



Ministério da Saúde

FIOCRUZ

Fundação Oswaldo Cruz

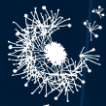
# EARLY-ALERT PANDEMIC SYSTEM



UFRJ



Rede  
Genômica  
Fiocruz



cidacs





[Video TV Channel Early-Alert.mp4](#)

<https://www.youtube.com/watch?v=cVsDHKyuriw>



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# How it works

## 1

STAGE

### Surveillance system with real-time monitoring



- Number of visits to hospitals and health centers;



- Sale of medicines in pharmacies;



- Interaction on social media.

Shooting first alert to the authorities



## 2

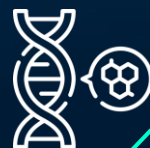
STAGE

### Identification of the causative agent

Molecular characterization of known or unknown infectious agents.



Fiocruz Genomic Network



## 3

STAGE

### Spread Risk Analysis

Computational models use climatic, socioeconomic and transport data to predict how the disease will spread.



Development of the plans for contingency with localized efforts.



# Platform | Features



## Rapid Response

Ability to anticipate the start of viral or bacterial outbreaks by up to 30 days, issuing alerts to health managers.



## Identification of the causer

Advanced molecular characterization of known and unknown pathogens.



## Anticipation

Predicting ways and locations of possible spread of the outbreak.



## Scope

Coverage all 5,570 Brazilian municipalities.



## Integration

Connection to existing systems, using health data, social determinants; bioclimatic; transport network; sale of medicines and social media.



## Universal

Open-code system allowing sharing with co-creation partners and which integrates a global surveillance solution.



## Replicable

Easy adaptation to other syndromes.



# The System Now

The Pandemic Anticipation System is being developed in collaboration with national and international health authorities, initially covering all 27 Brazilian capitals, focusing on two major problems in Global Public Health:



## RESPIRATORY VIRAL OUTBREAKS

In Brazil, more than 700,000 people died from Covid.

In the initial period of the pandemic, we had a 1,500% increase in deaths caused by Acute Respiratory Syndrome.



## DIARRHEAL OUTBREAKS

Around 1.5 million children under five die from diarrhea in the world, according to WHO.

8% of these deaths occur in Latin America and the Caribbean .

In Brazil, diarrhea is responsible for approximately 15% of the deaths of children under five years old.



PLATFORM UNDER  
DEVELOPMENT



START IN 2024



# What results will we have at the end?

**1.** A unique system in the world, capable of anticipating, by up to 30 days, the onset of a respiratory and diarrheal outbreak;

**2.** Open Code platform, enabling the development of other surveillance solutions;

**3.** The immediate use of this platform by the Ministry of Health in the 5,570 Brazilian municipalities.



# Implementation Timeline

## YEAR 1 (2023)

## YEAR 2 (2024)

## YEAR 3 (2025)

	Respiratory Syndromes	Diarrheal Syndromes	Respiratory Syndromes	Diarrheal Syndromes	Respiratory Syndromes	Diarrheal Syndromes
<b>Planning with stakeholders</b>	Accomplished	On holding	Realization of the 2nd annual workshop	Realization of the 1st annual workshop	Realization of the 3rd annual workshop	Realization of the 2nd annual workshop
<b>Signal detection in APS and in sales of medicines</b>	Advanced		Optimization and integration with the Ministry of Health (MS) notification system	Development of the system on a national basis	Fully functioning in the Ministry of Health (MS) System	Improvement and start of operation in the MS system
<b>Advanced molecular detection of pathogens</b>	Under development		Module operation in all regions of the country	System design and start of operation	Operating an improved sentinel system across the country	Operating as a sentinel system throughout the country
<b>Panel/ Dashboard</b>	Advanced		Operational	Development of the panel	In operation	Optimized dashboard in operation and being integrated into MS
<b>Operation of system with MS</b>	Under development		System in operation	System in Development	System migrated to the Ministry of Health	System integrated with the Ministry of Health

# Program Coordination



Chief scientist: Manoel Barral-Netto -Doctor, Phd in Pathology and postdoctoral fellow at the Seattle Biomedical Research Institute (SBRI). Senior researcher at FIOCRUZ and President of the Bahia Academy of Sciences (ACB).

## Contacts

Vice Presidency of Management and Institutional Development at Fiocruz

**Luis Fernando Donadio**  
[luis.donadio@fiocruz.br](mailto:luis.donadio@fiocruz.br)  
+55 21 99190-5794

**Milena Teixeira**  
[milena.teixeira@fiocruz.br](mailto:milena.teixeira@fiocruz.br)  
+55 21 98522-0644

