

“It’s positive- now what?”: Developing systems to enable real-time public health action in a large decentralised remote and regional COVID-19 point of care testing program

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Background/Approach: Since May 2020, the Aboriginal and Torres Strait Islander COVID-19 Point-of-Care (POC) testing program has provided POC PCR testing at 105 Australian remote and regional health services, with testing conducted by health service staff. We describe a novel, positive alert system which ensured result quality and facilitated immediate public health action.

Analysis/Argument: Design: POC program co-ordinators liaised with jurisdictional public health stakeholders and health services to understand the escalation protocols for COVID-19 cases. In response, local processes for identifying, verifying, and reporting positive results (i.e. the positive alert system) were developed and included resources for health services, a 24/7 phone support for positive results (hotline), electronic connectivity system to alert hotline staff of the positive results (24/7) and technical troubleshooting (9-5pm Mon-Fri).

System: Operators were advised to call the hotline after each positive result. Hotline staff sourced relevant patient clinical and epidemiological information, verified analytical quality, and immediately reported results to health service, surveillance and public health operation teams. Weak SARS-CoV-2 results (cycle thresholds >35) were investigated closely by repeat test, negative controls, alternative platform laboratory testing, where required.

Outcome/Results: Between March 2020-August 2022, there were 4307 positive results, >99% were alerted to the Hotline in <60 minutes. Of these, 26% (1122) had high cycle threshold values which required further investigation. The median time from start of the POC test to receipt by hotline (including test run time of ~45 minutes) was 99 minutes.

Conclusions/Applications: Decentralised POC testing networks require support systems to verify the analytical quality of results and rapidly communicate the results. To our knowledge the development of the positive result alert system in primary care is novel; with other decentralised POC programs generally providing technical support. These processes are critical in an emergency response setting and where timely, accurate results are required for appropriate clinical management.

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