**P4.1 Effective multisectoral coordination on AMR and the national action plan:**  
**score 2**

**Strengths**
- A multisectoral steering committee has been established and approved by the Minister of Social Affairs with all relevant stakeholders being involved.
- Enthusiastic and engaged professional societies in both human and veterinary sectors providing technical and scientific support and advice for medical staff, public health authorities and decision-makers.

**Challenges**
- Defining terms of reference, including roles and responsibilities of the intersectoral steering committee.
- Staff capacity and competency at national level.
- Deprioritization of AMR.

**P4.2 Surveillance of AMR:**  
**score 4**

**Strengths**
- Estonia has participated in EARS-Net since 2010.
- Digital Health Information System: all patient’s health records, including the results of laboratory investigations, are reported to the national database.
- AMR data in invasive bacterial isolates are collected and analysed by the Health Board (in collaboration with Estonian Society for Laboratory Medicine representative), reported to local stakeholders and submitted to ECDC annually.
- EARS-Net data currently covers 10 laboratories and 100% of hospitalized patients in the country.
- All laboratories participate in the EARS-Net provided EQA.
- All healthcare providers, including laboratory services, are obliged to transfer data to the national health information system.
- Most hospitals monitor antimicrobial susceptibility rates locally, providing feedback to the clinical departments and annual reports.
- Active surveillance to detect and monitor AMR in food-producing animals is systematically carried out in the country and results are publicly available in EU summary reports.

**Challenges**
- AMR surveillance system in outpatient facilities.
• Digital solution for data collection and analysis.
• Coordination on national level.
• National AMR surveillance protocol has not been developed yet.
• Development of well-functioning ICT solution requires additional financial resources and experienced staff from both ICT and epidemiological side.
• Lack of human resources and high personnel turnover during the last years.
• Health Board laboratory for communicable diseases has been appointed as the reference laboratory for AMR only recently. Additional funding and human resources allocated during the last 2 years to increase laboratory capacity, by implementing WGS technology.
• Lack of integration of AMR data generated from the different sectors at national level.

P4.3  Prevention of MDRO transmission in healthcare facilities: score 3

Strengths
• European Committee on Antimicrobial Susceptibility Testing guidelines and expert rules are in place in all microbiology laboratories.
• Most hospitals have facility-level guidelines on antimicrobial treatment, MDRO surveillance and outbreak detection and control.
• There is a recommended MDRO definition for Pseudomonas aeruginosa and Acinetobacter spp. approved and published by the clinical microbiology workgroup of the Estonian Society for Laboratory Medicine. Definitions for other pathogens are currently under review and approval.
• Regional hospitals and laboratories provide support and consultation for rural hospitals.

Challenges
• National guidelines on containment strategies at healthcare facilities in case of suspected MDRO outbreak is detected.
• Lack of early warning system for outbreak or other important MDRO-related event detection.
• Involvement of the national authorities and national reference laboratory to assist on MDRO-related events.
• Surveillance and control activities include a lot of manual work.
• Development of ICT solutions.
• Increasing expertise on national level.
• Developing national guidelines and updating regulations.

P4.4  Optimize use of antimicrobial medicines in human health: score 3

Strengths
• Antimicrobial use for humans is monitored via medicine wholesalers’ reports to the State Agency of Medicines and the Estonian Health Insurance Fund.
• According to regulation number 117, every hospital is obliged to develop and implement guidelines on antimicrobial treatment and antimicrobial stewardship programme.
• Prescription-only antibiotic policy; e-prescription system launched since 2010.
• Regional hospitals provide scientific and technical support and expertise for rural hospitals.
• Most acute care hospitals (> 90%) participate in point prevalence studies (PPS) conducted by ECDC every 5 years. Most hospitals conduct PPS annually at local level; online tool: https://www.kliinikum.ee/abr/app/avaleht.
• Only physicians can prescribe systemic antibiotics, apart from nitrofurantoin and fluconazole, which can be also prescribed by nurses and midwives, pharmacists cannot prescribe antibiotics.
Challenges

- Evidence-informed antibiotic prescription (based on laboratory-confirmed diagnosis).
- National antimicrobial treatment guidelines for hospitals and primary care.
- Comprehensive facility-based surveillance system of antibiotic prescribing; currently only data on total antibiotic consumption is available (wholesaler reports). It would be important to monitor prescribing at local level to implement and monitor antibiotic stewardships measures.
- Lack of national guidelines on diagnostic procedures, particularly for primary care and of treatment guidelines.
- Guidelines who receive treatment of common respiratory tract and urinary tract infections in primary care are under approval.

P4.5 **Optimize use of antimicrobial medicines in human and animal health and agriculture:** score 3

Strengths

- Action plan on AMR in veterinary sector.
- Well designed and operational database on use of antimicrobials in food-producing animals.
- AMR in animals and food is monitored in the EU under coordination of the European Commission.
- Delegation of responsibilities in control of use of antimicrobials between the Agriculture and Food Board and State Agency of Medicines (SAM).
- Cooperation in educating of veterinary practitioners and animal keepers with SAM and University of Life Science.
- EU countries annual reports and European Food Safety Authority summary reports on AMR are available on the European Food Safety Authority website.

Challenges

- Communication and education on reducing the use of antibiotics in animal husbandry.
- Data quality and validity of database on use of antimicrobials in food producing animals; surveillance of veterinarians responsible for data provision.
- Cooperation between stakeholders responsible for specific AMR actions and tasks.
- National (multisectoral) strategy for combating of AMR.
- Availability of antimicrobials (constraints related to limited market).
- Financial constraints (e.g. antimicrobial susceptibility testing costs).

Recommendations for priority actions

- Organize regular meetings of the intersectoral steering committee including all relevant stakeholders to develop a One Health AMR strategy to be submitted and approved by all sectors (multisectoral collaboration strengthening).
- Finalize, approve and implement (including budget) the National Action Plan on AMR and IPC for the human sector.
- Work with the Health and Welfare Information Systems Centre and the Estonian Society for Laboratory Medicine to implement automated (integrated) AMR and AMU surveillance systems (including feedback mechanisms to data providers and data submission to EARS-Net, ESAC-Net and WHO GLASS) covering the hospital and community setting.
- Develop a roadmap with the reference laboratory to monitoring AMR trends and unusual events at national level (including criteria for isolates to be submitted for confirmatory/further testing (incl. whole genome sequencing), protocols for risk assessment and outbreak investigation and integrated surveillance across sectors).
P5. Zoonotic disease

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 multi-sectoral, multidisciplinary mechanisms, policies, systems and practices are in place to minimize the transmission of zoonotic diseases from animals to human populations.

Level of capabilities

Estonia has good surveillance for zoonotic disease in both animals and humans and robust biosecurity systems in place in the priority production systems to minimize the risk of zoonotic disease. Surveillance of zoonoses in Estonia is the responsibility of the Agriculture and Food Board for disease in animals and the Health Board for disease in humans. During incidents there is close collaboration between the Agriculture and Food Board and the Health Board to enable timely investigation and management.

The list of priority zoonoses in Estonia is determined by EU legislation (European Directive 2003/99/EC). This includes those infections that must be monitored and additional diseases that may be monitored according to the epidemiological situation (Transmissible spongiform encephalopathies, Avian Influenza and rabies). These are agreed between the Agriculture and Food Board and the Health Board. Annual zoonoses reports are prepared by the Agriculture and Food Board in cooperation with the Agricultural Registers and Information Board and Health Board and published on web page of the Agriculture and Food Board in English and Estonian (https://pta.agri.ee/zoonoosid), as well as reported to European Food Safety Authority (e.g. to European Commission). Surveillance is in place for farmed animals and wildlife (rabies, Avian Influenza, Trichinella), however no formal system for surveillance on companion animals currently exists but this is being explored.

Management of zoonotic diseases is conducted according to Estonian Veterinary law and a cooperation agreement between the Agriculture and Food Board and the Health Board. Food monitoring and foodborne outbreak manuals have been developed. For foodborne infections, the primary agency is the Health Board and for non-foodborne zoonoses the Agriculture and Food Board leads. Laboratory investigations are conducted by the Health Board (human health) and the National Centre for Laboratory Research and Risk Assessment (animal health). A system is in place for collaboration and information in case of outbreak investigations and joint investigations and risk assessments are conducted.

An agreement between the Health Board and the Agriculture and Food Board exists around information exchange during outbreak. There is a log for each outbreak to be able to follow decision-making and information sharing activities. SitRep (national information platform) is activated when there is an outbreak and reports can be compiled after the outbreak.

Recent outbreaks have been foodborne and analytic epidemiological usually cohort studies. A simulation exercise (foodborne pathogen affecting human and animal feed) was conducted as part of the One Health European Joint Programme in 2022.
Evidence of good sanitary animal production practices is demonstrated through elevated levels of compliance in each of the main production systems. This is currently focused on pig farmers, domestic bird keepers and aquaculture. In future it will be expanded to bovine, ovine and caprine.

**Indicators and scores**

**P5.1 Surveillance of zoonotic diseases: score 4**

**Strengths**

- The advantage of being a small country makes it easier to communicate and supervise animal keepers.
- Food safety and animal health under same competent authority which provides a consistent approach to animal health and food safety surveillance plans.
- National legislation for surveillance, control and reporting foodborne and zoonotic infections is aligned with EU legislation. Based on this, an agreed list of priority infections has been developed by the Agriculture and Food Board and the Health Board.
- Surveillance of agreed priority zoonoses is undertaken by animal and human health sectors, including in wildlife and livestock. Annual reports of zoonotic diseases are published by the Agriculture and Food Board and reported to the European Food Safety Authority.
- There is a legal requirement to implement biosecurity measures to reduce the risk of zoonotic diseases – currently the biosecurity plan includes pig farming, domestic bird keeping and aquaculture. In future it will be expanded to bovine, ovine and caprine.
- There is a strong national laboratory capacity to detect zoonotic diseases however sharing of specimens and isolates between labs does not currently happen

**Challenges**

- Demographically ageing veterinarian workforce likely to lead to skill gap also because preference for younger vets is small animal practice.
- Outside of incidents communication between the Agriculture and Food Board and the Health Board is on an ad hoc basis.
- Limited information sharing between the Health Board and the National Laboratory Research and Risk Assessment Centre (LABRIS).

**P5.2 Responding to zoonotic diseases: score 4**

**Strengths**

- Good cooperation between stakeholders and close cooperation with the LABRIS, Estonian University of Life Science, Estonian Hunters’ Association and the Environmental Board.
- Clear definition of roles and rapid communication between the Agriculture and Food Board and the Health Board in zoonotic incidents. A manual for responding to foodborne incidents has been developed. The response has been tested through several foodborne incidents and a One Health European Joint Programme simulation exercise in 2022.
- In incident setting all stakeholders have access to SitRep (national information platform) which allows for rapid information exchange.

**Challenges**

- Communications have not been tested for non-foodborne incidents.
P5.3  Sanitary animal production practices: score 5

Strengths
- Animal breeding practices follow international recommendations on sanitary standards and animal welfare with elevated level of compliance in each of main production systems and satisfactory level of awareness and adhesion in the professionals and public.
- Biosafety measures are obligatory for all animal keepers.
- Biosafety plan obligatory for pig farmers, domestic bird keepers and aquaculture. In future this will be expanded to bovine, ovine and caprine.

Challenges
- No recent spill over events from domestic, companion or wild animals identified however surveillance of companion animals has not yet been established.
- Existing biosafety plans do not cover all animal groups, but this is planned.
- Ensuring sufficient personnel and budget to maintain and develop control systems

Recommendations for priority actions
- Based on review of existing scientific and epidemiological evidence and the current public health risks, update the national legal framework for zoonotic diseases and following on, revamp the national control programme based on revised legislation.
- Establish a multisectoral coordination group for zoonoses with clear terms of reference that formalises information sharing and communication between Food/veterinary and human health sectors.
- Develop guidance and advice for zoonoses prevention and control measures for primary producers, starting with salmonella in the first instance.
- Conduct a simulation exercise for a non-foodborne scenario.
- Develop entomology capacity and establish a vector surveillance programme to prepare for future climate change related infectious disease threats and potential changes to distribution of vectors and vector borne diseases.
P6. Food safety

Introduction

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

Target

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

Level of capabilities

The Republic of Estonia is a Member State of the EU and follows its regulations and directives in the field of food safety. The responsibility of food safety is shared among different ministries with their specific boards that have mandates on food production, animal and human health.

Official controls by trained inspectors within national surveillance and monitoring plans to ensure safety in food products are regularly conducted and a sampling plan developed by the Central Authority is available and annually approved by the Agriculture and Food Board. The laboratory analyses of samples collected at various levels in the food value chain are performed by the National Centre for Laboratory Research and Risk Assessment. This laboratory is equipped to carry out analyses using molecular-based methods such as WGS and provides support for such analyses to characterize bacterial isolates detected in food and environment in the frame of detection of clusters and ongoing outbreaks.

In the case of suspected contamination of ionizing radiation that could have harmful effects on people via food, the National Analytical Laboratory under the Environment Board of the Ministry of Climate supports with analysis and advice.

The Health Board is the leading authority for the investigation and reporting on foodborne outbreaks and contaminations. The country currently relies on an interactive online information platform, namely Situation Review (SitRep) web environment, for national crisis management and includes monitoring of food- and waterborne events as outbreaks and contaminations. SitRep is used by the Health Board and the Agriculture and Food Board for timely data collection and sharing, following on the different steps along investigations and response activities.

Indicators and scores

P6.1 Surveillance of foodborne diseases and contamination: score 5

Strengths

• Exhaustive guidelines on the monitoring and sampling of food products along the food chain to ensure safety considering biological hazards are available and widely implemented in the country.
• National randomized surveillance and risk-based control plans for the monitoring of veterinary medicinal product residues in food production are available and implemented.
• Surveillance data are publicly available in the annual EU summary report of zoonotic diseases including foodborne.

**Challenges**

• Lack of a legislative instrument to enforce notification of detection of pathogens in food of non-animal origin.
• Selection criteria for performing WGS analyses are only limited to isolates of Listeria spp. and Salmonella spp.

**P6.2  Response and management of food safety emergencies: score 4**

**Strengths**

• A cooperation agreement between the Health Board and the Agriculture and Food Board is in place and facilitate the collaboration between human and animal sectors in the case of foodborne outbreak investigations.
• Healthcare workers and food inspectors are trained on reporting of foodborne events and guidelines on foodborne outbreak investigation and response with detailed instructions are available for regional officers including sample collection.
• An interactive online information platform known as SitRep has been developed by the Ministry of Internal Affairs for national crisis management including the oversight of food- and waterborne events as outbreaks and contaminations.
• The country is a member of the International Food Safety Authorities Network and has identified the Focal and Emergency Contact Points. In addition, as part of the EU exchanges information on the identified hazards in food, food contact materials and animal feed between European Member States using the Rapid Alert System for Food and Feed notification system.
• The Codex Alimentarius Contact point is identified with the Food Safety Department at the Ministry of Regional Affairs and Agriculture.

**Challenges**

• The cooperation agreement between the Health Board and the Agriculture and Food Board currently does not clearly cover the transfer of biological material and data sharing on results obtained performing whole genome sequencing.
• Foodborne outbreaks are reported to be rare in the country and this makes challenging to justify requests for any increase in budget allocation to maintain or scale up the laboratory and epidemiological capacities.
• Heavy reliability on informal communication for triggering alert.

**Recommendations for priority actions**

• Update and adopt the cooperation agreement between the Health Board and the Agriculture and Food Board to ensure all aspects from data generation to data sharing and use in the framework of surveillance and response to foodborne events including contaminations, are included.
• Health Board and Agriculture and Food Board to jointly work to provide regular training opportunities and simulation exercises concerning the detection and management of nation-wide foodborne emergencies.
• Work with policy-makers to develop and enforce national policy and regulations on the notification of detection of infectious disease agents in food of non-animal origin.
• Work with policy-makers to allocate funds to adequately support for the development and implementation of risk analysis and evaluation concerning foodborne hazards.
P7. Biosafety and biosecurity

Introduction

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

Research with infectious agents is critical for the development and availability of public health and medical tools that are needed to detect, diagnose, recognize and respond to outbreaks of infectious diseases of both natural and deliberate origin. Additionally, 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 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 self-assessment of this technical area was conducted by representatives from the Health Board without input from other sectors.

The legislative framework for the implementation of biosafety and biosecurity in Estonia consist of a combination of laws and regulations, the framework includes acts and regulations in the areas of occupational health, control of communicable disease and information security. Legislation for occupational health stipulates that the organization needs to adopt safety measures to mitigate risks identified in a systematic risk assessment and this forms the base for biosafety regulation. Moreover, licensing of the handling of infectious material is mandatory before initiation of activity and license is issued by the Health Board. In addition, the clinical microbiological laboratories and the national veterinary laboratory are accredited according to ISO15189 and ISO17025, respectively. Compliance with these standards requires several activities that contribute to strengthening both biosafety and biosecurity at the organizations harbouring the laboratories.

There are seven Biosafety level 3 (BSL-3) laboratories in Estonia, one located at the Health Board, two at LABRIS, one at a private clinical diagnostic lab, one at the medical university of Tartu, one at hospital laboratory at Tallinn. There are no nationally adopted training curricula for biosafety and biosecurity but completed training programmes for staff before access to labs are given is mandatory according to occupational health regulation. For a staff to gain access to BSL-3 laboratories, both the Health Board and LABRIS require that staff has extensive experience of laboratory work at lower biosafety level within the organization and deemed to have the personal traits suitable for work in the high containment laboratory. However, the background/security checks of the staff are limited.
The concept of dual use research of concern seems not to be discussed at national level and it is unclear whether the relevant universities have a process of identifying this type of research, no national or subnational forum exist where the issue is discussed.

The collaboration between the public health sector, the veterinary sector, academia and the security/ law enforcement sector are limited and there is no national society or forum dedicated to strengthening biosafety or biosecurity in the country. There is a cross-sectoral forum for CBRN being developed that might also serve as a platform for discussion on biosafety and biosecurity.

There is currently no simple way to get collated data on what pathogens are being stored in which facility in the country, no national authority has the task to collect the data although the Health Board will have some data available from the licensing process with regards to which pathogens and material the laboratories planned to work with when the license was applied for. Neither is there an active process with regards to consolidation of high consequence pathogens but the national laboratories at the Health Board and LABRIS are through their roles as reference laboratories with BSL 3-capacity the organizations that holds most of the pathogens/samples of interest. For the veterinary and food safety sector only LABRIS that provides laboratory services.

**Indicators and scores**

**P7.1. Whole-of-government biosafety and biosecurity system in place for human, animal and agriculture facilities: score 2**

**Strengths**
- Legislation on occupational health, prevention and control of communicable disease and information security contribute to biosafety and biosecurity in Estonia.
- The majority of microbiological laboratories are accredited according to ISO15189 and the veterinary lab accredited according to ISO17025.
- Licencing of practices that induced handling of infectious material is mandatory and enforced by the Health Board.
- Pathogens of high consequence is due to the limited number of labs in the country and due to the reference laboratory structure consolidated to only a few laboratories.

**Challenges**
- There are no cross sectoral programmes for the strengthening of biosafety and biosecurity.
- There is no authority responsible for registry of what pathogens of concern that is stored in the laboratories.
- The awareness of the potential issue of dual use of research results is low.
- There is no national legislation or guidance on appropriate security measures related to the access to high containment laboratories, collections of pathogens of concern or information related to those pathogens.

**P7.2. Biosafety and biosecurity training and practices in all relevant sectors (including human, animal and agriculture): score 2**

**Strengths**
- Training in biosafety and biosecurity part of the mandatory training before access to laboratories.
- Limited number of microbiological laboratories in the country.

**Challenges**
- There is no specific training in biorisk management available in the country and no agreed national curriculum.
Recommendations for priority actions

- Review of and analysis of gaps in, current legislation with regards to available measures for strengthening biosafety and biosecurity. The assessment can be the first step to developing a national multisectoral plan on biosafety and biosecurity.
  » The analysis should be made jointly between sectors (e.g. human health, animal health, food safety, security/law enforcement, civil protection, customs, armed forces, academia)
  » The assessment should specifically address legislations to increase security measures for staff before granted access to high containment laboratories, priority pathogens collection and/or access to sensitive information regarding pathogens
  » The assessment should also consider the issue of dual use research of concern and identify what awareness measures that needs to be taken and how the universities should address the issue.
  » The assessment should also specifically address the legal support for establishing a national list of pathogens of concern and conduct national inventory of pathogens.

- Strengthen biorisk management training to increase competence for biorisk management the following actions are suggested:
  » A training programme for laboratory biorisk management could be developed jointly between human and veterinary sector, potentially with the support from national academic partners as well as international partners. LABRIS and the Health Board as national reference labs would be the suggested responsible authorities for developing the programme and primarily the focus can be on training of trainers' other laboratories in the country.
  » Include biorisk management in basic training and consider developing a specific academic course on biorisk management.
P8. Immunization

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

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

Level of capabilities
Estonia has a comprehensive national immunization programme. Development of the programme is included in the National Health Plan. Legislative and financial issues are stable; however, legislation is not consolidated in a way that would result in a harmonized operational implementation. Procurement processes are straightforward since the national programme vaccines are procured by the state. Delivery system is comprehensive and flexible. Cold chain infrastructure covers the area of the country. Vaccinations are performed on all levels of health system and by healthcare professionals. Monitoring of vaccine delivery has moved to a new system in 2022 and there are known challenges in the implementation, resulting in decreased quality of monitoring data. This may result in decreased detection of gaps in vaccination coverage. It is crucial that the quality of these data are increased by enforcing the requirements already stated in the current legislation. Safety and quality monitoring is performed and reported by the State Medicines Agency. Monitoring of public perceptions of immunization is needed and any hindrances to access to vaccination need to be detected and addressed. Successful campaigns were undertaken during the pandemic to address these issues and the lessons learned from these campaigns is important in strengthening the decreasing immunization coverage of Estonia.

Indicators and scores
P8.1 Vaccine coverage (measles) as part of national programme: score 3

Strengths
- Well designed, comprehensive national immunization programme with high availability of immunization services for all. Easy access to immunization services, for example in schools, primary care and hospitals.
- Plans for the development of the immunization programme are part of the comprehensive national health plan.
- Immunizations are provided by trained healthcare professionals.
- Immunization data are reported through Health Information System facilitating the monitoring of immunization.
• Campaigns to facilitate easy access to vaccines and distribute information to the public and the healthcare professionals have been implemented successfully. Impact of these campaigns has been monitored.

Challenges
• After moving to data collection from the health information system in 2022, immunization data quality has not reached the level it was during the previous method of reporting. Data capture and quality need to be improved.
• Due to the lack of accurate monitoring data, specific gaps in vaccine coverage in, for example, vulnerable populations may not be detected.
• Vaccination coverage has been decreasing worryingly over the past ten-year period and actions to address this trend need to be taken. A comprehensive and functioning monitoring system will facilitate initiating these actions, but lessons need to be learned from experiences during the pandemic.

P8.2 National vaccine access and delivery: score 4

Strengths
• Cold chain infrastructure covers the delivery system in all areas of the country. The Health Board performs regular supervisory visits to vaccination locations.
• In early 2023, an electronic ordering system was launched for the national delivery of vaccines to health care service providers. The use of an online system increases the flexibility of distribution.

Challenges
• During the pandemic, increasing vaccine hesitancy was detected in the population. While not an issue specific for Estonia, this needs to be addressed by a multifactorial approach including, for example, training of health care workforce, providing easy-to-access information for parents and schools and monitoring public perception on immunization.
• The quality of vaccine coverage data supplied by the current system is insufficient for the purposes of addressing gaps in coverage.

P8.3 Mass vaccination for epidemics of vaccine-preventable diseases: score 4

Strengths
• National legislative and financial decision processes enable rapid progress in mass vaccinations, such as during the coronavirus pandemic.
• The online vaccine ordering system enables a dynamic delivery process and monitoring in a situation of mass vaccination.
• The Estonian Health Insurance Fund can send direct immunization-related messages to, for example, target groups or individuals. These messages can be tailored to include information about vaccinations or an invitation to receive a vaccination.

Challenges
• The major challenge for mass vaccination for epidemics of vaccine-preventable diseases is vaccine hesitancy, as seen in the pandemic. The monitoring system needs to be strengthened to make increase detection of gaps in coverage.
Recommendations for priority actions

- Update the national immunization information system to improve immunization data capture and quality.
- Introduce regular tracking of public attitudes towards immunization to better target vaccination strategies.
- Increase vaccination demand and uptake by better understanding perception and behavioural issues related to immunization.
- Improve knowledge of the general population and healthcare workers in immunization, also improve awareness in schools.
- Update and consolidate legislation on immunizations.
Detect
D1. National laboratory system

Introduction

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

Target

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

Level of capabilities

The national microbiological laboratories at the Health Board and LABRIS, respectively, are well equipped and staffed. The laboratories provide reference functions within their respective sectors.

For veterinary laboratory services, LABRIS is the only laboratory in the country. Both laboratories perform analyses also of environmental samples, for the purposes of monitoring and control. The main laboratory of LABRIS is in Tartu and the organization also has smaller regional laboratories in Tallinn and Saaremaa. LABRIS laboratories are accredited according to ISO17025 and the LABRIS maintain about 250 accredited methods and the services provided are in accordance with EU regulation 2017/625.

For diagnostics of communicable diseases in humans, the provision of reference services is defined in Communicable Diseases Prevention and Control Act. The list of priority human communicable diseases for which laboratory diagnostics are available can be found in the registry of communicable diseases. In Estonia there are 11 clinical microbiological laboratories including the national laboratory at the Health Board in Tallin. The laboratory at the Health Board serves as the national reference laboratory for all the priority diseases except for M. tuberculosis for which the service is outsourced to the Medical University of Tartu. Although not required by law, all clinical labs are accredited according to ISO15189.

There Estonian Laboratory Medicine Association (ELMÜ) with members from the laboratories in the country serves as a platform for discussion and development of guidelines for diagnostic algorithms/ national standards, the society has up until now focused on guidance on diagnostics of AMR. For human-veterinary-, food- and certain environmental samples, the government funds the transport to the national laboratories; the transportation service covers the whole country.

There are seven BSL-3 laboratories of which one is located at the Health Board and two at LABRIS. The other laboratories are operated by hospitals, universities and private companies. For the analysis of highly pathogenic agents (i.e. risk group four pathogens) for which there are no laboratory diagnostics available in the country there is agreement between the Health Board and Public Health Agency of Sweden and this service has been used a few times during the last 10 years.
The national laboratories at the Health Board and LABRIS are the well-equipped and their respective responsibilities and mandates are clear. The reference functions for human diagnostics are stated in the communicable disease act therefore providing a legal base for the system. National laboratory capacity in both veterinary/food and human sector includes a broad spectrum of methods including classical ones as well as whole genome sequencing/next generation sequencing and the adjoining capacity for bioinformatics. The limited number of clinical labs (as well as veterinary labs) allow for coordination of activities and simplifies the communication between national laboratories and the other clinical laboratories.

There are a few challenges identified, the national lab at the Health Board has grown rapidly over the last few years and is in the process of establishing all required activities. National training programmes within the tasks of reference laboratory are lacking, as is a national External Quality Assessment (EQA) programme and national standards for diagnostics of communicable disease. The transition to the use of WGS for surveillance and detection, of priority pathogens require allocations of funds to allow for a sustained capacity, the establishment of WGS at the Health Board has been financed by external/project funds.

**Indicators and scores**

**D1.1 Specimen referral and transport system: score 5**

**Strengths**
- National reference laboratory services defined in the communicable disease prevention and control act. The act also defines priority diseases.
- One main reference laboratory, at the Health Board, covers all reference functions (except one that is outsourced) for clinical microbiological diagnostics.
- The national reference laboratory at LABRIS cover all the diagnostic services for veterinary and food safety sectors.
- There is a well-functioning system for sample transport funded by government. The transport system covers the whole country and allows for transport of clinical-, veterinary- and food/feed/environmental samples to the national reference laboratories

**Challenges**
- In the health sector, the laboratory at the Health Board has rapidly increased capacity over the last years and sustainability of functions and advanced methods can be a challenge.

**D1.2 Laboratory quality system: score 2**

**Strengths**
- All clinical microbiological laboratories are accredited according to ISO15189. Accreditation annually assessed by the Estonian Accreditation Centre.
- National Reference Laboratory (Health Board) has WHO accreditation for polio and measles.
- LABRIS is the only laboratory for veterinary medicine and food safety. LABRIS is accredited according to ISO17025 and the laboratory activities are in accordance with EU regulation 2917/625.

**Challenges**
- There are some standards/diagnostic algorithms for detection of AMR published by the society of laboratory medicine, but Estonia does not have national quality standards that guides clinical laboratories.
- Estonia does not have a national programme for EQA (proficiency testing) for clinical microbiological laboratories.
D1.3  Laboratory testing capacity modalities: score 4

Strengths
- There is methodology to detect priority diseases available in the sectors of veterinary medicine, food safety and human health. Methods available include molecular biology, serology, culturing of virus, culturing of bacteria (including antimicrobial susceptibility testing) and whole genome sequencing.

Challenges
- The development and establishment of advanced sequencing methods while also maintaining more classical methods (like virus and bacteria culturing) is resource heavy and a plan for the sustainability of WGS capacity would be beneficial.

D1.4  Effective national diagnostic network: score 3

Strengths
- National Reference Laboratory performs advanced molecular and serological testing for referred samples and for confirmation/re-confirmation of diagnosis.
- Agreement with laboratory in Sweden for the diagnostic of highly pathogenic pathogens (e.g. ebolavirus) exist and has been activated at few times during the last 10 years.

Challenges
- There is no finalized plan for tier-based testing strategy for communicable diseases, but the development of national quality standards will form a base for the development of this plan.

Recommendations for priority actions
- Develop national standards for laboratory diagnosis of human priority/notifiable diseases and AMR. The standards provide guidelines for all microbiological labs that perform laboratory diagnostics of communicable diseases.
- Develop national EQA programme for priority human communicable diseases and AMR. This programme should be part of the tasks of the national reference laboratories (for veterinary medicine, the laboratory service is consolidated to the laboratories of LABRIS so the need for a national EQA programme is not [a priority]).
- Increase the collaboration between laboratories in health and vet/food-sector through development of joint protocols for data sharing, including sequencing data and laboratory training. Consider developing collaboration for cross-sectoral support during emergencies that require increase of laboratory capacity.
- 4. Develop a long-term plan for sustainable programme, including mechanisms for funding, for the use of WGS for surveillance of selected pathogens and for detection of pathogens (metagenomics approach).
D2. 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

Strengthened early warning surveillance systems that can detect events of significance for public health and health security

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

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

The Estonian infectious disease surveillance system is based on the Communicable Disease Prevention and Control Act, which requires medical doctors and clinical laboratories to notify the Estonian Health Board of 56 Communicable diseases and 97 agents within 24 hours of diagnosis. The mandatory notification system applies EU case definitions in combination with International Classification of Diseases (ICD)-10 coding and Estonian public health authorities actively participate in international reporting through The European Surveillance System. The national reference laboratories are integrated in the surveillance system.

The indicator-based surveillance system is complemented by event-based surveillance. A subset of communicable diseases requires immediate notification to the Health Board to allow for the prompt coordination of mitigation and control measures. The Health Board has a coordinating office in Tallinn and four regional offices who can act upon events in their respective region. An implementation manual supports epidemiological fieldwork and event-based risk assessment, including the intersectoral collaboration, e.g. with the Agriculture and Food Board. The Communicable Disease Epidemiology Department at the Health Board further undertakes regular risk assessments for activity and supervision planning. The Health Board serves as the contact point for the EU Early Warning and Response System as well as for the notification under the International Health Regulations.

Furthermore, additional surveillance exists, such as sentinel surveillance for influenza, which now also incorporates a COVID-19 and a panel of seven other pathogens. The Health Board is making efforts to reinforce the sentinel surveillance system. Other, parallel or complementary surveillance systems are the all-cause mortality monitoring, the hospitalization and intensive care unit occupancy and admissions monitoring, etc.

The surveillance notifications are made through the Information System for Infectious Diseases (NAKIS) which, since 2021, is partly connected to the e-health Information System (TIS). The public health authorities plan to further develop the linkage between both applications through 2024–2025.
Data from the surveillance system is analysed on a regular basis and weekly, monthly and annual surveillance reports are made available on the website of the Estonian Health Board. For visualization of surveillance data, the website utilizes a statistical module with retrospective data from 2013.

Indicators and scores

D2.1 Early warning surveillance function: score 4

Strengths

- There is a surveillance system in place, in which about 800 family physicians, physicians from 19 hospitals and 12 laboratories must report cases of listed infectious diseases.
- This reporting system consists of an indicator-based component with a structured data collection and is complemented by event-based surveillance. This includes monitoring of media, domestic and international information sources and immediate reporting by physicians and labs of diseases that require prompt public health action.
- There is an agreement between the Health Board and the Agriculture and Food Board on collaboration and information exchange, which is currently being updated.

Challenges

- The Information System for Infectious Diseases is insufficiently integrated with the new e-health Information System.
- Healthcare providers use a variety of software that are not uniformly compatible with the e-health Information Systems’ standard for surveillance reporting.
- The infectious disease Act is outdated and definitions, disease list, case definitions for clinicians and labs, reporting modalities, response measures, etc. need to be reviewed and updated.
- Continuous professional development and training are needed for staff of the Health Board, particularly in the regional offices as they are the first line responders to reported infectious disease events.

D2.2 Event verification and investigation: score 4

Strengths

- Event verification and investigation take place in accordance with the Decree of the Health Board Director-General, the ‘procedures for notification of an infectious disease emergency and ensuring preparedness for epidemic control’ and the corresponding implementation manual.
- Where appropriate, the event verification and investigation take place in collaboration with the Health Board Communication Unit, the Health Board Laboratory, the Environmental Unit or the Agriculture and Food Board.

Challenges

- No dedicated electronic platform is available for cross-sectoral collaboration and different less efficient tools are used, e.g. email or a restricted document registry.
- The feedback to reporting physicians and labs could be improved to motivate and support collaboration.
- There is a need to facilitate the exchange of data from molecular methods between the Health Board and the Agriculture and Food Board, to enhance outbreak detection.
D2.3 Analysis and information sharing: score 4

Strengths

• In 2021 a process was initiated to integrate the Estonian Information System for Infectious Diseases with the Estonian e-Health Information System. In 2022–2023, the proportion of notification received via TIS was about 70% of all notifications.

Challenges

• There is limited data analysis due to information system limitations.

• Training of staff in advanced analytical methods to process epidemiological and molecular data are needed. This would allow to make better use of the information gathered and to communicate scientific analysis results to reporting physicians and labs, public health decision-makers, the scientific community and the public.

Recommendations for priority actions

• Design a road map for the development of the integrated infectious disease reporting system that, in addition to data from laboratories and clinicians, also includes data on, for example, demographics. This road map should be based on a thorough evaluation of the current surveillance system. High level requirements are drafted and data protection aspects, e.g. related to data linkage, are laid out in a dedicated document.

• Map funding and human resource needs and make resources available for the development, maintenance and performance of the integrated surveillance system, including the ICT solutions.

• Design a dashboard to dynamically query, tabulate and visualize data on infectious disease surveillance, including the creation of case reports, lab reports and display data analysis results. Make the dashboard available for use by the Health Board and as epidemiological resource for the reporting physicians and laboratories.

• Design an information exchange platform between the Health Board and the Agriculture and Food Board, to facilitate the epidemiological investigation of zoonotic diseases and food- and waterborne outbreaks and the collaboration on risk assessments and genomic surveillance data exchange.

• Make the results of WGS data analysis available for epidemiological surveillance and assess the effectiveness and efficiency of the integration of these new molecular methods. Increase the capacity of the national reference laboratory in terms of equipment and trained staff, as well as the training of epidemiologists in molecular and modern epidemiology.
D3. 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, ICT specialists and biomedical technicians and a corresponding workforce in the animal sector: veterinarians, animal health professionals, paramedics, epidemiologists, ICT specialists, etc.

The recommended density of doctors, nurses and midwives per 1000 populations for operational routine services is 4.45 plus 30% surge capacity. The optimal target for surveillance is one trained (field) epidemiologist (or equivalent) per 200 000 populations who can systematically cooperate to meet relevant IHR and 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 Estonian healthcare system is based on the principle of solidarity-based health insurance, which ensures equal quality assistance to all insured individuals. The Estonia Health Board has four regional offices which allow for efficient coordination, monitoring and response to public health matters at national and local level. In case of a crisis, a multidisciplinary task force is assembled from relevant ministries, agencies and public health institutes.

The National Health Plan 2020–2030 states that to ensure person-centred health care, enough committed, qualified, motivated and competent professionals are required to implement a high-quality health care service. The strategy mostly foresees investments, relevant interventions and action plans which are being implemented. In addition, the recovery and resilience plan support continuing investment in reforming the healthcare system to make it more resilient to pandemics.

The total number of healthcare workers in Estonia is 26 302 (the density is 4.9 healthcare workers per 1000 people). Only 3337 (13%) are men, so women are overrepresented in the profession. A recent decree set a strategic framework to alleviate the shortage of healthcare professionals.

The National Health Plan states that lifelong learning of professionals must be valued and a range of professional development measures are being implemented.

Relevant ministries and authorities provide regular reports on the implementation of the national health plans. Specific performance indicators and targets are regularly measured and assessed to track progress.

The multisectoral workforce strategy does not address workforce strategy in the veterinary sector. Also, field epidemiologists are not mentioned in this strategy.
Indicators and scores

D3.1 Multisectoral workforce strategy: score 3

Strengths
- There is a National Health Plan which covers the period 2020–2030 and a workforce strategy is a part of this plan.
- There are several national action plans and decrees.
- A Primary Care Development plan was recently developed with stakeholders.

Challenges
- Absence of a workforce strategy for human resources in the veterinary sector.
- Demographic ageing of public health workforce.
- Epidemiologists are not explicitly mentioned in the workforce strategy.
- Career tracks and job descriptions are not referred to in the workforce strategy.

D3.2 Human resources for implementation of IHR: score 4

Strengths
- The need for a multidisciplinary task force is identified based on the nature and urgency of the public health issue.
- There are standard reporting connections between national, intermediate and primary public health levels.
- The Health Board maintains a human resources database in cooperation with Ministry of Social Affairs.

Challenges
- Public health workforce in could be analysed in more detail.

D3.3 Workforce training: score 3

Strengths
- Continuous professional education is in place.
- There is a well-established medical specialization in public health and health science, including a master’s degree and doctorate.
- Training for management of emergency situations and joint exercises for multidisciplinary teams is in place.

Challenges
- Outbreak preparedness and control should be part of continuous professional education.
- Field epidemiology training is rare; there is little use of EPIET/EUPHEM, the ECDC Fellowship Programmed on field epidemiology and public health microbiology.
D3.4 Workforce surge during a public health event: score 4

Strengths
- There are sector specific emergency response plans developed by the corresponding authorities.
- There is a policy for surge staffing for public health emergency responses.

Challenges
- Workforce shortages as a broader social issue.
- Gender balance of public health workforce.

Recommendations for priority actions
- Develop, implement and monitor a strategy to increase the workforce for animal health in relation to the One Health policy.
- Analyse the current public health workforce situation, make recommendations for futureproofing and establish time-bound and measurable targets to strengthen the public health workforce.
- Include (field) epidemiologists in workforce action plans and strategies by increasing awareness and access of Estonian experts (from diverse disciplines) to the two-year ECDC EPIET or EUPHEM paths. Assess the possibility to re-establish a recognized Training Site of the Fellowship programme with Member State track fellows in Estonia.
- Develop a clear career structure within the workforce strategy to ensure effective replacement and retention of eligible and qualified public health professionals.
- Explore options to enhance collaboration in field epidemiology and operational research between the Epidemiology Department of the Estonian Health Board and academia.
Respond
R1. 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 the 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

- Existence of national strategic multi hazard emergency assessments (risk profiles) and resource mapping
- Existence of emergency readiness assessment.
- Development of national health emergency operation centred procedures.
- Establishment of an emergency response coordination mechanism or incident management system.
- 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 and personnel according to written national or international protocols.
- Existence of an emergency logistic and supply chain management system/mechanism.
- Existence of policies and procedures for research, development and innovation for emergency preparedness and response.

Level of capabilities

At national level, risk assessments are prepared to analyse the most probable emergencies and their causes, the probability of their occurrence and consequences. The responsible plans consequently are developed based on results for each threat that might cause an emergency. Nationally the risk analysis for rescue events, police events, cyber events, radio or nuclear accidents, health care events and animal diseases are in place. The risk assessment results are published at the leading institution web page.

The Health Board oversees crisis preparedness and management in health care. Based on risk assessments, the Health Board is responsible for leading preparedness planning and response for epidemics, mass poisoning, disruption of vital services (hospital and ambulances) and in the healthcare sector of mass casualty situations.

Prior to the COVID-19 pandemic the response to emergency situations was based on guidelines. The overall Emergency Response Plan for health emergencies was developed and approved in 2021. In addition, a COVID-19 preparedness plan for the 2022/2023 virus season and a Disaster Medicine Plan (2022) have been developed and approved.
Joint External Evaluation of the International Health Regulations (2005) core capacities for Estonia

Hospitals and ambulance services providers as providers of vital services independently prepare their own risk analyses and contingency plans. To test the procedures included in emergency plans simulation exercises, tabletop exercises, drills are performed regularly.

The national-level health emergency operational centre structure is supported with explicit standard operating procedures for duty specialists and consists of several parts-authorities:

- The Health Board provides round-the-clock monitoring of the inventory of operational stock of hospitals and ambulance service providers and provides data collection instructions to the parties involved; organizes cooperation within its competence, i.e. information exchange, with foreign institutions and sectoral international organizations.
- The Estonian Emergency Response Centre processes round-the-clock medical calls, manages ambulance operative resources, collects statistics and shares them with the Health Board.

Health care countermeasure stocks are divided into several separate types of stockpiles and their management is organized by several organizations. The Health Board has a responsibility of stocking vaccines and hospital drugs. The Estonian Stockpiling Agency is tasked to maintain the state stockpile of personal protective equipment. The necessity of countermeasure lists and amounts has been planned by the Health Board. To test the emergency management system and different elements of the emergency response plan and other documents regulating response in terms of emergency different levels and scales, simulation exercises are performed and these functions have a well-elaborated legal provision.

Indicators and scores

R1.1 Emergency risk and readiness assessment: score 4

Strengths
- Structured and regulated approach on risk assessment that has been performed and updated every 2 years nationally and as well by vital service providers including healthcare providers national wide.
- Regular training and simulation exercises on diverse levels are performed. It is legally mandated that nationwide exercises should be conducted at least once every 5 years, vital service providers are obliged to have training every 2 years and the Health Board monitors this.

Challenges
- Primary healthcare providers are not included in emergency preparedness and response planning and scope.
- There is a degree of multisectoral fragmentation and it is difficult to have a complete overview, including on development activities.

R1.2 Public health emergency operations centre: score 3

Strengths
- There are assigned functions for round-the-clock duty officers which is supported with a clear mandate and standard operating procedures and with the possibility to expand emergency operation centres as a functional mechanism in terms of premises and equipment.
- The system ensures ongoing collection and analysis of health care information to detect threats and with clear reporting to the State Situation Centre.

Challenges
- There is no training programme for emergency operation centre personnel and training are not performed in a regular or systematic manner.
**R1.3 Management of health emergency response: score 5**

**Strengths**
- Well-structured two-way reporting system within health sector supported by standard operating procedures developed and shared between partners by the Health Board.
- Development and implementation of the SitRep web environment for exchanging the operational information among all agencies and ministries that respond to emergency. Sitrep has a various functionality and can be used as internal platform within one ministry or the access to system for one event might be extended to other ministries.
- Regular organization and participation in simulation exercises to test the incident management system.

**Challenges**
- Employees are well-educated, experienced and with diverse backgrounds, however there is no training programme curriculum for crisis management or systematic and budgeted access to training programmes within the scope of emergency management.
- Lessons-learned from exercises have not always been followed up in terms of including them in strategic health and social care development plan or another relevant document.

**R1.4 Activation and coordination of health personnel in a public health emergency: score 4**

**Strengths**
- At national level, a voluntary database of medical personal was developed during the COVID-19 pandemic and is maintained in the case of emergency.
- Certification emergency medical technician type 2 developed and used nationally during the COVID-19 pandemic.
- Well established civil–military collaboration for health crisis management exists.
- In cooperation with the Defence Forces, reserve medics from the Defence Forces were activated and sent to hospitals as auxiliary personnel.

**Challenges**
- No existing legal provision or standard operating procedures (that cover requirements such as licensing, language or financing) for sending and receiving personnel during crisis situations.
- No national roster of healthcare professionals that have been trained and educated to be deployed in crisis situations.
- Shared health care personnel between civil and defence sectors may result in a shortage of civil sector personal in the case of certain emergency situations.

**R1.5 Emergency logistic and supply chain management: score 3**

**Strengths**
- The mechanisms for requesting as well sending different countermeasures for an emergency response internationally were practically used during the COVID-19 pandemic (requesting assistance through the Emergency Response Coordination Centre) and during the war in Ukraine (sending medical countermeasures).
- Cooperation with major hospitals for operational updating and distribution of health care countermeasures.
Challenges
- A multisectoral approach to ensure countermeasures for emergency situations nationwide.
- There is no legal provision to involve wholesalers in the process of stocking/reserving countermeasures for emergency situations.

R1.6 Research, development and innovation: score 3

Strengths
- There is a dedicated department within the Ministry of Social Affairs for supporting research, development and innovation activities.
- In the general perspective of operational crisis response, research is carried out by the main universities, e.g. Tallinn University, TalTech, University of Tartu and the Academy of Security Sciences.
- During the COVID-19 pandemic, a scientific committee to support operational research was functional.

Challenges
- Necessity of strengthened and focused collaboration between the Health Board and universities in the field of operational research and development.

Recommendations for priority actions
- Adopt national standard operating procedures and legal provisions to allow deployment and acceptance health care personnel during emergency situations.
- Review logistical and stockpile capacity particularly for primary healthcare providers based on the national multihazard response plan and develop a strategy for increasing capacities based on risk assessment.
- Appoint and define in legal acts primary healthcare providers that would be able to engage in emergency preparedness and response with clearly defined roles and responsibilities that are supported with sufficient financial resources.
- Strengthen operational research preparedness in governmental institutions, in close collaboration with the academia, by promoting the importance of evidence-informed public health in emergencies with appropriate resourcing.
R2. Linking public health and security authorities

Introduction

Public health emergencies pose special challenges for law enforcement, whether a threat is manmade or naturally occurring. In a public health emergency, law enforcement will need to quickly coordinate 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

Estonia demonstrates a collaborative approach between public health and security authorities in addressing biological, chemical and radiological events. While lacking a formal memorandum of understanding at national level, the country relies on legislation and generic emergency response plans to delineate responsibilities. Notably, joint training occurs, exemplified by the comprehensive CREVEX 2023 exercise, a major exercise organized every 4 years to train and test the nationwide emergency response capability and the continuity of state institutions. However, certain areas require improvement, such as the absence of specific agreements and standard operating procedures for joint risk assessments and a mechanism for systematic information exchange between public health and law enforcement.

Estonia’s efforts to integrate public health and security authorities in addressing biological (and chemical and radiological events) are commendable. Regular joint training and exercises contribute to readiness, but the absence of certain agreements and mechanisms for information exchange represents areas for improvement. Addressing historical silos and enhancing cooperation are essential for a more cohesive and effective response in the future. Learning from exercises, implementing best practices and refining protocols will further strengthen the country’s overall capabilities in this technical area.

Indicators and scores

R2.1 Public health and security authorities, (e.g., law enforcement, border control, customs) linked during a suspect or confirmed biological, chemical or radiological event: score 2

Strengths

• Joint training and exercises: Estonia boasts a robust exercise culture with regular exercises like CREVEX 2023 to train and test the nationwide emergency response capability and the continuity of state institutions fostering collaboration between public health and security authorities.
• Legal framework to enable public health and security authority collaboration.
• The country emphasizes learning from exercises, as evident from recent large exercises.
Challenges

- History of working in silos: The historical tendency of working in silos poses a challenge to effective collaboration between public health and security sectors.
- Linking protocols between sectors: Establishing and implementing protocols for seamless collaboration between sectors is an ongoing challenge.

Recommendations for priority actions

- Agree on the modalities for enhancing collaboration and coordination between public health and security authorities, either through a memorandum of understanding or another high-level agreement, as deemed appropriate in Estonia.
- Given the agreement, collaboratively develop with public health and security authorities, CBRN relevant scenarios to further test the preparedness and response gaps.
- Conduct regular (at least once every 2 years) tabletop and/or field exercises based on developed scenarios.
- Develop practical SOPs focusing on defining communication lines between the generic points of contacts (duty officers from respective stakeholders) to facilitate timely information sharing and risk assessment capability for potential real-life events.
- Clearly define CBRN in Estonia’s context in the ongoing development of the CBRN handbook and build on existing bilateral knowledge exchange with countries and organization with well-developed and tested collaboration linking public health and security authorities.
R3. Health services 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
- Evidence of demonstrated application of case management procedures for events caused by IHR relevant hazards.
- Optimal utilization of health services, including during emergencies.
- Ensuring continuity of essential health services in emergencies.

Level of capabilities
Estonia has a centralized health system with a single health insurance fund. Its health system is funded through payroll tax; the Estonian Health Insurance Fund operates as a semi-autonomous public organization, pooling most of the public funding for health and organizing the purchasing of health care. The Ministry of Social Affairs oversees the Estonian health system and one of its agencies, the Health Board is responsible to implement the design of a living and learning environment that supports and improves health targeted and high-quality health protection and health care service-oriented population health policy. The Health Board led Estonia’s health system response to the COVID-19 pandemic, in accordance with the provisions of the Emergency Act.

All major hospitals in Estonia are publicly owned; they provide inpatient care and the majority of outpatient specialist care. Most primary health and dental care providers are private, as are some providers of outpatient specialist and nursing care.

While 20 hospitals and 10 ambulance care providers are vital service providers by law. Regulation sets continuity requirements as 16 and 72 hours, including medical substances and devices. The operational stockpiles cover the health service providers’ normal needs to provide their services. The operational stockpile is an inseparable part of the HSP’s functioning and its renewal and rotation are done via normal supply chain mechanisms along the way. The health service providers own an average of 7–14 days of operational stockpiles. The representative organizations of retails pharmacies and whole sellers have declared that on both levels they own an average of 30 days stocks.

Estonia, through continuous health sector reforms, has made continuous improvements in healthcare system and health outcomes. Life expectancy in Estonia has risen more quickly than in any other country in the EU since 2000, the increase in life expectancy in Estonia was the highest among EU countries until 2020, in recent years it has plateaued together with disability-adjusted life expectancy and health inequalities across regions and socioeconomic groups have widened. In 2017 the Estonian government took the historic step of expanding the revenue base of the health system, but long-term sustainability of health system financing is still a challenge. Estonia’s National Health Plan sets health goals for the
country. To achieve the objectives of the National Health Plan 2020–2030 and continue to make health gains, targeted interventions are needed to reduce behavioural risk factors that result in differences in health outcomes. Estonia may also require an increase in its health system financing and more sustainable funding mechanisms. Currently, health spending in Estonia is among the lowest in the EU, and out-of-pocket expense payments make up a quarter of all health expenditure. Other challenges include filling gaps in population coverage by extending health insurance to the entire population of Estonia, as currently around 5% of the population is uninsured due to complex eligibility criteria. The Estonian Health Insurance Fund covers a broad basket of benefits and has ensured that the uninsured still have access to emergency care, Tuberculosis and HIV treatment, COVID-19 care and vaccinations and cancer screenings.

Estonia faces shortages in the health workforce and has fewer doctors and nurses per 100 000 population than EU countries on average (348 compared with 397 and 638 compared with 835 in 2019). Moreover, the volume of graduating doctors and nurses is insufficient and many health professionals are retiring, particularly in primary health care. The wide gap between workforce requirements and trained staff will become a challenge for addressing future needs. Nonetheless, significant task-shifting to family nurses and specialist nurses has already occurred and nurses are now able to prescribe certain medicines and authorize sick leave for patients.

As shown during COVID-19 Pandemic Estonia’s main strengths is its small size, agility with an ability to quickly adjust to changing needs. There is fast decision-making because there are direct contacts and the means of information transmission are all digital and reliable.

Estonia is quite advanced regarding its e-health solutions and services such as electronic health records, digital images, e-prescriptions and e-consultations. Over 96% of the population hold an identification card that enables digital authentication for government services and the health portal. Nevertheless, there is room for improvement to enable better use of the data for service integration, clinical decision-making and outcome measurement.

Estonia leveraged its extensive digital infrastructure to respond to the COVID-19 pandemic, including for testing and contact tracing. Digital tools also facilitated the roll-out of the COVID-19 vaccination programme, e-prescription, online health consultation, applying for sick leave certificates in the patient portal to reduce the number of calls to primary healthcare providers. Estonia added a new service to the benefits list, enabling digital consultations in specialized ambulatory care, aiming to initiate and empower interdisciplinary consultations to improve continuity of treatment and access to services.

The pandemic had less of an impact in Estonia than in other EU countries on population health and mortality, with 1291 COVID-19 deaths recorded between January 2020 and the end of August 2021. Estonia postponed nearly all elective care during the first weeks of the COVID-19 pandemic, stopping all elective inpatient and outpatient care.

After the first wave, maintaining essential services and resuming elective care remained a priority. Access to healthcare services during the crisis was promoted with the rapid uptake of remote consultations, which was supported by Estonia’s existing digital infrastructure.

COVID-19 prompted several changes in the governance of the Estonian health system. Hospital networks played a leading role in bolstering bed capacity, reorganizing provision and coordinating care. The private sector also increased its involvement in the health system, particularly in testing and vaccination, although the effectiveness of pre-existing collaboration with primary healthcare providers proved to be a deciding factor in the success of these initiatives.
Indicators and scores

R3.1 Case management: **score 4**

**Strengths**
- Estonia under the leadership of the Estonian Health Insurance Fund and supported by the University of Tartu and WHO, has established a well-functioning guideline development programme that has served as an example for other countries.
- In 2020 Estonia published and adapted Estonian handbook for guideline development, brings together experiences from Estonia alongside the latest internationally recognized methods for compiling evidence-informed guidelines. It describes all aspects of guideline development, from assessing the need for the guideline to discussing its distribution, implementation and steps needed to update it.
- Development of guidelines is coordinated by the University of Tartu, while the Health Insurance Funds evaluates their implementation.
- Guidelines are publicly available.
- Case management referral protocols are available at every level of service.
- Health Board supervision of health service providers’ activities.

**Challenges**
- CBRN clinical handbook (case management guideline) is still under development; primary care providers are not yet vital service providers.

R3.2 Utilization of essential health services: **score 4**

**Strengths**
- Central medical database is available for all healthcare workers to use daily; wide coverage of social/health Insurance is 95%.
- For 5% uninsured, the Health Insurance Fund covers a broad basket of benefits and has ensured that the uninsured still have access to emergency care, Tuberculosis and HIV treatment, COVID-19 care and vaccinations and cancer screenings.
- The Health and Welfare Information Systems Centre manages a central health information system.
- The National Institute for Health Development (TAI) collects, processes, analyses, distributes and provides research for reliable national health information.
- Over 96% of the population hold an identification card that enables digital authentication for government services and the health portal.
- Regular population-based surveys to assess the access to services and satisfaction are implemented.

**Challenges**
- Primary care providers scarce in rural areas.

R3.3 Continuity of essential health services: **score 4**

**Strengths**
- Definition of emergency care in legislation, services provided by healthcare workers in situations where postponement of care may cause death or permanent damage to the person.
- Short legislative act issuing/decision-making process (minister or Health Board Director general decree) the Health Board has the right to issue decrees for temporary reorganization and restrictions to healthcare providers activities.
- Functional emergency operations centre and emergency response plan.
• Hospitals and ambulance providers are vital service providers and, therefore, obliged to regularly update risk analyses and contingency plans.
• Healthcare workers are required to provide emergency care within their competency.
• The Health Board has developed a national plan for resolving health care emergencies.
• Healthcare workers monitor the continuity of service of healthcare providers around-the-clock.
• Estonian Emergency Response Centre processes medical calls around-the-clock and dispatches ambulance when necessary.
• Healthcare providers are required to prepare their own risk analyses and contingency plans and update them every 2 years; the Health Board monitors this.
• Healthcare providers are required to perform a simulation exercise once every 2 years which is the same for the Health Board as the institution coordinating health care vital services.
• Hospital laboratory services have developed prioritization criteria to scale down and up their services as needed.

Challenges
• Continuity of emergency health services is limited to the emergency care services.
• Inadequate stocks (medicines, equipment, protective equipment), inadequate storage conditions and improper use.
• Insufficient number of qualified health workers.

Recommendations for priority actions
• Finalize and document the case management guidelines for priority health events identified based on strategic risk assessment (e.g. epidemic prone diseases, trauma, chemical events, radiation emergencies, etc) including standard operating procedures with a list of designated referral healthcare facilities, referral procedures, field triage, safe transportation and treatment of pathologies resulting from events included. As well as guideline dissemination orientation and training of health workers at all levels.
• Expand the stockpile of medicine, medical products and supplies, equipment and vaccines according to assessed needs, both at the level of health service providers at primary, secondary and tertiary level and at national level. Ensure capacity to receive and store Medical Counter Measures donations, including legal provisions.
• Specify the role of the public healthcare providers in all relevant national preparedness and response plans as a vital service provider on emergency response and continuity of the essential health services. Enhance monitoring of the primary care services continuity more comprehensibly.
• Explicitly include the continuity of the emergency health services during emergencies in the relevant national preparedness and response plans. Establish the prioritization criteria (to define country context specific high priority health services) to ensure continuity of the essential quality health services during emergencies including: emergency care, promotion, prevention, diagnosis, treatment, rehabilitative and palliative care that are safe, equitable, effective and people-centred and are based on primary health care principles, including essential public health functions and addressing priority determinants of health.
• Document and further build and strengthen investment on proven effective innovative digital health solutions both for improving access to medicine and health services and bridging the inequity gap.
R4. Infection prevention and control

Introduction

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

Target

- A national IPC programme strategy developed and disseminated.
- Implementation of national IPC programme plans, with monitoring and reporting of HCAIs.
- Established national standards and resources for safe health facilities.

Level of capabilities

A national IPC strategy plan does not exist in Estonia, but there is legislation (Regulation number 117 of the Ministry of Social Affairs) that meets WHO minimum requirements on IPC on hospital settings. An inpatient health care service provider is obliged to designate at least one doctor and one nurse with the qualifications for infection control for every 250 beds. A hospital with less than 250 beds can outsource infection control service from another hospital. The IPC teams are responsible for hospital infection control, antimicrobial stewardship, hospital-specific IPC and treatment guidelines, surveillance and internal education. Most secondary and tertiary hospitals have functioning IPC teams, on facility level local IPC plans and they support the local hospitals. Estonia intended to expand this legislation for LTCFs and primary care soon.

The Health Board already develops, together with the Estonian Society of Infectious Diseases, several practical guidelines on IPC; hand-hygiene, IPC in LTCFs, isolation and waste-management. In 2022 the national guidelines on Standard requirements for Infection Control was approved by the Guideline Advisory Group. An IPC module is part of the curriculum to become a doctor or nurse. Each hospital has its own training modules for IPC. The PPS report from ECDC 2016–2017 reported an HCAI prevalence of 4.2% in Estonia (EU average 5.5%).

National coordination on surveillance of HCAI is absent. Most hospitals conduct some surveillance at local level and participate in PPS conducted by ECDC. Some hospitals participate voluntarily in HAI-Net surveillance such as surveillance on HCAI in ICU’s. Since more staff have been added at the Health Board for IPC activities, they are working on a plan for HCAI surveillance on a national level. Laboratory capacity is already available and there is a digital infrastructure for sharing data.

Safe water is available throughout Estonia; isolation capacity in secondary and tertiary hospitals is sufficient as also in most local hospitals. Appropriate personal protection equipment is available in hospital settings and in most LTCFs and primary care settings.

Finally, the positive attitude towards IPC and the enthusiasm of the people responsible for IPC plus additional staff within the Health Board will lead to further improvement on IPC policy in Estonia in coming years.
Indicators and scores

R4.1 IPC programmes: score 3

Strengths
• Regulation Minimum IPC requirements are listed in regulation 117.
• The national guidelines on standard requirements for infection control were approved in 2022.

Challenges
• National IPC programme that also covers LTCFs and primary care.
• Lack of staff dedicated to IPC in LTCFs.

R4.2 HCAI surveillance: score 2

Strengths
• Most secondary and tertiary hospital participate in international ECDC surveillance activities such as the point prevalence surveys of the European Healthcare-Associated Infections Surveillance Network.

Challenges
• Development of a national HCAI surveillance plan including a protocol and data standardization, in hospitals as well as LTCFs.
• ICT development for HCAI surveillance based on Health Information System records.
• IPC awareness within LTCFs, particularly management and staff, including surveillance on HCAI.

R4.3 Safe environment in health facilities: score 3

Strengths
• Sanitation, hand hygiene, waste management and environmental cleaning services are available in all healthcare facilities.

Challenges
• Proper use and availability of personal protective equipment in LCTFs and primary care.
• Capacity to isolate patients in local hospitals and long-term care facilities.
• Limited awareness of the need to use personal protective equipment both among managers and health professionals in long-term care facilities, as well as lack of financial resources.
• Additional budget for renovation of some long-term care facilities.

Recommendations for priority actions

• Finalize, approve and implement the National Action Plan on IPC policies with clear responsibilities and defined roles by the Health Board in collaboration with the Estonia Society for Infectious Diseases and with relevant stakeholders in 2024. The WHO national IPC assessment tool (IPCAT2) can be used.
• Set up a national IPC focal point responsible for implementation of the National Action Plan.
• Make a proposal to review and update IPC related policies and legislation by the Health Board in 2024.
• Develop a protocol to conduct surveillance on HCAI on national level in hospitals and LTCF’s.
• Ensure adequate staffing and assure allocate additional budget for hospitals and LTCF’s for planned IPC activities and support.
R5. Risk communication and community engagement

Introduction

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

Target

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

Estonia has RCCE and infodemic management capacities across several government agencies. The Ministry of the Interior is responsible for dealing with law enforcement and rescue (such as storms, floods, coastal pollution), the Ministry of Agriculture is responsible for animal disease emergencies and the Ministry of Social Affairs is responsible for health-related crises. In the event of a health crisis the Health Board is the leading authority. In an outbreak situation, for example, the Health Board, as the lead authority, coordinates communication and provides reports on the epidemiological situation. The Health Insurance Fund is responsible for vaccination campaigns. The State Agency of Medicines explains how medicines work. The Ministry of Social Affairs communicates the regulations. The agency responsible for resolving the situation provides comprehensive information, including a situation overview and behavioural guidelines. The information must be communicated promptly and regularly until the situation is resolved.

At the government level, RCCE and infodemic management are outlined in the Government Communication Handbook, 2018. The Health Board’s Strategic Communication Plan, which includes infodemic management strategy, is currently being updated.

During the COVID-19 pandemic, the coordination and cooperation of RCCE activities between the agencies went well, principally due to the close networking between actors. A regular exchange of staff between the agencies is practiced while this is not formalized. However, the roles and responsibilities in RCCE and infodemic management are still not defined, except indirectly in the job descriptions.

A remarkable best practice of preventive risk communication is the regular campaign to prevent mushroom poisoning. It has led to a decrease in the number of calls to the poison centre without an increase in the number of emergencies, indicating the effectiveness of providing targeted risk messages to the public.
Overall, the activities in the field of RCCE are impressive due to the elevated level of competence and commitment of the actors, particularly since the resources for this field are limited. Due to the close networking and the short distances, cooperation can currently take place across agencies without fixed specifications or standard operating procedures. For further planning; however, it would be useful to clarify the responsibilities and roles to create transparency and sustainability. Community engagement can be significantly expanded, but this is difficult to implement given the limited resources.

Indicators and scores

R5.1  RCCE systems for emergencies: score 3

Strengths
- The Health Board has a Strategic Communication Plan for RCCE and infodemic management, which is currently being updated.
- In the event of an imminent health hazard, guidelines are provided to the public with information on the known risks and recommendations for protective behaviour and measures.
- In the event of an outbreak, a rapid epidemiological report is prepared and published.
- Data on the most important infectious diseases are continuously collected and made available to the public, both for information via a dashboard and for download (open data).
- The infodemic management includes continuous verification of information and fact-checking.

Challenges
- Training for RCCE and infodemic management is offered by different agencies, but it is neither consistent, coordinated nor to all relevant stakeholders.
- Roles and responsibilities of RCCE staff and infodemic management staff are not clearly described in the Health Board’s Strategic Communication Plan, as well as role allocation.
- Comprehensive and strategic planning of RCCE and infodemic management is missing so far. This would include, inter alia, coordination and cooperation between government agencies in these areas, but also the strategic choice of communication channels and target groups. Various scenarios should be developed to be prepared for different and multi hazard crises.
- There is no dedicated, fixed budget for RCCE and infodemic management. This makes it difficult to maintain communication activities, but more importantly to plan for more, expand and create stable, resilient structures, including training programmes.

R5.2  Risk communication: score 4

Strengths
- Social media are monitored constantly, the results are analysed and measures are taken if necessary.
- Health campaigns are planned and implemented to inform and raise awareness, e.g. a regular campaign to avoid mushroom poisoning, where data indicate a significant preventive effect.
- Formative research is conducted before launching public health campaigns to gain insights into needs, knowledge, attitudes and behaviours of potential target groups. Public health messages are regularly pre-tested.
- A surveillance system for public risk perception has been established.
Challenges

• There is a lack of well-trained spokespeople. To close this gap, more communication training opportunities are urgently needed.

• The media are an important partner in risk communication; however, training is needed so that they can better manage information.

• A main component of infodemic management is the rapid response to misinformation and mal information. This works well as long as the quantity of messages remains manageable. However, in case of a massive volume of problematic messages there are not enough trained staff available.

R5.3 Community engagement: score 3

Strengths

• The regional health offices provide direct contacts to the local population and know the relevant stakeholders. Health workers and community volunteers engage with the local population.

• In the event of a crisis, hotlines can be set up quickly to offer information and receive feedback.

Challenges

• There is no comprehensive stakeholder mapping yet, which could serve as a basis for a more systematic and active involvement of communities, groups and individuals and networking among each other. It should then be updated at regular intervals to capture and respond to changes.

• Emergency response co-design initiatives still need to be established.

• There is no coordinated training for volunteers at community level to ensure both knowledge and skills, but also to ensure that everyone is on the same page and shares the same goals.

Recommendations for priority actions

• Develop scenarios for diverse types of crises in order to be prepared for multi-hazard crises

• Develop a plan for specifying the coordination and cooperation between government agencies in the field of RCCE and infodemic management.

• Develop and implement a training programme for RCCE and infodemic management that can be adapted to the needs of staff, spokespeople and media.

• Identify stakeholders in communities and plan together the next steps to co-develop and co-design emergency response initiatives.

• Work with policy-makers to establish a dedicated and sufficient budget for RCCE and infodemic management.
IHR-related hazards, PoEs and border health
PoE: PoEs and border health

Introduction

All core capacities and potential hazards apply to PoEs and therefore 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

Estonia has 1446 km of borders including 764 km of sea borders and 339 km of land borders (with Latvia and the Russian Federation). There are 40 PoEs: 29 ports, five airports (two receiving international flights) and 6 ground crossings (two temporarily closed). Currently none of these have been officially designated however both Tallin International Airport and Port of Tallin have been selected by the Intersectoral Working Group for developing of capacities as specified in Annex 1 of the IHR. Official designation of PoEs is pending subject to determining the level of the official designation required.


PoEs opened to international traffic should develop an Epidemic Preparedness Plan for cases of importing highly infectious diseases, this should be undertaken in collaboration with other partners and coordinated with the Regional Department of the Health Board (according to the PoE location).

The Health Board provides the following functions at PoEs: the approval of Epidemic Preparedness Plan developed by international ports, airports and ground crossings, the provision of information on epidemiological situations and preventive measures recommended for PoE, public health related risk assessment and management, epidemiological investigation on an international means of transport (ship, aircraft, bus or train) in any case of disease if a highly infectious disease is suspected, inspection of ships to issue a ship sanitation certificate under the IHR (2005).

In addition, both Tallin International Airport and the Port of Tallinn have Emergency Response Plans. There are no health or public health staff on site at either location or neither have dedicated space for isolation but can organize this if needed. The PoE will contact the ambulance service if needed or the Health Board for epidemiological assessments that require more examination. These plans are in place and have been tested recently with COVID-19 and Ebola.

The Estonian Maritime Documents Exchange provides a single window for receiving of all information required by various Government agencies when a ship calls at a port. This allows a ship agent to submit a ship’s documents to EMDE, give any additional information and notify an affected ship directly to the Health Board Duty Officer.
Indicators and scores

PoE1. Core capacity requirements at all times for PoEs (airports, ports and ground crossings): score 3

Strengths
- PoEs have several Emergency Control Plans/standard operating procedures for different types of emergencies, including Public Health (Epidemic) Emergency – 38 PoEs (29 ports, five airports, 4 ground crossings) have developed an Epidemic Preparedness Plan for cases of highly infectious diseases which is agreed with the Health Board’s Regional Department (according to the PoE’s location).
- Trained personal for supervision of conveyances: public health risks (HB (Health Board)), safety and occupational health.
- Safe environment for travellers using PoEs facilities is ensured.
- Access to an appropriate medical service for ill travellers is provided.
- Rapid sharing of information to the public and officials about public health risks (including implementation of international travel-related measures) is provided via communication units and a website (www.kriis.ee) managed by Government Communication Unit.
- The routine core capacity of Tallinn International Airport and Port of Tallinn has been assessed and meets level three according to the SPAR (State Party Annual Reporting) 2022.
- Intersectoral working group for the development of international travel-related measures comes together on an ad-hoc basis (including Ministry of Social Affairs, Ministry of the Interior, Ministry of Economic Affairs and Communication) according to the epidemiological situation and although Port of Tallinn and Tallinn Airport are not yet designated as meeting core capacities, multi-hazard approach is linked in with health board for surveillance WHO, ECDC/European Commission recommendations.

PoE2. Public health response at PoEs: score 3

Strengths
- A multi-agency approach for the optimization of preparedness planning at PoEs, although limited resources to cover all expected activity in an emergency, including entry-exit screening, contact tracing on transport, disinfection/decontamination, producing of guidelines and recommendations for different sectors etc.
- Knowledge and skills of first responders to recognize a public health event for triggering of public health intervention (multisectoral approach must be taken).
- Legal base for implementation of some public health measures.

PoE3. Risk-based approach to international travel-related measures: score 3

Strengths
- Measures were implemented during COVID-19 – both Port and Airport developed guidance/advice and stood up temperature screening rapidly – could institute similar measures again if needed.
Recommendations for priority actions

- Amend the legal basis for IHR implementation at points of in Estonia (including designation of the PoEs and core capacity development).
- Optimize preparedness planning at PoEs via strengthening of multi-agency approach and appropriate risk assessment.
- Raise awareness of travellers and collaborating partners about communicable disease risk areas and others travel-related public health risks (developing and systematic updating of the information at websites).
- Develop core capacities in other priority PoEs.
- Strengthen all hazard approach training/exercises.
- Recommended to designate appropriate space, separate from other travellers to interview suspect or affected people according to the IHR 2005 Annex B (capacities for public health emergency).
CE. Chemical events

Introduction

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

Target

States Parties with surveillance and 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

Estonia enforced the EU legislation on chemicals management such as Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), classification, labelling and packaging, biocides regulations as well as ratified international agreements in the areas of chemicals management and chemical emergences preparedness and response. National legal acts regulating management of chemical events are the Emergency Act (general principles of crisis management) and the Chemical Act (provides comprehensive coverage in the field).

There are several plans and policy documents in the areas of chemical accidents: the emergency response plan describes, among other things, ways to resolve such situations, including the use of necessary resources and notifying the public to ensure safety. The Health Board developed a public health plan for chemical incidents/emergencies as a part of the national emergency response plan. On- and off-site emergency plans of hazardous enterprises describe actions in relation to specific hazards to protect workers and populations. The Estonian Rescue Network Strategy defines the objectives for the prevention and preparedness of crisis including those caused by hazardous chemicals.

Several governmental bodies are involved both in prevention and response to chemical accidents. Depending on the nature of the different emergency stakeholders involved, there is a unified command structure made up of: the Rescue Board, Police, Security Police, Border Guard Board, Health Board, Environmental Board, Consumer Protection and Technical Regulatory Authority, local government representatives and other stakeholders if needed.

In most scenarios (industrial and transport accidents, release of chemicals), the Estonian Rescue Board is the leading authority which assesses risks of chemicals emergencies and publishes a chemical safety hazard forecast document. Based on that a five-year plan for chemical safety inspections is developed for enterprises with large-scale accident risks. The chemical safety surveillance department releases monthly reviews and annual summaries on safety inspection results. Agencies gather, interpret and survey information according to their tasks and legal mandate. In case of a response phase, an emergency response hub is formed and information flow is ensured by representatives of involved agencies.

A list of reference health facilities for the diagnosis and treatment of chemical poisoning cases is part of the national action plan. The Poisoning Information Centre gives medical advice to the public and medical staff around-the-clock; it provides consultation during chemical emergencies and is responsible for poisoning surveillance. It has access to the Nordic Association of poison centres around-the-clock. The
Chemical Safety Department at the Health Board conducts surveillance of chemical and product handlers. There is a manual for ambulance services which provides recommendations in the case of CBRN events. The Health Board is planning to issue operational guidelines for health care in CBRN events in 2024. The identification of chemical agents is a responsibility of clinical laboratories. In certain cases, the forensic medicine laboratory is involved.

There have been several accidents, but none of them major accidents according to the Seveso III Directive 2012/18/EU categorization. However, each accident and the cause of each accident is investigated and analysed and the summaries made publicly available (in an annual publication).

**Indicators and scores**

**CE1. Mechanisms established and functioning for detecting and responding to chemical events or emergencies: score 3**

**Strengths**
- The Rescue Board uses various information systems to manage data about an event and for enterprises with major hazards and dangerous enterprises.
- First responders are equipped to detect and to respond to chemical events.
- Cooperation with different stakeholders through a unified command structure in case of emergency is effective.
- Poisonings surveillance, advice to public and medical staff is provided by the Poison Information Centre around-the-clock; the poison centre is included in the Nordic countries network.
- There is an active search for best practices from neighbouring and EU countries with successful application into the national preparedness and response system.

**Challenges**
- There is irregular information exchange between relevant governmental bodies; absence of a common information sharing platform to support responsible agencies in gathering, interpreting and utilizing information both at preparedness, response and recovery staged of chemical accidents.
- There are gaps in the assessment of mortality and morbidity in relation to chemical events.
- There is a rapid increase in the demand for of all types of resources to respond to chemical crises, such as training, renewing protective equipment, renewing operating procedures, particularly in health care.
- The guidance document for the protection of health care first responders including recommendations on decontamination is outdated.

**CE2. Enabling environment in place for management of chemical events: score 5**

**Strengths**
- Estonia has enforced EU chemical legislation as well as international conventions, which has resulted in the strengthening of national capacities for chemicals management.
- The national emergency response plan is regularly updated based on a detailed analysis of each chemical accident; the responsible agency leads and ensure comprehensiveness of the response plan; response analysis is published annually.
- A mechanism to surge national capacities in the case of chemical emergency situations is in place; roles and responsibilities are clearly defined.
- Simulation exercises of various levels are conducted regularly with various stakeholders.
Challenges

- The organization of activities in the field in terms of management and administration tasks are fragmented between many state institutions, there is insufficient institutional coordination and limited supervisory cooperation.

- Laboratory capabilities at hospitals to detect chemical poisonings and to identify a big spectrum of chemical agents are insufficient. Primary diagnosis is based on clinical symptoms.

Recommendations for priority actions

- Update the CBRN management standard operating procedures for first responders in the health sector.

- In cooperation with other agencies, develop standard operating procedures and other relevant document on the public health management of chemical events for different scenarios, not only industrial accidents; this should include information exchange mechanism, decontamination of patients and medical staff, procedures for the investigation of unknown disease outbreaks with potential chemical origins.

- Establish a mechanism allowing timely and systematic information exchange between appropriate chemical units, surveillance units and other relevant sectors about acute chemical events, potential chemical risks and their response.

- Consider strengthening laboratory capacities for the identification of priority chemical agents in human samples.

- Organize regular training and education campaigns for medical staff, in hospitals and for first responders, on triage, decontamination and other health-related topics relating to chemical emergences.
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
Estonia is an International Atomic Energy Agency (IAEA) member since 1992. Missions carried out during the last 10 years include: peer appraisal of the arrangements of Estonia regarding preparedness and response to radiological and nuclear emergencies (2011), Integrated Regulatory Review Service (2016) and follow-up mission (2019), evaluation of monitoring arrangements of drinking-waters and food stuff (2020). A mission on Integrated Nuclear Infrastructure Review is planned for the fourth quarter 2023. Appropriate IAEA recommendations and EU regulations on radiation and nuclear safety and on emergency preparedness are in force in Estonia. Requirements of the Treaty Establishing the European Atomic Energy Community (EURATOM) and those of the EURATOM directives are transposed into national infrastructure.

Estonia is a Contracting Party to the International Convention on Early Notification of a Nuclear Accident and to the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency.

If a State needs assistance in the event of a nuclear or radiological emergency, whether or not such an event originates on its territory or is under its jurisdiction or control, it may request assistance from or through the IAEA.

The Environmental Board of Estonia signed bilateral Memorandums of Understanding with the Radiation and Nuclear Safety Authority of Finland (STUK) in May 2019 and with the State Environmental Service of Latvia in March 2020 for cooperation and exchange of information on radiation and nuclear safety and regulatory matters, which includes inter alia cooperation in preparedness for and response to nuclear or radiological incidents and emergencies, taking into account international emergency arrangements.

According to Radiation Act, radiation practice is any activity which increase or may increase the exposure of people to radiation emanating from artificial or natural sources of radiation. Such activities include production, processing, use (including electrical equipment emitting ionizing radiation), possession, holding, storage, transportation and intermediate storage or final disposal of radioactive substances. The use of radiation source requires a radiation practice license (hereinafter license), which is granted by the Environmental Board upon application. Radioactive sources are mainly used in medicine and industry. Radiation practices are categorized in the Act as being of low (less than 500), moderate (less than 300) or high risk (less than 10), depending on their level of radiation hazard. License holders are obligated to prepare an emergency response plan. In case of radiation practices with high risk, a holder of the license is obliged to prepare a response plan to accidental exposure situations based on the assessment of potential exposures. Responsibility of licensees specified by the Radiation Act also includes preventing or reducing the release of radioactive material and exposure of workers and the public. License holder must
immediately inform the Environmental Board and the Emergency Centre of loss, theft or unauthorized use of radiation sources and of any incidents or accidents that causes unintentional exposure of workers or members of the public.

In Estonia, the Emergency Act serves as the national legal framework for emergency preparedness and establishes the legal framework for crisis management. The Radiation Act provides more specific provisions of intervention needed in the case of a radiological emergency or an existing exposure situation.

According to Emergency Act, the Environmental Board directs and resolves radiological and nuclear emergencies and prepares risk assessment and emergency response plans. The risk assessment includes assessment of the types of radiological events that could cause an emergency and a risk matrix to assess the likelihood and severity of these events. The identified types of emergencies are a nuclear accident in a neighbouring country and a national radiological accident, for which the Environmental Board has drawn up two different emergency response plans. Plan describes organization of response to radiological emergency, management structure, duties of institutions participating, notification of public organization of international cooperation, resources and other relevant topics.

The Environmental Board assesses the operations and timeliness of the plan at least once every 2 years or after each emergency or significant incident. Nationwide exercises were organized in 2019 (KBRT); 2017 (BOREX); 2011 (EU CREMEX). Table-top exercises are conducted regularly.

The Environmental Board is the National Warning Point and the National Competent Authority in Estonia for any situation, which might result in an actual or potential deterioration of radiation safety of the population, environment or society. To immediately notify, advise and/or consult the local and governmental authorities on the needed emergency response actions, an expert of the Environmental Board is on duty for 24 hours a day. Early notification of a nuclear accident occurring abroad is received in Estonia from neighbouring countries and/or via the ECURIE system of the European Council and/or the IAEA USIE notification system or both. As a supplement to the early warning agreements, Estonian on-line system for automatic monitoring of radioactivity is in service 24 hours a day. Any increase in the gamma radiation dose rate above the threshold level initiates an alarm and a notification of the officer of the Environmental Board on a 24/7 duty. According to the Environmental Monitoring Act, the Environmental Board is the responsible institution carrying out radiation monitoring sub-programme. Monitoring Program is based on Article 35 of the Euratom Treaty and covers the monitoring of the radioactivity in the environment, foodstuffs and in drinking-water.

Monitoring of imported food is provided upon request of the Agriculture and Food Board (authority under the Ministry of Regional Affairs and Agriculture). Consumer products radioactivity is checked at the border (Estonian Tax and Customs Board, Ministry of Finance) with non-EU countries and in authorized post offices.

Although routine environmental monitoring gives a good general overview of the population dose accumulation, it does not cover accidental emergency exposure scenarios, when radiation worker(s) or member(s) of the public have been overexposed due to ingestion or inhalation of radioactive materials. As Estonia does not have human body direct measurement capabilities, cooperation with other countries may need further clarification of the existing agreements.

In terms of medical staff protection, there is a manual for ambulance services on how to work in the environment with CBRN contamination (2011).
Indicators and scores

RE1. Mechanisms established and functioning for detecting and responding to radiological and nuclear emergencies: score 4

Strengths

- The national emergency response plans (nuclear accident in a neighbouring country and a national radiological accident) are based on risk assessments and updated regularly.
- The mechanism for responding to emergency situations is tested and updated based on results of national scale exercises or real occurred incidents/events.
- Appropriate means to detect changes of radioactivity levels from different environmental media (e.g. food, air, drinking-water, soil etc) are following international recommendations and requirements.
- Early warning capabilities covers:
  » 24/7 automatic gamma radiation monitoring network;
  » a centralized Situation Report management portal (SITREP) for notifying various authorities and the public; and
  » a 24/7 duty officers’ group for international and national communication or to immediately notify, advise and/or consult the local and governmental authorities on the needed emergency response actions.
- Established appropriate means and solutions to measure radiation workers, emergency workers and public externally accumulated doses.

Challenges

- The system seems to work well in a normal situation, however in the event of widespread contamination (e.g. from a nuclear accident abroad), or laboratory measuring capacity may encounter a bottleneck, thereby preventing a representative picture of the situation in the country being known.
- In a crisis, the ability to cope with increased workloads is limited particularly for long lasting emergencies, mostly due to lack of high-level experts working in the field.
- No national capacity to measure internal doses (e.g. no direct measurement of human exposure is available).
- Interagency coordination as well as coordination with neighbouring countries is well adopted, partly formalized, but not addressing practical cooperation mechanisms (whole body counters use, pharmaceutical drugs etc)
- Number of hospitals with capacity to detect radioactively contaminated patients is very low (only few hospitals in Estonia). There are no standard operating procedures on decontamination and treatment protocols for radiation injured people.
- In terms of national planning to build an atomic power plant, more resources are needed for preliminary and further assessments, including a baseline assessment of population exposure to radiation. An official national decision regarding the use of nuclear energy in Estonia is anticipated in the spring of 2024.
RE2. Enabling environment in place for management of radiological and nuclear emergencies: score 5

Strengths

- National legislation including legal and implementation acts are available and harmonized with IAEA and EU recommendations and requirements.
- Established international cooperation with neighbouring countries, EC and the IAEA.
- There is regular exchange on radiation safety experience with foreign countries through participation in international exercises and training courses. National radiation laboratory (under The Environmental Board) regularly participates in intercomparison exercises and proficiency tests.
- There is coordination between designated focal points which ensures overall preparedness and response.
- Modern technologies (notifications systems, such as SITREP) and special designated websites and developed materials "Code of Conduct for Crisis Situations", gives information and main instructions to the public on how to prepare for and act during different crisis situations, including radiological accidents.

Challenges

- To identify all the caps related to patient treatment, a specific high-level expertise (international audit) is required.
- Procedures that describe cooperation between various national authorities who, according to national radiation emergency response plan, have overlapping duties or mutually supportive goals, should have official established mechanisms and procedures to act more efficiently during an emergency.
- A need to ensure the availability of relevant pharmaceuticals in the case of small- or large-scale radiation emergencies.
- All assessments related to the building and operating of a nuclear power plant should be carefully planned and coordinated between all agencies involved in preparedness and response to radiation emergencies.

Recommendations for priority actions

- Strengthen the capacity of laboratories to ensure monitoring in large-scale radiation emergencies by strengthening the national laboratory and signing agreements with laboratories in other countries. The possibility of nationally developing the capacity to assess doses from internal radiation should be considered.
- To ensure the sustainability of interagency communication and workflow coordination in emergency situations, the procedure and information flows between agencies must be updated and formalized.
- To build capacity and provide expertise in the field, designate at least one hospital that diagnoses and treats people overexposed to radiation.
- Follow CBRN manuals to ensure the best possible protection of first responders and hospital personnel from the hazards of radioactivity and contamination, including initial handling and treatment of contaminated patients.
- Further investigation to find out what are the country’s needs for different types of pharmaceutical drugs related to radiation emergency related patient treatment. For some cases also consider having agreement with neighbouring countries on the provision of pharmaceutical agents that can be used as countermeasures in the case of a radiation emergency or consider the creation of a national stockpile.
Annex. JEE background

Mission location and duration
Tallinn, Estonia. 8–13 October 2023

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<td>P2 Financing</td>
<td>Sara Bengtsson, Public Health Agency of Sweden</td>
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<td>Francesca Latronico, Food and Agriculture Organization of the United Nations</td>
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<td>P5 Zoonotic disease</td>
<td>Hilary Kirkbride, UK Health Security Agency, the United Kingdom</td>
<td>Andreas Bråve, Public Health Agency of Sweden</td>
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<tr>
<td>P7 Biosafety and biosecurity</td>
<td>Andreas Bråve, Public Health Agency of Sweden</td>
<td>John Simpson, UK Health Security Agency, the United Kingdom</td>
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<tr>
<td>P8 Immunization</td>
<td>Otto Helve, Finnish Institute for Health and Welfare, Finland</td>
<td>Emmanuel Robesyn, European Centre for Disease Prevention and Control</td>
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<tr>
<td>D1 National laboratory systems</td>
<td>Andreas Bråve, Public Health Agency of Sweden</td>
<td>Hilary Kirkbride, UK Health Security Agency, the United Kingdom</td>
</tr>
<tr>
<td>D2 Surveillance</td>
<td>Emmanuel Robesyn, European Centre for Disease Prevention and Control</td>
<td>Otto Helve, Finnish Institute for Health and Welfare, Finland</td>
</tr>
<tr>
<td>D3 Human resources</td>
<td>Toos Waegemaekers, National Institute for Public Health and the Environment, Netherlands (Kingdom of the)</td>
<td>Birgitte Strahwald, University of Munich, Germany</td>
</tr>
<tr>
<td>R1 Health emergency management</td>
<td>Indra Linina, State Emergency Medical Services, Latvia</td>
<td>Ardita Tahirukaj, WHO Regional Office for Europe</td>
</tr>
<tr>
<td>R2 Linking public health and security authorities</td>
<td>Jussi Sane, WHO Regional Office for Europe</td>
<td>Andreas Bråve, Public Health Agency of Sweden</td>
</tr>
</tbody>
</table>
**Objective**

To assess Estonia’s capacities and capabilities in the 19 technical areas of the JEE tool and to provide updated data that will further support Estonia’s ongoing efforts to enhance their public health security.

**The JEE process**

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

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

**Field visits**

- **Group 1: PoEs (airport, port, ground-crossing):**
  - Port of Tallinn
  - Tallinn Airport.
- **Group 2: Hospitals, including hospital labs and the emergency departments:**
  - North Estonia Medical Centre
  - Pärnu Hospital.
- **Group 3: Laboratories, animal and human health:**
  - Health Board
  - LABRIS.
- **Group 4: Radiation/chemical safety agencies:**
  - Environmental Board

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<tr>
<th>IHR core capacity</th>
<th>Lead</th>
<th>Co-lead</th>
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<tr>
<td><strong>R3</strong></td>
<td>Health services provision</td>
<td>Ardita Tahirukaj, WHO Regional Office for Europe</td>
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<td><strong>R5</strong></td>
<td>RCCE</td>
<td>Brigitte Strahwald, University of Munich, Germany</td>
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<td>Hilary Kirkbride, UK Health Security Agency, the United Kingdom</td>
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<td>Irina Zastenksaya, WHO Regional Office for Europe</td>
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<td><strong>RE</strong></td>
<td>Radiation emergencies</td>
<td>Irina Zastenksaya, WHO Regional Office for Europe</td>
</tr>
</tbody>
</table>
« Rescue Board
» Health Board.

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 just an audit. Information provided by Estonia will not be independently verified but will be discussed and the evaluation rating mutually agreed by the host country and the evaluation team. This is a peer-to-peer review.

Key Estonia participants and institutions

| Overall |
|-----------------|-----------------|------------------|
| Riina Sikkut, Minister of Health, Ministry of Social Affairs |
| Birgit Lao, Director General, Health Board |
| Ragnar Vaiknemets, Deputy Director General, Health Board |
| Kristian Sirp, Chief Risk Officer, Health Board |

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<th>IHR core capacity</th>
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<tr>
<td><strong>P1</strong> Legal instruments</td>
<td>Kerli Reintamm Heli Laarmann</td>
<td>Ministry of Social Affairs</td>
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<td><strong>P2</strong> Financing</td>
<td>Kerli Reintamm Heli Laarmann</td>
<td>Ministry of Social Affairs</td>
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<td><strong>P3</strong> IHR coordination, NFP functions</td>
<td>Jelena Rjabinina Kristian Sirp</td>
<td>Health Board</td>
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<td><strong>P4</strong> Antimicrobial resistance (AMR)</td>
<td>Liidia Dotsenko Kärt Söber</td>
<td>Health Board</td>
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<tr>
<td><strong>P5</strong> Zoonotic disease</td>
<td>Regina Pihlakas Olev Kalda</td>
<td>Agriculture and Food Board</td>
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<td><strong>P6</strong> Food safety</td>
<td>Toomas Kramarenko Olev Kalda</td>
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<td>Janne Pullat</td>
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Joint External Evaluation of the International Health Regulations (2005) core capacities for Estonia

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<td>Imre Kaas</td>
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<td>Jan Raidloo</td>
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<tr>
<td>CE</td>
<td>Chemical events</td>
<td>Teet Koitjärv</td>
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<td></td>
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<td>Raul Kurrista</td>
</tr>
</tbody>
</table>

JEE mission observers

- Nine Bakunin, Deputy Director-General, National Centre for Disease Control and Prevention, Ministry of Health, Armenia.
- Ondrej Fabrici, National Focal Point for the International Health Regulations, Public Health Authority, Slovak Republic.
- Monika Popa, Public Health Authority, Slovak Republic

WHO Estonia facilitation support

- Kristina Köhler, Liaison Officer.
- Gerli Sirk, Business Operations Associate.

Supporting documentation provided by Estonia

01. Legal instruments

- Rahvatevise seadus [https://www.riigiteataja.ee/akt/103022023007](https://www.riigiteataja.ee/akt/103022023007)
- Requirements for the conduct of the crisis management exercise and the organization of the exercise – established based on the emergency act [Kriisireguleerimisöppuse läbiviimisele ning õppuse korraldamisele esitatavad nõuded](https://www.riigiteataja.ee/akt/131072021003)
- Requirements and procedures for management of emergency resolution, cooperation of institutions and people participating in resolution, public information and interagency information exchange and preparation for large-scale evacuation and its implementation [Hädaolukorra lahendamise juhtimise, lahendamisel osalevate asutuste ja isikute koostöö, avalikkuse teavitamise ja asutustevahelise teabeavahetuse ning ulatuslikuks evakuatsiooniks valmistumise ja selle läbiviimise nõuded ja kord](https://www.riigiteataja.ee/akt/129122021069)
The procedure and conditions for preventing the spread of particularly dangerous infectious diseases at the Estonian state border – Eesti riigipiiril eriti ohtlike nakkushaiguste leviku tõkestamise kord ja tingimused https://www.riigiteataja.ee/akt/117042019013


Rescue Act – Päästeseadus https://www.riigiteataja.ee/akt/116122022021

Päästesündmusel osalevate riigi- ja kohaliku omavalitsuse asutuste ning isikute koostöö kord https://www.riigiteataja.ee/akt/116122020013

Health Board – Terviseamet https://terviseamet.ee/en

Local Governments – Kohaliku omavalitsus https://omavalitsus.fin.ee/omavalitsus/


02. Financing


State budget strategy https://www.fin.ee/riigi-rahandus-ja-maksud/riigieelarve-ja-eelarvestrateegia/riigi-eelarvestrateegiaview_instance=0 & andcurrent_page=1#riigi-eelarvestratee


Ministry of Finance https://www.fin.ee/riigi-rahandus-ja-maksud/riigieelarve-ja-eelarvestrateegia/riigieelarve#item-1

Ministry of Social Affairs budget https://www.sm.ee/sotsiaalministeeriumi-eelarve


Estonian Rescue Act https://www.riigiteataja.ee/akt/116122022021

• Regulation Tasks of Ambulance, Stationary Specialized Medical Care and General Practitioner Service Providers in Emergency and Defense Preparedness, as well as Levels and Content of Readiness for Fulfilment of Established Tasks During Increased Defense Readiness, State of War, Mobilization and Demobilization and in the Case of Threat of Emergency and During an Emergency https://www.riigiteataja.ee/akt/107112020001

03. IHR coordination, NFP functions
• Emergency Act – Hädaolukorra seadus https://www.riigiteataja.ee/akt/1300620 23022?leiaKehtiv
• Public Health Act – Tervishoiuteenuste korraldamise seadus https://www.riigiteataja.ee/akt/111032023092?leiaKehtiv

04. Antimicrobial resistance (AMR)
• Medicinal Product Act https://www.riigiteataja.ee/en/eli/525112013005/consolide/current
• Communicable diseases prevention and Control Act, updated version in force from 01.04.2023 https://www.riigiteataja.ee/en/eli/506012023006/consolide/current
• Regulation of the Minister of Social Affairs 2No.4 lists specific diseases and pathogens classified as notifiable https://www.riigiteataja.ee/akt/113032019241?leiaKehtiv
• Regulation of the Minister of Social Affairs 1No.17 regulates the activities of healthcare providers in the field of nosocomial infection Control https://www.riigiteataja.ee/akt/13253198?leiaKehtiv
• Veterinary Act https://www.riigiteataja.ee/en/eli/506072023012/consolide
• Regulation of the Minister of Rural Affairs 6No.2 Requirements for the organization for zoonoses monitoring https://www.riigiteataja.ee/akt/124112021007
• Regulation of the Minister of Rural Affairs 6No.8 on detailed requirements and procedure for keeping records and submitting reports and data on the provision of veterinary services https://www.riigiteataja.ee/akt/121122022022?leiaKehtiv
• Veterinary action plan on AMR https://www.agri.ee/toiduohutus-taime-ja-loomatervis/toiduohutus/mikroobide-resistentsus-amr
• EVIPNet evidence brief for policy: tackling antimicrobial resistance in primary health care through promoting the appropriate use of antibiotics in Estonia https://www.who.int/europe/publications/i/item/WHO-EURO-2022-4779-44542-63078

04. Zoonotic disease
• Veterinary Act https://www.riigiteataja.ee/en/eli/506072023012/consolide
• Rules for the control of Salmonellosis https://www.riigiteataja.ee/akt/131012023011
• Rules for the control and prevention of rabies https://www.riigiteataja.ee/akt/115032022018
• Requirements for surveillance of zoonoses https://www.riigiteataja.ee/akt/124112021007
• Rules for laboratories for notification, record keeping and reporting of animal diseases and zoonotic agents https://www.riigiteataja.ee/akt/124112021007
• National infectious animal disease control programmes for each disease covered in national surveillance plan
• Annual national infectious animal disease control programmes implementing measures https://pta.agri.ee/loomatauide-ennetamine
• Guidelines for taking samples and implementing measures in case for Salmonella spp at farm level

05. Food safety
• Commission Implementing Decision (EU) 2020/1729 of 17November 2020 on the monitoring and reporting of antimicrobial resistance in zoonotic and commensal bacteria and repealing Implementing Decision 2013/652/EU
• Commission Delegated Regulation (EU) 2022/1644 of 7July 2022 supplementing Regulation (EU) 2017/625 of the European Parliament and of the Council with specific requirements for the performance of official controls on the use of pharmacologically active substances authorized as veterinary medicinal products or as feed additives and of prohibited or unauthorized pharmacologically active substances and residues thereof.
• Commission Implementing Regulation (EU) 2022/1646 of 23September 2022 on uniform practical arrangements for the performance of official controls as regards the use of pharmacologically active substances authorized as veterinary medicinal productor as feed additives and of prohibited or unauthorized pharmacologically active substances and residues thereof, on specific content of multi-annual national control plans and specific arrangements for their preparation.
• Minister of Rural Affairs 7No.2, 25.112021, Regulation for the control of salmonellosis: https://www.riigiteataja.ee/akt/131012023011
• Prevention and Control of Infectious Diseases Act:https://www.riigiteataja.ee/akt/111032023072
• Requirements for the organization of zoonoses monitoring:https://www.riigiteataja.ee/akt/124112021007
• Veterinary Act:https://www.riigiteataja.ee/akt/130062023103
• An example of a foodborne outbreak investigation final report.
• Contingency plan for food (updated in 2022) – failToidu situatsiooniplaan 2022and AFB Director-General Decree No89 approving the above-mentioned plan)
• AFBstuff work order (updated in 2022, which is connected to the duties described in contingency plan for food) – failPTA stabitöö kord ja toimepidevusand AFB Director-General Decree 8No.1 approving the above-mentioned order.
• SitRep user guidance.

07. Biosafety and biosecurity
• Communicable diseases prevention and control act https://www.riigiteataja.ee/akt/130122011020
• Infectious Animal Disease Control Act https://www.riigiteataja.ee/en/eli/504112013009/consolide
• Occupational health and safety act https://www.riigiteataja.ee/en/eli/520032019007/consolide
• Requirements for the laboratory premises, equipment and technology of the person handling infectious material and the safety measures to be implemented https://www.riigiteataja.ee/akt/641075
• Procedure for handling infectious material https://www.riigiteataja.ee/akt/13253234
• Procedure for the selection and use of personal protective equipment https://www.riigiteataja.ee/akt/129122011181
• Procedure for the medical surveillance of workers https://www.riigiteataja.ee/akt/110042015003
• System of security measures for information systems (ISKE) Only in Estonian language: https://ria.ee/kuberturvalisus/riigi-infoturbe-meetmete-haldus/infosusteeemide-turvameetmete-susteem-iske
• Act on Rules governing the carriage of dangerous goods by road https://www.riigiteataja.ee/akt/12860577
08. Immunization
- Health Board (2023) [website], vaktsineeri.ee [National immunization website]. Tallinn, Health Board https://ta.vaktsineeri.ee

09. National laboratory systems
- CBRN https://kapo.ee/en/content/non-proliferation-weapons-mass-destruction/
- Poisoning awareness centre https://www.16662.ee/et
- Communicable diseases prevention and control act https://www.riigiteataja.ee/akt/130122011020
- Regulation No.71 of the Minister of Rural Affairs of 25.112021, Only in Estonian language: https://www.riigiteataja.ee/aktilisa/1261/1202/1013/MM_m71_Lisa1.pdf
- Requirements for the laboratory premises, equipment and technology of the person handling infectious material and the safety measures to be implemented https://www.riigiteataja.ee/akt/641075
- Procedure for handling infectious material https://www.riigiteataja.ee/akt/13253234
- Procedure for the selection and use of personal protective equipment https://www.riigiteataja.ee/akt/129122011181
- Procedure for the medical surveillance of workers https://www.riigiteataja.ee/akt/110042015003
- Act on the General Part of the Code of Economic Activities https://www.riigiteataja.ee/akt/115032014008
- Statute of the Register of Infectious Diseases https://www.riigiteataja.ee/akt/113032019242?leiaKehtiv
- Non-profit-making organization Association Estonian Centre for Standardization and Accreditation. (EAK) https://eak.ee/index_eng.php

10. Surveillance
- Data composition of documents transmitted to the Health Information System and the conditions
and procedure for their submission Sotsiaalministri määrus number 53, 17.09.2008 Tervise infosüsteemi edastatavate dokumentide andmekoosseisud ning nende esitamise tingimused ja kord https://www.riigiteataja.ee/akt/123052023044

- Veterinary Act https://www.riigiteataja.ee/akt/111032023051
- Health Board Director’s order on outbreak investigation and the implementation manual: Guide to communication of an emergency event and preparedness for epidemic control of communicable diseases, Health Board
- Estonian Health Board, website, surveillance data https://www.terviseamet.ee/en/health-board
  » Visualization of surveillance data by month, Health Board website statistical module. Retrospective data from 2013.
  » Weekly updates on COVID/influenza and ARVI intensity and trends.
  » Bulletin EstEpiReport (in English) statistical data on CD morbidity.
  » Quarterly overview of salmonellosis and campylobacteriosis morbidity.
  » Annual report on infectious diseases in Estonia.
- Influenza web page https://www.terviseamet.ee/et/nakkushaigused/tervishoiutootajale/nakkushaigustesse-haigestumine/gripp-ja-gripilaadsetesse

11. Human resources
- Minister’s decree which sets the strategic framework to alleviate the shortage of healthcare workers https://www.sm.ee/tervise-edendamine-ravi-ja-ravimid/ravi-ja-tervise-taastamine/tervishoius-tootavad-spetsialistid
- National Institute for Health Development https://www.tai.ee/et/uudised/kui-palju-eestis-tervishoiutootajaid-0
- MEDRE https://medre.tehik.ee/home
- University of Tartu Institute of Family Medicine and Public Health https://tervis.ut.ee/en

12. Health emergency management
- https://www.rescue.ee/et/haedaolukorra-riskide-hindamine
- Emergency Response Plan (health care events), 2021 – restricted document
13. Linking public health and security authorities
• Control of communicable diseases https://www.terviseamet.ee/et/nakkushaigused-menuu/tervishiutootajale/nakkusohutuse-juhendid-ja-soovitused
• Chemical and product safety https://www.terviseamet.ee/et/uudised/kemikaalialased-jarelevalveprojektid-2023-aasta
• Medical Devices https://www.terviseamet.ee/et/meditsiini-seadmed/meditsiiniseadmete-regulatsioonid/meditsiiniseadmete-regulatsioonide-ulevaade

14. Health services provision
• State of Health in the EU, Estonia Country Health Profile 2021, Estonia: Country Health Profile 2021 | European Observatory on Health Systems and Policies (who.int)
• Estonia Health system summary 2022, Estonia: health system summary, 2022 (who.int)
• Health Services Organization Act https://www.riigiteataja.ee/eli/ee/510042023001/consolide/current

15. IPC
• Communicable diseases prevention and Control Act, updated version 01.042023 https://www.riigiteataja.ee/en/eli/ee/506012023006/consolide/current
• Regulation number 117 Ministry of Social Affairs https://www.riigiteataja.ee/akt/13253198
• ECDC protocol PPS: Protocol for point prevalence surveys of health care-associated infections and antimicrobial use in European long-term care facilities – version 4.0 (europa.eu)
• Requirements for premises, installations and apparatus necessary for the provision of non-hospital specialist medical care https://www.riigiteataja.ee/akt/101062016008
• Requirements for types of hospital https://www.riigiteataja.ee/akt/793970?leiaKehtiv
• Requirements for the premises, equipment and equipment of the family doctor’s place of business https://www.riigiteataja.ee/akt/116032018004
• Standard conditions for hospital accommodation https://www.riigiteataja.ee/akt/120012011022
• WHO assessment tool IPCAT2 Assessment tool of the minimum requirements for infection prevention and control programmes at national level (who.int)

16. RCCE
• The Emergency act https://www.riigiteataja.ee/akt/109082022025
• Health Services Organization Act https://www.riigiteataja.ee/en/eli/ee/508012018001/consolide/current
• Health Services Organization Act https://www.riigiteataja.ee/en/eli/ee/508012018001/consolide/current
17. Points of entry and border health


18. Chemical events

- Chemical act https://www.riigiteataja.ee/en/ei/524082022002/consolidate
- The Emergency act https://www.riigiteataja.ee/akt/109082022025
- Industrial Emissions Act https://www.riigiteataja.ee/akt/121092023004
- Risk analysis (web page) https://www.rescue.ee/et/haedaolukorra-riskide-hindamine
- Chemical safety control service hazard forecast https://siseveeb-api.paa.sise/files/5dcca19b8b392ebf40e3662d5fd21f93ca02142e236e1598de56236a47433bc4
- 8 of Regulation No.18 of the Minister of Economy and Infrastructure dated 02.022016 Requirements for the mandatory documents of companies with a risk of a dangerous and major accident and their preparation, as well as the information to be transmitted to the public and notification of the accident
- Kemikaaliohutuse komisjoni moodustamine (Formation of the Chemical Safety Committee) Kuupäev digiallikirjas number 49 https://www.sm.ee/media/2023/download
- Estonia poison information centre https://mediv8.com/poisons-information/estonian-poison-information-centre/

19. Radiation emergencies

- IRRS Follow-up mission report https://www.iaea.org/node/46089
- Euratom Treaty https://keskkonnaamet.ee/media/1406/download
- https://www.riigiteataja.ee/akt/13090135
- Risk Assessment for Radiological or Nuclear Accident (approved by the directive of the Director-General of the Environmental Board on 31 January 2023 1No.–1/23/17)
- National Emergency Response Plan (approved by the directive of the Director-General of the Environmental Board on nine February 2022 1No.–1/22/28)
• Regulation of the Government 7No.8 list of events that may cause an emergency, for which a response plan is drawn up, the requirements and procedure for drawing up the plan and the authorities leading its preparation, the bodies of the executive state power leading the resolution of the emergency, a list of emergency situations for which risk communication is organized and the authorities responsible for its organization (passed 29.07.2021) https://www.riigiteataja.ee/akt/121072022007
• Regulation of the Ministry of the Environment 4No.7 Statute of the Environmental Board (in Estonian) https://www.riigiteataja.ee/akt/113072023021
• Regulation of Government 9No.5 Intervention and action levels and the permitted level of emergency exposure in a radiological emergency (in Estonian) https://www.riigiteataja.ee/akt/131072018011
• Regulation of Government 9No.5 Intervention and Action levels and reference level of emergency exposure in radiation emergency (in Estonian) https://www.riigiteataja.ee/akt/131072018011
• Regulation of the Ministry of the Environment 3No.3 The specifications of the procedure for processing of documents for importation, exportation or transit of radioactive waste and the time limits thereof based on the countries of origin and destination (in Estonian) https://www.riigiteataja.ee/akt/105102016005