In brief
COVID-19 vaccines in Australia

Internationally, 28 vaccines are approved and 8.55 billion doses have been administered.\footnote{1,2} All vaccines that are approved for use have strong safety profiles and benefit to risk ratios.\footnote{3} In Australia, three vaccines have been approved for use. To 12 December 2021, approximately 25.3 million doses of Comirnaty (Pfizer), 13.6 million doses of Vaxzevria (AstraZeneca) and 1.3 million doses of Spikevax (Moderna) vaccines have been administered.\footnote{4}

Vaxzevria,\footnote{5} Comirnaty,\footnote{6} and Spikevax\footnote{7} vaccines have been shown to:
- reduce symptomatic disease and mortality\footnote{5-7}
- reduce the chance of onward transmission by 40-50\%\footnote{8}
- reduce hospitalisation rates in ‘real world’ effectiveness studies, Vaxzevria by 80\% to 95\%, Comirnaty by 71\% to 97\%, and Spikevax by 95.7\% to 98.2\%.\footnote{9-13}

In Australia as of 12 December 2021, there have been 170 reports of blood clots assessed as thrombosis with thrombocytopenia syndrome (TTS).\footnote{4} There have been 11 reported deaths; eight from TTS, two from Guillain Barre Syndrome (GBS) and one from immune thrombocytopenia.\footnote{4}

In Australia as of 12 December 2021, for Comirnaty, there have been 400 reports which have been assessed as likely to be myocarditis. For Spikevax, there have been 33 reports which have been assessed as likely to be myocarditis. There have been no reported deaths.\footnote{4}

While there is evidence of a reduction, or waning, of serum antibodies to SARS-CoV-2 post-vaccination,\footnote{14} vaccines continue to provide effective protection against symptomatic and severe disease and death.\footnote{15-17}

ATAGI recommends COVID-19 booster vaccination with either Comirnaty or Spikevax, which are considered equally acceptable, for anyone aged 18 and older who completed their primary course of COVID-19 vaccination 5 or more months ago.\footnote{18} The TGA has provisionally approved a booster dose of the Comirnaty or Spikevax for individuals 18 years or older.\footnote{19,20}

The TGA has provisionally approved the Comirnaty vaccine for use in individuals five years or older.\footnote{21} In a phase 2-3 randomised trial with children aged five to 11 years, two 10μg doses of Comirnaty administered 21 days apart were found to be safe, immunogenic, and efficacious.\footnote{22}

Compared to unvaccinated persons, vaccinated persons were protected even after six months.\footnote{23} However, vaccine effectiveness against symptomatic infection was considerably lower than it had been closer to the vaccination date.\footnote{23,24} The antibody and neutralising responses were increased after a booster dose with Comirnaty, Vaxzevria or Spikevax.\footnote{25-27} For Comirnaty, individuals who received a booster dose at least 5 months after a second dose had substantially lower rates of severe illness and mortality due to COVID-19 than individuals who did not receive a booster dose.\footnote{28,29}

Early data suggests reduction in neutralisation capacity of existing vaccines against the Omicron variant.\footnote{30} Preprint studies found a significant increase in neutralizing activity against Omicron after a booster dose with Comirnaty.\footnote{31-33}
The Critical Intelligence Unit maintains a living evidence table on COVID-19 vaccines which was used to inform this brief.34

References


In brief documents are not an exhaustive list of publications but aim to provide an overview of what is already known about a specific topic. This brief has not been peer-reviewed and should not be a substitute for individual clinical judgement, nor is it an endorsed position of NSW Health.


26. Munro APS, Janani L, Cornellius V, et al. Safety and immunogenicity of seven COVID-19 vaccines as a third dose (booster) following two doses of ChAdOx1 nCoV-19 or BNT162b2 in the UK (COV-BOOST): a blinded, multicentre, randomised, controlled, phase 2 trial. The Lancet. DOI: 10.1016/S0140-6736(21)02717-3


In brief documents are not an exhaustive list of publications but aim to provide an overview of what is already known about a specific topic. This brief has not been peer-reviewed and should not be a substitute for individual clinical judgement, nor is it an endorsed position of NSW Health.