

A conversation with Jennifer Olsen on September 23, 2013

Participants

- Jennifer Olsen — Manager, Pandemics, Skoll Global Threats Fund
- Alexander Berger — Senior Research Analyst, GiveWell

Note: These notes were compiled by GiveWell and give an overview of the major points made by Jennifer Olsen.

Summary

GiveWell spoke with Jennifer Olsen of Skoll Global Threats Fund as part of its shallow investigation of biosecurity issues. Conversation topics included: ways to improve the detection and verification of outbreaks, details of Skoll projects, institutions and funders in this space, and solutions that apply across multiple threat areas.

Overview of the organization

Skoll Global Threats Fund operates in 5 threat areas: climate change, water security, pandemics, nuclear proliferation, and Middle East conflict. Pandemics and climate change are Skoll's most developed project areas. Currently, the organization has 13 staff members. The fund is 4 years old.

Overview of Skoll's work on pandemics

Skoll's goal is to end pandemics in our lifetime by detecting outbreaks faster and intervening at the local level to prevent the spread of outbreaks. It is mostly interested in "worst-case," high-threat pandemics, such as might be caused by diseases like H1N1 flu, SARS, and Middle East coronavirus. The pandemics team divides its work into 3 areas: detect, verify and connect. Currently, there are 4 staff members on the pandemics team.

Skoll's work on naturally occurring pandemics overlaps with approaches to combat bioterrorism and dual-use research. For example, its work on detection systems and diagnostics are applicable to outbreaks regardless of their origins.

Detect

Disease detection is the most important area of Skoll's work on pandemic prevention. Skoll's largest project in this area involve participatory surveillance, in which the public is engaged in reporting on its health.

Common symptoms are found across potential pathogens that can cause pandemic illness. Detection systems can start by identifying patterns in the prevalence of these symptoms, before a particular disease has been identified.

Flu Near You

Flu Near You is Skoll's most prominent detection project in the U.S. As part of the program, registered individuals are regularly contacted by e-mail or push notification on their smartphone and asked to report whether they or members of their household have experienced any of ten symptoms in the last week that are commonly associated with the flu. By directly contacting people on a regular basis, Flu Near You shares flu activity that may have not yet been reported to medical professionals. From Flu Near You, Skoll hopes to learn more about the challenges of implementing a citizen-generated data project and how to best engage people in reporting data.

In the near future, Flu Near You will be connected to similar tools in the E.U. and Australia.

Similar projects in Southeast Asia

Between November 2013 and January 2014, Skoll will be supporting the launch of a participatory surveillance project in Thailand. Participants will either receive a phone alert asking about their recent health or community health workers will gather data as part of existing data collection practices (by asking additional questions).

Skoll has chosen to work in Southeast Asia because the region is a hotspot for human-animal disease outbreaks.

Adapting tools to new countries

Because every region operates differently, programs like Flu Near You must be adapted before being implemented in other countries. For example, in a given region, the best-informed people might be pharmacists, newspaper salesmen, or some other group. It is important to identify the best-informed people in a given region and match them with the right surveillance interface.

Improvements in detection over time

A study using WHO data from 1996-2009 found significant improvements in outbreak detection over time. In 1996, outbreak detection took about 170 days from the time of the outbreak to the time it was reported in newspapers. By 2009, the lag had been reduced to about 23 days. With technologies currently in development and deployment of best practices, lag time between outbreak and detection could conceivably shrink to one or two incubation periods (depending on the disease), helping cut off disease spread.

U.S. detection rates

From a global perspective, the U.S. has relatively good detection rates. However, in the U.S., institutional complexities make it hard to compile data on how fast the government detects outbreaks because information has to move through local, sub-state, and state levels before reaching national agencies. Tracking the history of this information would require gathering data on various levels.

Verify

Once signs of an outbreak have been detected, the signal must be verified. Verification involves interpreting and reconciling signals from different sources, investigating, and reporting. To improve verification efforts, Skoll is working with TEPHINET (Training Programs in Epidemiology and Public Health Intervention Networks) to incorporate innovations in surveillance into its members' training programs. Skoll hopes that field epidemiologists trained in the latest methods of digital disease detection and participatory epidemiology will be able to verify outbreaks more quickly and accurately. In the same way we can crowd source detection, verification can be expedited by crowd sourcing our global network of epidemiologists trained in human and animal infectious disease threats.

Skoll recently hosted the Second International Digital Disease Detection Conference, one of its largest efforts to create a community of practice around digital methods of detection. These methods apply to both chronic and acute conditions.

Connect

Connecting actors in this space can mean:

- identifying new practitioners in the field and connecting them with existing resources and practitioners.
- identifying organizations with big data and connecting them to other players in the field.
- engaging investigators in the field.

CORDS (Connecting Organizations for Regional Disease Surveillance) is a project co-funded by the Rockefeller Foundation, the Gates Foundation, and Skoll Global Threats Fund. CORDS connects regional surveillance networks to each other so that they can share best practices and data across the globe.

Time horizons for investment in pandemics

Skoll recognizes that it may go several years without seeing whether its interventions are working. This is the nature of working on pandemics. Preventing a major pandemic would constitute an enormous success for Skoll, but it would be virtually impossible to attribute that success to their efforts.

Solutions that apply across threat areas

Skoll looks for solutions that can be applied across all of its threat areas. Among other common characteristics, solutions may address shared problems of:

- governance.
- big data.
- data sharing.
- citizen-generated data.
- establishing communities of practice in new fields.

Citizen-generated data

Skoll is 2 years into its investigation of what drives citizen take-up of these participatory technologies in the public health sphere. It may be that people are more likely to engage in citizen data projects when they are at a higher personal risk of the conditions targeted by the system.

Other funders in this space

Besides the Gates Foundation, the Rockefeller Foundation, and Skoll Global Threats Fund, there are few philanthropic funders in the pandemics space. Skoll has had private discussions with a few other funders potentially interested in entering this space.

Olsen is optimistic that more funders will enter this space in the future.

The lack of funders in this space may be due to the fact that the issue is not tied to a specific disease or a clear problem set (e.g. “eradicating polio”) and is therefore harder to place into the framework of traditional foundation philanthropy.

Important institutions in this space

Important institutions in this space include:

- Centers for Disease Control and Prevention (CDC)
- World Health Organization (WHO)
- World Organization for Animal Health (OIE)
- Food and Agriculture Organization of the United Nations (FAO)
- Regional disease surveillance networks
- Field epidemiology training programs, e.g. members of TEPHINET
- Ministries of health, veterinary medicine, etc.
- Technology developers.
- Telecom companies. Partnerships with telecom companies are crucial for projects that use phone reporting and need data donated.

Skoll has relationships with WHO and CDC.

All GiveWell conversations are available at <http://www.givewell.org/conversations/>