

Rapid evidence checks are based on a simplified review method and may not be entirely exhaustive, but aim to provide a balanced assessment of what is already known about a specific problem or issue. This brief has not been peer-reviewed and should not be a substitute for individual clinical judgement, nor is it an endorsed position of NSW Health.

Acute mental health inpatient unit risk mitigation and models

Evidence check question

What are the published risk mitigation and models of care for COVID-19 positive people in an acute mental health inpatient unit or in the community?

In brief

Inpatient models of care

- A systematic review identified four themes for reorganising psychiatric facilities to reduce transmission risk: addressing people's higher risk of infection, organising to prevent clusters, implementing multiple adaptations in facilities and setting up extra-psychiatric care structures.¹
- International examples of care delivery models for COVID-19 positive people with a lived experience of mental health issues include:
 - In the United States, a free-standing psychiatric hospital was re-purposed for treating COVID-19 in people requiring inpatient psychiatric treatment. Bed capacity, source of referral, personal protective equipment, admitting process, team structure, medical and psychiatric management, disinfecting the unit and other factors are described in how to operationalise the psychiatric COVID-19 unit.²
 - Also in the United States, a medical centre created a stand-alone unit to care for COVID-19-positive people with acute psychiatric needs, while minimising the risk of exposure to other patients and staff using a three phase approach: identifying an existing unit; moving patients; and creating the administrative, staffing, and clinical infrastructure.³
 - A case report in the United States described a COVID-19 positive person, who presented to the emergency department, who had his psychiatric treatment conducted via phone and through a glass wall.⁴
 - In Israel, a dedicated psychiatric hospital has 16 beds specifically dedicated to treating people with both acute psychiatric needs and COVID-19. Two-way communication technology was installed, enabling people to speak to therapists and family members from a safe distance.⁵
 - A dedicated setting was established in India. They considered several factors to reduce transmission risk, including modifications to admission procedures, criteria for admission and discharge, logistics of management while admitted, transfer and discharge and readmission.⁶

- An inpatient unit in Turkey for people with COVID-19 included measures such as cameras in rooms for observations, hospitalisation with a companion, daily visits and medical treatments for people with COVID-19 being conducted after daily consultations with the Department of Infectious Diseases.⁷
- The American Psychiatric Association Committee guidance suggests vaccines should be prioritised for people with substance use disorders and serious mental illness.⁸ People should be provided with information about the benefits of vaccination, and vaccination rates in people with mental illness can be increased with targeted strategies such as vaccination programs in clinics.⁹
- Uptake of COVID-19 vaccination in a medium secure psychiatric hospital population in the United Kingdom was high (85 of 92 patients).¹⁰ However a mental health hospital in Israel had 51 of 196 people sign the informed consent for vaccination.¹¹ A large university psychiatric hospital in Belgium found COVID-19 vaccination rates in people with mental disorders, admitted to or residing in a psychiatric hospital, were as high as in the general population with a targeted prevention program.¹²

Alternative models to inpatient care

- Telepsychiatry and other technologies, such as mobile apps and virtual reality, have advantages, including improved access to care, possibility to receive care in native language and reduction of travel time and costs. Limitations, however, include a lack of evidence for diagnostic reliability and therapeutic efficiency, privacy, and it may not be suitable for all patients.^{13, 14}
- General guidance for establishing telepsychology services covers visual consultation, training, consent, documentation, back up in case of equipment failure and considering which consultations will be appropriate for telepsychology.¹⁵
- In Catalonia, Spain, a novel home-based mental health care approach was implemented which had two main modalities: home intensive community teams for mild-to-moderately ill patients; and home hospitalisation teams for people with moderate to severe mental illness.¹⁶ Learnings from before the pandemic suggest there is moderate evidence for a reduced number and length of hospital admissions due to mental health hospital in the home programs.¹⁷
- A case study from the United States suggested mental health clinics consider a spectrum of service delivery options which are responsive to clients' needs and preferences for care, as well as their psychiatric and medical risk status. These include in-person care in the community with appropriate preventative measures; clinic-based care in a larger room that allows physical distancing; clinic-based telehealth; clinic-based care in a standard office in a manner consistent with local public health guidelines; telehealth encounters with clients at home or in the community; and coaching family members.¹⁸

Minimising spread

- Adjustments to psychiatric facilities to minimise the spread of COVID-19 include:
 - maintaining physical distance, wearing appropriate masks and other adequate personal protective equipment and cleaning and disinfecting protocols for equipment and premises
 - implementing areas or units dedicated to people with suspected or confirmed COVID-19, including areas for screening procedures such as assessing body temperature and testing
 - restricting in-person visits
 - scaling down activity by reducing or even ceasing outpatient and day hospital activities and cutting down full inpatient admissions and the number of available and occupied beds
 - using digital tools to ensure continuity of care, including teleworking and telepsychiatry

- observation areas for newly admitted people
 - staffing measures, including separating staff by groups, spaces, and rosters to prevent cross-infection; encouraging social distancing; and using apps for online meetings
 - education for people with a lived experience of mental health issues including quarantine, hand hygiene, mask wearing and vaccination
 - changes to group therapy, including limiting the number of individuals participating in a group and ensuring that physical distancing among individuals occurs.
- Electroconvulsive therapy has been identified as a potential aerosol generation procedure and requires the appropriate use of personal protective equipment. The Royal Australian and New Zealand College of Psychiatrists have information about the provision of electroconvulsive therapy during COVID-19, including the use of personal protective equipment, cleaning, screening of patients and staff, physical distancing and other general considerations.^{19, 20}
 - Air ventilation disconnected from other parts of the hospital.^{1, 5, 21-32}

Limitations

The evidence base is dynamic, and information is still emerging about best responses to support people with a lived experience of mental health issues during COVID-19. The language has been updated wherever possible in the results table to 'people with a lived experience of mental health issues' or 'people with a lived experience of severe mental health issues.' This is to ensure the language used in this rapid evidence review is inclusive, respectful and trauma informed. Historical language has not been changed in the title of sources. Peer reviewed literature was limited to systematic reviews. This is a rapid evidence review that has not been developed and/or reviewed with the involvement of people with a lived experience of mental health issues. The scope of this evidence check is severe mental illness and specifically health system response for inpatient mental health services. It does not include community mental health, mental health and wellbeing during COVID-19 or the mental health impacts of COVID-19 more broadly.

Background

Disparities in morbidity and mortality in people with a lived experience of mental health issues compared to general populations have been unequivocally established.³³ People experiencing severe mental health issues may be susceptible to worse outcomes during infectious disease outbreaks such as COVID-19.³⁴

Challenges for inpatient psychiatry during the COVID-19 pandemic include close contact among staff and patients, space constraints, and structural barriers in care delivery.²⁶ In addition, frontline staff may be confronted by behaviours that heighten the risk of viral spread, such as shouting, biting and spitting. As a result, healthcare organisations dedicated to psychiatric care need to promote staff morale, which may include ensuring COVID-19 infection preventive measures, increasing infection control and prevention training and providing scheduling flexibility.³⁵

Acute psychiatric inpatient units are also built with a multitude of factors related to the physical structure and distribution of spaces or protection materials that make it difficult to contain COVID-19. These include a lack respiratory isolation rooms, firmly closed doors, poorly ventilated wards, and shared patient rooms.³⁶ The World Health Organization has published a roadmap to improve and ensure good indoor ventilation in the context of COVID-19.³⁷

Methods (Appendix 1)

PubMed, Google and Google Scholar were searched on the 14 September 2021. Table 1 includes systematic and literature review articles, table 2 includes grey literature and table 3 provides international examples of mental health models of care from both the peer reviewed and grey literature. Table 3 is not a complete list of studies but aims to provide examples from the international literature.

Results

Table 1: Peer reviewed literature

Source	Summary
The early impacts of the COVID-19 pandemic on mental health facilities and psychiatric professionals Baumgart, et al. Aug 2021 ¹	A systematic review identified four themes for reorganising psychiatric facilities to reduce transmission risk: addressing peoples’ higher risk of infection, organising to prevent clusters, implementing multiple adaptations in facilities, and setting up extra-psychiatric care structures. Preventative measures are for people with symptomatic and asymptomatic COVID-19. Specific adjustments from the review include: <ul style="list-style-type: none"> • maintaining physical distance, wearing appropriate masks and other adequate personal protective equipment and cleaning and disinfecting protocols for equipment and premises • implementing areas or units dedicated to people with suspected or confirmed COVID-19, including areas for screening procedures such as assessing body temperature and testing • restricting in-person visits • scaling down activity by reducing or even ceasing outpatient and day-hospital activities and cutting down full inpatient admissions and the number of available and occupied beds • using digital tools to ensure continuity of care, including teleworking and telepsychiatry.
Coronavirus and its implications for psychiatry: a rapid review of the early literature Cabrera, et al. Dec 2020 ²¹	<ul style="list-style-type: none"> • A rapid literature review suggests psychiatric hospitals have accommodated enhanced infection control by reducing in-person visitors and shortening inpatient stays. Findings from the review suggest the rapid and widespread adoption of telepsychiatry has been a positive change in psychiatric practice. It is being used between physicians and patients and between psychiatrists and primary teams.
Telepsychiatry and other cutting-edge technologies in COVID-19 pandemic: Bridging the distance in mental health assistance Di Carlo, et al. 2021 ¹³	<ul style="list-style-type: none"> • Review on role the of telepsychiatry and other technologies (e.g. mobile apps, virtual reality, big data and artificial intelligence) for people with a lived experience of mental health issues. • Advantages of telepsychiatry include improved access to care, possibility to receive care in native language, reduction of travel time and costs, comparable effectiveness to in-person care. • Limitations include lack of evidence for diagnostic reliability and therapeutic efficiency, not suitable for all people, potentially not suitable during acute crisis and privacy. • Telepsychiatry can ensure continuity of care during the COVID-19 pandemic; reduces infection risk; supports social distancing or isolation and avoids care interruptions.

Source	Summary
<p>Challenge and strategies of infection control in psychiatric hospitals during biological disasters-from SARS to COVID-19 in Taiwan Hsu, et al. 2020 ²²</p>	<ul style="list-style-type: none"> • A review of infection prevention and control in psychiatric hospitals in Taiwan. • Most psychiatric hospitals have space arrangement plans for environmental support when people with mental health issues also have infectious diseases. <ul style="list-style-type: none"> ○ Observation areas for newly admitted. New people admitted to the hospital are quarantined for eight days with limited daily activities. ○ Quarantine areas for suspected contacts. ○ Ordinary areas for people without COVID-19 contact. • Infection control measures, including hand hygiene and appropriate personal protective equipment. • Staffing measures, including separating staff by groups, spaces, and rosters to prevent cross-infection; encouraging social distancing; and using apps for online meetings • Education for people on topics including quarantine, hand hygiene, mask wearing and vaccination.
<p>Emergency response strategy for containing COVID-19 within a psychiatric specialty hospital in the epicenter of the COVID-19 epidemic in China Ma, et al. 2020 ²³</p>	<ul style="list-style-type: none"> • Response plan for COVID-19 infection in mental health institutions. • Ward reconstruction: <ul style="list-style-type: none"> ○ Three areas – clean area, semi-contaminated area and contaminated area ○ Two access points – contaminated access for medical waste and transfer of infected people, and clean access for medical personnel and daily clinical work ○ Reallocation of ward functions – COVID-19 ward for confirmed cases, suspected COVID-19 ward, isolation observation ward for new people admitted to the institute, rehabilitation ward and general ward • Resource allocation: <ul style="list-style-type: none"> ○ Reorganise wards, recruit non-frontline health workers and new staff ○ Request additional protective equipment • Liaison consultation: <ul style="list-style-type: none"> ○ Team of experts to assess people with COVID-19 including psychiatric medical staff, infectious disease experts, and respiratory disease experts • Infection prevention and control
<p>Toward establishing telepsychology guideline. Turning the challenges of COVID-19 into opportunity Alqahtani, et al. 2021 ¹⁵</p>	<ul style="list-style-type: none"> • Guide to implementation of telepsychology in the context of COVID-19 in Saudi Arabia and other Arabic communities. • General notes for telepsychology services: <ul style="list-style-type: none"> ○ Must include visual consultation ○ Providers must be trained in telepsychology ○ People must sign a consent form ○ Procedures and activities should be formally documented ○ Not all consultations are appropriate for telepsychology – must be safe, effective and manageable for each person with a mental health issue ○ There must be a plan B in case of equipment failure, particularly in critical cases

Source	Summary
	<ul style="list-style-type: none"> ○ Not recommended for serious cases, e.g. suicide risk or violence, unless no alternative face-to-face services available ● Provides protocol and framework, including pre-visit, setting, body of the session, timing and schedule of the session.
COVID-19 testing and patients in mental health facilities Benson, et al. 2020 ³²	<ul style="list-style-type: none"> ● Best practice should involve screening all people for symptoms of COVID-19, particularly before admission. ● Protocol should be implemented for management of people who develop symptoms. ● People with COVID-19 should be separated from others until they are no longer infectious. ● Prevention should focus on providing safe conditions for people and staff.
COVID-19 vaccination for people with severe mental illness: why, what, and how? Mazereel, et al. 2021 ⁹	<ul style="list-style-type: none"> ● People with severe mental illness face barriers to immunisation, including lack of knowledge and awareness, accessibility, cost, fear, and lack of recommendation from primary care providers. ● People should be provided with information about the benefits of vaccination and invited to participate in the vaccination program. ● Vaccination rates in people with mental illness can be increased with targeted vaccination strategies, such as vaccination programs in mental health clinics and active outreach. These would require mental health professionals to be trained in administering the vaccine. ● Compulsory vaccination should only be considered as a last resort.
Review of the current empirical literature on using videoconferencing to deliver individual psychotherapies to adults with mental health problems Thomas, et al. 2021 ¹⁴	<ul style="list-style-type: none"> ● Videoconferencing is effective for delivery of behavioural and cognitive therapies to adults with mental health issues. ● Trial evidence has established videoconferencing is no less efficacious than in-person therapy for prolonged exposure, cognitive processing therapy, and behavioural activation. ● Nonverbal feedback is harder to judge, and people with a lived experience of mental health issues may take time to adapt to videoconferencing. ● People with a lived experience of mental health issues rate videoconferencing for therapeutic alliance and satisfaction similarly to in-person therapy and expected improvements in target symptoms are reported. ● Videoconferencing improves accessibility, provides time and cost savings and increases continuity of care. ● Therapy protocols may need to be adapted to be delivered via videoconferencing.

Table 2: International guidance

Source	Summary
COVID-19 and clinical management of mental health issues	Guidance includes minimising risk in inpatient settings, including isolating suspected and confirmed cases, managing people who are acutely

Source	Summary
Oxford Precision Psychiatry Lab March 2021 ²⁴	unwell, vaccines and vaccine hesitancy and use of digital technologies and telepsychiatry.
Covid19: interim considerations for state psychiatric hospitals Substance Abuse and Mental Health Services Administration (SAMHSA) May 2020 ²⁵	Interim considerations for psychiatric hospitals, including segregating new admissions until COVID-19 testing results are available for review, limiting the movement of people with COVID-19 and identifying dedicated staff to care for people with COVID-19.
Challenges and priorities in responding to COVID-19 in inpatient psychiatry Open Forum April 2020 ²⁶	Open Forum focuses on specific challenges, contingency planning considerations and downstream impacts of COVID-19 on inpatient psychiatric care. This includes COVID-19-specific precautions, visitor restrictions, physician workforce considerations, operational adjustments, and group therapy changes, including limiting the number of individuals participating in a group and ensuring that physical distancing among individuals occurs. Organised leadership and clear communication are identified as early priorities in pandemic response to minimise misinformation and address immediate challenges.
Managing acute disturbance in the context of COVID-19 National Association of Psychiatric Intensive Care and Low Secure Units December 2020 ²⁷	Updated guidance from NAPICU, including procedures to minimise transmission risk (e.g. daily monitoring of temperatures and enquiry or observation), care planning to support isolation, and use of personal protective equipment and physical interventions.
COVID-19: guidance for community and inpatient services Royal College of Psychiatrists, 2021 ³⁸	Specific guidance on supporting people who are unwell with COVID-19 in inpatient facilities, managing capacity and demand and providing liaison psychiatry services.
The role of the psychiatrist in the equitable distribution of the covid-19 vaccine American Psychiatric Association, 2021 ⁸	COVID-19 pandemic guidance document prepared by the American Psychiatric Association Committee on Psychiatric Dimensions of Disaster. Guidance suggests vaccines should be prioritised for people with substance use disorders and serious mental illness.

Table 3: Examples of international models of care

Country	Examples
Belgium	<p>A large university psychiatric hospital in Belgium assessed how many people accepted an offer to be vaccinated against COVID-19 in a targeted vaccination program. From 30 March 2021 to 19 July 2021, people older than 18 years admitted to, or already residing in, the hospital (including people in day care) were invited to be vaccinated against COVID-19. Findings suggest that COVID-19 vaccination rates in people with a lived experience of mental health issues admitted to, or residing in, a psychiatric hospital are just as high as in the general population with a targeted prevention program.¹²</p>
Canada	<p>A Canada-wide survey collected information regarding changes in processes related to providing care to patients on inpatient psychiatry units in response to the COVID-19 pandemic, including physical separation on the wards, symptom and vital signs screening, testing, isolation, rationales for number of beds allocated for COVID-positive, –suspect and -negative people and for selecting a particular hospital to provide care to these different groupings.³¹</p>
India	<p>Describes a dedicated unit which was made operational at the RM Varma subspecialty block at the National Institute of Mental Health and Neuro Sciences, Bengaluru, Karnataka. The article also presents a working framework for delivering psychiatric care in a dedicated setting and for reducing transmission risk, including modifications in admission procedures, criteria for admission and discharge, logistics of management while admitted, transfer and discharge and readmission.⁶</p>
Israel	<p>Sheba Medical Center is a dedicated psychiatric hospital in Israel. The hospital has 16 beds specifically dedicated to treating patients with both acute psychiatric needs and COVID-19. The air ventilation system was designed to be disconnected from the rest of the hospital. Two-way communication technology was installed, enabling people admitted to the hospital to speak to their therapists and family members from a safe distance.⁵</p> <p>Shalvata Mental Health hospital provided vaccines to patients. Fifty-one people with a lived experience of mental health issues, out of 196 people hospitalised in closed, open or day wards during that period, signed the informed consent and were assessed for their clinical condition, fear of COVID-19 and approach to the vaccine.¹¹</p>
Spain	<p>Correspondence on the role of mental health home hospitalisation care during the COVID-19 pandemic. The novel home-based approach used in Spain has two main modalities: home intensive community teams for people with mild-to-moderate illness and home hospitalisation teams for moderate-to-severe mental illness cases.¹⁶</p>
The Netherlands	<p>A case series to identify the weaknesses and risk factors within the mental health care system, which may contribute to nosocomial outbreaks in psychiatry. The population, healthcare workers, infrastructure, and policy were identified as making the department more susceptible to an outbreak.³⁹</p>
Turkey	<p>Describes actions taken to structure an inpatient unit for patients with the comorbidity of COVID-19 and severe mental illness in Istanbul. Actions included:</p> <ul style="list-style-type: none"> • cameras in rooms for observations • hospitalisation with a companion <p>daily visits and medical treatments for people with COVID-19 being conducted after daily consultations with the Department of Infectious Diseases.⁷</p>

Country	Examples
Uganda	<p>The transformation of psychiatric units into isolation centres in low-income countries such as Uganda requires mental health providers to adopt new mental health care models. Models for community mental health care, such as integrating psychiatric care into everyday clinical practices, are crucial during the pandemic.⁴⁰</p>
United Kingdom	<p>Interventions implemented in a 20-bed acute all-male psychiatric unit in London included regular team briefings, air ventilation, patient flow, patient education, no visit policy, use of isolation and testing (including point-of-care), and virtual links with community services.³⁰</p> <p>All patients in the Arnold Lodge in Leicester, were offered COVID-19 vaccines. Findings from a service evaluation suggests COVID vaccine was broadly acceptable, and most people admitted to the Lodge gave consent to receive it (85 of the 92 patients).¹⁰</p>
United States	<p>A quality-improvement study of in-patient psychiatry management of COVID-19 in New York, USA. Preventative measures included restricting visitor, reducing access to common areas (and use of hospital-provided surgical masks when in common areas), and serving meals to individual rooms. People with a lived experience of mental health issues who tested positive for COVID-19 were placed under contact, droplet and eye precautions and asked to isolate themselves in their rooms on the unit. Staff workflow was also restructured, resident physicians were redistributed to provide care via telepsychiatry, and surveillance testing was implemented to minimise transmission risk.²⁸</p> <p>Case study of experiences and challenges from Gracie Square Hospital, a free-standing psychiatric hospital in New York, USA, repurposed for treating people with COVID-19 requiring inpatient psychiatric treatment only. Bed capacity, source of referral, personal protective equipment, admitting process, team structure, medical and psychiatric management, disinfecting the unit and other factors to operationalise the psychiatric COVID-19 unit are included in the case study.²</p> <p>A COVID-19 testing and triage algorithm for psychiatric units has been implemented in New York USA.⁴¹</p> <p>The University of Rochester Medical Center in the USA created a stand-alone unit to care for people with COVID-19 with acute psychiatric needs while minimising the risk of exposure to other people in the unit including staff. A three-phase approach was used to create the unit:</p> <ul style="list-style-type: none"> • identifying an existing unit that could be adapted to support the unique treatment needs of this population • moving people currently occupying that space to an appropriate offsite location • creating the administrative, staffing, and clinical infrastructure.³ <p>Universal testing was used at the UTHealth Harris County Psychiatric Center in the Houston area, Texas.²⁹</p> <p>Describes the containment of a COVID-19 outbreak in an inpatient geriatric psychiatry unit, including infection control and nursing-led interventions. The interventions included special droplet and contact precautions, which included isolation in a private or semiprivate room and all staff wearing a disposable gown, gloves, and surgical mask with eye protection before entering each room; and testing all people admitted to the unit. People in the unit who tested negative twice were removed from isolation precautions.⁴²</p>

Country	Examples
	<p>A case study presented at the American Psychiatric Association annual meeting described a person with acute psychosis who tested positive for COVID-19 on presenting to the emergency department. The person was isolated, and his psychiatric treatment conducted via phone and through a glass wall.⁴</p> <p>A case study from the United States found mental health clinics should consider a spectrum of service delivery options that are responsive to clients' needs and preferences for care, as well as their psychiatric and medical risk status. This may include in-person care in the community with appropriate preventative measures; clinic-based care in a larger room that allows physical distancing; clinic-based telehealth; clinic-based care in a standard office in a manner consistent with local public health guidelines; telehealth encounters with clients at home or in the community; and coaching family members.¹⁸</p>

Appendix 1

To inform this brief the following searches were done.

Table 1: A PubMed search was run to capture existing systematic and literature reviews on COVID-19 mental health models of care delivery using the following search string:

((("model*" OR "organisation" OR "risk mitigation" OR "adaptation" OR "infection control" OR "vaccinat*" OR "testing") AND (psychiatr*[Title/Abstract] OR telepsych*[Title/Abstract] OR ("mental health"[Title/Abstract] AND (facilit*[Title/Abstract] OR unit*[Title/Abstract] OR acute[Title/Abstract] OR community[Title/Abstract] OR tele*[Title/Abstract]))) AND (("COVID"[Title/Abstract] OR "COVID-19"[Title/Abstract] OR "SARS-CoV-2"[Title/Abstract]) AND (review[Filter] OR systematicreview[Filter]) AND (english[Filter])))

Tables 2 and 3: Google and Google Scholar searches were undertaken to identify relevant grey literature as well as international examples of models of care delivery.

“models of mental health care in the community covid-19”

“models of inpatient mental health care covid-19”

"hospital in the home" and covid and psychiatr*

“mental health services” and psychiatry and COVID and community

“psychiatric hospitals and COVID19”

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