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HEPSA – health emergency preparedness self-assessment tool

User guide

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User guide

This project was commissioned by the European Centre for Disease Prevention and Control (ECDC), coordinated by Graham Fraser and Svetla Tsolova, and produced by Mariana Haeberer, senior epidemiologist at IQVIA, Madrid. We would also like to thank the Dutch National Institute for Public Health and the Environment (RIVM) for their input.

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Abbreviations

BSI	Baseline set of indicators
CSI	Comprehensive set of indicators
EEA	European Economic Area
EU	European Union
HEPSA	Health emergency preparedness self-assessment
IHR	International Health Regulations
MS	Member State
NFP	National focal point
PHEP	Public health emergency preparedness
WHO	World Health Organization

Glossary

Crisis	A serious, unexpected and often dangerous situation, requiring timely action; a situation that may affect or threaten lives, environment, critical infrastructure or core societal functions; may be caused by natural or man-made disasters.
Disease event	A manifestation of disease or an incident that creates a potential for disease.
Early warning system	A system for identification of potential crises, mainly through bulletins, forecasts, alerts.
Emergency communication	Urgent, time-sensitive communication with a specific group of people as the result of an abnormal situation that requires prompt action beyond normal procedures in order to limit injury, damage or death to persons, property or the environment. Emergency communications are very often intended to prompt or guide immediate action.
Emergency preparedness	Actions taken in anticipation of an emergency to facilitate rapid, effective and appropriate response to an emergency.
Hazard	Something that has the potential to cause adverse health effects in exposed populations.
Indicator-based surveillance	The routine reporting of disease cases to, for example, notifiable disease surveillance systems, sentinel surveillance systems, and laboratory-based surveillance. Routine reporting is often carried out by healthcare facilities, with reports filed on a weekly or monthly basis.
Preparedness	The knowledge and capacities developed by government, professional response and recovery organisations, communities and individuals to effectively anticipate, respond to, and recover from the impacts of likely, imminent or current crisis.
Preparedness planning	Involves factoring in plans at the local, national and EU dimension in various sectors that impinge on emergency plans. Preparedness plans provide a backbone structure for developing core elements to address different types of health threats and improve the interoperability of such plans; preparedness planning addresses threats and emergencies that threaten or are likely to threaten public health in a Member State.
Priority disease	Diseases that are of concern for a country; there are set criteria for the identification of these diseases.

Public health emergency preparedness	The capability of the public health and healthcare systems, communities, and individuals to prevent, protect against, quickly respond to, and recover from health emergencies, particularly those whose scale, timing, or unpredictability threatens to cause undue strain to routine functions. Public health emergency preparedness involves a coordinated and continuous process of planning and implementation that relies on measuring performance and taking corrective action.
Public health risk	The likelihood of an event that may adversely affect the health of human populations, with an emphasis on whether it may spread internationally or present a serious and direct danger.
Public health threat	An event (incident), condition or agent, which by its presence has the potential to rapidly harm, directly or indirectly, an exposed population sufficiently to lead to a crisis.
Response	The provision of emergency services and public assistance during or immediately after a crisis, in order to save lives, to reduce impacts on health, environment and society, ensure public safety and meet the basic subsistence needs of the people affected.
Risk	The combination of the probability of a crisis and its negative consequences.
Risk assessment	A scientifically based process consisting of the following steps: i) hazard identification, ii) hazard characterisation, iii) exposure assessment, and iv) risk characterisation.
Risk communication	The exchange and dissemination of appropriate information about risks to enable decision makers, stakeholders and the public to make appropriate decisions.
Risk management	The process, distinct from risk assessment, of weighing policy alternatives, risk assessment and other factors that are relevant for protecting the health of consumers – in consultation with all involved parties; if necessary, this process results in selecting appropriate prevention and control options.
Surveillance	The systematic ongoing collection, collation and analysis of data for public health purposes, combined with the timely dissemination of public health information for assessment and public health response.
Vulnerability	The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a crisis.

1 Introduction

The European Centre for Disease Prevention and Control (ECDC) aims to support the preparedness objectives of Decision No 1082/2013/EU of the European Parliament and the Council of 22 October 2013 on serious cross-border threats to health, addressing preparedness and response planning. ECDC provides technical support for public health emergency preparedness (PHEP) and pursues a wide range of initiatives in the field of PHEP, such as the development of preparedness methodologies, materials on the practical aspects of preparedness, and guidance on preparedness planning.

The purpose of the HEPSA tool – the name is an acronym for 'health emergency preparedness self-assessment' – is to aid countries in improving their level of PHEP by letting them assess their level of preparedness regarding public health emergencies. HEPSA is used to evaluate levels of preparedness, identify potential gaps, identify vulnerabilities, and detect areas for improvement – with the goal to strengthen overall preparedness capacities for public health emergencies.

The tool contains two sets of assessment indicators: baseline and comprehensive; the set of comprehensive indicators includes all baseline indicators to conduct a comprehensive self-assessment.

HEPSA is a macro-enabled Microsoft Excel workbook. This user guide provides basic information on the self-assessment process. Please send an email to preparedness@ecdc.europe.eu if you have further questions.

2 The HEPSA tool

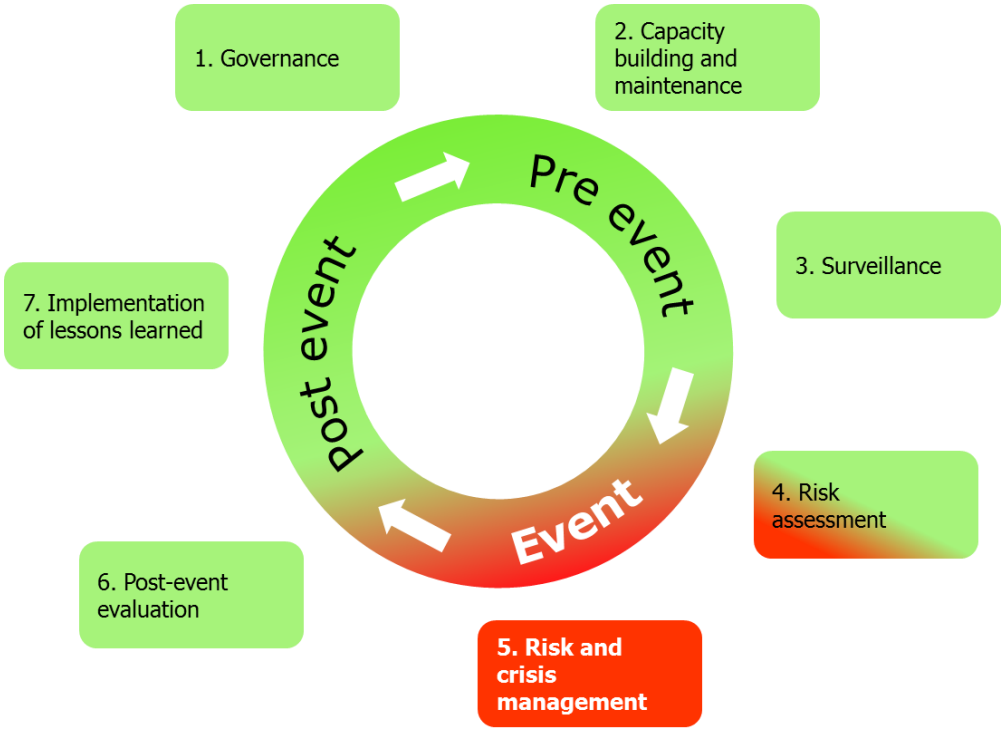
The tool consists of seven domains that define the process of public health emergency preparedness and response. Relevant activities and indicators are highlighted to help EU/EEA Member States evaluate their level of preparedness, identify potential gaps, and set priorities for further development. Indicators were formulated after a thorough literature review and after an international expert consensus was obtained (in consultations with ECDC's National Focal Points for Preparedness and Response).

Each domain of the tool has several indicators. Indicators are divided into a baseline set of indicators (BSI) and a comprehensive set of indicators (CSI). The BSI define basic country preparedness, which should be achieved in every country, irrespective of how the country's health system is structured. The CSI is defined by additional preparedness indicators.

The HEPSA tool contains cross references to the WHO Joint External Evaluation Tool (JEET – version 1)[1] and the Strategic Framework for Emergency Preparedness[2], which helps users calculate potential JEET scores and assess their preparedness level according to the WHO Framework.

Every domain worksheet features two columns with cross references to the WHO documents. Users can consult the corresponding worksheet (JEET: 'Summary' worksheet; WHO Framework: 'WHO Framework' worksheet) to see the links to the WHO documents.

Figure 1. PHEP process



The PHEP process (Figure 1), which is covered by HEPSA, is divided into seven steps:

- Pre-event preparations and governance
- Resources: trained workforce
- Support capacity: surveillance
- Support capacity: risk assessment
- Event response management
- Post-event review
- Implementation of lessons learned.

[1] WHO, A Strategic Framework for Emergency Preparedness, 2017. Available from: http://apps.who.int/iris/bitstream/10665/204368/1/9789241510172_eng.pdf
[2] WHO, IHR (2005) Monitoring and evaluation framework; Joint External Evaluation Tool. Available from: http://apps.who.int/iris/bitstream/10665/254883/1/9789241511827-eng.pdf

The seven steps are grouped into three phases: the pre-event phase spans all activities related to planning and anticipation, whereas the event phase focuses on the execution of existing preparedness plans in response to a (potential) public health threat. The post-event phase takes place after the recovery from a public health threat and emphasises the continuous improvement of all domains and elements represented in the PHEP process.

2.1 Pre-event preparations and governance

Pre-event preparations and governance represent the structures and processes through which stakeholders interact and participate in PHEP-related decision-making. This includes, for instance, the establishment of national policies and legislation that govern emergency preparedness, plans for emergency preparedness, response and recovery measures, coordination mechanisms – and the implementation and monitoring of all areas mentioned above.

2.2 Resources: trained workforce

A well-trained workforce, with a high level of competence in human resources and good organisational skills, plays an important role in PHEP planning. An organisation's preparedness for emergencies depends on skilled staff in order to respond effectively to public health emergencies. Training activities and exercises help to develop, assess, and improve functional capabilities and procedures and thus make it possible to efficiently respond to an outbreak or public health emergency. A published set of core emergency preparedness competencies might be used to support further discussions in this area[3].

2.3 Support capacity: surveillance

Surveillance, including early warning and epidemic intelligence, is an essential element to rapidly detect public health risks and initiate the assessment and management of these risks. It is also one of the core capacities outlined in the International Health Regulations (IHR) core capacity monitoring framework[4]. Disease surveillance encompasses the systematic, ongoing collection, collation and analysis of data for public health purposes and the timely dissemination of public health information.

2.4 Support capacity: risk assessment

Risk assessment is defined as a systematic process during which a risk level is assigned to a (potential) public health threat arising from alerts and early warnings from a country's surveillance systems. Accordingly, risk assessment comprises the collection, assessment, and documentation of relevant information[5] in order to support decision-making in response to the threat. Risk ranking can also be useful in prioritising risks and actions[6].

2.5 Event response management

Event response management involves all strategies and actions designed to help countries deal with sudden and significant public health emergencies. Public health events show whether an organisation can make timely, adequate and careful decisions that are based on a proper assessment of the situation and best available knowledge. The aim of event response management is to limit the negative impact of public health events and return to the normal situation. It is the responsibility of public health planners to establish a functional system of cooperation at regional, national and international levels. High demands are placed on mutual communication, information exchange and transparent decision-making. The legal references for such activities are found in national legislation, EU Decision 1082/2013 on cross-border health threats, and the IHR.

2.6 Post-event review

It is important to conduct a post-event review after a public health emergency. Evaluating the event provides the opportunity to assess a country's or a region's level of preparedness and aids the identification of potential gaps and areas for improvement.

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[3] European Centre for Disease Prevention and Control. Public health emergency preparedness – Core competencies for EU Member States. Stockholm: ECDC; 2017. Available from: https://ecdc.europa.eu/sites/portal/files/documents/public-health-emergency-preparedness-core-competencies-eu-member-states.pdf

[4] http://www.who.int/ihr/publications/WHO-HSE-GCR-2016.16/en/

[5] https://ecdc.europa.eu/sites/portal/files/media/en/publications/Publications/1108_TED_Risk_Assessment_Methodology_Guidance.pdf

[6] https://ecdc.europa.eu/sites/portal/files/documents/Tool-for-disease-priority-ranking_handbook_0_0.pdf

2.7 Implementation of lessons learned

After assessing strengths and weaknesses in the PHEP system during a post-event evaluation, these findings need to be converted into actions, namely the implementation of lessons learned.

3 Instructions

3.1 Intended audience

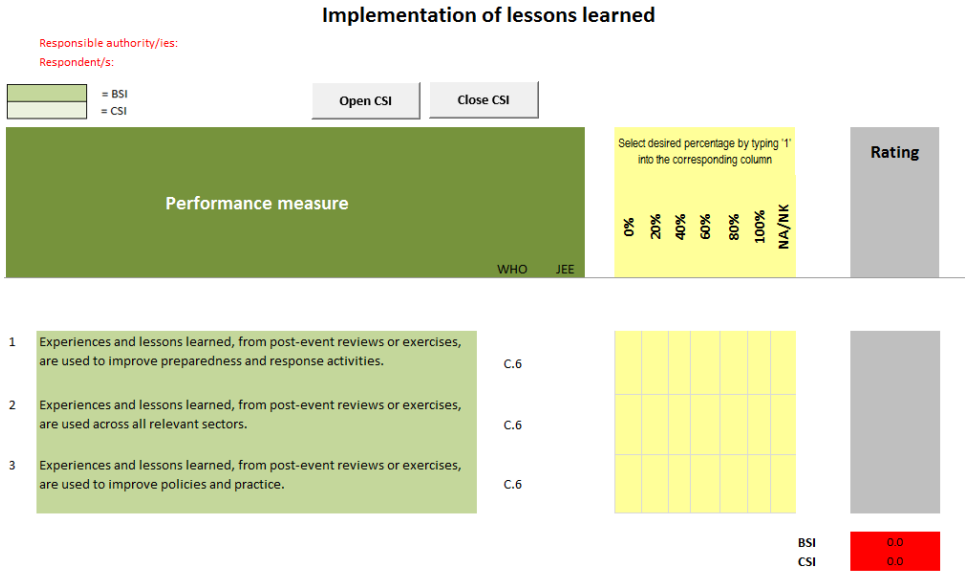
The HEPSA tool is designed for use by public health professionals in the field of emergency planning and event management. The tool's worksheets can be filled in by more than one person, for example during a workshop or by circulating the Excel file via e-mail. This discussion and consensus process can be seen as a first step in improving awareness and coordination among public health professionals in charge of public health events.

3.2 Completing the worksheets

The HEPSA tool consists of seven domains, with each domain having its own worksheet. Each domain has several indicators. Indicators belong to a baseline set of indicators (BSI) or a comprehensive set of indicators (CSI).

The BSI and CSI do not correspond to a hierarchical structure. In fact, the comprehensive indicators do not define the assigned baseline indicator; instead, they provide a more comprehensive view of a domain. Initially, only the BSI is visible. After clicking on the 'Open CSI' button at the top of the worksheet, the CSI will be displayed on all worksheets. Clicking the 'Close CSI' button will disable the CSI (see screenshot).

Figure 2. Screenshot: Implementation of lessons learned



Score	Frequency scale	Achievement scale
No (0%)	Never	Not achieved, no progress, no sign of forward action
20%	Infrequent	Minor progress, with few signs of forward action in plans or policy
40%	Sometimes	Some progress, but without systematic policy and/or organisational commitment
60%	Often	Organisational commitment attained or considerable progress made, but achievements do not meet all needs and requirements
80%	Mostly	Substantial achievements but with some recognised limitations in capacities, capabilities and/or resources
Yes (100%)	Always	Comprehensive achievements with sustained commitment and capacities at all levels

3.3 Score

There are two options for filling in the HEPSA tool.

- Fill in the fields and calculate a score for the BSI (dark green indicators). The results are presented at the bottom of each worksheet; the 'Summary' worksheet provides an overview of the attained PHEP level.
- Fill in the fields and calculate a score for the CSI (all indicators). The results are presented at the bottom of each worksheet; the 'Summary' worksheet provides a comprehensive overview of the attained PHEP level.

In order to calculate a score, a full set of corresponding indicators needs to be applied.

Scores are given as a percentage (0 to 100, in increments of 20) and on two scales: a frequency scale and an achievement scale. See Table 1 for an interpretation of the calculated scores.

Table 1. Interpretation of scores

Score	Frequency scale	Achievement scale
No (0%)	Never	Not achieved, no progress, no sign of forward action
20%	Infrequent	Minor progress, with few signs of forward action in plans or policy
40%	Sometimes	Some progress, but without systematic policy and/or organisational commitment
60%	Often	Organisational commitment attained or considerable progress made, but achievements do not meet all needs and requirements
80%	Mostly	Substantial achievements but with some recognised limitations in capacities, capabilities and/or resources
Yes (100%)	Always	Comprehensive achievements with sustained commitment and capacities at all levels

3.4 Additional hints

- Always save a copy of the file; do not forget to save the file regularly.
- You can decide to get a score for all domains or for only some of the domains. Scores can be calculated based on the BSI or the CSI. A comment box is provided for all indicators, which can be used to explain why a certain indicator was used.
- When calculating a score, check the guide to see which indicator fits best. There are no wrong answers, but it is important to record weaknesses or vulnerabilities so they can be addressed in the future.
- To select a percentage, place a '1' in the relevant box of the yellow section. Only one percentage per indicator can be chosen. Always complete a full set of indicators (BSI or CSI), even if you occasionally have to resort to 'NA/NK' (not applicable/not known). Incomplete sets cannot be rated. Please note that you may have to scroll up/down to display all indicators in a particular domain. All results will automatically be transferred to the 'Summary' worksheet.
- The scores for each indicator are shown in the 'Scores' column. These are then converted into a weight, which will count toward the overall score for that domain. After each indicator is rated, click *Enter* to get a summary of all scores for a particular domain (displayed at the bottom of each worksheet). A summary of all scores is available in the 'Summary' worksheet.
- If you cannot finish answering all indicators in one session, save and close your Excel file. Pick up where you have left off when you have time again.
- Once all values for the BSI/CSI are entered, the result of the calculation is automatically transferred to the 'Summary' worksheet. The 'Summary' worksheet presents the scores for each domain, along with a radar graph for BSI/CSI. The worksheet also provides an overview of scores based on JEE indicators and related HEPSA indicators.
- If you want to start over, open a new HEPSA file. Alternatively, you can choose to delete all answers by selecting all fields and press 'delete' on your keyboard.
- If you want to print your work, save the Excel worksheet as a PDF file and print the PDF.
- Evaluation of the tool: an evaluation form is provided with the tool in order to assess the usability and usefulness of the tool. We greatly appreciate your feedback and will use it to further improve the tool. Please return the form to: preparedness@ecdc.europa.eu

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