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## D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

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## National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

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PU	Public	<input checked="" type="checkbox"/>
SEN	Sensitive	<input type="checkbox"/>

# National Institute of Public Health

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Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

## Table of Contents

Table of Contents.....	3
List of Abbreviations .....	4
List of Figures.....	4
List of Tables .....	4
Executive Summary .....	5
1. General Introduction of Principles for the Evaluation Strategy .....	6
Key Components of the Evaluation Strategy are the following: .....	6
2. Specific Evaluation Measures in Context of the HERA2CZ Project .....	8
Key measures of this Evaluation Strategy:.....	8
3. Detailed Introduction of The Strategy for Implementation of the Individual Evaluation Measures .....	
3.1 Contextual Assessment .....	10
3.2 Key Performance Indicators (KPIs) .....	12
3.3 Stakeholder Engagement .....	14
3.4 Process Evaluation .....	16
3.5 Evaluation of the Project Outcomes .....	18
3.6 Compliance and Ethical Consideration.....	20
3.7 Communication and Dissemination .....	22
3.8 Sustainability and Long-term Impact Evaluation .....	24
3.9 Reporting and Accountability.....	26
4. Implementation Outline .....	28
Project’s Context.....	29
Genomic surveillance of selected infectious diseases in the Czech Republic (HERA2CZ) .....	29
Enhancing Public Health Protection through the HERA2CZ Project .....	29
Key Points of the HERA2CZ Project.....	29
What is Whole Genome Sequencing (WGS)? .....	29
Challenges Associated with WGS.....	29
Focus of the HERA2CZ Project .....	30
The Project’s Basic Data.....	30

# National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

## List of Abbreviations

<b>ECDC</b>	<i>European Centre for Disease Prevention and Control</i>
<b>IRB</b>	Institutional Review Board
<b>KPI</b>	<i>Key Performance Indicators</i>
<b>NIPH</b>	<i>National Institute of Public Health</i>
<b>NRLs</b>	<i>National Reference Laboratories</i>
<b>RT-PCR</b>	<i>Reverse Transcription Polymerase Chain Reaction</i>
<b>SMART</b>	Specific, Measurable, Achievable, Relevant, and Time-bound
<b>WGS</b>	<i>Whole Genome Sequencing</i>

## List of Figures

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## List of Tables

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# National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

## Executive Summary

The Impact Evaluation Strategy outlined in the Deliverable D1.4 focuses on ensuring the effective monitoring and surveillance of data quality within public health surveillance systems and is based on the best practice of established evaluation methodologies. The overall evaluation strategies encompass key components such as defining Key Performance Indicators (KPIs), conducting data source profiling, implementing data validation and verification processes, assessing data completeness and timeliness, evaluating data integration and harmonization, ensuring data governance and privacy, engaging stakeholders, promoting continuous improvement, and facilitating transparent reporting and communication.

Deliverable D1.4 is an evaluation strategy specifically tailored to the HERA2CZ project in the Czech Republic. The evaluation measures are designed to follow key goals set in the HERA2CZ project - to strengthen disease surveillance capabilities, enhance early detection, response, and control of infectious diseases, and address challenges related to limited resources and infrastructure capacities. The strategy includes a contextual assessment, defining project-specific Key Performance Indicators (KPIs), conducting data quality assessments, fostering stakeholder engagement, performing process and outcome evaluations, undertaking cost-benefit analysis, ensuring compliance and ethical considerations, assessing capacity building initiatives, evaluating communication efforts, and planning for sustainability and long-term impact.

By implementing these evaluation measures, the HERA2CZ project team aims to optimize its outcomes, enhance national public health surveillance capacity, and contribute significantly to the detection and management of infectious diseases and threats for public health, thereby ensuring the fulfilment of the project's goals and long-term sustainability.

# National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

## 1. A General Introduction of Principles for the Evaluation Strategy

The objective of this evaluation strategy is to ensure the effective monitoring and surveillance of data quality within public health surveillance systems. Drawing inspiration from the "Data Quality Monitoring and Surveillance System Evaluation - A Handbook of Methods and Applications" by the European Centre for Disease Prevention and Control ([ECDC](#)), this strategy aims to provide a comprehensive approach for evaluating the quality of data collected, processed, and reported by various surveillance systems in the context of evolving technology and data management practices.

### Key Components of the Evaluation Strategy are the following:

- 1. Definition of Key Performance Indicators (KPIs):** Identify and define a set of Key Performance Indicators that assess the data quality and integrity within the surveillance system. These KPIs will include completeness, timeliness, accuracy, precision, consistency, and reliability of data. Define benchmarks and targets for each KPI based on the specific needs of the surveillance system and public health objectives.
- 2. Data Source Profiling:** Conduct an in-depth analysis of data sources, including an assessment of data collection methods, data entry processes, data transmission mechanisms, and data storage infrastructure. Identify potential sources of data bias, errors, and discrepancies that could impact data quality.
- 3. Data Validation and Verification:** Implement automated and manual data validation procedures to ensure data accuracy and reliability. Develop validation rules and checks to identify outliers, missing data, and inconsistencies. Regularly verify data against external data sources or gold-standard datasets to assess the accuracy of reported information.
- 4. Data Completeness and Timeliness:** Assess the timeliness of data reporting and data completeness. Develop metrics to measure the time between data collection and reporting and define thresholds for acceptable delays. Monitor and report on the completeness of key variables over time.
- 5. Data Integration and Harmonization:** Evaluate the effectiveness of data integration and harmonization processes across different surveillance systems. Ensure that data from various sources are standardized and compatible to facilitate meaningful analyses and interpretations.
- 6. Data Governance and Privacy:** Evaluate data governance policies and procedures to ensure data privacy, security, and compliance with relevant regulations. Implement measures to protect sensitive information and maintain data confidentiality throughout the data lifecycle.
- 7. Stakeholder Engagement:** Involve key stakeholders, including data providers, public health practitioners, data analysts, and decision-makers in the evaluation process. Gather feedback from stakeholders to continuously improve the data quality monitoring and surveillance system.

## National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

### D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

8. **Feedback and Continuous Improvement:** Establish a feedback loop for continuous improvement of the surveillance system. Regularly review the evaluation results, identify areas for enhancement, and implement action plans to address data quality issues.
9. **Reporting and Communication:** Develop clear and concise reports summarizing the evaluation findings and highlighting key data quality issues. Communicate these findings to relevant stakeholders and the public health community to foster transparency and accountability.

An integrated data quality evaluation strategy is essential to ensure the reliability and usefulness of surveillance data in public health decision-making. By following the guidelines outlined in this strategy, surveillance systems can continuously monitor and improve data quality, thereby enhancing their overall effectiveness and impact on public health outcomes.

## National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

## 2. Specific Evaluation Measures in Context of the HERA2CZ Project

The HERA2CZ project aims to strengthen disease surveillance capabilities in the Czech Republic to improve the early detection, response, and control of infectious diseases. The country currently faces challenges related to limited resources, infrastructure, and data management practices. The proposed evaluation strategy will assess the effectiveness of the disease surveillance system in terms of data quality, timeliness, completeness, and overall performance. The evaluation process will involve key stakeholders, including government health agencies, local health facilities and specialists in health sector and international partners, to ensure a collaborative and inclusive approach.

### Key measures of this Evaluation Strategy:

- 1. Contextual Assessment:** Conduct a comprehensive contextual assessment to understand the country's current disease surveillance infrastructure, including the types of surveillance systems in place, data collection methods, reporting mechanisms, and existing data management practices. Identify the key infectious diseases of concern and their public health impact.
- 2. Define Key Performance Indicators (KPIs):** Develop a set of KPIs that will assess the effectiveness and impact of the project. KPIs will include the percentage increase in WGS and RT-PCR capacity, the number of successful outbreak investigations, the proportion of timely data reporting, and the number of cross-border threats mitigated.
- 3. Data Quality Assessment:** Implement data quality checks and validation procedures to ensure the accuracy, completeness, and reliability of the surveillance data collected throughout the project. Monitor and address any data quality issues promptly.
- 4. Stakeholder Engagement:** Engage with all relevant stakeholders, including representatives from NIPH, national health authorities, local health facilities, ECDC, and other international partners. Every twelve months collect seek feedback and inputs from stakeholders to understand their needs and perspectives.
- 5. Process Evaluation:** Conduct regular process evaluations to assess the progress and efficiency of each work package. This evaluation should identify any challenges faced during implementation and strategies to overcome them.
- 6. Outcome Evaluation:** Evaluate the outcomes of the project against the predefined objectives and KPIs. Assess the extent to which the project has contributed to enhancing WGS and RT-PCR capacities, improving disease surveillance, and strengthening response to the COVID-19 outbreak and other health emergencies represented in HERA2CZ project.



## National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

### D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

7. **Cost-Benefit Analysis:** Perform a cost-benefit analysis to determine the financial investment made in the project and the associated benefits in terms of improved disease detection, preparedness, and cross-border disease control.
8. **Compliance and Ethical Considerations:** Ensure that the project is compliant with all relevant regulations, including data privacy and ethical guidelines. In collaboration with the GDPR manager, evaluate the project's adherence to these standards and address any issues related to compliance.
9. **Capacity Building Assessment:** Evaluate the effectiveness of capacity-building initiatives conducted as part of the project. Assess the skills and knowledge acquired by project participants and their ability to apply these skills in their roles.
10. **Communication and Dissemination:** Assess the project's communication and dissemination efforts. Evaluate how effectively the project's findings and outcomes are shared with relevant stakeholders and the broader public health community.
11. **Sustainability and Long-term Impact:** Assess the sustainability of the enhanced WGS and RT-PCR capacities and their integration into routine surveillance activities after the project's completion. Evaluate the potential long-term impact of the project on disease detection, response, and public health outcomes.
12. **Lessons Learned and Recommendations:** Identify lessons learned during the project implementation and provide recommendations for improvement. These insights will be valuable for future similar initiatives.
13. **Reporting and Accountability:** Prepare comprehensive evaluation report that summarize the findings, achievements, and challenges of the project. Share these reports with all stakeholders, including ECDC, and use the results to ensure accountability and continuous improvement.

## Conclusion

The evaluation strategy for the HERA2CZ project is designed to comprehensively assess the project's performance, impact, and sustainability. By monitoring key performance indicators, data quality, stakeholder engagement and compliance with protection of personal data. The evaluation will provide valuable insights for optimizing the project's outcomes and ensuring its success in strengthening national public health surveillance capacity for infectious diseases.

# National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

## 3. Detailed Introduction of The Strategy for Implementation of the Individual Evaluation Measures

### 3.1 Contextual Assessment

Implementing the Contextual Assessment for the HERA2CZ Project will be done in the following steps:

1. **Research and Data Collection:** Conduct extensive research to gather information about the country's disease surveillance infrastructure. This will involve reviewing existing reports, publications, and relevant literature related to public health and disease surveillance. Additionally, engage with key stakeholders, including NIPH, national health authorities, and local health facilities, to gather firsthand insights and data.
2. **Stakeholder Interviews and Surveys:** Conduct structured interviews and surveys with key stakeholders involved in disease surveillance and public health. These stakeholders will include public health officials, epidemiologists, data managers, laboratory personnel and community health workers. Gather information about the current surveillance systems, data collection processes, and reporting mechanisms from their perspectives.
3. **Data Sources and Data Flow:** Map out the data sources used for disease surveillance, including health facilities, laboratories, and community health workers. Understand the flow of data from the source to the national level and any intermediate steps involved in data aggregation and reporting.
4. **Review of Surveillance Systems:** Examine the types of surveillance systems in place, such as syndromic surveillance, laboratory-based surveillance, and sentinel surveillance. Assess the strengths and weaknesses of each system and their capacity to detect and respond to infectious diseases effectively.
5. **Data Collection Methods:** Evaluate the methods used for data collection, including electronic data capture, paper-based forms, and mobile reporting applications. Consider the reliability, accuracy, and timeliness of data collected through these methods.
6. **Reporting Mechanisms:** Assess the reporting mechanisms used to transmit surveillance data from health facilities to higher levels of the system. Identify any bottlenecks or challenges in data reporting and data flow in the light of the COVID -19 pandemics and lessons learned.

## National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

7. **Data Management Practices:** Evaluate the data management practices, including data storage, data processing, and data quality checks. Assess the measures in place to ensure data integrity and security and responsibility of the system and data protection.
8. **Identification of Key Infectious Diseases:** The key infectious diseases of concern in the country as defined in the proposal will be discussed. We will consider the prevalence, incidence, and public health impact of these diseases. Prioritize diseases with epidemic potential or those that pose a significant threat to public health.
9. **Gap Analysis:** Perform a gap analysis to identify areas of improvement in the existing disease surveillance infrastructure. Identify gaps related to data quality, timeliness, completeness, reporting, and capacity. Use the findings to inform the development of targeted interventions.
10. **Report and Recommendations:** Compile all the information gathered during the contextual assessment and present it in a comprehensive internal report. The report should include an analysis of the current disease surveillance infrastructure, key infectious diseases, and their public health impact, as well as a clear set of recommendations for strengthening the surveillance system and achieving project objectives.
11. **Continuous Monitoring:** Develop a plan for continuous monitoring and periodic reassessment of the disease surveillance infrastructure throughout the duration of the HERA2CZ project. Regularly update the contextual assessment as the project progresses to ensure that it remains relevant and reflective of the evolving situation.

### Conclusion

By conducting a thorough contextual assessment, the HERA2CZ project can gain a comprehensive understanding of the country's disease surveillance landscape, identify areas for improvement, and tailor its interventions to enhance national public health surveillance capacity effectively.

## National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

### 3.2 Key Performance Indicators (KPIs)

Implementing Key Performance Indicators (KPIs) for the HERA2CZ Project will be achieved through subsequent set of the following actions:

1. **Stakeholder Consultation:** Engage with project stakeholders, including NIPH, national health authorities, ECDC, and other relevant partners, to identify and agree upon the most critical aspects of the project's effectiveness and impact. Gather inputs from each stakeholder group to ensure that KPIs are relevant, measurable, and aligned with the project's objectives.
2. **SMART KPIs Development:** Ensure that each KPI is Specific, Measurable, Achievable, Relevant, and Time-bound (SMART). For example:
  - a. **Percentage Increase in WGS and RT-PCR Capacity:** Define the target percentage increase in the country's WGS and RT-PCR capacity compared to the baseline. This can be based on the number of samples processed or the speed of turnaround for results.
  - b. **Number of Successful Outbreak Investigations:** Establish a target number of outbreak investigations that will be conducted and successfully resolved during the project. This could be linked to the time taken to detect and respond to outbreaks.
  - c. **Proportion of Timely Data Reporting:** Set a specific target for the proportion of timely data reporting from health facilities to the national level. Measure the adherence to reporting timelines and establish benchmarks for improvement.
  - d. **Number of Cross-border Threats Mitigated:** Define the number of cross-border threats that are successfully mitigated or prevented due to enhanced disease surveillance capacity. This could include the time taken to alert neighbouring countries about potential outbreaks.
3. **Data Collection and Tracking:** Develop a data collection and tracking system to monitor progress toward achieving the defined KPIs. This will involve setting up databases, implementing data entry protocols, and establishing data management procedures.
4. **Regular Data Analysis:** Regularly analyse the collected data to assess progress toward meeting the KPI targets. Conduct interim evaluations to identify areas where adjustments or improvements are needed.
5. **Data Visualization and Reporting:** Create visual representations of the KPI data, such as charts and graphs, to facilitate easy understanding and communication of progress. Generate reports that provide a clear overview of the status of each KPI, highlighting achievements and areas that require attention.
6. **Periodic Review and Reflection:** Conduct periodic reviews with project stakeholders to discuss the KPI results and assess the effectiveness of the project's interventions. Use these reviews as opportunities for reflection and course correction, if necessary.

## National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

### D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

7. **Continuous Improvement:** Use the KPI data and evaluation findings to inform continuous improvement efforts throughout the project's lifecycle. Identify successful strategies and best practices that can be scaled up or replicated in other contexts.
8. **Accountability and Learning:** Ensure that the KPIs are used as a tool for accountability, promoting transparency among stakeholders. Encourage learning from successes and challenges and share lessons learned to enhance the effectiveness of similar future initiatives.
9. **Adaptive Management:** Adopt an adaptive management approach, where the project team continuously assesses progress and adapts strategies based on evaluation results. Flexibility is essential in responding to changing circumstances and unexpected challenges.
10. **Project -External Evaluation:** An external evaluator will be engaged to conduct an independent assessment of the project's effectiveness and the achievement of KPIs. An external perspective can provide valuable insights and increase the credibility of the evaluation process.

## Conclusion

By implementing a robust KPI framework, the HERA2CZ project can effectively track its progress, measure its impact, and make informed decisions to enhance disease surveillance capacity and achieve its objectives successfully. The continuous monitoring and evaluation will ensure that the project remains on track, maximizing its contributions to public health and cross-border disease control efforts.

## National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

### 3.3 Stakeholder Engagement

Implementing Stakeholder Engagement for the HERA2CZ Project will be achieved through the following implementation steps:

1. **Stakeholder Mapping:** Identify all relevant stakeholders involved in the project, including representatives from NIPH, national health authorities, local health facilities, ECDC, and other international partners. Create a comprehensive stakeholder map that includes contact information and their roles in the project.
2. **Establishing Communication Channels:** Set up effective communication channels to engage with stakeholders. These channels include meetings, workshops, webinars, email updates, and project website. Ensure that communication is two-way, allowing stakeholders to provide feedback and ask questions. The representative body of for project stakeholders is the Evaluation Advisory Board that includes partners from previous HERA project. These representatives represent academia, university and local laboratory infrastructure.
3. **Evaluation Advisory Board Meeting:** Conduct a project kick-off meeting to introduce the HERA2CZ project to Evaluation Advisory Board and use project communication channels to engage stakeholders. Clearly communicate the project's goals, objectives, scope, and expected outcomes. Encourage members of the Evaluation Advisory Board to share their perspectives and expectations during this meeting.
4. **Ongoing Meetings and Workshops:** Organize regular meetings and workshops with EAB to provide updates on the project's progress and achievements. Use these sessions as an opportunity to seek feedback, address concerns, and gather suggestions for improvement.
5. **Feedback Mechanisms:** Establish feedback mechanisms that allow EAB to provide input and raise any issues related to the project. This will include feedback forms, surveys, or dedicated email addresses for inquiries and feedback.
6. **Collaborative Decision-making:** Involve stakeholders from EAB and EC and ECDC in decision-making processes that directly impact the project. Seek their input on key decisions, e.g. the selection of surveillance methods, data collection tools, and intervention strategies.
7. **Stakeholder Consultations:** Conduct stakeholder consultations on specific topics or challenges related to the project. These consultations will involve focus group discussions, roundtable meetings, or one-on-one interviews with key stakeholders.
8. **Incorporating Stakeholder Input:** Actively incorporate stakeholder input and feedback into the project's planning and implementation. Demonstrate how their input has influenced project activities and outcomes.
9. **Sharing Project Progress and Results:** Regularly share project progress and results with EAB and EC to keep them informed about the project's impact and achievements. Use visualizations and clear language to communicate complex findings effectively.

## National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

### D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

10. **Acknowledging Contributions:** Recognize and acknowledge the contributions of stakeholders to the project's success. Highlight their involvement and impact during project updates and public communications.
11. **Addressing Stakeholder Concerns:** Address any concerns raised by stakeholders. Show transparency in addressing challenges and demonstrate a commitment to resolving them.
12. **Building Relationships:** Focus on building strong relationships with stakeholders based on trust, respect, and collaboration. Cultivate a positive and open environment that encourages stakeholders to actively engage in the project.
13. **Documenting Stakeholder Engagement:** Maintain records of stakeholder engagement activities, including meeting minutes, feedback received, and action taken. This documentation will be valuable for future evaluations and reporting.
14. **Continuous Improvement:** Use stakeholder feedback and insights to drive continuous improvement in the project. Continuously adapt and refine project strategies based on stakeholder needs and changing circumstances.

## Conclusion

By implementing robust stakeholder engagement practices through the Evaluation and Advisory Board, the HERA2CZ project will foster collaboration, gather valuable insights, and ensure that the interventions are responsive to the needs of all stakeholders. Effective stakeholder engagement will enhance project's impact and support the successful achievement of its objectives.

# National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

## 3.4 Process Evaluation

Implementing Process Evaluation for the HERA2CZ Project will be done as the following:

1. **Establish Evaluation Plan:** Develop a comprehensive plan for conducting process evaluations. Define the frequency, scope, and methodologies for the evaluations. We will ensure that the evaluation plan aligns with the project's timeline and milestones.
2. **Identify Key Indicators:** Define key process indicators for each work package that will be assessed during the evaluations. These indicators should measure progress, efficiency, and adherence to timelines and deliverables.
3. **Data Collection Methods:** Select appropriate data collection methods for the process evaluations. This will include surveys, interviews, focus groups, document reviews, and direct observations. We will use a combination of qualitative and quantitative data collection techniques.
4. **Data Collection Tools:** Develop data collection tools, such as evaluation questionnaires, interview guides, and observation checklists. Pilot test these tools to ensure they are clear, relevant, and effective in capturing the required information.
5. **Data Collection and Analysis:** Collect data according to the predetermined schedule. We will analyse the data to assess progress, identify challenges, and understand the factors influencing the implementation of each work package.
6. **Stakeholder Involvement:** Involve stakeholders from each work package in the evaluation process. Seek feedback and insights from project team members, partners, and beneficiaries to gain a holistic understanding of the project's progress and challenges.
7. **Report and Presentation:** Prepare detailed reports summarizing the findings of the process evaluations. Present the results to project stakeholders, including NIPH, national health authorities, and ECDC. Use visual aids and clear language to facilitate easy understanding.
8. **Identify Successes and Lessons Learned:** Highlight successful aspects of each work package and identify best practices. Also, identify lessons learned and areas for improvement. Use these insights to inform future project activities and strategies.
9. **Collaborative Problem-Solving:** Organize collaborative sessions to discuss the challenges identified during the process evaluations. Engage stakeholders in problem-solving discussions to develop effective strategies and action plans.
10. **Continuous Monitoring and Feedback Loop:** Establish a continuous monitoring and feedback loop to track the implementation of strategies developed to address challenges. Regularly review progress and make adjustments as needed.



## National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

### D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

11. **Adaptation and Flexibility:** Recognize that process evaluations will reveal the need for changes in project activities or timelines. Be flexible in adapting project plans to address emerging challenges and opportunities.
12. **Integration into Project Management:** Integrate the findings of process evaluations into the project management process. Use the evaluation results to inform decision-making and resource allocation.
13. **Quality Assurance:** Ensure the quality and credibility of the evaluation process by involving external evaluators or establishing an evaluation committee to provide oversight and validation.
14. **Documentation and Learning:** Document the process evaluation activities, findings, and actions taken. Use this documentation as a valuable resource for learning and continuous improvement in future projects.

## Conclusion

By implementing a robust process evaluation, the HERA2CZ project can identify challenges early on and proactively address them, leading to improved efficiency and effectiveness of each work package. Regular evaluations will contribute to the project's success in strengthening national public health surveillance capacity for infectious diseases and meeting its objectives.

## National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

### 3.5 Evaluation of the Project Outcomes

Implementing Outcome Evaluation for the HERA2CZ Project will be done in the following subsequent implementation steps:

1. **Define Clear Objectives and KPIs:** Ensure that the project's objectives and Key Performance Indicators (KPIs) are well-defined, specific, and measurable. Establish baseline data for each KPI before the project's implementation to facilitate comparison and evaluation of outcomes.
2. **Data Collection:** Collect relevant data to assess the outcomes of the project. This will include data on WGS and RT-PCR capacities, disease surveillance performance indicators, response times to outbreaks, and data on the impact of project interventions on public health outcomes.
3. **Data Sources:** Identify the sources of data needed for outcome evaluation. This will involve data from surveillance systems, laboratory records, health facility reports, outbreak response documentation, and relevant public health databases.
4. **Data Analysis:** Analyse the collected data to measure progress against the predefined objectives and KPIs. Use statistical analysis, data visualization, and trend analysis to understand patterns and identify areas of success or challenges.
5. **Comparative Analysis:** Compare the outcomes with the baseline data and any relevant historical data to determine the extent of improvement and impact achieved during the project period.
6. **Stakeholder Input:** Seek input from stakeholders, including NIPH, national health authorities, ECDC, and other partners, to gain their perspectives on the project's outcomes and effectiveness. Incorporate their feedback and insights into the evaluation process.
7. **Case Studies and Qualitative Assessment:** Conduct case studies and qualitative assessments to gain deeper insights into the impact of project interventions. Use interviews, focus groups, and surveys to gather qualitative data on how the project has affected key stakeholders and public health practices.
8. **Outbreak Response Evaluation:** Assess the effectiveness of the project's response to COVID-19 outbreaks and other health emergencies. Evaluate the timeliness and appropriateness of the response measures and their impact on controlling the spread of infectious diseases.
9. **Cost-Benefit Analysis:** Conduct a cost-benefit analysis to determine the financial investment made in the project and compare it with the achieved outcomes and improvements. This analysis will demonstrate the project's cost-effectiveness and benefits.
10. **Documentation and Reporting:** Document the outcome evaluation process, methods, and findings thoroughly. Prepare a comprehensive report that presents the evaluation results, including successes, challenges, and recommendations for future projects.

## National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

### D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

11. **Continuous Learning and Improvement:** Use the outcome evaluation findings as a basis for continuous learning and improvement. Identify areas where further enhancements or adjustments are needed to sustain the project's impact and benefits.
12. **Knowledge Dissemination:** Disseminate the results of the outcome evaluation to relevant stakeholders, public health communities, and the broader public. Share lessons learned and best practices to promote knowledge sharing and replication of successful strategies.
13. **Incorporating Lessons Learned:** Integrate the lessons learned from the outcome evaluation into future public health projects and disease surveillance initiatives. Use the insights to inform evidence-based decision-making and planning.

## Conclusion

By implementing a comprehensive outcome evaluation, the HERA2CZ project can demonstrate the effectiveness and impact of its interventions. The evaluation will provide valuable insights into how the project has contributed to enhancing WGS and RT-PCR capacities, improving disease surveillance, and strengthening response to COVID-19 and other health emergencies. Ultimately, the outcome evaluation will support evidence-based decision-making and contribute to continuous improvement in public health practices.

## National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

### 3.6 Compliance and Ethical Consideration

Implementing Compliance and Ethical Considerations for the HERA2CZ Project will be achieved through implementation of the following measures:

1. **Regulatory Review:** Conduct a thorough review of all relevant regulations, laws, and guidelines that pertain to public health surveillance, data privacy, and ethical considerations in the country where the project is being implemented. Ensure that the project team is well-versed in these regulations.
2. **Ethical Approval:** Obtain ethical approval from the appropriate Institutional Review Board (IRB) or Ethics Committee before the project's implementation. This approval is essential, especially when the project involves the collection and use of human subjects' data.
3. **Data Privacy Assessment:** Perform a data privacy assessment to identify potential risks and vulnerabilities related to the handling of personal health data. We will ensure that data storage, transmission, and access protocols comply with data protection laws.
4. **Informed Consent:** Ensure that informed consent is obtained from individuals or entities contributing data to the project. Clearly explain the purpose of data collection, how the data will be used, and any potential risks involved. Analysis, if participants' rights to opt-out or withdraw consent at any time will be respected.
5. **Data Anonymization and De-identification:** Implement appropriate data anonymization and de-identification procedures to protect the privacy of individuals whose data is collected. Minimize the inclusion of personally identifiable information and ensure data cannot be traced back to specific individuals.
6. **Secure Data Management:** Establish secure data management protocols to safeguard the confidentiality, integrity, and availability of project data. Use encryption, access controls, and secure data storage facilities to prevent unauthorized access or data breaches.
7. **Monitoring and Auditing:** Regularly monitor and audit data management practices to ensure compliance with data privacy and security measures. Conduct periodic reviews to identify and address any potential vulnerabilities or non-compliance issues.
8. **Risk Assessment:** Conduct a risk assessment to identify potential ethical risks associated with the project's activities. Develop risk mitigation strategies to minimize the likelihood and impact of these risks.
9. **Training and Awareness:** Provide training and awareness programs to the project team and stakeholders on compliance requirements and ethical considerations. Ensure that all team members understand their responsibilities in upholding ethical standards.
10. **Reporting Mechanism:** Establish a mechanism for reporting any ethical concerns or non-compliance issues that will arise during the project. Encourage a culture of open communication to address and resolve concerns promptly.

## National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

### D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

11. **Continual Improvement:** Regularly review and update compliance and ethical considerations based on new regulations or changes in project activities. Continually strive to improve ethical practices and compliance measures throughout the project's lifecycle.
12. **External Validation:** Consider seeking external validation or an independent ethics review to assess the project's compliance and adherence to ethical standards. External reviews can provide additional assurance and insights.
13. **Collaboration with Ethics Experts:** Collaborate with ethics experts or consultants who can provide guidance on complex ethical issues and help ensure that the project follows best ethical practices.
14. **Documentation and Reporting:** Document all compliance and ethical considerations, including approvals, consent forms, risk assessments, and any actions taken to address non-compliance. Report on compliance efforts in regular project updates and final evaluation reports.

## Conclusion

By implementing robust compliance and ethical considerations, the HERA2CZ project can ensure that it operates within legal and ethical boundaries while respecting individual rights and data privacy. Adherence to these standards will enhance the project's credibility and uphold the trust of participants, stakeholders, and the broader public health community.

## National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

### 3.7 Communication and Dissemination

Implementing Communication and Dissemination impact evaluation for the HERA2CZ Project will be done as the following:

1. **Communication Plan:** Develop a comprehensive communication plan that outlines the project's key messages, target audiences, communication channels, and the frequency of communication. The plan should also define roles and responsibilities for communication tasks. This plan is developed in separate deliverable D1.2
2. **Stakeholder Engagement:** Engage with stakeholders from the project's inception and throughout its lifecycle. Regularly communicate updates, progress, and achievements to stakeholders, including NIPH, national health authorities, ECDC, and other partners.
3. **Dissemination Channels:** Utilize a mix of communication channels to reach different stakeholders effectively. These will include project sub-site, press releases, publications, participation at topic-relevant webinars, and conferences.
4. **Audience Analysis:** Conduct an audience analysis to understand the specific communication needs and preferences of different stakeholders. Tailor the communication messages and formats accordingly to ensure maximum impact.
5. **Content Creation:** Create clear, concise, and engaging communication materials that highlight the project's findings, and key achievements. Use visual aids, infographics to make the content more accessible and understandable.
6. **Timely Updates:** Provide timely updates on the project's progress and milestones. Regularly share updates and reports to keep stakeholders engaged throughout the project.
7. **Media Engagement:** Engage with the media to increase visibility and awareness of the project's impact. Publish project relevant materials on the project sub-site to share project updates and findings with a broader audience.
8. **Feedback Collection:** Collect feedback from stakeholders on the effectiveness of communication materials and strategies. Use surveys or focus groups to assess whether the messages are clear, relevant, and useful.
9. **Metrics and Analytics:** Track the reach and engagement of communication efforts using metrics and analytics. Measure sub-site traffic, and the uptake of published materials to gauge the effectiveness of dissemination.
10. **Knowledge Translation:** Translate scientific findings into practical and actionable messages for different audiences. Use plain language and avoid jargon to ensure that the project's outcomes are accessible to policymakers and the general public.

## National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

### D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

11. **Collaboration with Communication Experts:** Collaborate with experts or consultants who can provide guidance on effective communication strategies and message dissemination and use of NIPH's media channels in order to get multiply the communication's effect.
12. **Transparent Reporting:** Provide transparent and accurate reporting on the project's progress, challenges, and results. Share both successes and lessons learned to demonstrate accountability and promote learning.
13. **Evaluation of Reach and Impact:** Evaluate the reach and impact of the project's communication efforts by assessing how well the messages have been received and whether they have influenced decision-making and public health practices.

## Conclusion

By implementing a comprehensive evaluation of the project communication and dissemination, we will verify that its findings and outcomes reach the intended audiences and contribute to evidence-based decision-making. Effective communication will maximize the project's impact, build awareness, and foster knowledge sharing within the public health community, ultimately leading to improved disease surveillance and response capabilities.

## National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

### 3.8 Sustainability and Long-term Impact Evaluation

Implementing Sustainability and Long-term Impact Evaluation for the HERA2CZ Project will be achieved through the following measures:

1. **Define Sustainability Indicators:** Identify key indicators that will measure the sustainability of the enhanced WGS and RT-PCR capacities. These indicators will include the continued use of equipment, the availability of trained personnel, funding allocation, and the integration of enhanced capacities into routine surveillance systems.
2. **Baseline Assessment:** Conduct a baseline assessment of the WGS and RT-PCR capacities before the project's implementation. This assessment will provide a starting point for measuring changes and progress in sustainability during and after the project.
3. **Stakeholder Engagement:** Engage stakeholders, including NIPH, national health authorities, laboratories, and relevant partners, to assess their commitment to sustaining the enhanced capacities. Seek their perspectives on the challenges and opportunities for long-term sustainability.
4. **Resource Mobilization:** Evaluate the availability of financial and human resources needed to maintain the enhanced capacities beyond the project's funding period. Determine the sources and mechanisms for securing sustainable funding and support.
5. **Capacity Building for Sustainability:** Conduct capacity-building initiatives focused on building the skills and knowledge of local staff to maintain and operate the enhanced capacities independently.
6. **Integration into Routine Systems:** Assess the integration of enhanced capacities into routine disease surveillance activities. Measure the extent to which these technologies and methodologies have become standard practices in public health surveillance.
7. **Policy Support:** Evaluate the existence and strength of policies and regulations that support the sustained use of WGS and RT-PCR in disease surveillance. Advocate for the integration of project outcomes into national policies to ensure institutional support for sustainability.
8. **Data Utilization:** Assess the extent to which the data generated through enhanced capacities are being effectively utilized for decision-making and public health actions. Monitor how data outputs contribute to improved disease detection and response.



## National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

9. **Collaboration and Partnerships:** Evaluate the sustainability of collaborations and partnerships established during the project. Measure the degree to which these collaborations continue to support the enhanced capacities and long-term public health goals.
10. **Stakeholder Commitment:** Assess the commitment of stakeholders to continue supporting and utilizing the enhanced capacities beyond the project's completion. Understand the motivations and incentives that drive ongoing commitment.
11. **Continuous Improvement Plan:** Develop a sustainability plan that outlines specific strategies and actions for maintaining and improving the enhanced capacities. The plan should address identified challenges and build on lessons learned.
12. **Monitoring and Periodic Assessment:** Implement regular monitoring and periodic assessments to track progress in sustainability and long-term impact. Use these evaluations to identify areas for improvement and make necessary adjustments.
13. **Cost-Benefit Analysis:** Conduct a cost-benefit analysis to demonstrate the value of sustained enhanced capacities. Highlight the economic benefits of continued investment in WGS and RT-PCR for public health surveillance.
14. **Knowledge Sharing and Dissemination:** Share the findings of the sustainability and long-term impact evaluation with relevant stakeholders and the public health community. Disseminate lessons learned and best practices to promote knowledge sharing and replication.

### Conclusion

By implementing a robust sustainability and long-term impact evaluation, the HERA2CZ project can ensure that the enhanced capacities become an integral part of routine disease surveillance activities and have a lasting positive effect on public health outcomes. The evaluation will provide valuable insights into the factors that influence sustainability and inform strategies to maximize the long-term impact of the project's interventions.

## National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

### 3.9 Reporting and Accountability

Implementing Reporting and Accountability evaluation for the HERA2CZ Project will be performed such as the following:

1. **Reporting Framework:** Develop a reporting framework that outlines the key components and structure of the evaluation reports. Define the sections, data to be included, and the format of the reports.
2. **Data Collection and Analysis:** Collect data from various evaluation measures implemented throughout the project, such as outcome evaluations, cost-benefit analysis, sustainability assessments, lessons learned, and stakeholder feedback. Analyse the data to derive meaningful insights and conclusions.
3. **Data Synthesis:** Synthesize the data collected from different evaluation measures to create a comprehensive overview of the project's performance, impact, and achievements. Present the information in a clear and coherent manner.
4. **Clear and Transparent Reporting:** Ensure that the evaluation reports are clear, transparent, and objective. Present both positive and negative findings, including challenges and lessons learned, without bias.
5. **Stakeholder Input:** Seek input from all relevant stakeholders, including project team members and ECDC, to gain multiple perspectives on the project's performance and impact.
6. **Accountability Mechanisms:** Establish mechanisms for holding project stakeholders accountable for their roles and responsibilities. Define clear benchmarks and performance expectations for project participants.
7. **Actionable Recommendations:** Include actionable recommendations based on the evaluation findings to address identified challenges and further improve project outcomes. Recommendations should be specific, measurable, achievable, relevant, and time-bound (SMART).
8. **Timely Reporting:** Prepare evaluation reports in a timely manner, ensuring that stakeholders receive the information when it is most relevant and actionable.
9. **Executive Summary:** Include an executive summary at the beginning of the report to provide a concise overview of the project's key findings and recommendations. This will help stakeholders quickly grasp the main points.

## National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

10. **Visual Representation:** Use visual aids such as charts, graphs, and infographics to present data and findings in a visually engaging manner, facilitating easier comprehension.
11. **Dissemination Strategy:** The evaluation of the project will be shared with stakeholders at project's final conference. Day-to-day progress will be presented at workshops and Conferences where project team members will participate.
12. **Feedback and Review:** Encourage feedback on the evaluation reports from stakeholders to ensure that their perspectives are considered. Review the reports with stakeholders to validate the accuracy and relevance of the information presented.
13. **Continuous Improvement:** Use the evaluation reports as a foundation for continuous improvement in project management and implementation. Act on the recommendations to drive positive change in future projects.
14. **Learning and Knowledge Sharing:** Promote learning and knowledge sharing by making the evaluation reports publicly available to the broader public health community. Share the insights gained from the project to contribute to best practices and evidence-based decision-making.

### Conclusion

By implementing a robust reporting and accountability process, the HERA2CZ project can effectively communicate its performance and impact to all stakeholders, including ECDC. The evaluation reports will serve as a vital tool for ensuring transparency, accountability, and continuous improvement in public health initiatives.

## National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

### 4. Implementation Outline

M0	Evaluation strategy outline presentation for discussion among the Project team members
M0-1	Evaluation strategy submitted to the EC in form of project deliverable
M2-4	Desk research and analysis of available data sources
M5-6	Baseline impact evaluation data collection
M7-18	Data analysis and back verification if needed
M19	Preparation of the final evaluation report for the EC in form of project deliverable

# National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

## Project's Context

### Genomic surveillance of selected infectious diseases in the Czech Republic (HERA2CZ)

#### Enhancing Public Health Protection through the HERA2CZ Project

The HERA2CZ project aims to enhance the quality of public health protection and improve the preparedness of the Czech Republic for emergency health situations and pandemics such as COVID-19, or any future health crisis with potential international impact. The HERA2CZ project assists the National Institute of Public Health (NIPH/SZÚ) in increasing the capacities of the National Reference Laboratories (NRL) for whole genome sequencing (WGS) of infectious agents and expanding the spectrum of WGS characterization to various human pathogens, especially SARS-CoV-2 and other respiratory viruses, bacterial pathogens with cross-border impact, including antibiotic-resistant bacteria. WGS is a modern, precise, and time-efficient analytical method that enables rapid and accurate identification of infectious disease outbreaks, control of these outbreaks, monitoring the spread of infectious agents, and their mutations. Early detection of potential threats and a proper understanding of the spread of infectious diseases are crucial for timely responses from public health authorities.

#### Key Points of the HERA2CZ Project

- The HERA2CZ project addresses shortcomings in the healthcare system, particularly considering the experiences from the COVID-19 crisis.
- The main objective is to enhance the Czech Republic's preparedness for future health emergencies related to the spread of infectious diseases at national and global levels.
- Public health protection requires a comprehensive approach crossing national borders, strengthening healthcare systems, analytical capacities, implementing modern methods, and improving cross-border data sharing.

#### What is Whole Genome Sequencing (WGS)?

- WGS is a modern method used to analyse the complete DNA sequence of an organism's genome.
- WGS allows precise tracking and differentiation of individual strains, aiding in identifying sources of infection and understanding the spread of infectious diseases.
- The accuracy of the method makes WGS an indispensable tool for effective surveillance of the occurrence and spread of infectious diseases.
- WGS enables timely and accurate identification, monitoring, and prevention of the spread of infectious diseases in a global context.
- Cross-border data sharing through WGS supports collaboration between countries and is necessary for efficient monitoring and prevention of global health threats.

#### Challenges Associated with WGS

- While WGS is highly effective, it is more resource-intensive compared to other sequencing methods and requires robust technical and personnel resources.
- WGS generates complex data, the precise analysis of which demands specialized expertise, management, and storage, necessitating additional skilled personnel.
- Some of these challenges were partially addressed in the previous HERA project.

## National Institute of Public Health

Genomic surveillance of selected infectious diseases in the Czech Republic, HERA2CZ

Project: 101113387 — HERA2CZ — EU4H-2022-DGA-MS-IBA-1

D1.4 – Evaluation Strategy Outline for the HERA2CZ Project

### Focus of the HERA2CZ Project

- The follow-up HERA2CZ project focuses on increasing the genotypic characterization capacity within the National Reference Laboratories (NRL) of the National Institute of Public Health (NIPH/SZÚ) in the Czech Republic and expanding the spectrum of WGS characterization to various human pathogens, especially SARS-CoV-2 and other respiratory viruses, bacterial pathogens with cross-border implications, including antibiotic-resistant bacteria.
- The HERA2CZ project further refines methods based on whole genome sequencing and incorporates these modern methods into routine genomic surveillance of selected infectious diseases.

### The Project's Basic Data

<i>Project Title (acronym):</i>	<i>Genomic surveillance of selected infectious diseases in the Czech Republic (HERA2CZ)</i>
<i>Project ID:</i>	<i>Grant Agreement - Project 101113387</i>
<i>Type of action:</i>	<i>EU4H Project Grants</i>
<i>Beneficiary:</i>	<i>National Institute of Public Health, the Czech Republic</i>
<i>Call:</i>	<i>EU4H-2022-DGA-MS-IBA-1</i>
<i>Topic:</i>	<i>EU4H-2022-DGA-MS-IBA-01-02</i>
<i>Coordinator:</i>	<i>Jana Kozáková, MD</i>
<i>Project duration</i>	<i>1.10.2022 – 30.6.2025</i>



Find out more: [www.szu.cz/hera2/](http://www.szu.cz/hera2/)



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