

Maryland's Department of Health and health information exchange collaborate on data-driven response for COVID-19 contact tracing



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CATEGORY: **Interoperable Data Systems**

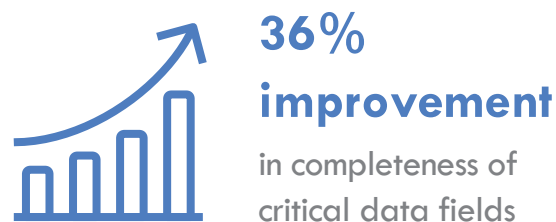
Accurate, complete, timely data were essential to effective contact tracing for COVID-19. The Maryland Department of Health partnered with Maryland's designated health information exchange, Chesapeake Regional Information System for Our Patients (CRISP), to establish data enhancement processes that provided the foundation for Maryland's successful contact tracing program.

The "What"

Electronic positive COVID-19 test results were routed hourly through CRISP to the contact tracing data platform. CRISP matched reports against its master patient index to enhance the record with demographic, address, telephone, fatality, vaccination and hospitalization data. Records were deduplicated and flagged if associated with a congregate setting (such as a nursing home), select state universities, or recent international travel. Chi-square tests were used to assess if CRISP-added phone numbers resulted in better contact tracing outcomes.

The "So What"

From June 15, 2020, to September 1, 2021, CRISP pushed 531,094 records to the state's contact tracing data platform within an hour of receipt;



of those eligible for investigation, 99% had a phone number, thereby enhancing the opportunity for contact tracers to reach individuals by phone. CRISP matched 521,731 (98%) records to their master patient index, allowing for deduplication and enrichment of critical data fields such as race and ethnicity (completeness of these fields improved from 46% to 82%). CRISP flagged 15,615 cases in nursing homes and assisted living facilities, correctional facilities, and other congregate settings as well as 3,304 university students; these records were immediately routed for outbreak investigation. Records with a phone number added by CRISP were significantly more likely to be successfully reached compared to cases with no added phone number ($p = 0.01$).

The "Now What"

CRISP enhanced COVID-19 electronic laboratory reports with a near-instant impact on public health actions, such as expediting outbreak investigations, affording contact tracers the greatest chance of reaching individuals by phone, and being able to assess outcomes by race and ethnicity. The partnership and data processing workflows can serve as a blueprint for data modernization in public health agencies across the United States.

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