



12th Jan 2021

**Australasian Virology Society Position Statement on
SARS-CoV-2 Vaccination in Australia**

The Australasian Virology Society (AVS) welcomes the Federal Government's recent decision to bring forward vaccination timelines in Australia with new start dates of mid-late February 2021. Through the use of public health measures including improved quarantine protocols for arriving international travellers, Australia has largely minimized SARS-CoV-2 infections. Vaccination against SARS-CoV-2 provides the best and indeed only way to restore our country to normal operation and good health. Vaccine development for SARS-CoV-2 has been swift on the back of strong long-term discovery research. The evaluation of these new products has been thorough in large-scale clinical trials performed in multiple countries. Available data on numerous candidates show they are safe over the first year of administration and highly effective at preventing infections and/or consequences of severe COVID-19. The Australian Government has multiple contracts for the supply of front-running vaccines. While these vaccines employ several different, and in some cases, new technologies, all are safe and effective. Each of these vaccines requires two doses, 3-4 weeks apart, to achieve maximum levels of immunity.

AVS considers the following issues require immediate attention:

1. While vaccination goals and milestones are currently being set, the logistics and planning around mass vaccination are of immense importance and demand an urgent national conversation with the relevant parties. Critically, the program will benefit by appointing a coordinating and independent expert authority - linked to the wider national network of state health departments and the local government vaccination providers - to oversee the logistical challenge of vaccinating the vast Australian population.
2. Vaccination schedules should adhere to the manufacturer's approved dose and timing proven to be efficacious in clinical trials. Deviation from the approved schedule, such as using different vaccines for first and second doses, should only occur if scientific evidence is provided of non-inferior efficacy. The AVS supports the use of the most efficacious vaccines in the Australian population that enable herd immunity to be achieved.
3. The emergence of SARS-CoV-2 variants with potential to evade immune responses to current vaccines is a major concern. Ongoing monitoring of any SARS-CoV-2 infections or transmissions from vaccinated individuals is necessary to determine whether vaccine escape has occurred. Constant monitoring of SARS-CoV-2 global and local circulating strains will be required and must be evaluated against vaccine-derived immunity. In time, adjustments to vaccines may be necessary to match circulating strains and provide maximum protection. There are current challenges in fully understanding the biological and/or clinical consequences of emerging viral mutations. More formal engagement between clinical and available virology expertise would assist in providing greater insights.

AVS supports the following:

1. The approval processes by regulatory bodies of developed countries are rigorous and robust, and we believe any vaccine approved in Australia will be safe and effective.
2. Mass vaccination is the best way to reduce the morbidity, mortality and economic impact of COVID-19 and should be initiated as soon as TGA approval is received and vaccines are in hand.
3. Australia is in an ideal position to begin vaccination as soon as possible because we have low rates of infection. This will allow vaccinees to fully develop immune responses without risk of infection or the selection of vaccine escape mutants during their period of sub-optimal immunity (prior to receiving the second dose of vaccine).
4. With the reality that Australia will require many months to roll out vaccines, a staged and orderly approach is required beginning with (1) persons involved in handling of returned international travellers, (2) health care and emergency service workers and any personnel involved in handling potentially infectious material for diagnostic or scientific research purposes, (3) aged care workers, (4) persons aged over 60 years and (5) vulnerable Aboriginal and Torres Strait Islander Australians. By beginning with persons in contact with returned international travellers, an additional barrier against introduction of SARS-CoV-2 into Australia can be achieved which will provide more time for vaccine roll out in the absence of community transmission.
5. As Australia moves into mass vaccination, it will be essential to maintain key public health messages including physical distancing, mask wearing when required, and hand sanitation.
6. There must also be widespread delivery of educational messages around safety and efficacy of the vaccines, and the need to maintain all the existing public health practices until the numbers of vaccinated in the community ensures herd immunity.

Table 1. List of vaccines to be used in Australia following TGA approval.

| Manufacturer | Platform | Viral components | Efficacy | Research publication (DOI) |
|--------------------------------|----------------------------|------------------|---------------------|---|
| Astra Zeneca/Oxford University | Viral vector | Spike gene | 62%-90% | https://doi.org/10.1016/S0140-6736(20)32661-1 |
| Pfizer/BioNTech | mRNA | Spike gene | 95% | https://doi.org/10.1056/NEJMOA2034577 |
| Moderna | mRNA | Spike gene | 94.1% | https://doi.org/10.1056/NEJMOA2035389 |
| Novavax | Nanoparticle protein based | Spike protein | Phase 3 in progress | |

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