Combining Talents for Novel Tools

Assemble the brightest minds, formulate ambitious ideas, and produce novel solutions, all in less than a week. With an Epihack, more countries are realizing how this formula creates and improves tools to find and report outbreaks faster.

Ending Pandemics devised Epihack events around an adaptable structure with goals determined by each community's needs. During intense four- to six-day sessions, specialists from the worlds of animal and public health and policy collaborate with software developers, interface designers, and other technology experts.

Bonded by their common mission to help stop the spread of disease, teams break down the problems, present possible open-source solutions, create prototypes, and refine their designs. Epihacks typically produce a mix of new tools and refinements to existing systems with a focus on disease surveillance—plus a new network of multi-sector professionals invested in their success. Engaging official government partners responsible for human and animal health in the Epihack process further increases the likelihood of a project's use and its sustainability.

Since the first Ending Pandemics EpiHack in August 2013, hosted in Phnom Penh, Cambodia, more than 230 participants have convened at nine Epihack events on five continents. These events have produced sustainable tools now used by governments and communities every day.

Rapid Returns:

More than 40 attendees at the 2014 Thailand Epihack gave life to Participatory One Health Disease Detection (PODD)—a program enabling trained volunteers on the ground to report potential outbreaks easily with a mobile app.

In its first four months, volunteers reported more animal disease cases in PODD Chiang Mai districts than had been reported in the whole province the entire year before.

Learn about past Epihack events

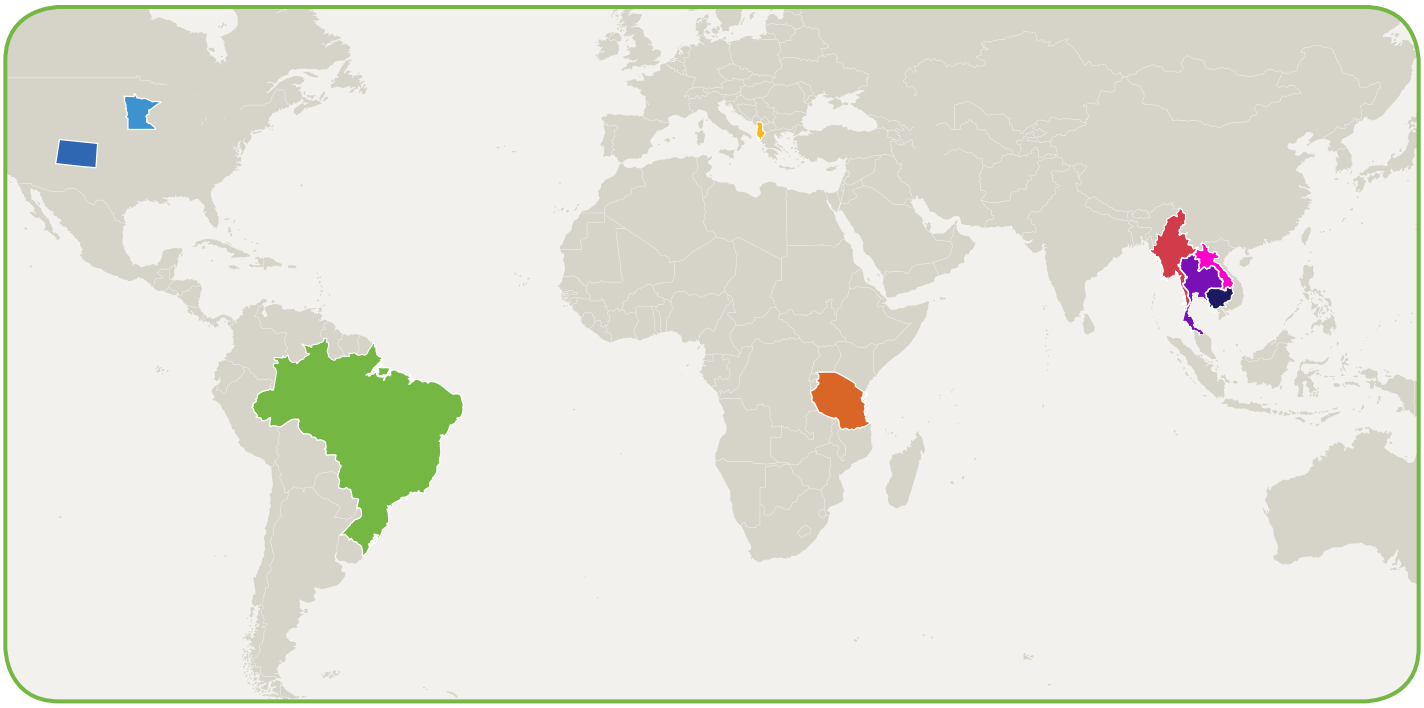
Pandemics pose an imminent threat to our connected world— *a threat we have the power to eliminate. Through events like Epihacks, Ending Pandemics unlocks the potential to find and report disease outbreaks faster everywhere on the planet.*

Ending Pandemics

To learn more about these inspiring events, visit epihack.org.

Combining Talents for Novel Tools

Epihack Events 2013 – 2016



Epihack Denver, Colorado (2016)
Updated the design and functionality of the Flu Near You public health dashboard and developed other resources to assist health professionals.

Epihack Minneapolis, Minnesota (2015)
Improved ways for health departments to import, analyze, and leverage data from the self-reporting Flu Near You tool.

Epihack Rio de Janeiro, Brazil (2015)
Created apps to engage sports fans in participatory surveillance (individual reporting of symptoms and situations) during the 2016 Rio Games.

Epihack Saranda, Albania (2016)
Developed new tools to accommodate all data from animal, human, vector, and environmental sources among several countries.

Epihack Arusha, Tanzania (2014)
Devised a digital solution for two-way communication between local community health workers and animal health workers regarding outbreak risks among humans, wildlife, and livestock.

Epihack Yangon, Myanmar (2016)
Created a new app and alert system to help community health workers and volunteers share information about potential disease outbreaks.

Epihack Vientiane, Laos (2014)
Customized an open-source voice-based system to serve as a Dengue fever alert system.

Epihack Chiang Mai, Thailand (2014)
Designed a mobile app for citizens to easily report in real time events among humans, animals, and the environment.

Epihack Phnom Penh, Cambodia (2013)
Focused on adapting five existing projects, including the DoctorMe self-reporting mobile app and Verboice, a voice-based participatory surveillance system.

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flu near you
do you have it in you?

Putting Real-Time Reporting on the Map

Every week, tens of thousands of people take a minute from their busy day to be part of something bigger—something that could help control a stubborn and vexing threat. They are the reporters for Flu Near You, an online self-reporting, flu-tracking tool fueled by the real-time input of volunteers.

Through the project's website or mobile app, more than 60,000 participants across the U.S. anonymously file weekly reports, indicating symptoms of illness or a healthy status. The Flu Near You system aggregates these reports, creating publicly available local and national maps that show hotspots of influenza-like illness (ILI).

Visitors to FluNearYou.org can easily check the status of their community and take action to protect themselves and their families, including using the Vaccine Finder tool to quickly locate vaccine sources nearby. Meanwhile, public health officials and researchers gain instant intelligence that could help them better understand the spread of flu and help us all think about ways to prevent a deadly flu pandemic. In fact, the CDC and health departments across the country integrate Flu Near You data into their own strategies.

A Powerful Addition

Influenza sickened over 24 million people and killed nearly 12,000 in America during the 2015–2016 season (November to March), according to CDC estimates. While vaccinations remain the best defense against flu, early detection is crucial to halting its spread. Recognizing symptoms early can also allow for the effective use of anti-viral treatments.

The speed of Flu Near You's self-reporting disease surveillance complements traditional systems that rely on case reports from doctors and laboratory results being sent to health departments. It provides a flexible platform that can be easily modified to track new symptoms. Flu Near You also fills vital gaps in information about influenza-like illness—such as when individuals don't seek medical care—and provides insights into those areas where few medical providers are linked to the CDC's surveillance system.

Worth Repeating

Health officials across the globe have begun adapting Flu Near You's participatory surveillance model to tackle other health crises. The CDC and the University of Arizona created the Kidenga app, which encourages the self-reporting of symptoms from mosquito-borne diseases. Officials in Brazil seeking to boost safety at mass gatherings used the self-reporting model for Saude na Copa (Healthy Cup) at the 2014 World Cup and for the Guardians of Health app during the 2016 Rio Games.

Flu Near You launched in 2011 through a partnership between HealthMap of Boston Children's Hospital and Harvard University and the Ending Pandemics team. Within two years, Flu Near You began generating a signal of influenza-like activity in the United States that demonstrates a strong correlation with CDC surveillance systems.

Learn about other Participatory Surveillance Systems ▶▶

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Ending Pandemics

To learn more about this innovation in self-reporting, visit FluNearYou.org.

flu near you
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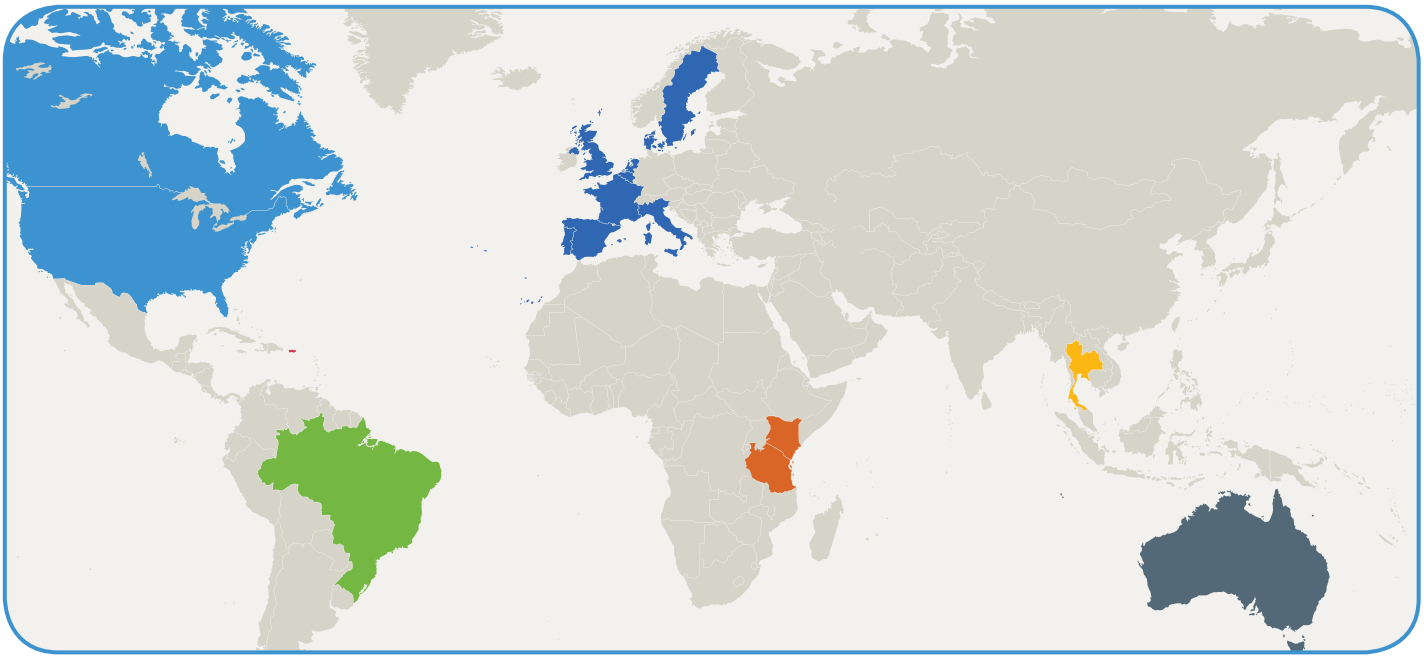
Putting Real-Time Reporting on the Map

Participatory Surveillance Systems with Ending Pandemics Involvement

Flu Near You is one of several participatory disease surveillance systems used worldwide to gather real-time data digitally from volunteers.



Flu Near You
Canada
United States

Salud Boricua
Puerto Rico

Guardians of Health
2016 Olympics

Saude na Copa
2014 World Cup
Brazil

Influenzanet
Belgium
Denmark
France
Italy
Netherlands
Portugal
Spain
Sweden
United Kingdom

SACIDS
Kenya
Tanzania

DoctorMe & PODD
Thailand

FluTracking
Australia

Ending Pandemics

To learn more about this innovation in self-reporting, visit FluNearYou.org.

EPICORE

Crowdsourcing Epidemic Intelligence Across the Globe

The number of innovative surveillance methods used globally to monitor disease outbreaks is increasing. And with expanded Internet and mobile connectivity, more people now have the ability to report potential outbreaks.

While many of these surveillance systems are sensitive—meaning they detect indications/occurrences of disease outbreaks—they lack specificity (the ability to detect when the outbreaks are real). **Rapid disease verification is vital to determining if a response is needed to stop the spread of a potential outbreak.**

Pandemics pose an imminent threat to our connected world— *a threat we have the power to eliminate. Through projects like EpiCore, Ending Pandemics unlocks the potential to find and report disease outbreaks faster everywhere on the planet.*

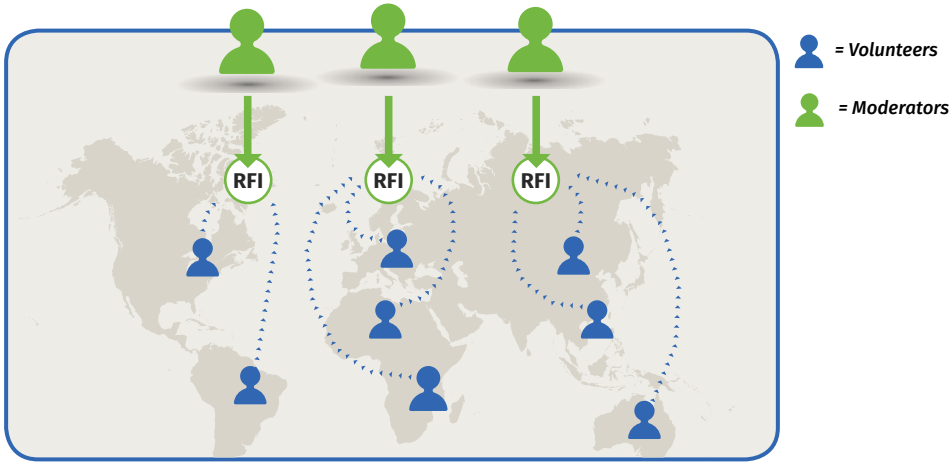
Ending Pandemics

In 2013, Ending Pandemics took action, investing in and partnering with three leading health organizations to create EpiCore—a robust global network of human and animal health professionals committed to verifying disease outbreaks.

EpiCore's secure, online platform, launched in 2015, operates under a simple premise: Connect more trained professionals to a system that gives them immediate access to an early alert in their area and they can validate it as real—leading to faster, accurate outbreak validation.

How EpiCore Works

- EpiCore recruits volunteers worldwide—professionals in human and animal health trained in the basic principles of epidemiology and infectious diseases.
- Moderators review reports of potential outbreaks in humans or animals from disparate sources and then use EpiCore to send requests for information (RFI) to volunteers, so that signals can be verified.
- Volunteers combine their expertise, knowledge of on-the-ground realities, and other resources to verify or discard early indications of an outbreak. They report back to moderators, who assimilate responses and share their findings with the global disease surveillance community.
- Currently, information verified through EpiCore as either true signals or unsubstantiated rumors is shared with more than 80,000 ProMED-mail subscribers.



To date, over 1,800 human and animal health professionals from 136 countries have joined the virtual EpiCore community.

Learn More

To learn more about this growing network, visit epicore.org.

EPICORE

Crowdsourcing Epidemic Intelligence Across the Globe

The System in Action

EpiCore quickly delivered on its mission. In its first year, EpiCore generated over **450 requests for information** and achieved a **request response rate of 80%**. That's a 20-fold improvement on the ProMED-mail response rate achieved before EpiCore.

- In Nigeria, EpiCore members expeditiously confirmed an unknown febrile rash as **measles**.
- In India, volunteers attributed the source of a zoonotic **anthrax** outbreak to the consumption of cattle meat.
- Within 24 hours, EpiCore members relayed information on the date of lab confirmation and specifics of two cases of **H7N9** avian influenza in **China**.
- EpiCore members provided lab confirmation and size information for the Lassa fever outbreak in **West Africa**.

EpiCore's Next Goal:

Increase the number of timely verifications of potential outbreaks in the system and expand the innovative crowdsourcing model with members in **every country** working together to verify outbreaks.

EpiCore's Founding Partners

ProMED-mail rapidly disseminates early-warning reports on outbreaks of emerging and re-emerging diseases to 80,000+ scientists, physicians, epidemiologists, and public health professionals globally.

HealthMap aggregates disparate online data sources to create a comprehensive view of the global state of infectious diseases on an open and free map.

TEPHINET (Training Programs in Epidemiology and Public Health Interventions Network) includes 65 field-based epidemiology training programs in 90 countries worldwide representing the frontlines of epidemic detection and response.

Ending Pandemics

To learn more about this growing network, visit epicore.org.

CORDS

CONNECTING ORGANIZATIONS FOR REGIONAL DISEASE SURVEILLANCE

A World United Against Infectious Disease

As deadly microbes travel freely and swiftly across borders, efforts to stop them must do the same. That's the principle behind CORDS: Connecting Organizations for Regional Disease Surveillance.

CORDS unites networks of leading health organizations to share best practices and scale innovations aimed at early outbreak detection and response. Neighboring countries collaborate and communicate in the interest of confining outbreaks to the smallest possible areas—limiting their spread and potential devastation.

Founded by a collective of partners, CORDS today comprises six regional disease surveillance networks spanning 28 countries in the Middle East, Southern and Eastern Africa, South Eastern Europe, and Southeast Asia. Ending Pandemics plans to expand the coverage to include other hotspot regions for pandemic threats, including West Africa and South Asia.

Meanwhile, the central CORDS Secretariat facilitates the exchange of information and cross-network collaboration on surveillance solutions among network members. The Secretariat also mobilizes disease outbreak expertise to improve national emergency response planning efforts.

Throughout its work, CORDS promotes the One Health approach, which recognizes the interconnected nature of human, animal, and environmental health.

Total Team Effort

Through CORDS, individual country partners cooperate by:

- Sharing information on emerging pathogens
- Identifying outbreaks straddling borders
- Harmonizing response strategies
- Developing pandemic preparedness plans

Participating regional members share innovations to find and report diseases faster and communicate key information across the network. As an example, the Southern African Network (SACIDS) and the East African Network (EAIDSNet) are now working to establish a cross-national mobile phone system encompassing six border countries in their regions. This effort follows the successful implementation of a project piloting the use of mobile technologies for disease surveillance.

CORDS Founding Partners:

Skoll Global Threats Fund

The Bill & Melinda Gates Foundation

The Rockefeller Foundation

The Nuclear Threat Initiative

Fondation Mérieux

Learn about CORDS networks

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Ending Pandemics

To learn more about this collaborative network, visit cordsnetwork.org.

CORDS

CONNECTING ORGANIZATIONS FOR REGIONAL DISEASE SURVEILLANCE

A World United Against Infectious Disease

CORDS Networks:

SECID
Southeast European Center for Surveillance and Control of Infectious Diseases

MECIDS
Middle East Consortium on Infectious Disease Surveillance

MBDS
Mekong Basin Disease Surveillance

SACIDS
South African Centre for Infectious Disease Surveillance

EAIDSNet
East African Integrated Disease Surveillance Network

APEIR
Asia Partnership on Emerging Infectious Diseases Research

The World Organization for Animal Health is a member of CORDS. Both the Food and Animal Organization of the United Nations and the World Health Organization are observers.

Ending Pandemics

To learn more about this collaborative network, visit cordsnetwork.org.