

## Terms Of Reference

### **City Lead Agency for Multi-city WBE Initiative**

#### **Background**

The Wastewater-based Epidemiology (WBE), commonly known as Environmental Surveillance, is a supplementary branch of public health technology, which uses community wastewater to test for infectious pathogens which may be hazardous for ecology (human, animals and climate) and has a pandemic potential.

The WBE has been carried out for several years, though the usage was limited to Poliovirus surveillance at a very limited area of concern. It has gained significant ground in the advent of COVID-19 pandemic, in which it proved to be helpful in detecting early warning signals by tracking the SARS-CoV-2 virus from the community wastewater. Currently, various studies and articles prove that the WBE can be a key surveillance tool, which will help public health bodies in assessment of prevalence, nature of the infection spread and preparation of an evident outbreak at the city level, especially those having low-resource settings, where large scale surveillance creates a heavy burden for the surveillance agencies and public health managements.

In WBE, a wastewater sample is collected from selected sites within a drain (open or closed) of the city, and tested for the presence of pathogen(s). The presence of the virus in wastewater is a surrogate indicator based on the fact that the fecal discharge from the affected persons, sometimes in a very early stage of infection (even asymptomatic carriers), contains the COVID-19 virus. This surrogate indicator can serve as an early warning of an outbreak in a new area, particularly in densely populated urban slums and congested urban pockets.

#### **Precision Health**

[Precision Health](#) is Catalysts' Environmental Surveillance (ES) platform. The platform provides technical support, digital backbone, learning and sharing platform and communication support for believers, enthusiasts and implementers of environment surveillance. It is a partnership driven program, which explores, tests and utilizes learnings to promote WBE as a significant complementary public health surveillance tool.

The main objective of the platform is to mainstream WBE as a key public health surveillance tool in India, through interventions, research, communication & advocacy and scale up. Since the [launch of the platform on May, 27th, 2021](#), the platform has successfully conducted the following:

1. Set up an Early Warning System(EWS) for COVID outbreaks by surveilling SARS-CoV-2 virus in Bengaluru, Karnataka to support:
  - a. government health officials with analyzed data and trends through sense-making platforms
2. Genome Sequencing of wastewater samples to show lineages and sublineages of dominant variants for SARS-CoV-2 virus.

3. Drug level testing to understand the consumption of antibiotic and antipyretic drugs in the city.
4. Study to assess the prevalence of Antimicrobial Resistance to commonly used medicines in the city.

For more information, visit <https://precisionhealth.in/>

Over time, there has been a significant change in the awareness levels around WBE and national government and various city governments planning to initiate WBE in their cities.<sup>1</sup>

## Multi-City WBE Initiatives

The [Precision Health platform](#), which works on Wastewater-based Epidemiology (WBE), is seeking applications and proposals from reputed and registered agencies or consortium of agencies to support their city governments in carrying out ES to detect SARS-CoV-2, in order to provide Early Warning Signals (EWS) for COVID outbreaks in the city. The City Lead agency will be facilitating WBE activities to set an Early Warning System in a city. The role of City Lead Agency will be to support/execute the process on ES in each city, under the Multi-city Scale up Initiatives. The City Lead manager will coordinate, manage or execute operations at city-wide Environmental Surveillance initiative for SARS-CoV-2 virus to support government stakeholder in understanding and utilizing ES data for public health actions.

The city initiatives must not be treated as one-off projects but a catalytic investment to ignite interest, build capacities and inspire forward evidence-based planning, programming, decision-making and resourcing by city municipalities as well as public health agencies in the city.

In order to manage the above responsibilities, the City Lead must have strong coordinating and partnership skills, project management and an understanding of health surveillance. Strong communication skills are a must for the project manager to coordinate with multiple partners regularly and to create clear, concise reports that communicate outcomes and program impact. He will have to travel to multiple locations within the city, so flexibility and strong organizational skills are important to balance the workload.

## Responsibilities

### 1. For City Lead agency

- a. Create or develop internal capacities or Identify and partner with potential and suitable implementing agencies for activities involved in ES, i.e. sample collection and sample testing (Molecular Biology laboratory).
- b. Create or develop internal capacities or identify and engage with local experts for consultation on sanitation, drainage and wastewater governance of the city.
- c. Pursue and learn all aspects of ES and coordinate with partners in the capacity building programs.
- d. Plan activities with respect to Scope of Work
- e. Coordinate and manage planned activities and processes in ES.

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<https://economictimes.indiatimes.com/news/india/centre-planning-to-test-sewage-water-for-covid-19-virus-load/articleshow/86744568.cms?from=mdr>

- f. Liaison and coordinate with Govt partners and implementation teams.
- g. Orient and coordinate with Govt stakeholders on ES concepts and data findings through data interpretation, sense-making and reporting along with regular follow ups.
- h. Intracity travels to various sites for project oversight.
- i. Physical visits to oversee lab activities and processes.
- j. Organize weekly catch-ups with the implementation team and partners for work review, resolving challenges faced and sharing new learnings.
- k. Partnership development, engage and manage relationships with stakeholders, partners and donors
- l. Learn process-related operations and conduct regular internal quality checks of the processes.

The functions and roles of city lead in the project is mentioned below:

Functions	Results
Understand the processes on WBE and prepare and develop roadmap, milestone, and timelines of each activities	Developing team and project framework, team structure, expected roles of the team.
Identify implementation teams to carry out ES activities in the city	Better understanding of prospective and potential agencies
Set roles and responsibilities of teams	Partnerships, role settings, distribute responsibilities, formulate TORs and deliverables
Build and maintain rapport with the local government for the ES and associated work	Support and cooperations, permission of work, PoC for communication, data and information procurement
Coordinate with implementation teams and consultants (if any) for pre planning phase	Site identification, fix and set geo locations, coordinate training of recruited staff for sample collection and testing on the process and data collection and recording.
Coordinate with implementation teams for the plan and execution	Develop sampling strategies, procurement of supplies and consumables and daily work flow.
Review performance and execution on weekly basis	Document learnings, resolve challenges, identify gaps and discuss solutions to fill the gaps
Share data and information to stakeholder through reports and dashboard	Share reports and early warning signals (if detected) to stakeholder with interpretation and recommendations for action
Attend NCES events to share data insights and develop capacities on data interpretation	Additional learnings and develop strategic vision

Regular communication with the stakeholders to understand their next plans and expectations on ES.	Workshops with the city local govt officials and public health officials for better understanding of ES and other use cases.
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The competency of the city lead agency will be assessed on the basis of educational qualification, work experience of the key persons, its engagement and experience with the local/state governments and their skill levels in objective oriented working with multiple partners, stakeholders and organizations.

### Partnership framework

The agency, once shortlisted, will undergo a screening course, where it will be assessed on the knowledge and skill & competencies required to carry out ES on ground.

Once the agency clears the assessment, it needs to get a letter of support/interest from the concerned city authorities. The [template of the letter of support](#) is suggestive and the content can be rephrased as per the authority's advice. Once the letter of support is received, the agency will be contracted for 12 months with detailed roles and responsibilities, activities, deliverables and payment terms proposed in the application.

After contract signing, there will be a capacity building program, wherein each aspect of ES will be covered, with a more demonstrative and practical approach with the entire implementation team, either at the city, at Bangalore city or at a third location (city).

The selected agency of the city will plan and carry out ES operations with the implementation teams after notifying the PH core team. The lead personnel of the agency will also have an opportunity to attend and interact with Alliance members, which will help enhance knowledge and understanding on various aspects of WBE.

### Stakeholder(s) at the city

The listed cities where the WBE initiative will be conducted may be governed by one of more than one municipal corporations within its overall territory. However, each municipal corporation will have a designated geographical region and population, which it manages. Hence, the agency can choose the area of one or more municipal corporations it wants to work in. The same should be mentioned in the application form.

For any query, please reach out to [Shirish Harshe](#) , [shirish@catalysts.org](mailto:shirish@catalysts.org), with the subject line <Query - Multi-city Initiative on ES>.