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Emergency Department presentations from quarantine hotels in Sydney, Australia, during the COVID-19 outbreak – an analysis of clinical patterns and outcomes

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This retrospective observational study of 542 Emergency Department (ED) patient presentations from Special Health Accommodation during the Coronavirus (COVID-19) response in Sydney. The most common ED diagnosis categories were mental health disorders (18.82%) and cardiovascular complaints (15.50%). The study highlights the need for increased psychological support and care coordination for people in quarantine.

Introduction

In response to the Coronavirus (COVID-19) global pandemic, a Public Health Order was enacted in March 2020 requiring all those returning or arriving from overseas to quarantine for fourteen days in Australia.¹ To manage this process and minimise the risk of community transmission in New South Wales, all people returning from overseas from March 2020 were accommodated in around 30 temporarily repurposed hotels located in inner Sydney and the Central Business District. Those with identified acute or ongoing healthcare needs through were referred to the Royal Prince Alfred (RPA) Virtual Hospital, including those who tested positive for the severe acute respiratory syndrome coronavirus 2 (SARS CoV-2) virus, and housed in 3 Special Health Accommodation hotels to allow for remote monitoring of symptoms and signs through the RPA Virtual Hospital model of care.² An analysis of characteristics of these patients will inform the ongoing public health and hospital response to COVID-19 and ensure a patient-centred approach to health services provided to this vulnerable population during isolation.

Methods

We performed a retrospective study on Emergency Department (ED) presentation types for patients referred from all Special Health Accommodation hotels, during the period of June to September 2020. Through abstraction of electronic medical records, we analysed ED clinical characteristics and outcomes of interest including diagnosis categories, comorbidities, and ED length of stay (time from arrival to actual departure date and time). Wilcoxon rank sum tests were used to compare median ED length of stay between cases associated with mental health and other diagnosis groups. Approval for this study was obtained from the Sydney Local Health District Research Ethics Committee (X20-0365 & 2020/ETH02007).

Results

Between June and September 2020, total of 2774 people were registered to be accommodated in Special Health Accommodation hotels. Of these, 461 (16.61%) presented to ED during this period at least once (total of 542 ED presentations). Thirteen patients (2.82%) were diagnosed with COVID-19 and none of these required monitoring in intensive care. The most common ED diagnosis categories (Table 1) were mental health conditions (102, 18.8%) and

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cardiovascular complaints (84, 15.5%). Of mental health presentations, anxiety (43, 42%), suicidal ideation (24, 23%) and acute psychosis (11, 11%) were the most common (Figure 1). The median length of stay for mental health presentations was longer at 543 minutes (interquartile range, IQR 372-788) compared to non-mental health presentations (433 minutes IQR 302-598) ($p < 0.001$). These were also associated with higher triage acuity and higher proportion of pre-existing mental health conditions compared to non-mental health presentations (63.7% versus 11.1% $p < 0.001$).

Discussion and Conclusion

The COVID-19 pandemic continues to have significant direct and indirect health care consequences globally. Some of the most important of these include impacts on mental health.³ The proportion of mental health presentations reported in this cohort was 18%, some five times higher than general ED presentations.^{4,5} Whilst quarantine has proven to be a vital public health measure to curb the spread of SARS-CoV2, it is not without the potential for direct and indirect physical and psychological harms.⁶ This was the first Australian report demonstrating the impact of mental health during hotel quarantine and highlights the need for increased psychological supports and other services to be made available for people entering quarantine in other jurisdictions.⁷ In this study, all patients who presented to ED with mental health problems were routinely followed up by psychologists through the RPA Virtual Hospital. Finally, prolonged length of stay in ED (median length of stay over 9 hours) likely compounded any psychological stress in patients presenting with mental health problems. Only 15.9% of patients were admitted or discharged within the required 4 hours. A prospective study is currently underway by these authors to better understand the psychological impacts of hotel quarantine as the COVID-19 pandemic response evolves in 2021.

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Table 1. Emergency Department (ED) characteristics of 542 presentations from Special Health Accommodation hotels in Sydney June-September 2020. * Out of females excluding representations

		Total n=542
Age (mean sd)		43.50 (22)
Male		284 (52.4%)
Triage category	1 (life threatening)	0 (0%)
	2 (potentially life threatening)	87 (16.1%)
	3 (urgent)	315 (58.1%)
	4 (semi urgent)	121 (22.3%)
	5 (nonurgent)	19 (3.5%)
Diagnosis Category	Mental health	102 (18.8%)
	Cardiovascular	84 (15.5%)
	Abdominal/gastrointestinal	68 (12.6%)
	Musculoskeletal	35 (6.5%)
	Injury	32 (5.9%)
	Neurological	28 (5.2%)
	Urological	27 (5.0%)
	Fever/infection	26 (4.8%)
	Social	23 (4.2%)
	Obstetrics gynaecology	23 (4.2%)
	Allergy/skin rash	19 (3.5%)
	Respiratory	12 (2.2%)
	Ear Nose Throat and Eye	12 (2.2%)
	Administrative/pathology tests/prescriptions	11 (2.0%)
	General complaints	10 (1.9%)
	Drug health/toxicology	10 (1.9%)
	Haematology/Oncology	7 (1.3%)
	Other	13 (2.4%)
Pre-existing conditions (n=460)	None	154 (33.5%)
	Mental health	89 (19.3%)
	Hypertension	83 (18.0%)
	Ischaemic Heart Disease	25 (5.4%)
	Diabetes Mellitus	34 (7.4%)
	Respiratory disorder	28 (6.1%)
	Renal disorder	5 (1.1%)
	Cancer	15 (3.6%)
	Neurological disorder	13 (2.8%)
	Pregnancy*	24/220 (10.9%)
Disposition (n=542)		
	Discharged from ED: treatment complete	409 (76%)
	Discharged from ED: no treatment	7 (1%)
	Admitted to ward	112 (21%)
	Admitted to critical care ward	14 (3%)
ED Length of stay <		

4 hours		
	Total (n=542)	86 (16%)
	Discharged from ED (n=416)	58 (14%)
	Admitted to in-patient ward (n=126)	28 (22%)

Figure 1. Breakdown of mental health presentations to ED from hotel quarantine June-September 2020

