

# **Public Health Environmental Surveillance - Evaluation Framework**

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# 1 Public Health Environmental Surveillance Evaluation Framework (PHES-EF)

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**An international e-Delphi study to develop an evaluation framework for public health environmental surveillance**

## 1.1 Background

The use of environmental surveillance systems for public health has drastically increased since the beginning of the COVID-19 pandemic. With this increased use, comes a need to these systems to be evaluated. A formal evaluation of environmental surveillance systems for public health is crucial for determining whether such systems can be used reliably and credibly to inform public policy and public health action. Formal evaluation of this landscape will also be critical in determining whether these systems will continue to receive funding or remain operational.

Before these surveillance systems can formally be evaluated, consensus on evaluation criteria will need to be obtained.

The study will develop an evaluation framework using a multidisciplinary and multinational consensus approach that considers current evidence for evaluating public health surveillance systems and new knowledge gained

throughout the COVID-19 pandemic. The goal is to identify criteria that should be used to evaluate environmental surveillance systems and provide guidance on how the criteria should be assessed. While SARS-CoV-2 wastewater surveillance will be used to frame the study, the framework and associated criteria should also consider other environmental surveillance targets and uses (e.g., other pathogens, antimicrobial resistance, and drug use). A range of uses of environmental surveillance will be considered.

This project will use an electronic Delphi (e-Delphi) consensus process to generate a list of contextually appropriate criteria to be used when evaluating public health environmental surveillance systems.

## 1.2 Objectives

Our primary objective is to develop an evaluation framework for public health environmental surveillance (*PHES-EF*), using a consensus approach.

An evaluation framework provides structured guidance to facilitate a systematic approach to evaluation of the program.<sup>10</sup> While there is variation in the terminology used to describe frameworks,<sup>11</sup> we further define our approach as: presenting a clear list of items that should appear in an evaluation; providing an organisation or structure for the list of items; defining how the list and organisation were developed; and, potentially, including details about how to measure the evaluation items.

Our specific objectives are to:

1. Engage a multidisciplinary executive group of international experts to inform the development of the evaluation framework.
2. Review the literature to identify current guidance on surveillance evaluation items.

## *1.2 Objectives*

3. Prioritize items for an evaluation framework for environmental surveillance using an international e-Delphi process.
4. Conduct a consensus meeting that engages international representatives from all wastewater surveillance stakeholder groups to create an evaluation framework for public health environmental surveillance based on the multinational and multidisciplinary consensus.
5. Develop a comprehensive dissemination plan for the evaluation framework.





## References

