

# The past does not predict the future, but it can inform it

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CATEGORY: **Epidemiology and Laboratory Capacity (ELC)**

The Ohio Department of Health has used cross-cutting flexible epidemiologists and informatics capacity to monitor cases and contacts during several public health disease response activities over the past five years. Leveraging these staff and systems increased the timeliness of local-state-federal information sharing to inform disease prevention activities.

## The “What”



Contact tracing and monitoring has always been a key component of public health investigations. Monitoring is especially imperative during periods of disease emergence, or re-emergence, when there may be a lack of information about risk of transmission, incubation periods, and the potential for asymptomatic or pre-symptomatic transmission. In the past five years, the Ohio Department of Health (ODH) has initiated monitoring for several notable national and local events: COVID-19, monitoring of travelers returning from countries experiencing an Ebola virus outbreak, mpox, measles, and highly pathogenic avian influenza (HPAI).

Like many health jurisdictions, ODH created a contract tracing solution for COVID-19. This system was highly specific in nature, designed to collect a designated set of symptoms over a 14-day period. The system did not inherently have the ability to distinguish by a health monitoring “condition” or the ability to assign permissions to individual users. Changes to the system to accommodate these needs would have required substantial development time from the vendor.



In February 2021, the Centers for Disease Control and Prevention (CDC) recommended public health monitoring and follow-up of travelers returning from countries experiencing Ebola virus outbreaks (Democratic Republic of the Congo and Guinea). ODH needed a way to communicate with local health departments (LHDs) about travelers returning to their jurisdiction, to establish the appropriate level of monitoring following a risk assessment, and to facilitate monitoring data that was available rapidly between local and state public health authorities. Epidemiologists funded by the Epidemiology and Laboratory Capacity for the Prevention and



## Control of Emerging Infectious Diseases (ELC)

Cooperative Agreement, cross-cutting program, built a project in the state's instance of REDCap. This project allowed LHDs who had travelers to receive information about their travelers specifically, protecting confidentiality, and to document information obtained during the interview and monitoring periods. The project also ensured that state users could provide timely updates to agency and state leadership. In 2022, Ebola outbreaks were identified in the Democratic Republic of the Congo and Uganda. ODH was able to use the 2021 monitoring REDCap as a base and create a new project that contained specific information and risk assessments that reflected the latest outbreak status. Similarly, ODH was able to create monitoring projects when mpox emerged in 2022 and used the REDCap project to download and report data in support of national data collection efforts. ODH has also built projects to support contact tracing associated with measles, during the 2022 Central Ohio Measles outbreak, and monitoring associated with HPAI detections, upon request from LHDs.

## The "So What"

Having epidemiology staff that were able to respond across diseases and using a customizable platform were critical to successful monitoring efforts throughout 2022 and 2023. Over 680 successful contact monitoring records have been completed using REDCap platforms, in support of four separate public health outbreaks/issues of concern (Ebola, mpox, measles, and HPAI). Being able to leverage a dynamic system, that was easily modifiable, decreased the amount of training needed for local staff and increased the timeliness of local-state-federal information sharing.

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## The "Now What"

Moving forward, having staff that can assist across specific disease areas will be critical. Currently, there are no staff specifically funded for Ebola-virus activities; however, we are increasingly seeing global outbreaks that require domestic public health activities. Likewise, the initial mpox emergence would have overwhelmed staff normally assigned to orthopoxvirus activities. We may not know the public health threats we will face moving forward, but it is almost certainly a guarantee that at least some threat will be previously unknown. Staff capacity must be built and maintained in a

way that is dynamic and prepared. Likewise, data systems must be equally dynamic and responsive. The needs for our data systems can change by the hour during the initial stages of a response, and health departments will need systems that can flex to meet this need and be interoperable with other state and federal systems. ELC funding provides major support for ODH to build and maintain this capacity. The specific public health threats we have faced may not tell us the threats we will face tomorrow, but it is certain that there will be threats and we will need the staff and the systems that are poised to respond.

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Key contributors to this project include Kara Tarter, Ohio Department of Health; Bureau of Infectious Disease Epidemiologists, Ohio Department of Health.