

The Government-owned and operated (public) pathology sector displayed exemplary leadership, innovation and commitment to serve patients, health services and Governments during the COVID-19 pandemic.

The public pathology response was effective from an early stage in the pandemic, covered a broad spectrum of activities including managing patients in acute health settings whilst ensuring equity of access to testing, and also facilitated the private pathology sector response. Public pathology did this at cost and in close partnership with Government.

Utilising actual public pathology test numbers, we can confidently affirm that the proportion of public pathology COVID Polymerase Chain Reaction (PCR) tests of the total COVID PCR tests was greater than 30% and was particularly high in jurisdictions such as the Australian Capital Territory (68.5%), South Australia (77.6%), Tasmania (81%) and the Northern Territory (92.8%).ⁱ

Public pathology was the first pathology provider to test for COVID-19 in Australia, the first to establish drive through collection centres and to deliver timely SMS reporting. Public pathology providers performed the majority of acute and high risk COVID testing and genomic sequencing for contact tracing and epidemiological purposes. Public pathology's reach spanned metropolitan and rural communities with laboratories located close to where testing was required to reduce reporting times. This enabled testing for all communities including the vulnerable and disadvantaged.

The response to the pandemic by the public pathology sector was comprehensive, innovative and agile. Public pathology:

- Rapidly developed a new PCR assay to detect SARS-CoV-2 before commercial test kits were available and before the private pathology sector started testing. This enabled detection of the first case in Australia on 25 January 2020.
- Actively contributed to incident control centres, Government and World Health Organisation (WHO) COVID committees, advisory panels, reviews and hospital planning structures. In addition to participating in COVID State Health Emergency Operating Committees, public pathology provided educational material on testing protocols and procedures (e.g. sensitivity, specificity and predictive values of test modalities) and was responsive to ministerial and consumer queries. Public pathology provided the only Australian representative on the WHO investigative group that was constituted to explore the potential source of the virus.
- Established widespread testing technologies across laboratories by developing methodologies which were published for peer review and boosted laboratory testing capacity. This required sourcing large volumes of scarce reagents and novel platforms for clinical care.

- Public pathology isolated and grew the SARS-CoV-2 virus in PC3/4 State Biosecurity Units for research, test development and provided the positive control material to validate and quality control the assays in many other laboratories. Public pathology did SARS-CoV-2 cultures which provided RNA for private pathology laboratories to validate their assays. Cultures also provided assistance to clinically manage patients in hospitals. Public pathology developed new locally manufactured devices for virus extraction and analysis.
- Independently validated assays (e.g. for Rapid Antigen Tests (RATs) and antibody tests) and consumables (e.g. rhino swabs and viral transport medium). Public pathology's comprehensive and extensive validation, certification and decision comparison of RATs informed Government purchasing.
- Developed serology tests which were not available commercially for many months. These were used to monitor outbreak and cluster progress in important sites such as the Ruby Princess investigation as well as monitoring the likelihood of pathogen exposure in arriving airline passengers.
- Was the sole provider of Whole Genome Sequencing for cluster investigation, outbreak resolution and objective epidemiological alignment. Public pathology conducted multiple serosurveys for State Governments. They also conducted pathogen genomics studies for international databases, such as the Global Initiative on Sharing All Influenza Data (GISAID) website.
- Delivered and supported extra COVID-19 collection options at high risk sites such as domiciliary services, in aged care facilities (including taking over testing during major outbreaks such as that at Newmarch House), in complex environments (e.g. Qudos Bank Arena), on international cruise ships, in quarantine hotels, medi-hotels, virtual hospitals, airports, via mobile testing vans and specialised collection centres such as those for immuno-compromised patients.
- Established Australia's first 'drive through' COVID testing clinic in South Australia (the second in the world). Public pathology established the operational framework for 'drive through' and public/private COVID-19 collection services so they conformed with national NPAAC quality requirements.
- Established and managed rapid COVID testing for critically ill patients and patients in regional areas where logistics impede reporting timeframes. For example, the local public pathology provider managed 37,000 COVID swabs in the Victorian Shepparton outbreak of 2020/21.
- Supported point-of-care testing in isolated island communities and other remote areas (e.g. Wilcannia, NSW).
- Assisted with the rollout of rapid PCR testing so the Kirby Institute could service First Nations communities under a Commonwealth contract.
- Provided access to internet registration and resulting services for national and international testing regimes.

- Built the first effective, large-scale, secure, direct to patient, SMS result service for COVID-19.
- Developed and provided active QR code registration for COVID patients and subsequent SMS results delivery direct to patients and established or expanded call centres.
- Supported and provisioned public COVID-19 clinics with swabs, nursing staff, couriers and testing of specimens.
- Developed documentation about infection control and personal, protective equipment (PPE) use, contamination and testing priorities for internal and external agencies including private pathology practices.
- Conducted testing for the private pathology sector when required (e.g. when the private sector closed for the Christmas break during the peak testing period of December/January 2021/22).
- Provided troubleshooting and confirmatory testing for private pathology laboratories (e.g. followed up false positives/single gene detections and explored and resolved laboratory contamination issues).
- Provided business continuity plans for public and private sector laboratories during COVID-19 threats.
- Managed COVID-19 deceased with State-wide mortuary management protocols.
- Collaborated with industry to conduct testing for critical infrastructure such as mining, fisheries, shipping, police and the defence force.
- Developed new reporting dashboards and processes that contribute significantly to clinical analytics.

Public pathology demonstrated its capability to serve Governments and the public during the COVID-19 pandemic. It is important to ensure that the public pathology sector is well supported to meet changing testing demands including surveillance and surge testing should they be required in the future for new COVID-19 variants or a subsequent pandemic.

ⁱ Sourced directly from public pathology COVID-19 PCR volumes against [Commonwealth reported data](#).