Submissions and evidence to the COVID-19 Response Inquiry

Dr [redacted]

I am a medical scientist employed in human infectious disease pathology testing for over [redacted]. I service on many international and national committees, in particular the European Expert Committee on medical devices and *in-vitro* diagnostic medical devices (IVD), Australian Standards committee [redacted], and Australian National Testing Strategy committees. My employer is a WHO Collaborating Centre and my role has active and on-going activities with the WHO, Global Fund and USA ODO. Of note, I have been an advisor to the WHO Prequalification of medical Products focused on IVDs. I had oversight of the evaluation of IVDs for the evaluation of diagnostics tests for SARS-CoV-2 serology on behalf of WHO, as well as the evaluation of rapid antigen test kits for the Australian Government, Therapeutic Goods Administration (TGA). The organisation I work for, the [redacted] conducts evaluations of test kits on behalf of the WHO and TGA and is a leading authority globally on test kit evaluations, as well as a provider of quality assurance services to Australian and international laboratories using these test kits. [redacted] was established in 1985 by the Australian Government in response to the HIV epidemic. At the time, [redacted] was responsible for the evaluation of HIV test kits and advised TGA of which tests should be used and in what sequence they should be used to optimise the sensitivity and specificity of test results. Although the circumstances between HIV and COVID-19 were different, [redacted] retains the capacity to perform this work, and routinely advises foreign ministries of health on test kit selection.

This submission focuses on the introduction of new diagnostic tests in a pandemic setting. Australia is party to the IMDRF whereby all IVDs are regulated using a classification system (1 to 4 in Australia). In Australia, all IVDs must be evaluated by the TGA for performance, quality and safety and listed on the Australian Registry for Therapeutic Goods (ARTG) prior to being sold in Australia. Similar processes are required in most countries with stringent regulatory systems including the USA (FDA), Europe (Medicines Agency). IVDs testing for high-risk diseases that have significant impact on an individual and the community require comprehensive performance evaluation prior to listing.

At the advent of COVID-19, all regulatory authorities globally, including the WHO, allowed the use of test kits for SARS-CoV-2 be used under "Emergency Use Listing" (EUL). This was a pragmatic and necessary response to a quickly developing emergency. The checks and balances normally stringently applied to IVDs sold in Australia were set aside. However, the outcome of this decision meant that a) numbers of commercial and start up companies not having any exposure to the regulatory system were allowed to import and distribute test kits into Australia and b) the quality of tests being supplied was essentially unknown. Many millions of dollars were spent in the purchase of these test kits. The TGA required minimal evidence of performance, and accepted manufacturer-derived data.

In March 2020, my employer wrote to the Health Minister offering our services to establish systematic process for the evaluation of new test kit. If accepted at the time, a comprehensive evaluation of the performance and use of the test kits and on-going surveillance of the performance of testing could have been implemented within 6 months. Sample repositories could have been established allowing for a better understanding of the test kits and their use and support on-going evaluations and research. Disappointingly, this request was denied by the minster's office and the TGA. Australia, as in most other countries, experienced a flood of new IVDs into the country, without any systematic review of quality or performance.

The TGA contracted the Peter Doherty Institute (PDI) to evaluate the SARS-CoV-2 serology rapid test kits. The initial report dated 29th April 2020 was substandard, as PDI had little expertise in the evaluation of test kits. After subsequent representation from [redacted] to the TGA, all further evaluations were undertaken by [redacted] in collaboration with PDI and TGA staff, as it was recognised that [redacted] had existing, functional quality systems suited to IVD evaluations. It should be noted that staff at PDI, which incorporates Victorian Infectious Disease Reference Laboratory (VIDRL), the Victorian public health laboratory, was already stretched due to the State, National and International public health commitments in a state of emergency. The medical and scientific staff were under extreme duress. In my opinion, it was inappropriate for the government to accentuate this situation by contract them to undertake activities that were outside their expertise, when a world-leading organisation stood ready to perform the tasks. It must be stated that PDI excelled in delivering international public health services throughout the pandemic.

Although COVID-19 was quite prevalent in Victoria, access to clinical samples was extremely difficult. I personally spent three months seeking access to samples, obtaining ethics and material transfer agreements, liaising with clinical services and contacting representatives of departments of health, without success. [redacted] finally paid for access to clinical samples from commercial suppliers from Ireland, Germany and USA, spending many thousands of dollars, but where successful in creating a world-class panel of samples suitable for comprehensive evaluations of test kits. We were able to offer this evaluation service to WHO and test kit manufacturers.

Subsequent to this recent COVID-19 pandemic, is Australia in a better position to respond to the next emergency when faced with the evaluation and licensing of diagnostic devices? Undoubtedly, **we are no better off** now than in 2019. The barriers faced in 2019 still remain. Since COVID-19, Australia has experienced outbreaks of Mpox, Japanese Encephalitis and our nearest neighbour, Indonesia had foot and mouth disease. Climate change will exacerbate outbreaks and pandemics.

To address these barriers, a range of activities and infrastructure should be implemented.

- Identify and fund an organisation with demonstrable expertise in the evaluation of test kits;
- Develop templated protocols for the evaluation of test kits most likely required for future outbreaks, based on probability and technical requirements;
- Establish collaborations between existing public health and scientific organizations such as PDI, CSIRO Australian Center for Disease Preparedness and relevant State and Federal Ministries of Health, as well as the TGA;
- Establish ethics for sample collection, material transfer agreements, sample bank repositories and international collaborations with sample providers;
- Create a response plan to be initiated in an emergency setting, which allows immediate access to test kits but quickly evaluates the quality and performance of the tests so that underperforming tests can be removed from the market quickly;
- Develop a communication strategy for the evaluation laboratory to inform the TGA on poor performance;
- Establish quality assurance programs that monitor the performance of IVDs once placed in the market;

Without these elements in place, future outbreaks will be met with the same competition for funding, samples, experienced personnel and infrastructure. This competition leads to delays, fragmentation in approaches, poorer quality outputs which feed mis-information and ultimately, poor test kits reporting incorrect results.