

## Evidence check

28 April 2020

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 This brief has not been peer-reviewed and should not be a substitute for individual clinical judgement, nor is it an endorsed position of NSW Health.

## Management of acute behavioural disturbance and COVID-19

### Rapid review questions

1. What is the guidance on the management of acute behavioural disturbance during COVID-19?
2. Specifically, what are the: a) infection control and personal protective equipment, b) pharmacotherapy and c) non-pharmacological management considerations during COVID-19?

### In brief

- There is limited evidence on the specific management of acute behavioural disturbances during COVID-19.
- Expert opinion is that people with severe mental illness may find it difficult to understand, accept and follow isolation protocols. This may increase the risk of COVID-19 transmission to others.
- Based upon studies conducted during and after previous pandemics, periodic testing for infection symptoms, nurse-led approaches within a non-specialist setting and strong leadership were effective in delivering mental health and psychosocial support services.
- Experience from China suggests early identification of people needing hospitalisation and rapid precaution planning including remote monitoring is important during COVID-19.
- A recent account from the emergency department of the Royal Adelaide Hospital described challenges when managing a patient with both suspected COVID-19 and acute behavioural disturbance. A review of the incident estimated that at least 30 healthcare workers could have been exposed if the person had tested positive for COVID-19.
- NAPICU (the National Association of Psychiatric Intensive Care and Low Secure Units) released guidance on managing acute behavioural disturbance and recommends establishing local ethics committees to consider restrictive interventions employed for managing COVID-19 risks.
- Comment published in Lancet Psychiatry suggests if psychotropic medications are used as part of a management plan, basic pharmacological treatment principles of ensuring minimum harm is required to reduce harmful effects of any interactions with COVID-19 and its treatments.
- US medical societies encourage the creation and use of 'psychiatric advanced care' directives; and the use of telehealth in high-risk environments.
- Guidance generally states to avoid the use of benzodiazepines due to increased risk of respiratory depression.
- An expert consensus statement on the use of clozapine states the frequency of absolute neutrophil count (ANC) may be reduced for people fulfilling a set criteria. One review on clozapine has suggested that there may be an increased risk of pneumonia.

## Limitations

- The evidence base is dynamic and information is still emerging about best responses for the management of acute behavioural disturbances during the COVID-19 pandemic. Recommendations are copied from source material and no attempt has been made to integrate the different guidance. There may be additional evidence and resources not included in this rapid review.
- This review has not included guidance available on the management of acute behavioural disturbance prior to COVID-19 or conducted an analysis of the changes and/or adaptations to the guidance in response to COVID-19.
- The scope of this review is behavioural disturbance related to mental illness. It does not include behavioural disturbance that may be caused by general medical conditions (e.g. acute delirium, head trauma, infection or dementia) or by substance use including intoxication or withdrawal.
- This review has not included guidance on suicide risk and/or suicide-related consequences in response to COVID-19 and/or broader mental health, wellbeing and psychosocial considerations in response to COVID-19 and/or general management approach for psychiatric issues.

## Background

People with a lived experience of mental health issues, including those with severe mental illnesses, might be affected by relapse, new issues and possible exacerbation of symptoms during the COVID-19 pandemic. (1-6)

People with severe mental illness may find it difficult to understand, accept and follow isolation protocols. This may increase the risk of COVID-19 transmission to others. This may also present challenges to the management of people who present with acute behavioural disturbance and who are also a possible infection risk. (7-9).

Management plans that may be required to safely care for people presenting with acute behavioural disturbance and minimise the risk of spreading COVID-19 could present ethical and legal challenges with respect to professional practice. (9)

Inpatient psychiatric settings also present unique challenges when implementing infection control measures including; open-space units, patient population and close contact for treatment. (9)

Wuhan Mental Health Center in China was the first psychiatric hospital with clustered nosocomial infections. Three elements were responsible for the infection of patients: source of infection (patients with COVID-19), transmission route (human-to-human droplet transmission), and susceptibility (patients without insight). (10) In South Korea a psychiatric ward was locked down after two of its 100 patients became infected with COVID-19. (11)

Mental Health Acts in Australia require that seclusion and restraint be used only where all other reasonably practicable ways to prevent harm have been considered and/or attempted. Recent amendments to mental health legislation in Australia gives the 'Mental Health Review Tribunal' discretion to extend community treatment orders, adjourn mental health inquiries for up to 28 days and conduct hearings by telephone.

## Methods (Appendix 1)

PubMed, Google and Twitter were searched on 28 and 29 April 2020.

**Results (Tables 1-3)**

**Table 1: Overreaching guidance on the management of acute behavioural disturbance during COVID-19**

Reference	Source	Summary guidance (aims to summarise components of the guidance, it is not a complete summary of the full guidance)
The COVID-19 outbreak and psychiatric hospitals in China: managing challenges through mental health service reform  Xiang et al., 2020 (4)	<a href="#">Article</a>	<ul style="list-style-type: none"> <li>• Implement preventive measures such as the provision of adequate medical supplies and protective equipment, public education on the risks of COVID-19 for hospital staff and patients, and restrict family visits to hospitals</li> <li>• Measurement of body temperature should be performed at least once a day</li> <li>• Avoid group interactions in communal areas</li> <li>• Establish isolation wards for psychiatric patients with suspected and confirmed COVID-19</li> </ul>
Schizophrenia and COVID-19: risks and recommendations  Fonseca et al, 2020 (12)	<a href="#">Article</a>	<ul style="list-style-type: none"> <li>• Recommendations for health professionals and families regarding schizophrenia:                         <ul style="list-style-type: none"> <li>- mental health professionals should remotely monitor unstable outpatients and, when possible, use telehealth (internet-based) technologies to provide more frequent clinical contact and support for emerging concerns</li> <li>- mental health professionals and families should promote and monitor adherence to antipsychotic medication regimens, as well as ensure access to prescriptions</li> <li>- patients should continue regular medication regimens, including clozapine</li> </ul> </li> </ul>

Reference	Source	Summary guidance (aims to summarise components of the guidance, it is not a complete summary of the full guidance)
<p>COVID-19 disease emergency operational instructions for mental health departments issued by the Italian Society of Epidemiological Psychiatry</p> <p>Starace et al., 2020 (13)</p>	<p><a href="#">Article</a></p>	<ul style="list-style-type: none"> <li>• Limit new admissions to clinical emergencies which cannot be deferred (e.g. compulsory admissions)</li> <li>• For new admissions, check the physical health status (specifically, the presence of cough, body temperature &gt;99.5 F, sore throat, shortness of breath), and contacts at risk in the previous 14 days</li> <li>• If the symptoms listed above are present or the person had a contact at risk in the previous 14 days, and the admission to the unit is necessary, it is possible to admit the patient only if the facility can provide the following: rooms for isolation (single room with ensuite facilities), personal protective equipment, and a virus-screening test. If those requirements are not met, evaluate the possibility to transfer the inpatient compulsory admission to a different facility</li> <li>• Visitors are not allowed to the building. Authorised visitors are required to wear fluid-resistant surgical masks, practice hand hygiene, and keep social distancing</li> </ul>
<p>Progression of mental health services during the COVID-19 outbreak in China</p> <p>Li et al., 2020 (14)</p>	<p><a href="#">Article</a></p>	<ul style="list-style-type: none"> <li>• Address prevention of nosocomial infections</li> <li>• Provide timely treatment and care for patients with severe mental illness infected with COVID-19</li> </ul>
<p>Challenges and priorities in responding to COVID-19 in inpatient psychiatry</p> <p>Luming, 2020 (15)</p>	<p><a href="#">Article</a></p>	<ul style="list-style-type: none"> <li>• Screen patients diligently for respiratory symptoms and fever prior to admission and rescreen for symptoms throughout hospitalisation</li> <li>• Personal protective equipment should be used in cases where patients develop fever and respiratory symptoms, although its use should be minimised if patients do not meet both criteria, especially if personal protective equipment supplies are low</li> <li>• Surfaces should be cleaned often, using recommended cleaning agents, such as high-content ethanol-based hand sanitiser for disinfecting oneself and surfaces. In addition, disinfection should be performed on items and spaces used frequently, including dining areas, doorways, common-use computers, and identification cards, which contain plastic and metal and can transmit COVID-19</li> </ul>

Reference	Source	Summary guidance (aims to summarise components of the guidance, it is not a complete summary of the full guidance)
		<ul style="list-style-type: none"> <li>• Visitor restrictions for family members and nonessential employees</li> <li>• Telepsychiatry can be an important consideration for delivering inpatient services to minimise simultaneous exposure of a high number of healthcare workers including psychiatrists</li> </ul>
<p>COVID-19 and mental health: A review of the existing literature</p> <p>Rajkumar, 2020 (16)</p>	<p><a href="#">Literature review</a></p>	<ul style="list-style-type: none"> <li>• Five papers (correspondence, n = 2; commentary, n = 3) have directly addressed the use of specific strategies to deliver mental healthcare to persons affected by the COVID-19:                             <ul style="list-style-type: none"> <li>- development of teams of specialists qualified to address emotional distress</li> <li>- training of community health personnel in basic aspects of mental healthcare</li> <li>- the use of online surveys to assess the scope of mental health problems</li> <li>- development of online materials for mental health education</li> <li>- provision of online counselling and self-help services</li> <li>- use of structured letters as a form of asynchronous telepsychiatry consultation</li> <li>- development of synchronous telemedicine services for diagnostic purposes as well as counselling</li> </ul> </li> </ul>
<p>Ensuring mental health care during the SARS-CoV-2 epidemic in France: a narrative review</p> <p>Chevance et al., 2020 (17)</p>	<p><a href="#">Narrative review</a></p>	<ul style="list-style-type: none"> <li>• To maintain the continuity of psychiatric care in France several directions can be considered, in particular the creation of 'COVID+ units'. These units are under the dual supervision of a psychiatrist and an internist or infectious disease specialist. All new entrants are placed in quarantine for 14 days. The nursing staff receives specific training, daily medical check-ups and close psychological support. Family visits are prohibited and replaced by videoconference</li> </ul>

Reference	Source	Summary guidance (aims to summarise components of the guidance, it is not a complete summary of the full guidance)
<p>The challenge of managing patients with COVID-19 and acute behavioural disturbances</p> <p>Lightfoot et al., 2020 (8)</p>	<p><a href="#">Letter</a></p>	<ul style="list-style-type: none"> <li>• Consider and respond to challenges including:                             <ul style="list-style-type: none"> <li>- delays in security arrival due to the closure of doors within the department to construct an isolation area</li> <li>- delays and ineffective application of personal protective equipment (PPE)</li> <li>- delays in pharmaceutical sedation due to medication being located on the other side of the department to where patients with acute behavioural disturbance are routinely managed</li> <li>- extended duration of the duress alarm resulting in unnecessary staff without PPE attending and entering a corridor of the COVID-19 clinical area</li> <li>- activation of the fire alarm</li> <li>- plan to facilitate entry of external emergency services into contaminated COVID-19 areas</li> </ul> </li> </ul>
<p>Impact of COVID-19 pandemic on pre-existing mental health problems</p> <p>Chatterjee et al., 2020 (18)</p>	<p><a href="#">Letter</a></p>	<ul style="list-style-type: none"> <li>• Emergency services must be more aware about psychiatric emergencies so that appropriate and timely referrals can be done</li> <li>• Psychotropic medications which are essential (e.g. selective serotonin reuptake inhibitors (SSRIs), atypical antipsychotics, sodium valproate) can be prescribed without stringent monitoring and ought to be mentioned in the list 'A' and 'B' drugs</li> </ul>
<p>Addressing the COVID-19 pandemic in populations with serious mental illness</p> <p>Druss, 2020 (19)</p>	<p><a href="#">Viewpoint</a></p>	<ul style="list-style-type: none"> <li>• Develop continuity-of-operations plans to ensure that they can maintain vital functions in the face of staff illnesses or shortages of psychotropic medications</li> <li>• Develop protocols for identifying and referring patients at risk of infection and self-quarantine strategies for clinicians who develop symptoms of the illness. Adequate environmental protections including well-ventilated spaces, easy access to handwashing, and PPE should be available. Institutional settings, including state psychiatric hospitals, nursing homes, and long-term care facilities, will be at particularly high risk for outbreaks and need to ensure that they have contingency plans to detect and contain them if they occur</li> </ul>

Reference	Source	Summary guidance (aims to summarise components of the guidance, it is not a complete summary of the full guidance)
Optimizing psychiatric care during the COVID-19 pandemic  Maden et al, 2020 (5)	<a href="#">Letter</a>	<ul style="list-style-type: none"> <li>• Psychiatric hospitals are not designed to the required standard of isolation against respiratory disease</li> <li>• Psychiatric medical staff have little experience in dealing with infectious disease</li> <li>• Activities to ‘stabilise’ patients may not be compatible with best practice for preventing the spread of infectious disease</li> </ul>
Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed  Xiang, 2020 (20)	<a href="#">Comment</a>	<ul style="list-style-type: none"> <li>• Timely psychiatric treatments should be provided for those presenting with more severe mental health issues</li> <li>• If psychotropic medications are used, basic pharmacological treatment principles of ensuring minimum harm should be followed to reduce harmful effects of any interactions with COVID-19 and its treatments</li> </ul>
Managing acute disturbance in the context of COVID-19  NAPICU, 2020 (9)	<a href="#">Guidance</a>	<ul style="list-style-type: none"> <li>• Interventions for supporting patients with acute behavioural disturbances should be divided into primary, secondary and tertiary interventions:                         <ul style="list-style-type: none"> <li>• Primary                                 <ul style="list-style-type: none"> <li>- On admission, and ideally prior to admission, patients should be asked if they, or anyone they live with, have had COVID-19, a temperature, or a new and persistent cough</li> <li>- Patients admitted should be engaged in a process of discussion and information sharing about COVID-19 infection risk. The possibility should be addressed that a patient who has identified infection risk issues, may need to be subject to isolation</li> </ul> </li> <li>• Secondary                                 <ul style="list-style-type: none"> <li>- Avoid patients being unnecessarily subject to placement or procedures that result in a finite resource being inefficiently deployed. Suggested methods could include daily monitoring of temperatures and enquiry or observation to ascertain the presence of a cough</li> <li>- For those subject to isolation, an assessment should be made of items available to the patient which could improve cooperation and experience of isolation, reducing the potential for disturbance. Items helpful in meaningfully occupying time should be allocated for the patient’s individual use, and not re-introduced to</li> </ul> </li> </ul> </li> </ul>

Reference	Source	Summary guidance (aims to summarise components of the guidance, it is not a complete summary of the full guidance)
		<p>general unit use until cleaning or disposal consistent with infection control recommendation</p> <ul style="list-style-type: none"> <li>• Tertiary                             <ul style="list-style-type: none"> <li>- For the period of time that the person with COVID-19 presents with behaviour that is a significant risk to others, which could include an infection risk, and lesser restrictive intervention is not possible, then consideration should be given to extended segregation. While all effort should be made to avoid the need for tertiary interventions, the balance is pushed toward the use of segregation and/or seclusion, where close physical contact such as extended holds are the only alternatives</li> <li>- Benzodiazepines should not be used when a patient has acute pulmonary insufficiency. Lorazepam would be the preferred benzodiazepine as it has a shorter half-life</li> </ul> </li> <li>• Set up local ethics committees that are able to consider any restrictive interventions employed for managing COVID-19 infection risks including restriction leave</li> <li>• Leave outside needs to balance risks and benefits in-line with government advice and take into account the innate issues of operating an inpatient mental health unit</li> </ul>
<p>COVID-19 &amp; clinical management of mental health issues</p> <p>Oxford Precision Psychiatry Lab 2020 (21)</p>	<p><a href="#">Guidance</a></p>	<ul style="list-style-type: none"> <li>• Clozapine treatment                             <ul style="list-style-type: none"> <li>- It is highly unlikely that during this period it will be possible to start patients on clozapine treatment safely unless normal haematological monitoring can be assured</li> <li>- For people on clozapine with symptoms of infection, including fever, sore throat and flu-like symptoms, an urgent neutrophil count is strongly recommended</li> <li>- If patients on clozapine become symptomatic with fever and flu-like symptoms, the emergence of signs and symptoms of clozapine toxicity may require clinicians to reduce the dose of clozapine by as much as a half</li> <li>- Continuation of clozapine treatment is the imperative unless low neutrophil counts dictate treatment cessation</li> </ul> </li> <li>• Inpatient wards                             <ul style="list-style-type: none"> <li>- Wards should exercise the principles of social distancing across the ward community</li> </ul> </li> </ul>

Reference	Source	Summary guidance (aims to summarise components of the guidance, it is not a complete summary of the full guidance)
		<ul style="list-style-type: none"> <li>- Take appropriate steps to isolate patients with mild symptoms on the ward</li> <li>- Restrict the public to limit visiting and to consider other ways of keeping in touch, such as phone calls. Visitors must be immediate family members or carers, limited to one per patient unless under specific circumstances</li> <li>- Temperature should be taken on admission, patient should be engaged in information sharing, a formal capacity assessment should be completed, infection control measures, use materials for activities that can be wiped clean and disinfected or disposed after use, in rooms large enough to adhere to social distancing. In a patient with suspected COVID-19, medication can be used with caution, consider short-acting medication, oral medication is preferred, lorazepam would be the preferred benzodiazepine, physical health monitoring</li> <li>- Best management includes supportive measures, targeted treatment and organ support</li> <li>• Lithium treatment                         <ul style="list-style-type: none"> <li>- Lithium may be started but will depend on careful consideration, balancing clinical need and the resources available to maintain the expected standards for lithium monitoring</li> <li>- For patients on lithium, remind all patients to not stop taking this unless they are advised to do so. Where possible, routine lithium monitoring at the suggested intervals should continue</li> </ul> </li> <li>• Long-acting injectable (LAI) antipsychotics                         <ul style="list-style-type: none"> <li>- LAI may be started although clinicians will need to check local arrangements for administration of these injections</li> <li>- Advise patients to continue their current dosage until the changes in healthcare provision necessary during the COVID-19 pandemic have been reversed</li> </ul> </li> </ul>
<p>Joint statement for care of patients with behavioral health emergencies and suspected or confirmed COVID-19</p>	<p><a href="#">Statement</a></p>	<ul style="list-style-type: none"> <li>• Support medical screening via telehealth or telephonic and clinical pre-admission screenings and assessments by qualified, licensed professionals</li> <li>• Expand use of telehealth, including prescribing of controlled substances for opioid use disorder via telemedicine, in line with infectious disease recommendations (i.e. social distancing)</li> </ul>

Reference	Source	Summary guidance (aims to summarise components of the guidance, it is not a complete summary of the full guidance)
American Association for Emergency Psychiatry, American College of Emergency Physicians, American Psychiatric Association, Coalition on Psychiatric Emergencies, Crisis Residential Association, and the Emergency Nurses Association, 2020 (22)		<ul style="list-style-type: none"> <li>• Encourage novel use of telehealth in high-risk environments for diversion and mitigation of unnecessary emergency department visits</li> <li>• Encourage the creation and use of psychiatric advanced directives by patients; that will help provide treatment guidance for providers by patients before their symptoms worsens to the point of impairment in psychiatric medical decision making</li> </ul>

**Table 2: Pharmacotherapy considerations during COVID-19**

Reference	Source	Guidance
<p>A rational use of clozapine based on adverse drug reactions, pharmacokinetics, and clinical pharmacopsychology</p> <p>Leon et al., 2020 (23)</p>	<p><a href="#">Article</a></p>	<ul style="list-style-type: none"> <li>In the absence of data on COVID-19 in clozapine patients, clozapine possibly impairs immunological mechanisms and may increase pneumonia risk in infected patients. Psychiatrists should call their clozapine patients and families and explain to them that if the patient develops fever or flu-like symptoms, the psychiatrist should be called and should consider halving the clozapine dose. If the patient is hospitalized with pneumonia, the treating physician needs to assess for symptoms of clozapine intoxication since halving the dose may not be enough for all patients; consider decreasing it to one-third or even stopping it. Once the signs of inflammation and fever have disappeared, the clozapine dose can be slowly increased to the prior dosage level</li> </ul>
<p>Consensus statement on the use of clozapine during the COVID-19 pandemic</p> <p>Siskind et al., 2020 (24)</p>	<p><a href="#">Consensus statement</a></p>	<ul style="list-style-type: none"> <li>The frequency of absolute neutrophil count (ANC) may be reduced to every 3 months, with dispensation of up to a 90-day supply (if it can be safely stored) for people fulfilling all the following criteria:                         <ul style="list-style-type: none"> <li>continuous clozapine treatment for &gt;1 year</li> <li>have never had an ANC &lt;2000/<math>\mu</math>L (or &lt;1500/<math>\mu</math>L if history of benign ethnic neutropenia)</li> <li>no safe or practical access to ANC testing</li> </ul> </li> <li>For patients on clozapine with any symptoms of infection (including those reported for severe acute respiratory syndrome coronavirus 2 [SARS-CoV-2], such as cough, fever and chills, sore throat or other flu-like symptoms), an urgent physician assessment including a complete blood count (with ANC) should be obtained</li> <li>If patients on clozapine become symptomatic with fever and flu-like symptoms, the emergence of signs and symptoms of clozapine toxicity may require clinicians to reduce the dose of clozapine by as much as a half. Continue the lower dose until 3 days after the fever has subsided, then increase clozapine in a stepwise manner to the pre-fever dose</li> </ul>
<p>COVID-19: Providing medication</p>	<p><a href="#">Guidance</a></p>	<ul style="list-style-type: none"> <li>Consider carefully if withdrawing or changing patients from antidepressant, anxiolytic or antipsychotic medication is required during COVID-19. In some circumstances this may be unavoidable due to clinical need, however the clinical rationale should be carefully documented and arrangements for monitoring put in place</li> </ul>

Reference	Source	Guidance
Royal College of Psychiatrists, 2020 (25)		<ul style="list-style-type: none"> <li>• Patients to continue their current dosage until the changes in healthcare provision in response to COVID-19 outbreak have been reversed, and only then dosage reductions or withdrawal to be considered</li> <li>• Increase physical health monitoring for patients taking benzodiazepines and monitoring of lithium levels and renal function. If there is a delay in obtaining a lithium level, pause treatment</li> <li>• Continue with regular blood monitoring for patients already established on clozapine. Ensure PPE is worn and adhere to infection prevention control procedures</li> <li>• Extend blood test validity for individual patients in circumstances where clozapine might normally be withheld pending the results of a full blood test; noting this may be unavoidably disrupted during the pandemic. Local services must identify the local expert with responsibility for reviewing requests</li> </ul>
<p>Use of long-acting injectables as a clinically necessary treatment</p> <p>North Carolina Psychiatric Association, 2020 (26)</p>	<p><a href="#">Guidance</a></p>	<ul style="list-style-type: none"> <li>• Ensure the role of long-acting injectables (LAI) is considered a clinically necessary treatment and is continued for patients with chronic mental illness. Withdrawal of this treatment would likely increase their risk of physical and psychiatric decompensation</li> <li>• Continued use of long-acting injectable medication be limited to situations in which the individual would predictably have an adverse outcome with a transition to oral medication or would have barriers to access oral medication (e.g. individuals unwilling to take oral medication, with a history of past decompensation (including hospitalization, agitation, violence, arrest, relapse or overdose)</li> </ul>
<p>Policy for Certain REMS Requirements During the COVID-19 public health emergency guidance for industry and health care professionals</p> <p>U.S Department of Health and Human Services Food</p>	<p><a href="#">Guidance</a></p>	<ul style="list-style-type: none"> <li>• On 22 March 2020 guidance was issued regarding the COVID-19 public health emergency and access to medications that are subject to risk evaluation and mitigation strategy required testing.</li> <li>• The guidelines allow patients to receive clozapine in the absence of laboratory testing of ANC if there are compelling reasons not to complete the testing.</li> </ul>

Reference	Source	Guidance
and Drug Administration, 2020 (27)		
Medicines management COVID-19  Australian Commission on Safety and Quality in Healthcare, 2020 (28)	<a href="#">Guidance</a>	<ul style="list-style-type: none"> <li>Guidance on medicines management during the COVID-19 pandemic has been developed to assist health service organisations and clinicians. In particular, those involved in the prescribing, dispensing and administration of medicines. Development has been informed by environmental scanning and literature review.</li> </ul>
Clozapine and blood dyscrasias in patients with coronavirus (COVID-19)  NHS Foundation Trust, 2020 (29)	<a href="#">Guidance</a>	<ul style="list-style-type: none"> <li>Current data suggest that COVID-19 infection results in a lowered white cell count for some (9-45% of patients have white cell count &lt;math&gt;&lt;1.5 \times 10^9 /L&lt;/math&gt;). It was reported in 33-83% of patients)</li> <li>More severe abnormalities correlate with severity of the disease. Notably however, studies have found neutrophils to be in the normal range (median 3-5 x 10<sup>9</sup> /L) or raised (&gt;6.3 x 10<sup>9</sup> /L), 38% of patients in one study</li> </ul>
Medication use for acute behavioural disturbance during the COVID-19 pandemic  Grampian NHS Trust, 2020 (30)	<a href="#">Guidance</a>	<ul style="list-style-type: none"> <li>Guidance on medications</li> </ul>
COVID-19 interim clozapine management  Office of the Chief Psychiatrist (South Australia), 2020 (31)	<a href="#">Guideline</a>	<ul style="list-style-type: none"> <li>Guideline on interim measures to reduce the risk to vulnerable mental health consumers during the COVID-19 pandemic while ensuring that they receive appropriate clozapine care and is not to be taken as a permanent change in management guidelines</li> </ul>

Reference	Source	Guidance
<p>The risk and prevention of novel coronavirus pneumonia infections among inpatients in psychiatric hospitals</p> <p>Zhu et al., 2020 (10)</p>	<p><a href="#">Letter</a></p>	<ul style="list-style-type: none"> <li>• Based on the risk level of a latent infectious patient, the physician should make a firm decision on whether the patient should be transferred to the designated hospital for treatment set by the local government</li> <li>• Temporarily prohibit on-site visits, and replace them with video chat. Ensure that family members know that the patients receive sufficient daily necessities from the hospital, so as to eliminate the worries and doubts of family members</li> <li>• Early identification of people needing hospitalisation and rapid precaution planning including remote monitoring for patients at risk</li> </ul>

**Table three: Guidance from previous pandemics on the management of acute behavioural disturbance**

Reference	Source	Results
Psychiatric inpatients' reactions to the SARS epidemic: An Israeli survey  Iancu et al., 2005 (32)	<a href="#">Article</a>	17% of psychiatric inpatients at a centre close to a SARS outbreak had not even heard about the SARS threat during the 2003 epidemic.
Mental health care during the Ebola virus disease outbreak in Sierra Leone  Kamara et al., 2017 (33)	<a href="#">Article</a>	A nurse-led approach within a non-specialist setting was a successful model for delivering mental health and psychosocial support services during the Ebola outbreak in Sierra Leone. Strong leadership and partnerships were essential for establishing a successful service. Lack of affordable psychotropic medications, limited human resources and weak social welfare structures remain challenges.
A tuberculosis outbreak in a psychiatric hospital: Kanagawa, Japan, 2012  Tasaka et al., 2020 (34)	<a href="#">Article</a>	To prevent similar outbreaks, particularly in psychiatric hospitals, periodic screening of healthcare workers is required to prevent nosocomial tuberculous outbreaks.
Factors associated with psychosis among patients with severe acute respiratory syndrome: a case-control study  Lee et al., 2004 (35)	<a href="#">Article</a>	A review of all SARS-related psychiatric consultations in Hong Kong and investigation of the risk factors for psychosis among patients with SARS in a matched case-control study found: patients with SARS-related psychosis received higher total doses of steroids and had higher rates of family history of psychiatric illness. Steroid toxicity, personal vulnerability, and, probably, psychosocial stressors jointly contributed to the development of psychosis in patients with SARS.

## Appendix

PubMed search terms:

((2019-nCoV[title/abstract] or nCoV\*[title/abstract] or covid-19[title/abstract] or covid19[title/abstract] OR "covid 19"[title/abstract] OR "coronavirus"[MeSH Terms] OR "coronavirus"[title/abstract] OR sars-cov-2[title/abstract] OR "severe acute respiratory syndrome coronavirus 2"[Supplementary Concept])) AND (("behavio\* disturbance" OR "mental illness"))

(clozapine) AND ((2019-nCoV[title/abstract] or nCoV\*[title/abstract] or covid-19[title/abstract] or covid19[title/abstract] OR "covid 19"[title/abstract] OR "coronavirus"[MeSH Terms] OR "coronavirus"[title/abstract] OR sars-cov-2[title/abstract] OR "severe acute respiratory syndrome coronavirus 2"[Supplementary Concept]))

("psychotic" OR "psychosis") AND ((2019-nCoV[title/abstract] or nCoV\*[title/abstract] or covid-19[title/abstract] or covid19[title/abstract] OR "covid 19"[title/abstract] OR "coronavirus"[MeSH Terms] OR "coronavirus"[title/abstract] OR sars-cov-2[title/abstract] OR "severe acute respiratory syndrome coronavirus 2"[Supplementary Concept]))

("behavio\* disturbance" OR "mental illness" OR "psychotic" OR "psychosis") AND ("pandemics"[MeSH Terms] OR "pandemic\*" [title/abstract] OR "disease outbreak\*" [title/abstract]))

("behavioural distrubance\*" OR "behavioral distrubance\*" OR "mental illness" OR "psychotic" OR "psychosis") AND ("SARS" OR "Severe Acute Respiratory Syndrome" OR MERS))

Google search terms:

“COVID-19 and “mental illness” or “acute behavioural disturbance” with “guideline or guidance or review”

Twitter search terms:

“COVID-19” and “mental illness” or “acute behavioural disturbance” or “psychosis”

## Reference

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