# Characteristics of COVID-19 cases diagnosed using SARS-CoV-2 rapid antigen compared to PCR tests in Victoria, January - March 2022

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**Background:**
While polymerase chain reaction (PCR) remains the “gold standard” for detecting SARS-CoV-2 infection, rapid antigen tests (RATs) are low-cost and convenient. Rapid diagnosis of COVID-19 using RAT complements the test-trace-isolate-quarantine (TTIQ) prevention strategies in Australia and globally. Mandatory self-reporting of positive RATs to the Victorian Department of Health (DH) was introduced state-wide in 2022. We aimed to describe trends and characteristics of COVID-19 cases diagnosed using RATs compared to PCR in Victoria.

**Methods:**
We used routine COVID-19 surveillance data collected over a three-month period, January-March, 2022, for RAT and PCR positive cases notified to the DH. The surveillance system captures sociodemographic, screening, laboratory, and clinical information for cases and contacts. RAT-diagnosed cases, from saliva or nasal swab, subsequently confirmed by PCR within 8 weeks maintain the initial notification date.

**Results:**
A total of 1,098,904 COVID-19 cases were notified to the DH over the three months; 49% RAT and 51% positive. There were 1,190 RAT diagnosed cases who were subsequently confirmed by PCR. The ratio of notified cases shifted from 1.4 PCR:1 RAT, to 0.5:1. RAT diagnoses were prevalent in younger people <19 years (33% vs 22%). Ten percent of RAT positive cases were identified as part of screening programs in education settings. Aged care residents were more commonly diagnosed by PCR than RAT (59% vs 41%). RATs detected fewer symptomatic cases compared with PCR (49% vs 68%), most of whom were not healthcare workers (58% RAT; 33%).

There were 909 and 138 deaths diagnosed through PCR and RAT respectively.

**Conclusion:**
COVID-19 diagnoses has shifted towards predominantly rapid antigen testing in line with the Victorian policy. Utility of rapid testing and diagnosed was demonstrated in young people and school settings. Further characterization of RAT and PCR testing is required especially in high-risk settings and considerations for rapid antigen test kit availability and mandatory reporting.

**Disclosure of Interest Statement:**
No conflicts of interest to declare.