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research on collaborative care might further contribute to clinicians addressing mental disorders as non-communicable disorders.⁸ Finally, neurogenetics research has focused on user perspectives, and is often funded by family advocates. Global mental health is increasingly encouraging user participation in research and advocacy, and can usefully lobby for both discovery and delivery research priorities.⁹

Engagement of global mental health and neurogenetics researchers could face impediments. Scale-up of efficacious interventions might have immediate benefits, but the time from genetic discovery to clinical utility is long. Genetic testing is used in neuropsychiatry in resource-rich clinical settings; extension of genetic testing to African populations might be facilitated by combining discovery, clinical genetic testing, return of results, and genetic counselling.¹⁰ Comorbidity of mental disorders is challenging for both global mental health researchers and neurogeneticists. Research in under-resourced countries on interventions for comorbid conditions is at an early stage, and although neurogenetics studies have shown genetic overlap across mental disorders, pleiotropic effects are not well understood. The fields of global mental health and neurogenetics are both cognisant of translation challenges. In global mental health, to go from efficacy trials to scale-up, multiple issues need to be addressed, including buy-in, training and supervision, quality maintenance, monitoring, and finance. There are analogous challenges for the field of neurogenetics in moving from laboratory findings to clinical application. Both fields must emphasise that mental health research is underfunded and that greater investment will substantially pay-off over time.

Discovery research has shown that the story of humans begins in Africa and, with population growth, genetic

research on the continent will become increasingly crucial. There has, however, been an imbalance in health research with 90% of all research emerging from high-income countries, in which only 10% of the world live. Greater engagement between global mental health and neurogenetics in Africa (figure) might be valuable in redressing this research imbalance.

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**Dan J Stein, Thomas Lehner, Zane Lombard, Beverly Pringle, Geetha Senthil, Monica Uddin*
dan.stein@uct.ac.za

SAMRC Unit on Risk & Resilience in Mental Disorders, Department of Psychiatry and Neuroscience Institute, University of Cape Town, Cape Town, 7925, South Africa (DJS); New York Genome Center, New York, NY, USA (TL); National Institute of Mental Health (TL, GS) and Center for Global Mental Health Research (BP), National Institutes of Health, Bethesda, MD, USA; New York Genome Center, New York, NY, USA (TL); Division of Human Genetics, School of Pathology, Faculty of Health Sciences, National Health Laboratory Service & University of the Witwatersrand, Johannesburg, South Africa (ZL); Genomics Program, College of Public Health, University of South Florida, Tampa, FL, USA (MU).

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How the humanities can ameliorate China's health-care crisis



Who wants to be a doctor when an epidemic occurs? The recent coronavirus epidemic has shown how crucial it is for medical doctors to possess strong mental health, resilience, and a spirit of self-sacrifice. This poses the question: what is the best way to cultivate medical doctors with such qualities?

Over the past century, advances in the medical sciences have engendered an optimistic spirit among

those in the profession. However, in addition to acute issues such as the outbreak of infectious diseases, challenging phenomena such as chronic diseases have threatened that positivity. Responding fully to these diseases will not be possible by relying solely on the sciences. Because caring for the health of mankind is the essence of medicine, the prevention of disease is in itself a social process, requiring human love that

is blind to national borders. In addition, a diverse range of work in critical medical humanities has long explored the realities of medicine and health. Therefore, reflection on the nature of medicine, with special attention to the economic, social, cultural, anthropological, and historical causes of disease, is essential for reshaping medical education for the 21st century. Although these topics have been introduced into medical humanities curricula, pragmatically focused medical education systems concentrate on immediate clinical results rather than critical reflection. In many medical schools around the world, the medical humanities have thus become enclaves against the dominance of biological sciences.

In this globalised world, China's health-care system is not only directly responsible for the care of the country's 1·4 billion people, but also indirectly responsible for medical issues that might affect the entire world's population—as recent events have shown. Since 2009, along with expansions in the provision of health care and technical advances, the Chinese government has vigorously promoted various policies and guidelines aimed at improving physicians' training standards and working environments, including raising their incomes and reforming medical humanities curricula.

During difficult periods in Chinese history, such as the Sino-Japanese War, many Western missionaries were engaged in providing medical education and services in China. Their stories are remembered by generations of Chinese people. One of the most influential of these doctors was Dr Norman Bethune. Statues in his honor can be found in cities throughout China. Bethune emphasised that a person's motivations should be guided by principles, not profits, and he effectively brought modern medicine to rural China. His selfless attitude left a profound impression on the Chinese people, and Bethune's spirit to this day remains at the core of a Chinese medical humanities education.⁹

Despite many successful reforms in medical education in China, various problems have arisen, including physician attrition¹ and a deteriorating doctor-patient relationship.^{2,3} Some argue that the fundamental reasons behind these problems lie within misdirected medical curricula.^{4,5} Although some authors^{4,7} have commented on the relative scarcity of humanities material in Chinese medical curricula, there has been little research regarding the state of the humanities

at Chinese medical schools, particularly from a comprehensive and evidence-based approach.

In China, only tier-one colleges may offer an education in clinical medicine. We conducted a comprehensive web-based search of curricula to identify all medical humanities courses at all tier-one Western medicine Chinese medical schools (of which there are 138). Eight course types were identified. The most frequently offered course types are medical psychology or clinical psychology (72 [77%] of 94 schools who publicise their curricula), medical ethics (68 [72%]), hygienic and medical jurisprudence (57 [61%]), and doctor-patient communication (46 [49%]). Medical humanities courses account for 3–10% of the total credits that students are required to obtain in order to graduate, and the compulsory ideological and political theory curriculum accounts for 6–8% of the credits required to graduate. This curriculum includes Mao Zedong thought, modern Chinese history, Marxism, socialism with Chinese characteristics, and moral education and law, and it is required of all students, not solely medical students.

Medical humanities courses at Western medical schools account for a greater proportion of the total credits required to graduate; for example, they make up 15% at Oxford University and 25% at Harvard University. In China, the ideological and political theory curriculum also has a humanistic intent, and when added together with traditional medical humanities content, the two together account for 9–18%. Thus, China might not be as far behind Western countries with regards to the quantity of medical humanities education as it appears on the surface.

Despite continued deterioration of the doctor-patient relationship in China, only around half (49%) of tier-one medical schools offer coursework focused on doctor-patient communication, and this coursework is mostly limited to a single semester or school year. In contrast, medical schools in Western countries, such as Harvard University and Oxford University, place a much greater emphasis on doctor-patient communication, with applicable coursework running through both the preclinical and clinical years.

In the past few years, Chinese medical education has been uniquely transformed in a way that reflects Chinese culture and history. A coherent and longitudinal medical humanities framework, specifically aimed at strengthening the doctor-patient relationship, is

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

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*Angela P Fan, Russell O Kosik, Selina S Lien, Yunung Hsu, Lihong Fan, Dan Li, Lei Huang, Xudong Zhao, Yuanpeng Ren, Baisheng Jiang, Qi Chen, fan_angela@hotmail.com

School of Medicine, National Yang-Ming University, Taipei, Taiwan (APF, SSL, YH); 10th People's Hospital, Tongji University School of Medicine, Shanghai, China (ROK, LF, DL); Tongji Hospital, Tongji University School of Medicine, Shanghai, China (LH); Tongji University School of Medicine, Shanghai, China (XZ); and Nanjing Medical University, Nanjing, China (YR, BJ, QC)

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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