



Supporting Information

Supplementary tables

**This appendix was part of the submitted manuscript and has been peer reviewed.
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Table 1. The ANZICS surge survey

In your <u>hospital</u> today, how many of the following are there?	
ICU bed capacity	
1	Available staffed ICU beds (staffed equipped bed space presently available)
2	Physical ICU bed spaces (this should include available staffed beds PLUS any additional physical bed spaces not currently staffed)
3	Bed spaces outside of ICU capable of looking after invasively ventilated patients (e.g. in OT recovery areas and ED)
4	Bed spaces, not counted above, which, could be used currently or with minor modification to provide care for invasively ventilated patients (e.g. in ward areas with existing wall oxygen, air and other mandatory requirements to deliver mechanical ventilation)
Ventilators	
5	Standard 'ICU-style' ventilators capable of providing ongoing invasive mechanical ventilation
6	Other ventilators (e.g. for transports) capable of providing invasive mechanical ventilation
7	Anaesthetic machine ventilators
8	Non-invasive ventilators capable of delivering invasive ventilation
9	Others
Renal replacement	
10	Haemofilters/dialysis machines available for routine use in ICU
11	Machines for haemodialysis used for patients with chronic renal failure
Others	
12	ECMO machines (allocated for use in your ICU)
13	Machines being used for cardiopulmonary bypass which could deliver ECMO in ICU
14	IV infusion pumps

Table 2. Sites that responded to the surge survey

	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Total
Tertiary	1	11		10	3	2	6	3	35
Metropolitan	1	9	1	6	1		10	3	31
Rural/regional		17	1	7			9	1	36
Private	3	20		13	6	1	17	5	65
Pediatric		3		1	1	1	1	1	8
Total	5	60	2	37	11	4	43	13	175

Alfred Hospital ICU, Austin Hospital ICU, Canberra Hospital ICU, Concord Hospital (Sydney) ICU, Flinders Medical Centre ICU, Gold Coast University Hospital ICU, Gold Coast University Hospital ICU - paed, John Hunter Hospital ICU, Launceston General Hospital ICU, Liverpool Hospital ICU, Mater Adults Hospital (Brisbane) ICU, Monash Medical Centre-Clayton Campus ICU, Nepean Hospital ICU, Prince of Wales Hospital Sydney ICU, Princess Alexandra Hospital ICU, Royal Adelaide ICU, Royal Brisbane and Women's Hospital ICU, Royal Hobart Hospital ICU, Royal Hobart Hospital NICU/PICU, Royal Melbourne Hospital ICU, Royal North Shore Hospital ICU, Women's and Children's Hospital PICU, Angliss Hospital ICU, Armadale Health Service ICU, Bankstown-Lidcombe Hospital ICU, ox Hill Hospital ICU, Caboolture Hospital ICU, Calvary Hospital (Canberra) ICU, Calvary Mater Newcastle ICU, Campbelltown Hospital ICU, Canterbury Hospital ICU, Dandenong Hospital ICU, Fairfield Hospital ICU, Footscray Hospital ICU, Frankston Hospital ICU, Gosford Hospital ICU, Holmesglen Private Hospital ICU, Hornsby Hospital , Ipswich Hospital ICU, Joondalup Health Campus ICU, Logan Hospital ICU, Lyell McEwin Hospital ICU, Maroondah Hospital ICU, Northern Beaches, Queen Elizabeth II Jubilee Hospital ICU, Redcliffe Hospital ICU, Robina Hospital ICU, Rockingham General Hospital ICU, Royal Darwin Hospital ICU, Northern Hospital ICU, Werribee Mercy Hospital ICU, Albury Wodonga Health ICU, Alice Springs Hospital ICU, Ballarat Health Services ICU, Bathurst Base Hospital ICU, Bendigo Health Care Group ICU, Bowral Hospital HDU, Broken Hill Base Hospital & Health Services ICU, Bunbury Regional Hospital ICU, Bundaberg Base Hospital ICU, Cairns Hospital ICU, Central Gippsland Health Service (Sale) ICU, Coffs Harbour Health Campus ICU, Dubbo Base Hospital ICU, Fiona Stanley Hospital ICU, Goulburn Base Hospital ICU, Goulburn Valley Health ICU, Grafton Base Hospital ICU, Hervey Bay Hospital ICU, Latrobe Regional Hospital ICU, Lismore Base Hospital ICU, Mackay Base Hospital ICU, Maitland Hospital ICU, Manning Rural Referral Hospital ICU, Mildura Base Hospital ICU, Mount Isa Hospital ICU, Orange Base Hospital ICU, Port Macquarie Base Hospital ICU, Rockhampton Hospital ICU Shoalhaven Hospital ICU, South East Regional Hospital ICU, South West Healthcare (Warrnambool) ICU, Tamworth Base Hospital ICU, Toowoomba Hospital ICU, Tweed Heads District Hospital ICU, Western District Health Service (Hamilton) ICU, Wyong Hospital ICU, Ashford Private , Buderim Private Hospital ICU, Cabrini Hospital ICU, Calvary Bruce Private Hospital HDU, Calvary Hospital (Lenah Valley) ICU, Calvary John James Hospital ICU, Calvary North Adelaide Hospital ICU, Calvary Wakefield , Epworth Eastern Private Hospital ICU, Epworth Freemasons Hospital ICU, Epworth Geelong ICU, Epworth Hospital (Richmond) ICU, Flinders Private , Gold Coast Private Hospital ICU, Gosford Private Hospital ICU, Greenslopes Private Hospital ICU, Hollywood Private Hospital ICU, Hurstville Private Hospital ICU, John Fawcner Hospital ICU, John Flynn Private Hospital ICU, Kareena Private Hospital ICU, Knox Private Hospital ICU, Lake Macquarie Private Hospital ICU, Lingard Private Hospital ICU, Macquarie University Private Hospital ICU, Maitland Private Hospital ICU, Mater Private Hospital (Brisbane) ICU, Mater Private Hospital (Sydney) ICU, Melbourne Private Hospital ICU, Mount Hospital ICU, Mulgrave Private Hospital ICU, National Capital Private Hospital ICU, Nepean Private Hospital ICU, Newcastle Private Hospital ICU, Noosa Hospital ICU, North Shore Private Hospital ICU, Norwest Private Hospital ICU, Peninsula Private Hospital ICU, Pindara Private Hospital ICU, St Andrew's Hospital (Adelaide) ICU, St Andrew's Hospital Toowoomba ICU, St Andrew's Private Hospital (Ipswich) ICU, St Andrew's War Memorial Hospital ICU, St John of God (Berwick) ICU, St John Of God Health Care (Subiaco) ICU, St John Of God Hospital (Ballarat) ICU, St John of God Hospital (Bendigo) ICU, t John Of God Hospital (Geelong) ICU, and Public & Private ICU, St Vincent's Private Hospital Northside ICU, St Vincent's Private Hospital (Sydney) ICU, St Vincent's Private Hospital Fitzroy ICU, Strathfield Private Hospital ICU, Sunnybank Hospital ICU, Sunshine Coast University Private Hospital ICU, Sydney Adventist Hospital ICU, Sydney Southwest Private Hospital ICU, The Bays Hospital ICU, The Chris O'Brien Lifehouse ICU, The Memorial Hospital (Adelaide) ICU, Warringal Private Hospital ICU, Westmead Private Hospital ICU, Wollongong Private Hospital ICU, John Hunter Children's Hospital PICU, Queensland Children's Hospital PICU, Royal Children's Hospital (Melbourne) PICU, Sydney Children's Hospital PICU, The Children's Hospital at Westmead PICU

Table 3. Ventilator capacity at the 175 respondent surge survey intensive care units (ICUs), by category and jurisdiction

	Ventilator type					Total
	Standard ICU ventilators	Other ICU ventilators	Anaesthetic machine ventilators	Non-invasive ventilators capable of mechanical ventilation	Other	
Category						
Tertiary	980	188	477	190	31	1866
Metropolitan	314	81	200	78	22	695
Rural/regional	226	91	142	93	25	577
Private	522	128	633	86	49	1418
Paediatric	142	44	24	24	25	259
Jurisdiction						
Australian Capital Territory	47	9	34	9	0	99
New South Wales	730	189	545	163	89	1716
Northern Territory	27	8	4	0	2	41
Queensland	451	89	192	119	0	851
South Australia	204	20	140	36	35	435
Tasmania	49	18	35	3	3	108
Victoria	525	146	369	108	14	1162
Western Australia	151	53	157	33	9	403
Total	2184	532	1476	471	152	4815

Table 4. Available ventilators per bed at the respondent surge survey intensive care units (ICUs), by hospital type

A. Tertiary hospitals

	Number of ventilators	Ventilators per bed			
		ICU beds	ICU beds + additional physical beds	ICU beds + additional physical beds + bed spaces outside ICU	ICU beds + additional physical beds + bed spaces outside ICU + others
Total number of beds (35 ICUs)		799	1056	1767	2147
Standard ICU ventilators	980				
Mean (SD)		1.2 (0.6)	0.9 (0.4)	0.6 (0.2)	0.5 (0.3)
Median (IQR)		1.1 (1.0–1.4)	0.9 (0.8–1.0)	0.6 (0.4–0.7)	0.4 (0.3–0.7)
Standard ICU ventilators+ other ICU ventilators	1168				
Mean (SD)		1.5 (0.7)	1.1 (0.4)	0.7 (0.2)	0.5 (0.3)
Median (IQR)		1.4 (1.2–1.6)	1.1 (0.9–1.2)	0.7 (0.5–0.9)	0.5 (0.4–0.8)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators	1645				
Mean (SD)		2.1 (0.9)	1.6 (0.6)	0.9 (0.3)	0.8 (0.3)
Median (IQR)		2 (1.6–2.3)	1.5 (1.4–1.8)	1.0 (0.8–1.0)	0.8 (0.6–1.0)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators	1835				
Mean (SD)		2.3 (1.3)	1.7 (0.6)	1.0 (0.3)	0.9 (0.4)
Median (IQR)		2.1 (1.9–2.6)	1.7 (1.5–2.1)	1.1 (1.0–1.2)	1.0 (0.7–1.1)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators + other non-ICU ventilators	1866				
Mean (SD)		2.3 (1.3)	1.8 (0.7)	1.1 (0.3)	0.9 (0.4)
Median (IQR)		2.2 (1.9–2.6)	1.7 (1.5–2.1)	1.1 (1.0–1.2)	1.0 (0.7–1.1)

IQR = interquartile range; SD = standard deviation. Bold: mean or median ventilator-too-bed ratio below 1.0.

B. Metropolitan hospitals

	Number of ventilators	Ventilators per bed			
		ICU beds	ICU beds + additional physical beds	ICU beds + additional physical beds + bed spaces outside ICU	ICU beds + additional physical beds + bed spaces outside ICU + others
Total number of beds (31 ICUs)		285	412	733	847
Standard ICU ventilators	314				
Mean (SD)		1.1 (0.5)	0.8 (0.4)	0.4 (0.3)	0.4 (0.3)
Median (IQR)		1.0 (0.8–1.4)	0.9 (0.5–1.0)	0.5 (0.2–0.7)	0.4 (0.2–0.6)
Standard ICU ventilators+ other ICU ventilators	395				
Mean (SD)		1.4 (0.6)	1.0 (0.4)	0.5 (0.4)	0.5 (0.4)
Median (IQR)		1.4 (1.1–1.7)	1.0 (0.7–1.2)	0.6 (0.3–0.9)	0.5 (0.3–0.7)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators	595				
Mean (SD)		2.1 (0.8)	1.4 (0.6)	0.8 (0.5)	0.7 (0.5)
Median (IQR)		1.9 (1.6–2.6)	1.4 (1.1–1.8)	0.7 (0.5–1.1)	0.7 (0.5–0.9)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators	673				
Mean (SD)		2.4 (1.0)	1.6 (0.6)	0.9 (0.6)	0.8 (0.6)
Median (IQR)		2.1 (1.8–2.7)	1.5 (1.2–2.1)	0.9 (0.6–1.3)	0.7 (0.6–1.0)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators + other non-ICU ventilators	695				
Mean (SD)		2.4 (1.0)	1.7 (0.7)	0.9 (0.6)	0.8 (0.6)
Median (IQR)		2.1 (1.8–3)	1.5 (1.3–2.1)	0.9 (0.6–1.3)	0.7 (0.6–1.1)

IQR = interquartile range; SD = standard deviation. Bold: mean or median ventilator-to-bed ratio below 1.0.

C. Rural and regional hospitals

	Number of ventilators	Ventilators per bed			
		ICU beds	ICU beds + additional physical beds	ICU beds + additional physical beds + bed spaces outside ICU	ICU beds + additional physical beds + bed spaces outside ICU + others
Total number of beds (36 ICUs)		291	396	794	1064
Standard ICU ventilators	226				
Mean (SD)		0.8 (0.4)	0.6 (0.3)	0.3 (0.2)	0.2 (0.2)
Median (IQR)		0.7 (0.4–0.9)	0.5 (0.4–0.6)	0.2 (0.2–0.4)	0.2 (0.1–0.4)
Standard ICU ventilators+ other ICU ventilators	317				
Mean (SD)		1.1 (0.6)	0.8 (0.4)	0.4 (0.3)	0.3 (0.3)
Median (IQR)		0.9 (0.7–1.3)	0.7 (0.5–1.0)	0.4 (0.2–0.6)	0.3 (0.2–0.5)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators	459				
Mean (SD)		1.6 (1.0)	1.2 (0.7)	0.6 (0.4)	0.4 (0.4)
Median (IQR)		1.2 (0.8–1.8)	1.0 (0.6–1.3)	0.5 (0.4–0.8)	0.4 (0.3–0.7)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators	552				
Mean (SD)		1.9 (1.1)	1.4 (0.8)	0.7 (0.4)	0.5 (0.4)
Median (IQR)		1.5 (1.2–2.1)	1.2 (0.8–1.5)	0.7 (0.5–1.0)	0.6 (0.4–0.8)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators + other non-ICU ventilators	577				
Mean (SD)		2 (1.2)	1.5 (0.9)	0.7 (0.4)	0.5 (0.4)
Median (IQR)		1.5 (1.2–2.2)	1.2 (0.8–1.6)	0.7 (0.5–1.0)	0.6 (0.4–0.8)

IQR = interquartile range; SD = standard deviation. Bold: mean or median ventilator-to-bed ratio below 1.0.

D. Private hospitals

	Number of ventilators	Ventilators per bed			
		ICU beds	ICU beds + additional physical beds	ICU beds + additional physical beds + bed spaces outside ICU	ICU beds + additional physical beds + bed spaces outside ICU + others
Total number of beds (65 ICUs)		725	783	1730	2166
Standard ICU ventilators	522				
Mean (SD)		0.7 (0.7)	0.7 (0.4)	0.3 (0.2)	0.2 (0.2)
Median (IQR)		0.6 (0.4–1.0)	0.5 (0.4–0.9)	0.3 (0.2–0.4)	0.2 (0.1–0.4)
Standard ICU ventilators+ other ICU ventilators	650				
Mean (SD)		0.9 (1.0)	0.8 (0.4)	0.4 (0.2)	0.3 (0.2)
Median (IQR)		0.8 (0.5–1.1)	0.7 (0.5–1.0)	0.3 (0.2–0.5)	0.3 (0.2–0.5)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators	1283				
Mean (SD)		1.8 (1.8)	1.6 (0.9)	0.7 (0.5)	0.6 (0.5)
Median (IQR)		1.7 (1.1–2.3)	1.5 (1.1–2.2)	0.7 (0.5–1.0)	0.6 (0.4–0.8)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators	1369				
Mean (SD)		1.9 (2)	1.7 (0.9)	0.8 (0.5)	0.6 (0.5)
Median (IQR)		1.7 (1.2–2.4)	1.7 (1.1–2.3)	0.8 (0.6–1.0)	0.6 (0.4–0.9)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators + other non-ICU ventilators	1418				
Mean (SD)		2.0 (2.0)	1.8 (1.0)	0.8 (0.5)	0.7 (0.5)
Median (IQR)		1.7 (1.2–2.8)	1.7 (1.1–2.4)	0.8 (0.6–1.1)	0.6 (0.4–0.9)

IQR = interquartile range; SD = standard deviation. Bold: mean or median ventilator-to-bed ratio below 1.0.

E. Paediatric hospitals

	Number of ventilators	Ventilators per bed			
		ICU beds	ICU beds + additional physical beds	ICU beds + additional physical beds + bed spaces outside ICU	ICU beds + additional physical beds + bed spaces outside ICU + others
Total number of beds (8 ICUs)		128	168	214	262
Standard ICU ventilators	142				
Mean (SD)		1.1 (0.5)	0.8 (0.4)	0.7 (0.4)	0.5 (0.4)
Median (IQR)		1.0 (0.9–1.2)	0.8 (0.6–0.9)	0.6 (0.4–0.7)	0.4 (0.3–0.5)
Standard ICU ventilators+ other ICU ventilators	186				
Mean (SD)		1.5 (0.6)	1.1 (0.4)	0.9 (0.4)	0.7 (0.4)
Median (IQR)		1.4 (1.0–1.5)	1.0 (0.9–1.1)	0.8 (0.6–1.1)	0.6 (0.5–0.8)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators	210				
Mean (SD)		1.6 (0.8)	1.3 (0.5)	1.0 (0.4)	0.8 (0.4)
Median (IQR)		1.4 (1.0–2)	1.0 (1.0–1.4)	0.8 (0.7–1.1)	0.7 (0.5–1.1)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators	234				
Mean (SD)		1.8 (1.1)	1.4 (0.6)	1.1 (0.5)	0.9 (0.5)
Median (IQR)		1.5 (1.0–2.2)	1.1 (1.0–1.8)	1.0 (0.7–1.3)	0.9 (0.5–1.2)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators + other non-ICU ventilators	259				
Mean (SD)		2.0 (1.1)	1.5 (0.7)	1.2 (0.6)	1.0 (0.5)
Median (IQR)		1.9 (1.5–2.3)	1.3 (1.1–1.9)	1.1 (0.8–1.6)	0.9 (0.5–1.3)

IQR = interquartile range; SD = standard deviation. Bold: mean or median ventilator-to-bed ratio below 1.0.

Table 5. Available ventilators per bed at respondent surge survey intensive care units (ICUs), by jurisdiction

A. New South Wales

	Number of ventilators	Ventilators per bed			
		ICU beds	ICU beds + additional physical beds	ICU beds + additional physical beds + bed spaces outside ICU	ICU beds + additional physical beds + bed spaces outside ICU + others
Total number of beds (60 ICUs)		854	1033	2067	2579
Standard ICU ventilators	730				
Mean (SD)		0.9 (0.8)	0.7 (0.4)	0.4 (0.3)	0.3 (0.3)
Median (IQR)		1.0 (0.6–1.3)	0.8 (0.5–1.0)	0.5 (0.3–0.6)	0.4 (0.3–0.6)
Standard ICU ventilators+ other ICU ventilators	919				
Mean (SD)		1.1 (1.0)	0.9 (0.4)	0.4 (0.4)	0.4 (0.4)
Median (IQR)		1.2 (0.8–1.6)	1.0 (0.7–1.2)	0.6 (0.4–0.8)	0.5 (0.3–0.7)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators	1464				
Mean (SD)		1.7 (1.7)	1.4 (0.7)	0.7 (0.5)	0.6 (0.5)
Median (IQR)		1.9 (1.3–2.5)	1.5 (1.0–2.1)	0.8 (0.6–1.1)	0.7 (0.5–1.0)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators	1627				
Mean (SD)		1.9 (2)	1.6 (0.8)	0.8 (0.6)	0.6 (0.6)
Median (IQR)		2.1 (1.5–2.8)	1.7 (1.2–2.2)	0.9 (0.7–1.3)	0.8 (0.6–1.0)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators + other non-ICU ventilators	1716				
Mean (SD)		2.0 (2.0)	1.7 (0.8)	0.8 (0.6)	0.7 (0.6)
Median (IQR)		2.2 (1.6–2.9)	1.7 (1.2–2.4)	1.0 (0.7–1.4)	0.8 (0.6–1.2)

IQR = interquartile range; SD = standard deviation. Bold: mean or median ventilator-to-bed ratio below 1.0.

B. Victoria

	Number of ventilators	Ventilators per bed			
		ICU beds	ICU beds + additional physical beds	ICU beds + additional physical beds + bed spaces outside ICU	ICU beds + additional physical beds + bed spaces outside ICU + others
Total number of beds (43 ICUs)		499	648	1314	1665
Standard ICU ventilators	525				
Mean (SD)		1.1 (0.6)	0.8 (0.3)	0.4 (0.3)	0.3 (0.3)
Median (IQR)		1.0 (0.7–1.3)	0.8 (0.5–0.9)	0.4 (0.2–0.7)	0.3 (0.2–0.6)
Standard ICU ventilators+ other ICU ventilators	671				
Mean (SD)		1.3 (0.7)	1.0 (0.4)	0.5 (0.3)	0.4 (0.3)
Median (IQR)		1.2 (0.9–1.5)	1.0 (0.6–1.1)	0.6 (0.3–0.8)	0.4 (0.3–0.7)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators	1040				
Mean (SD)		2.1 (1.0)	1.6 (0.6)	0.8 (0.4)	0.6 (0.4)
Median (IQR)		1.8 (1.2–2.2)	1.4 (0.9–1.7)	0.9 (0.5–1.0)	0.7 (0.4–0.9)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators	1148				
Mean (SD)		2.3 (1.3)	1.8 (0.7)	0.9 (0.4)	0.7 (0.4)
Median (IQR)		2.0 (1.4–2.5)	1.5 (1.1–2)	1.0 (0.6–1.1)	0.8 (0.6–1.0)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators + other non-ICU ventilators	1162				
Mean (SD)		2.3 (1.4)	1.8 (0.9)	0.9 (0.4)	0.7 (0.4)
Median (IQR)		2.0 (1.4–2.7)	1.5 (1.1–2)	1.0 (0.8–1.1)	0.8 (0.6–1.1)

IQR = interquartile range; SD = standard deviation. Bold: mean or median ventilator-to-bed ratio below 1.0.

C. Queensland

	Number of ventilators	Ventilators per bed			
		ICU beds	ICU beds + additional physical beds	ICU beds + additional physical beds + bed spaces outside ICU	ICU beds + additional physical beds + bed spaces outside ICU + others
Total number of beds (37 ICUs)		376	530	792	891
Standard ICU ventilators	451				
Mean (SD)		1.2 (0.4)	0.9 (0.3)	0.6 (0.2)	0.5 (0.1)
Median (IQR)		0.5 (0.4–0.8)	0.5 (0.3–0.7)	0.2 (0.1–0.3)	0.2 (0.1–0.3)
Standard ICU ventilators+ other ICU ventilators	540				
Mean (SD)		1.4 (0.5)	1.0 (0.4)	0.7 (0.2)	0.6 (0.2)
Median (IQR)		0.6 (0.5–1.0)	0.6 (0.4–1.0)	0.3 (0.2–0.4)	0.2 (0.1–0.4)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators	732				
Mean (SD)		1.9 (1.0)	1.4 (0.9)	0.9 (0.4)	0.8 (0.3)
Median (IQR)		1.4 (1.1–1.9)	1.3 (0.9–1.8)	0.6 (0.4–0.8)	0.5 (0.3–0.7)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators	851				
Mean (SD)		2.3 (1.0)	1.6 (0.9)	1.1 (0.4)	1.0 (0.3)
Median (IQR)		1.6 (1.2–1.9)	1.4 (1.0–1.8)	0.6 (0.5–0.9)	0.5 (0.3–0.7)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators + other non-ICU ventilators	851				
Mean (SD)		2.3 (1.2)	1.6 (1.0)	1.1 (0.4)	1.0 (0.3)
Median (IQR)		1.6 (1.2–1.9)	1.4 (1.0–1.8)	0.6 (0.5–0.9)	0.5 (0.3–0.8)

IQR = interquartile range; SD = standard deviation. Bold: mean or median ventilator-to-bed ratio below 1.0.

D. South Australia

	Number of ventilators	Ventilators per bed			
		ICU beds	ICU beds + additional physical beds	ICU beds + additional physical beds + bed spaces outside ICU	ICU beds + additional physical beds + bed spaces outside ICU + others
Total number of beds (11 ICUs)		193	234	327	348
Standard ICU ventilators	204				
Mean (SD)		1.1 (0.4)	0.9 (0.2)	0.6 (0.1)	0.6 (0.1)
Median (IQR)		0.5 (0.2–0.6)	0.4 (0.2–0.4)	0.2 (0–0.2)	0.2 (0–0.2)
Standard ICU ventilators+ other ICU ventilators	224				
Mean (SD)		1.2 (0.8)	1.0 (0.4)	0.7 (0.2)	0.6 (0.2)
Median (IQR)		0.8 (0.3–1.0)	0.7 (0.2–0.8)	0.2 (0.1–0.4)	0.2 (0.1–0.3)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators	364				
Mean (SD)		1.9 (1.3)	1.6 (0.6)	1.1 (0.3)	1.0 (0.3)
Median (IQR)		1.2 (0.6–1.6)	1.0 (0.5–1.2)	0.5 (0.1–0.6)	0.4 (0.1–0.5)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators	400				
Mean (SD)		2.1 (1.5)	1.7 (0.7)	1.2 (0.4)	1.1 (0.3)
Median (IQR)		1.5 (0.7–2)	1.2 (0.4–1.5)	0.6 (0.2–0.7)	0.5 (0.2–0.6)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators + other non-ICU ventilators	435				
Mean (SD)		2.3 (1.5)	1.9 (0.7)	1.3 (0.4)	1.3 (0.3)
Median (IQR)		1.5 (0.7–2)	1.2 (0.4–1.5)	0.6 (0.2–0.7)	0.5 (0.2–0.6)

IQR = interquartile range; SD = standard deviation. Bold: mean or median ventilator-to-bed ratio below 1.0.

E. Western Australia

	Number of ventilators	Ventilators per bed			
		ICU beds	ICU beds + additional physical beds	ICU beds + additional physical beds + bed spaces outside ICU	ICU beds + additional physical beds + bed spaces outside ICU + others
Total number of beds (13 ICUs)		179	210	442	561
Standard ICU ventilators	151				
Mean (SD)		0.8 (0.3)	0.7 (0.3)	0.3 (0.2)	0.3 (0.2)
Median (IQR)		0.5 (0–0.7)	0.4 (0–0.5)	0.2 (0–0.3)	0.1 (0–0.3)
Standard ICU ventilators+ other ICU ventilators	204				
Mean (SD)		1.1 (0.4)	1.0 (0.4)	0.5 (0.2)	0.4 (0.2)
Median (IQR)		0.6 (0–1.0)	0.5 (0–0.8)	0.3 (0–0.4)	0.2 (0–0.4)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators	361				
Mean (SD)		2 (1.0)	1.7 (0.9)	0.8 (0.4)	0.6 (0.4)
Median (IQR)		1.2 (0–1.7)	1.1 (0–1.7)	0.6 (0–0.8)	0.6 (0–0.8)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators	394				
Mean (SD)		2.2 (1.1)	1.9 (0.9)	0.9 (0.5)	0.7 (0.4)
Median (IQR)		1.3 (0–1.8)	1.3 (0–1.7)	0.7 (0–1.0)	0.7 (0–0.9)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators + other non-ICU ventilators	403				
Mean (SD)		2.3 (1.1)	1.9 (0.9)	0.9 (0.5)	0.7 (0.4)
Median (IQR)		1.3 (0–1.8)	1.3 (0–1.7)	0.7 (0–1.0)	0.7 (0–0.9)

IQR = interquartile range; SD = standard deviation. Bold: mean or median ventilator-to-bed ratio below 1.0.

F. Northern Territory

	Number of ventilators	Ventilators per bed			
		ICU beds	ICU beds + additional physical beds	ICU beds + additional physical beds + bed spaces outside ICU	ICU beds + additional physical beds + bed spaces outside ICU + others
Total number of beds (2 ICUs)		24	28	37	47
Standard ICU ventilators	27				
Mean (SD)		1.1 (0.2)	1.0 (0.2)	0.7 (0.2)	0.6 (0.3)
Median (IQR)		1.2 (0.8–0.9)	1.0 (0.8–0.9)	0.5 (0.3–0.4)	0.5 (0.2–0.4)
Standard ICU ventilators+ other ICU ventilators	35				
Mean (SD)		1.5 (0.2)	1.3 (0.2)	0.9 (0.2)	0.7 (0.3)
Median (IQR)		1.0 (0.9–1.0)	1.0 (0.9–1.0)	0.5 (0.4–0.5)	0.5 (0.2–0.4)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators	39				
Mean (SD)		1.6 (0.2)	1.4 (0.2)	1.1 (0.1)	0.8 (0.5)
Median (IQR)		2.3 (2.4–2.5)	2.3 (2.4–2.5)	1.0 (1.0–1.1)	1.0 (0.6–1.0)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators	39				
Mean (SD)		1.6 (0.5)	1.4 (0.5)	1.1 (0.02)	0.8 (0.5)
Median (IQR)		2.3 (2.5–2.8)	2.3 (2.5–2.8)	1.1 (1.1–1.1)	1.0 (0.7–1.0)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators + other non-ICU ventilators	41				
Mean (SD)		1.7 (0.5)	1.5 (0.5)	1.1 (0.02)	0.9 (0.5)
Median (IQR)		2.3 (2.5–2.8)	2.3 (2.5–2.8)	1.1 (1.1–1.1)	1.0 (0.7–1.0)

IQR = interquartile range; SD = standard deviation. Bold: mean or median ventilator-to-bed ratio below 1.0.

G. Australian Capital Territory

	Number of ventilators	Ventilators per bed			
		ICU beds	ICU beds + additional physical beds	ICU beds + additional physical beds + bed spaces outside ICU	ICU beds + additional physical beds + bed spaces outside ICU + others
Total number of beds (5 ICUs)		52	69	136	231
Standard ICU ventilators	47				
Mean (SD)		0.9 (0.3)	0.7 (0.1)	0.3 (0.1)	0.2 (0.05)
Median (IQR)		0.9 (0.6–1.0)	0.6 (0.5–0.6)	0.2 (0.2–0.3)	0.2 (0.2–0.3)
Standard ICU ventilators+ other ICU ventilators	56				
Mean (SD)		1.1 (0.3)	0.8 (0.1)	0.4 (0.1)	0.2 (0.1)
Median (IQR)		1.2 (0.9–1.4)	0.7 (0.6–0.7)	0.3 (0.2–0.4)	0.3 (0.2–0.3)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators	90				
Mean (SD)		1.7 (0.5)	1.3 (0.4)	0.7 (0.2)	0.4 (0.1)
Median (IQR)		1.9 (1.8–2)	1.3 (1.2–1.5)	0.5 (0.5–0.6)	0.5 (0.5–0.6)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators	99				
Mean (SD)		1.9 (0.5)	1.4 (0.5)	0.7 (0.2)	0.4 (0.1)
Median (IQR)		2 (2–2.1)	1.3 (1.2–1.5)	0.6 (0.5–0.6)	0.6 (0.5–0.6)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators + other non-ICU ventilators	99				
Mean (SD)		1.9 (0.5)	1.4 (0.5)	0.7 (0.2)	0.4 (0.1)
Median (IQR)		2.0 (2.0–2.3)	1.4 (1.4–1.5)	0.6 (0.5–0.6)	0.6 (0.5–0.6)

IQR = interquartile range; SD = standard deviation. Bold: mean or median ventilator-to-bed ratio below 1.0.

H. Tasmania

	Number of ventilators	Ventilators per bed			
		ICU beds	ICU beds + additional physical beds	ICU beds + additional physical beds + bed spaces outside ICU	ICU beds + additional physical beds + bed spaces outside ICU + others
Total number of beds (4 ICUs)		51	62	123	164
Standard ICU ventilators	49				
Mean (SD)		1.0 (0.3)	0.8 (0.2)	0.4 (0.2)	0.3 (0.2)
Median (IQR)		0.8 (0.7–0.8)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.5)
Standard ICU ventilators+ other ICU ventilators	67				
Mean (SD)		1.3 (0.3)	1.1 (0.2)	0.5 (0.2)	0.4 (0.2)
Median (IQR)		0.9 (0.8–1.0)	0.6 (0.5–0.6)	0.6 (0.5–0.6)	0.6 (0.5–0.6)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators	102				
Mean (SD)		2.0 (0.3)	1.6 (0.2)	0.8 (0.2)	0.6 (0.2)
Median (IQR)		0.9 (0.8–1.0)	0.6 (0.5–0.6)	0.6 (0.5–0.6)	0.6 (0.5–0.6)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators	105				
Mean (SD)		2.1 (0.4)	1.7 (0.2)	0.9 (0.2)	0.6 (0.2)
Median (IQR)		1.5 (1.4–1.5)	0.9 (0.8–1.0)	0.9 (0.6–1.0)	0.9 (0.6–1.0)
Standard ICU ventilators + other ICU ventilators + anaesthetic machine ventilators + non-invasive ventilators + other non-ICU ventilators	108				
Mean (SD)		2.1 (0.4)	1.7 (0.2)	0.9 (0.2)	0.7 (0.2)
Median (IQR)		1.5 (1.4–1.5)	0.9 (0.8–1.0)	0.9 (0.6–1.0)	0.9 (0.6–1.0)

IQR = interquartile range; SD = standard deviation. Bold: mean or median ventilator-to-bed ratio below 1.0.

Table 6. Ventilators at veterinary facilities, by jurisdiction and location type

	Total	Metropolitan	Regional
Australian Capital Territory	4	4	0
New South Wales	75	58	17
Northern Territory	2	2	0
Queensland	36	21	15
South Australia	8	8	0
Tasmania	0	0	0
Victoria	47	38	9
Western Australia	16	16	0
Total	188	147	41

Table 7. Renal replacement therapy machines at the 175 respondent surge survey intensive care units (ICUs), by category and jurisdiction

	ICU-specific haemofilters/dialysis machines	Other machines for haemodialysis	Total
Category			
Tertiary	194	206	400
Metropolitan	67	119	186
Rural/regional	51	187	238
Private	118	154	272
Paediatric	15	9	24
Jurisdiction			
Australian Capital Territory	11	8	19
New South Wales	171	288	459
Northern Territory	10	2	12
Queensland	23	89	112
South Australia	20	32	52
Tasmania	12	14	26
Victoria	153	170	323
Western Australia	45	72	117
Total	445	675	1120

Table 8. Extracorporeal membrane oxygenation (ECMO) equipment at the 175 respondent surge survey intensive care units, by category and jurisdiction

	ECMO machines	Machines used for cardiopulmonary bypass
Category		
Tertiary	98	38
Metropolitan	4	2
Rural/regional	14	4
Private	9	42
Paediatric	21	13
Jurisdiction		
Australian Capital Territory	1	1
New South Wales	58	31
Northern Territory	0	0
Queensland	24	14
South Australia	11	6
Tasmania	6	3
Victoria	36	33
Western Australia	10	11
Total	146	99

Table 9. Intravenous infusion pumps at the 175 surge respondent survey intensive care units, by category and jurisdiction

	Intravenous infusion pumps
Category	
Tertiary	3509
Metropolitan	1589
Rural/regional	1639
Private	5139
Paediatric	962
Jurisdiction	
Australian Capital Territory	282
New South Wales	5282
Northern Territory	80
Queensland	1089
South Australia	192
Tasmania	462
Victoria	4100
Western Australia	1351
Total	12 838

Table 10. Annual number of elective surgery patient admissions to 157 Australian intensive care units for which data were available

	Elective surgery admissions (proportion of all admissions)	Elective surgery bed-days (proportion of all bed-days)
Category		
Tertiary	20 413 (29.9%)	1 041 729 (18%)
Metropolitan	3368 (12.3%)	163 875 (8.1%)
Rural/regional	2496 (9.3%)	114 070 (6.2%)
Private	40 062 (72.5%)	1 660 403 (60.8%)
Jurisdiction		
Australian Capital Territory	2391 (48.4%)	98 084 (29.0%)
New South Wales	21 504 (36.8%)	1 002 206 (23.4%)
Northern Territory	209 (12.0%)	14 438 (10.0%)
Queensland	12 259 (41.4%)	511 567 (25.5%)
South Australia	5656 (45.1%)	258 314 (29.6%)
Tasmania	256 (14.8%)	15 911 (12.2%)
Victoria	14 753 (36.0%)	671 688 (24.6%)
Western Australia	5312 (39.8%)	229 102 (25.8%)
Total	62 340 (38.1%)	2 801 310 (24.6%)