COVID-19

AUSTRALASIAN PSYCHIATRY

Real-world performance of Victorian hospitals during the COVID-19 lockdowns

Australasian Psychiatry
2022, Vol. 30(2) 239–242

DOI: 10.1177/10398562221079281
journals.sagepub.com/home/apy
SAGE

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Abstract

Objective: Victoria has low numbers of general adult psychiatric beds per capita by Australian and international standards. Hospital key performance indicators (KPIs) such as bed occupancy rates, emergency department waiting times and inpatient lengths of stay are proximal measures of the effects any shortfall in beds. We investigate the real-world performance of Victorian hospitals during the first year of the COVID-19 pandemic and the extended lockdowns in 2020.
Conclusions: The Victorian inpatient psychiatric system is characterised by high bed occupancies in many regions, extended stays in emergency departments awaiting a bed, and short inpatient lengths of stay, except for patients with excessively long stays on acute units (over 35 days) who are unable to be admitted to non-acute facilities. At the end of 2020, bed occupancies were high (above 90%) in 10 regions, with three regions having bed occupancies over 100%. However, state-wide average bed occupancy improved between 2019 (94%) and 2020 (88%). Other KPIs remained steady because acute hospitals did not experience the expected pandemic mental health demand-surge. For a more complete picture of the impact of the pandemic, Australia needs interconnected, centralised data systems.

'Reality is that which, when you stop believing in it, doesn't go away'. – Philip K. Dick

Victoria's per capita expenditure on adult psychiatric services is the lowest in the nation. Consequently, the state has the lowest rate of patients seen by adult psychiatric community services, the lowest community psychiatric contacts per capita, and the smallest general adult psychiatric bed base, being 34% below the national average and 44% below NSW's provision.[1]

Victoria has 36 adult psychiatric beds per 100,000 people (acute and non-acute), which is below the Australian average (41/100,000) and the average for Organisation for Economic Co-operation and Development (OECD) countries (65 beds/100,000).[2] A recent international Delphi study found 60 beds/100,000 was considered optimal and 30 beds/100,000 was the minimum level.[3] Within this range, each nation might have a threshold for negative outcomes arising from low bed numbers.[4] The most proximal measures of adverse effects on access are hospital key performance indicators (KPIs) such as

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Table 1. Key performance indicators for the Victorian psychiatric inpatient units

	2019	2020
Local inpatient access	75%	75%
Bed occupancy excluding leave	94%	88%
Length of stay (excluding >35 days)	9.5 days	9.4 days
Long stay bed occupancy (>35 days)	11%	10%
28-day readmission rate	15%	16%
Seclusions per 1,000 bed days	9.2	9.6
Separations with multiple seclusions	2%	2%
Pre-admission contact in area	62%	60%
Pre-admission contact in area ongoing	88%	85%
7-day post discharge follow-up	91%	88%
Rating questionnaire staff compliance	86%	82%
Admission within 8-h	50%	52%

Note. Victorian Adult Mental Health Performance Indicator Reports for Oct–Dec 2019–20 and Oct–Dec 2020–2021 (https://www.health.vic.gov.au/site-4/publications/adult-mental-health-performance-indicator-report-2020-2021-quarter-2).

Table 2. Bed occupancy in Victorian adult mental health services

Adult mental health service region	Bed occupancy
Northern Mallee	53.6
Barwon	69.2
Inner South East	73.8
Inner Urban East	74.3
South West	79.8
Peninsula	83.7
Central East	86.1
Loddon	86.5
State-wide	**87.6**
Grampians	85.3
Goulburn	85.9
Dandenong	86.7
Orygen Youth	87.3
North East	89.3
Inner West	91.5
Albury	93.34
Middle South	93.5
Outer East	93.6
Gippsland	94.5
Northern	95.9
North West	96.1
Glenelg	100.8
Mid-West	103.2
North East and border	110.8

Note. Victorian Agency for Health Information report for Oct–Dec 2020 (vahi.vic.gov.au).

bed occupancy rates, emergency department (ED) waiting times and inpatient lengths of stay.[4]

Pandemic key performance indicators

Prior to the COVID-19 pandemic, the Victorian adult acute inpatient system had considerable difficulties with access to inpatient care. Average bed occupancy was high (94%), above the target of 85% or less that is required for patient flow in large hospitals (Table 1).[4] Consequently, only half of admitted patients were transferred from the ED to a bed within 8 h, and 25% could not access a bed in the local region. Average length of stay (ALOS) was short (9.5 days, excluding patients (11%) with excessively long stays on acute units (more than 35 days), due to the shortfall in more suitable non-acute placements). ALOS had decreased by 17% on Victorian general adult units (from 2010/11 to 2018/19) because emergency demand increased while bed numbers remained static. Psychiatric ALOS needs to be longer than other specialities, due to the timelag for medication action.[4] The Victorian ALOS of 9.5 days was shorter than average stays considered adequate for assessment, treatment and discharge planning (approximately 14 days on acute units).

Hospital KPIs for Victoria's adult inpatient services were expected to deteriorate markedly in 2020, when the state began the longest series of lockdowns in the world. While these lockdowns reduced community transmission rates of COVID-19 infections, lessened pressure on acute hospitals, limited the health risks for medical and nursing staff, and minimised community mortality,[5] some predicted that population mental health would be adversely affected, psychiatric illness would become more acute, suicide risk would rise, and psychiatric services would be overwhelmed by '*a long, deep second wave of mental ill health and suicide*'.[6]

However, the KPIs for Victorian adult inpatient services were largely stable from 2019 to 2020 (Table 1). Average bed occupancy moderated slightly from a state-wide average of 94% in 2019 to 88% in 2020, after the extended lockdown in Victoria (16 March–16 September 2020). Seclusion rates (9.6 seclusion episodes per 1000 bed days) were close to the target (10/1000 bed days) with 2% having multiple seclusions in 2020. There was a slight reduction in 7-day follow-up rates from 91% in 2019 to 88% of 2020. The 28-day inpatient readmission rate was 16% in 2020, which was slightly above the target (14%).

Access remained difficult with only 52% of patients being admitted from an ED within 8 h in 2020. Bed occupancies were high (above 90%) in 10 regions with three regions having bed occupancies over 100% (Table 2). High bed occupancies have been associated with raised suicide rates amongst patient cohorts.[7] Despite concerns about the impact of the lockdowns on young people,[6] bed occupancy in

Orygen Youth (which provided mental health services for young people aged 15–25 living in the western and north-western regions of Melbourne) was 87% after the 2020 lockdowns, which was close to the accepted target of 85%.

Acute demand during the pandemic

Several factors might have protected Victoria's psychiatric inpatient units from being overwhelmed in 2020. Investigating these factors is complex because Australia does not have a centralised psychiatric data system. At present, data are scattered, difficult to interpret, and not easily brought together to inform public policy.

However, data from the Australian Health and Welfare (AIHW), the Victorian Government and peer-reviewed studies provide clues to protective factors that operated during the pandemic. Firstly, ambulance attendance rates for psychiatric presentations did not rise as expected. In fact, ambulance attendance for suicide attempts fell by 17% (from 14.9/100,000 people at the end of 2019 to 12.4/100,000 after the 2020 lockdowns), and Victorian ambulance attendances for suicidal ideation were stable (from 22.4/100,000 in 2019 to 22.9/100,000 after the lockdown) (https://www.aihw.gov.au/suicide-self-harm-monitoring/data/ambulance-attendances/ambulance-attendances-for-suicidal-behaviours). However, Victorian ambulance attendances for self-injury increased substantially (by 38% from 4.7/100,000 in 2019 to 6.5/100,000 in 2020) with higher risks amongst young women (https://www.aihw.gov.au/reports/children-youth/covid-19-and-young-people).

A large regional psychiatric service in Melbourne reported a marginal (3%) reduction in adult psychiatric ED presentations during the pandemic compared to a control period in 2019.[8] A 7% increase in ED presentations for psychotic disorders was observed during the lockdown.[9] Admissions to four inpatient units across the region reduced by 12% after the onset of the pandemic.[10] Decreased admissions rates were likely related to fear of infection in hospitals, and higher clinical thresholds for admission.

Pandemic population mental health

The Victorian lockdowns were initially associated with nearly double the prevalence of depressive and anxiety symptoms in national online surveys, assessed using standardised scales, which was accompanied by complementary but smaller rises in the use of crisis helpline and private outpatient and inpatient Medicare-subsidised psychiatric and allied health mental health care.[11,12,13] Young people were more affected by the lockdowns, likely due to disrupted schooling, employment and social connections (https://www.aihw.gov.au/reports/children-youth/covid-19-and-young-people). The increases in population distress, crisis helpline use and Medicare-funded mental health services were higher in Victoria than the Australian average. Longitudinally, increased anxiety and depressive symptoms were transient, rising and then falling as circumstances improved.[14]

These findings are consistent with those across high-income countries. The pandemic-related rise in population distress was relatively short-lived. The Lancet's COVID-19 Commission Mental Health Task Force rapid review of the evidence (until April 2021) found that population distress rose in the early months of the pandemic, especially amongst young women and parents of children under 5 years of age (https://psyarxiv.com/zw93g/).[15] However, most measures of psychological distress returned to baseline levels by mid-2020. There was negligible change in life satisfaction across most countries with the exception of English-speaking countries (Canada, the UK and the United States) with higher community transmission rates than Australia and New Zealand.

Some predicted suicide risks would to rise with the COVID-19 pandemic and associated lockdowns.[6] However, Victoria's all-age suicide rate fell marginally (6%) from 10.7/100,000 in 2019 to 10.1/100,000 in 2020 (Table 3). Youth rates of suicide were stable from 2019 into 2020 (https://www.aihw.gov.au/reports/children-youth/covid-19-and-young-people). In 2020, Victoria had the lowest all-age suicide rate of any state or territory, and NSW

Table 3. Australian state and territory age-standardised suicide rates

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Victoria	9.2	9	8.9	10.9	11.1	10.1	11.1	10.5	10.7	10.1
NSW	8.4	9.8	9.5	10.8	10.9	10.5	11.6	11.5	11.4	10.5
Australia	10.5	11.2	11.1	12.3	12.9	11.9	13.2	12.6	12.9	12.1
ACT	9.3	6.2	9.6	9.8	11.4	7.2	14.3	11.2	12.4	13.1
SA	12.9	11.7	11.9	14.4	13.3	13	12.9	11.9	13.9	13.3
WA	12.9	15	13.5	14.5	15.6	14.5	16.2	14.7	16	14.3
Qld	12.9	13.9	14.6	14	16	14.2	16.5	16	15.4	14.7
Tas	14.1	13.7	14.2	12.8	16.2	17.1	15.3	14.5	19.5	15.9
NT	18.5	19.1	14.2	21.8	20.3	19.2	20.2	19.5	21	20.4

Note. Australian Bureau of Statistics (https://www.abs.gov.au/statistics/health/causes-death/causes-death-australia/latest-release).

had the second lowest suicide rate. Further studies are required on the protective factors that operated during the pandemic and the lockdowns including the influence of social cohesion.

Stable Victorian suicide rates during the pandemic concord with the Lancet Commission Mental Health Task Force reporting '*numerous sources show no increase in suicide rates across 20+ nations*'.[15] Perhaps, the public health messaging that 'we are all in it together' was effective in building community cohesion, and thereby reducing suicide rates. Also, the lockdowns might have increased supervision and support amongst people not living alone, and reduced access to lethal means.

The Victorian population demonstrated resilience during the extended lockdowns with mostly transient rises in population distress and relatively low suicide rates. While the findings across various datasets are broadly consistent, there are gaps in the evidence. For a more complete picture of the impact of the pandemic on people with severe mental illness, Australia needs interconnected, centralised data systems, and national case registries to observe the long-term effects of treatment and support services.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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References

1. Australian Institute of Health and Welfare. *Mental health services in Australia*. 2022. https://www.aihw.gov.au/reports/mental-health-services/mental-health-services-in-australia/report-contents/mental-health-indicators/key-performance-indicators-for-australian-public-mental-health-services
2. Victorian Auditor General's Office. *Access to Mental Health Services*. Melbourne, VIC: Victorian Government, 2019.
3. Mundt AP, Serri ER, Irarrázaval M, et al. Minimum and optimal numbers of psychiatric beds: expert consensus using a Delphi process. *Mol Psychiatry* 2022; DOI: 10.1038/s41380-021-01435-0.
4. O'Reilly R, Allison S, Bastiampillai T. Observed outcomes: an approach to calculate the optimum number of psychiatric beds. *Adm Pol Ment Health Ment Health Serv Res* 2019; 46: 507–517.
5. Grafton RQ, Parslow J, Kompas T, et al. Epidemiological modelling of the health and economic effects of COVID-19 control in Australia's second wave. *J Public Health* 2021; 28: 1–6.
6. McGorry P. Mental health and COVID -19: are we really all in this together? *Med J Aust* 2020; 213: 454–455.
7. Kaboli PJ, Augustine MR, Haraldsson B, et al. Association between acute psychiatric bed availability in the veterans health administration and veteran suicide risk: a retrospective cohort study. *BMJ Qual Saf* 2021; 2020: 012975.
8. Jagadheesan K, Danivas VItrat A, et al. Emergency department visits for psychiatric care during the first lockdown in Melbourne. *Australas Psychiatry* 2021; 30: 8–12.
9. Jagadheesan K, Danivas VItrat Q, et al. A 6-month study on the pattern of emergency department presentations for schizophrenia and other psychotic disorders during COVID-19 lockdown. *Psychiatry Res* 2021; 303: 114081.
10. Jagadheesan K, Danivas VItrat Q, et al. COVID-19 and psychiatric admissions: an observational study of the first six months of lockdown in Melbourne. *Psychiatry Res* 2021; 300: 113902.
11. Fisher J, Tran T, Hammarberg K, et al. Quantifying the mental health burden of the most severe covid-19 restrictions: a natural experiment. *J Affective Disord* 2021; 293: 406–414.
12. Looi JCL, Bastiampillai T, Kisely SR, et al. How has private psychiatry in Australia responded to the COVID-19 pandemic? *Aust New Zealand J PsychiatrySept* 2021; 24: 48674211048148.
13. Reay R, Kisely SR, Looi JCL. Better Access: substantial shift to telehealth for allied mental health services during COVID-19 in Australia. *Aust Health Rev* 2021; 45: 675–682.
14. Batterham PJ, Calear AL, McCallum SM, et al. Trajectories of depression and anxiety symptoms during the COVID-19 pandemic in a representative Australian adult cohort. *Med J Aust* 2021; 214: 462–468.
15. Aknin LB, De Neve JE, Dunn EW, et al. Mental health during first year of COVID-19: a review and recommendations for moving forward. *Perspect. Psychol. Sci* 2022: DOI: 10.1177/17456916211029964.