

# Expanded laboratory capability and staff surge improve timeliness of measles PCR testing



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

ELC funding supports in-house measles testing at the Ohio Department of Health State Public Health Laboratory. This, coupled with the ability to increase surge staffing capacity and collaboration between epidemiology and laboratory staff allowed for a more timely and dynamic response to a measles outbreak.



## The “What”

On Saturday, November 5, 2022, a healthcare provider notified local and state public health of two children admitted to a local hospital being evaluated for febrile rash illness. Neither had received any doses of the measles, mumps, and rubella vaccine, despite being age eligible. Neither child had traveled internationally or had a known exposure to anyone with measles, indicating undetected community transmission likely linked to a previously identified case of imported measles. Both children subsequently tested positive for measles by reverse transcription-polymerase chain reaction (RT-PCR) at the Ohio Department of Health (ODH) State Public Health Laboratory (PHL), and prompt public health investigation identified additional suspected cases and a local day care center as an exposure site. Contacts without evidence of immunity were advised to self-quarantine and were monitored for symptoms daily.

Epidemiology and Laboratory Capacity for the Prevention and Control of Emerging Infectious Diseases (ELC) funding supports in-house measles RT-PCR testing at the state PHL. However, ODH and PHL operate Monday through Friday and observe official holidays. In order to provide timely measles RT-PCR testing during this outbreak, ODH leadership implemented weekend and holiday surge staffing to meet the rapidly expanding testing needs for this measles outbreak. The Vaccine Preventable Disease (VPD) Epidemiology Program partnered with PHL colleagues to identify staff and establish a coverage schedule for weekend and holiday epidemiology and laboratory staffing, starting the following Friday, November 11, 2022, and running through January 22, 2023.



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During this period of surge staffing and weekend testing, a REDCap survey link was provided to local health departments with outbreak-linked cases. Measles testing requests were then entered into the REDCap project, reviewed by epidemiology team members and specimen approvals were shared daily with PHL to provide same-day testing results for specimens received before to noon.

**Both the expanded capability to perform this testing in-house, coupled with the collaboration and teamwork of VPD epidemiology and PHL staff to provide weekend and holiday testing provided a dynamic response to a rapidly evolving measles outbreak. This collaboration and teamwork is the embodiment of the intent behind the ELC projects.**

## The “So What”

Prior to the current ELC 5-year competitive award cycle, Ohio did not have in-house capability at PHL to perform measles RT-PCR testing. Previously, specimens were shipped from the submitter to PHL, who then repackaged and shipped the specimens to the VPD Reference Center at the Wisconsin State Public Health Laboratory. From specimen collection to actual test results, turnaround times could vary from four to nine days, depending on weekend, holiday, and weather-related shipping delays. This lengthy turnaround negatively impacted the ability of the VPD Epidemiology program to provide timely measles RT-PCR results to public health partners investigating these suspected cases. Both the expanded capability to perform this testing in-house, coupled with the collaboration and teamwork of VPD epidemiology and PHL staff to provide weekend and holiday testing provided a dynamic response to a rapidly evolving measles outbreak. This collaboration and teamwork is the embodiment of the intent behind the ELC projects.

## The “Now What”

This experience has demonstrated the ability for management to work through bargaining units, and to work with staff to provide needed coverage to respond to laboratory and epidemiology needs during an outbreak. Public health partners impacted by the outbreak were appreciative of the expanded capability to respond, frequent updates about staffing schedules, and for the timeliness of

test results. The experience also served as another teachable moment for the VPD Epidemiology program staff to rapidly develop and deploy a REDCap survey for these types of responses. In the future, it is likely that both will need to be utilized in providing surge capability for outbreak-related testing at PHL.

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Key contributors to this project include Laurie Billing, Jeremy Budd, Nicholas Fisher, Nancy Moran, Zachary Schmidt, Maya Scullin, and Kara Tarter, Ohio Department of Health Bureau of Infectious Diseases. Shelby Anders, Jared Ford, Whitney Jones, Erica Leasure, and Karla Velazquez, Ohio Department of Health Public Health Laboratory.