



Supporting Information

Supplementary results

**This appendix was part of the submitted manuscript and has been peer reviewed.
It is posted as supplied by the authors.**

Appendix to: Sritharan HP, Bhatia KS, van Gaal W, et al. Cardiovascular outcomes for people hospitalised with COVID-19 in Australia, and the effect of vaccination: an observational cohort study. *Med J Aust* 2024; doi: 10.5694/mja2.52307.

Table 1. In-hospital mortality by baseline characteristics of 580 patients with known vaccination status: univariable and multivariable analyses

Variable	Odds ratio (95% confidence interval)	
	Unadjusted	Adjusted
Vaccination (≥ 1 dose)	0.83 (0.44-1.55)	0.38 (0.18-0.79)
Age (per year)	1.06 (0.79-1.59)	1.06 (1.03-1.09)
Sex (male)	1.54 (0.81-2.96)	-
Coronary artery disease	2.69 (1.31-5.50)	1.11 (0.47-2.63)
Heart failure or cardiomyopathy	3.44 (1.40-8.42)	1.81 (0.62-5.29)
Atrial fibrillation or flutter	3.24 (1.57-6.68)	1.28 (0.52-3.12)
Severe valvular disease	1.10 (0.14-8.77)	-
Stroke or transient ischaemic attack	4.04 (1.63-10.0)	1.64 (0.60-4.46)
Hypertension	2.62 (1.33-5.16)	1.02 (0.44-2.39)
Hypercholesterolemia	2.47 (1.31-4.65)	0.97 (0.44-2.14)
Diabetes mellitus	1.62 (0.85-3.12)	-
Peripheral arterial disease	2.05 (0.24-17.4)	-
Currently or recently smoked	0.21 (0.03-1.59)	-
Chronic obstructive pulmonary disease	0.90 (0.27-3.05)	-
Asthma	0.97 (0.37-2.57)	-
Chronic kidney disease (eGFR < 60mL/min/1.73m ²)	6.20 (3.01-12.8)	3.66 (1.59-8.42)

eGFR = estimated glomerular filtration rate.

* The multivariable binary logistic regression model examining mortality was statistically significant ($\chi^2(9) = 55.1$, $P < 0.001$), explained 22.9% (Nagelkerke R^2) of the variance in in-hospital mortality and correctly classified 92.2% of cases. The model fit the data well using the Hosmer-Lemeshow goodness-of-fit test ($\chi^2(8) = 9.95$, $P = 0.27$).

Table 2. Troponin elevation above upper limit of normal by baseline characteristics of 580 patients with known vaccination status: univariable and multivariable analyses

Variable	Odds ratio (95% confidence interval)	
	Unadjusted	Adjusted
Vaccination (≥ 1 dose)	2.78 (1.77-4.36)	1.43 (0.80-2.58)
Age (per year)	1.34 (1.11-1.57)	1.07 (1.04-1.09)
Sex (male)	1.48 (0.97-2.28)	1.86 (1.06-3.25)
Coronary artery disease	5.78 (2.92-11.4)	2.20 (0.98-4.96)
Heart failure or cardiomyopathy	6.53 (2.42-17.6)	1.94 (0.57-6.61)
Atrial fibrillation or flutter	10.5 (4.29-25.5)	2.61 (0.90-7.58)
Severe valvular disease	10.4 (1.29-84.2)	1.84 (0.19-17.5)
Stroke or transient ischaemic attack	6.76 (1.92-23.8)	2.02 (0.48-8.47)
Hypertension	3.70 (2.36-5.80)	1.20 (0.64-2.24)
Hypercholesterolemia	3.18 (2.00-5.06)	0.83 (0.43-1.60)
Diabetes mellitus	2.36 (1.46-3.80)	1.31 (0.70-2.45)
Peripheral arterial disease	2.27 (2.02-2.56)	-
Currently or recently smoked	0.92 (0.46-1.87)	-
Chronic obstructive pulmonary disease	2.70 (1.23-5.96)	1.02 (0.39-2.69)
Asthma	0.75 (0.38-1.48)	-
Chronic kidney disease (eGFR < 60mL/min/1.73m ²)	5.84 (2.48-13.8)	3.59 (1.25-10.3)

eGFR = estimated glomerular filtration rate.

^ The multivariable binary logistic regression model examining troponin elevation was statistically significant ($\chi^2(13) = 153.2$, $P < 0.001$), explained 48.0% (Nagelkerke R^2) of the variance in troponin elevation and correctly classified 78.6% of cases. The model fit the data well using the Hosmer-Lemeshow goodness-of-fit test ($\chi^2(8) = 5.48$, $P = 0.70$).

Table 3. Intubation by baseline characteristics of 580 patients with known vaccination status: univariable and multivariable analyses

Variable	Odds ratio (95% confidence interval)	
	Unadjusted	Adjusted
Vaccination (≥ 1 dose)	1.42 (0.80-2.56)	0.30 (0.15-0.61)
Age (per year)	1.07 (1.05-1.09)	0.99 (0.97-1.02)
Sex (male)	1.66 (0.83-3.29)	-
Coronary artery disease	0.68 (0.23-1.96)	-
Heart failure or cardiomyopathy	1.08 (1.06-1.11)	-
Atrial fibrillation or flutter	0.57 (0.17-1.91)	-
Severe valvular disease	1.20 (0.15-9.53)	-
Stroke or transient ischaemic attack	0.90 (0.21-3.92)	-
Hypertension	2.63 (1.30-5.31)	3.09 (1.28-7.47)
Hypercholesterolemia	2.09 (1.09-4.02)	1.41 (0.62-3.18)
Diabetes mellitus	2.07 (1.07-4.02)	1.77 (0.86-3.68)
Peripheral arterial disease	2.22 (0.26-18.9)	-
Current or recent smoker	1.42 (0.53-3.81)	-
Chronic obstructive pulmonary disease	0.29 (0.04-2.20)	-
Asthma	1.07 (0.40-2.83)	-
Chronic kidney disease (eGFR < 60 mL/min/1.73m ²)	0.50 (0.12-2.14)	-

eGFR = estimated glomerular filtration rate.

*The multivariable binary logistic regression model examining intubation was statistically significant ($\chi^2(5) = 22.461$, $P < 0.001$), explained 10.0% (Nagelkerke R^2) of the variance in intubation and correctly classified 92.9% of cases. The model fit the data well using the Hosmer-Lemeshow goodness-of-fit test ($\chi^2(8) = 4.574$, $P = 0.802$).

Table 4. Clinical cardiovascular events by baseline characteristics of 580 patients with known vaccination status: univariable and multivariable analyses

Variable	Unadjusted Odds Ratio (95% CI) for clinical cardiovascular events	Adjusted Odds Ratio (95% CI) for clinical cardiovascular events [#]
Vaccination (≥ 1 dose)	1.730 (0.659-4.543)	1.562 (0.586-4.163)
Age (per year)	1.012 (0.988-1.036)	-
Sex (male)	2.155 (0.821-5.283)	2.241 (0.848-5.923)
Coronary artery disease	0.434 (0.057-3.307)	-
Heart failure or cardiomyopathy	-	-
Atrial fibrillation or flutter	-	-
Severe valvular disease	1.048 (1.027-1.069)	-
Stroke or transient ischaemic attack	1.259 (0.159-9.936)	-
Hypertension	1.490 (0.620-3.580)	-
Hypercholesterolemia	1.611 (0.652-3.982)	-
Diabetes mellitus	2.640 (1.092-6.379)	2.549 (1.043-6.231)
Peripheral arterial disease	7.367 (0.733-74.000)	-
Current or recent smoker	1.053 (1.030-1.076)	-
Chronic obstructive pulmonary disease	1.568 (0.348-7.071)	-
Asthma	0.701 (0.159-3.086)	-
Chronic kidney disease (eGFR < 60 mL/min/1.73m ²)	1.838 (0.517-6.529)	-

eGFR = estimated glomerular filtration rate.

[#]The multivariable binary logistic regression model examining clinical cardiovascular events was statistically significant ($\chi^2(3) = 8.07$, $P = 0.045$), explained 5.6% (Nagelkerke R^2) of the variance in clinical cardiovascular events and correctly classified 95.5% of cases. The model fit the data well using the Hosmer-Lemeshow goodness-of-fit test ($\chi^2(5) = 3.51$, $P = 0.62$).

Table 5. Contributing hospitals and AUS-COVID investigators

AUS-COVID contributing hospitals	AUS-COVID investigators and hospital
<u>New South Wales</u>	Hari P Sritharan, Royal North Shore Hospital, Sydney, NSW
Belmont Hospital	Kunwardeep S Bhatia, Bankstown Hospital, Sydney, NSW
Concord Repatriation General Hospital	William van Gaal, Northern Hospital, Melbourne, VIC
John Hunter Hospital	Leonard Kritharides, Concord Repatriation General Hospital, Sydney, NSW
Lismore Base Hospital	Clara Chow, Westmead Hospital, Sydney, NSW
Liverpool Hospital	Ravinay Bhindi, Royal North Shore Hospital, Sydney, NSW
North Shore Private Hospital	Usaid Allahwala, Royal North Shore Hospital, Sydney, NSW
Prince of Wales Hospital	Justin Chia, Royal North Shore Hospital, Sydney, NSW
Royal North Shore Hospital	Jonathan Ciofani, Royal North Shore Hospital, Sydney, NSW
Royal Prince Alfred Hospital	Daniel Nour, Royal North Shore Hospital, Sydney, NSW
Ryde Hospital	Karina Chui, Royal North Shore Hospital, Sydney, NSW
Westmead Hospital	Sheran Vasanthakumar, Northern Hospital, Melbourne, VIC
Wollongong Hospital	Pavithra Jayadeva, The Royal Melbourne Hospital, Melbourne, VIC
<u>Victoria</u>	Dhanvee Kandadai, Royal Perth Hospital, Perth, WA
Epworth HealthCare	Rohan Bhagwandeem, John Hunter Hospital, Newcastle, NSW
Northern Hospital	David B Brieger, Concord Repatriation General Hospital, Sydney, NSW
Royal Melbourne	Christopher Y P Choong, Royal North Shore Hospital, Sydney, NSW
St Vincent's Hospital	Anthony Delaney, Royal North Shore Hospital, Sydney, NSW
The Alfred Hospital	Girish Dwivedi, Fiona Stanley Hospital, Perth, WA
<u>Queensland</u>	Benjamin Harris, Royal North Shore Hospital, Sydney, NSW
The Prince Charles Hospital	Graham Hillis, Royal Perth Hospital, Perth, WA
<u>Western Australia</u>	Bernard Hudson, Royal North Shore Hospital, Sydney, NSW
Fiona Stanley Hospital	George Javorsky, The Prince Charles Hospital, Brisbane, QLD
Royal Perth Hospital	Nigel Jepson, Prince of Wales Hospital, Sydney, NSW
Sir Charles Gairdner Hospital	Logan Kanagaratnam, Royal North Shore Hospital, Sydney, NSW
	George Kotsiou, Royal North Shore Hospital, Sydney, NSW
	Astin Lee, Wollongong Hospital, Wollongong, NSW
	Sidney T H Lo, Liverpool Hospital, Sydney, NSW
	Andrew I MacIsaac, St Vincents Hospital Melbourne, Melbourne, VIC
	Brendan M McQuillan, Sir Charles Gairdner Hospital, Perth, WA
	Isuru Ranasinghe, The Prince Charles Hospital, Brisbane, QLD
	Antony Walton, Alfred Health Heart Centre, Melbourne, VIC
	James Weaver, Royal Prince Alfred Hospital, Melbourne, VIC
	William Wilson, The Royal Melbourne Hospital, Melbourne, VIC
	Andy Yong, Concord Repatriation General Hospital, Sydney, NSW
	John Zhu, Lismore Base Hospital, Lismore, NSW