Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

urgently needed. China's endeavours to foster medical humanities education reforms should be actively promoted at the level of research, policy, and practice.

We declare no competing interests.

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COVID-19 testing and patients in mental health facilities


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People residing in psychiatric treatment facilities are at high risk for coronavirus disease 2019 (COVID-19). Given the absence of a vaccine or treatment, prevention is the primary guard against adverse events, such as acute respiratory distress syndrome and death. However, prevention requires keeping infected and uninfected patients apart as much as possible.

Because some patients with COVID-19 can be contagious yet asymptomatic, especially in the initial days after infection, knowing who is infected requires timely diagnostic testing as well as when and how a patient was exposed and when symptoms began. This could be challenging in individuals with psychiatric or substance use disorders as some are unable to recall or are unaware of potential exposures and symptom onset.

Even under optimal conditions, current diagnostic tests do not effectively identify infected individuals and, as more people become infected, the number of false negatives increases. Furthermore, new polymerase chain reaction and serological tests arise each week, often with limited performance information, which adds to the confusion about COVID-19 tests.[1]

People with psychiatric conditions or substance use disorders, particularly those in residential treatment or inpatient facilities, are at increased risk of exposure to COVID-19, not only because of the difficulty in evaluating their medical symptoms and history, but also because of frequent patient turnover, limited space and staff, and general resource constraints in many facilities. Patients infected with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)—the virus responsible for the development of COVID-19—pose a substantial threat of spreading the virus because they come in contact with other susceptible individuals given the close quarters and communal living environments. Furthermore, these patients are at higher risk for complications of COVID-19 because they frequently have underlying medical conditions that worsen their prognosis (eg, cardiac disease, history of smoking).

The vulnerability of institutionalised populations has been noted by clinicians and researchers, and we extend this work by drawing attention to this particularly high-risk subgroup and the problems posed by the performance of current diagnostic technology.[2,3]

One solution would be to test all individuals for COVID-19 before entry into treatment facilities. Testing capacity has improved; however, access remains limited and test sensitivity is modest, which results in false negatives.[4,5] Test performance is further compromised by variations in test quality, sample collection, and duration of symptom onset, increasing the potential for error.[6] For example, for a patient presenting with disorganised thinking or altered mental status, determining the date of onset of non-specific symptoms such as a cough might be difficult. Thus, the pretest probability of infection with SARS-CoV-2 could be

hard to estimate. Fundamentally, when the sensitivity of a test is limited and the disease course for a patient is unknown, the test outcome could be unreliable and infectious patients could be placed erroneously in treatment facilities.

Already, there has been evidence of rapid spread of COVID-19 through long-term care facilities and inpatient psychiatry units,[7,8] with several reporting patient deaths attributed to COVID-19. Non-pharmacological interventions such as physical distancing and frequent handwashing can be difficult to implement in these types of inpatient or residential settings, as some individuals might not be able to adhere to recommendations.

Best practice should involve screening all patients for symptoms of COVID-19, particularly before admission, and a protocol should be implemented for management of inpatients who develop symptoms.[9]

One potential strategy for improving detection could involve testing all patients for COVID-19 at two or more time points before entry to the inpatient unit to mitigate the risk of false negative results for those with uncertain time of disease onset. Another would be to require sample testing from multiple body sites with more than one sample, analogous to blood culture protocols, which could address concerns about sampling technique. Patients infected with SARS-CoV-2 should remain separated from other people until testing indicates they are no longer infectious.

As serological tests and additional diagnostic or risk information become available, diagnostic certainty and detection should improve, at which point existing protocols should be adapted. Because of the potential for rapid spread and serious complications, implementation of such preventative efforts must occur immediately. This should be done in combination with the development of a rigorous evidence base monitoring diagnostic testing and disease transmission in this rapidly changing environment by use of creative study designs.

In addition to testing patients, prevention should centre around providing safe conditions for patients and staff. The United States Centers for Medicare and Medicaid Services recently released guidelines allowing for patient separation on the basis of COVID-19 status for patients in long-term care facilities.[10] Analogous considerations for individuals with mental illness in residential or acute care facilities would probably benefit this population.

These recommendations are burdensome, but necessary given increasing reports of rapid spread within facilities housing susceptible individuals. The structure of these facilities and patient populations make monitoring illness course and preventing the spread of COVID-19 more difficult, but these risks can be mitigated by employing testing strategies that attempt to lift the shroud of false negative test results.

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