FINANCIAL INNOVATIONS LAB®

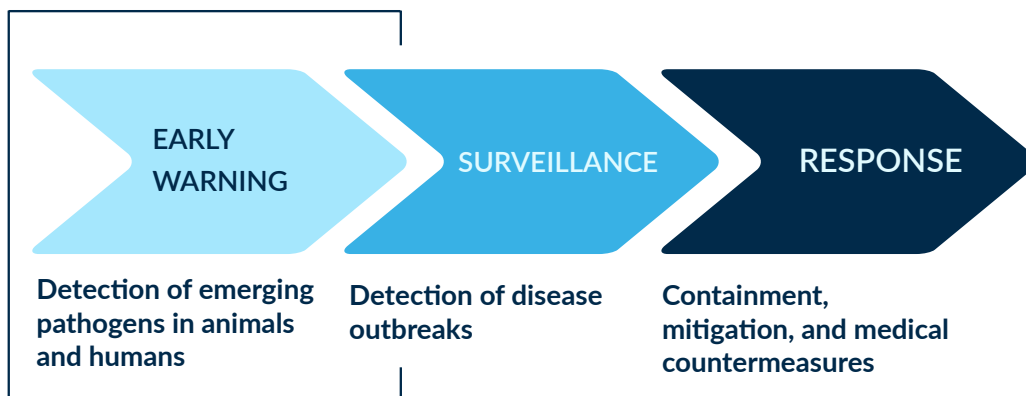# Innovative Finance Models for Global Early Warning Systems for Pandemics

EXECUTIVE SUMMARY

Report Background and Overview

Despite the lessons we learned from COVID-19, the world remains "dangerously ill-prepared" for the next pandemic.[1] Climate change, deforestation, urbanization, and population movements increase the risk of disease transmission, jeopardizing global health, economy, and social stability.

Growth in data and advances in analytics have created an unprecedented opportunity to stand up early warning systems that can detect emerging disease threats at their earliest stage (see Figure 1). The aims of these systems would be in prediction and early detection, rather than disease surveillance, which is the focus of many efforts in place today.

Figure 1: Pandemic Prevention, Preparedness, and Response Continuum

EARLY WARNING

SURVEILLANCE

RESPONSE

Detection of emerging pathogens in animals and humans

Detection of disease outbreaks

Containment, mitigation, and medical countermeasures

Source: Milken Institute (2022)

The World Health Organization and the World Bank estimate a funding gap of $4.1 billion per year for global and local "surveillance, collaborative intelligence, and early warning."[2] Funding gaps exist in three core elements: infrastructure (laboratories, facilities, and equipment), data and tools (datasets, technologies, and tools that enable the collection, cleaning, sharing, and analysis of data), and people (workforce, training, and expertise).

This sizeable shortfall underscores areas where the private sector could bridge the deficit. However, the path for private-sector engagement has yet to be clearly delineated, and private investment in early warning systems today is scarce due to barriers such as uncertain revenue streams, market failures, and regulatory restrictions.

Innovative Finance Models for Global Early Warning Systems for Pandemics summarizes the research and key findings of a Financial Innovations Lab® conducted in April 2023. The lab brought together investors, international and civil society organizations, academia, and public and philanthropic sectors to explore solutions for sustainable funding and financing for early warning systems.

Recommendations

Recommendation 1: Establish and Fund an Early Warning Information and Insight Exchange

Participants envisioned a platform, designated as the Health Information Insight Exchange (HIIX). It would serve as the aggregator and clearinghouse of data from early warning systems and networks around the world, leveraging private-sector technical capabilities to identify signals that could predict and detect early disease outbreaks.

Lab participants outlined two strategic considerations related to the financial sustainability of HIIX:

- **Funding Sources:** While development aid, international organizations, and philanthropic foundations will remain primary funding sources, private companies and health-care providers can contribute with their resources, expertise, and technological capabilities. Exploring partnerships with corporate entities through their corporate social responsibility initiatives could also be a viable avenue.

- **Revenue Models:** Lab participants identified multiple potential revenue streams that could bolster the platform's long-term self-sustainability, such as a subscription model with tiered pricing, data licensing, and advertising. They agreed that the platform's value lies in the unique insights it generates rather than in the raw data. They also emphasized the need to balance affordability and revenue generation, ensuring HIIX remains accessible while also financially viable.

Recommendation 2: Establish a Venture Philanthropy Fund to Finance Data and Tools

- A venture philanthropy fund would go beyond providing one-time grants to provide early-stage data technology companies or nonprofit organizations with strategic advisory support. The fund would also recycle and reinvest any financial returns to create a continuous funding cycle.

- Investors can support a company in forging strategic partnerships and collaborations to tap into a vast network of knowledge and expertise. Furthermore, exploring derivative or adjacent opportunities with commercial potential amplifies the impacts of investments and generates financial returns.

- Lab participants suggested that the fund size be US$200 million with the capacity to make investments of at least US$5 million to $15 million in each portfolio company. The fund's objective should be to achieve a 1-in-10 chance of success while targeting a 3x return on investment through rigorous selection, diversification, and collaboration with experts.

Recommendation 3: Structure a Blended Finance Vehicle to Finance Infrastructure

- A blended finance vehicle, such as a tiered equity or debt fund, could finance the infrastructure needed for early warning systems while meeting different levels of investor risk appetite.

- To bridge investor demand for less risky assets and investee demand for lower-cost capital, blended finance deploys concessional catalytic capital as an additional layer of protection. This catalytic capital, from public and philanthropic sources, can take on below-market-rate terms, as junior debt or equity, or provide credit enhancements like risk guarantees. Simultaneously, impact investors and commercial investors that seek financial returns could contribute senior equity and debt capital.

- Lab participants identified use cases in which a blended finance fund could help mobilize infrastructure improvements:

  - A risk guarantee can help a laboratory obtain low-cost loans to purchase genome sequencing equipment.

  - Junior equity can help to establish a fund that invests in purchasing and leasing equipment.

Lab participants recommended a fund size between US$150 million and $300 million to accommodate both typical transactions and the growing cadre of larger-scale projects. Additionally, the average investment per project should be within the US$10 million to $50 million range, enabling portfolio diversification across different geographies and facilitating the customization of investments to meet specific local requirements.

View the full report on the Milken Institute website at: https://milkeninstitute.org/report/innovative-finance-early-warning-pandemics

ENDNOTES

1. Ellen Johnson Sirleaf, "Don't Put COVID-19 in the Rearview Mirror. Now We Need to Prepare for the Next Pandemic," *Time*, March 17, 2023, https://time.com/6262639/covid-prepare-next-pandemic/.

2. *Analysis of Pandemic Preparedness and Response (PPR) Architecture, Financing Needs, Gaps and Mechanisms* (World Health Organization and the World Bank, March 2022), https://thedocs.worldbank.org/en/doc/5760109c4db174ff90a8dfa7d025644a-0290032022/original/G20-Gaps-in-PPR-Financing-Mechanisms-WHO-and-WB-pdf.pdf.