U-Report to identify how and where young people wish to be involved in advancing the goal of promoting mental health and wellbeing in their communities and wider society.

Alongside scalability, a need exists for inclusive tools that allow for genuine and meaningful engagement from children in rural areas, ethnic minorities, gender and sexual minorities, those exposed to poverty and violence, and those who experience health challenges. In our work with the *Lancet* Commission on Global Mental Health and Sustainable Development on the My Mind Our Humanity campaign, arts-based approaches have allowed us to engage young people from a range of backgrounds, both face-to-face and online. Poetry and music have created safe spaces for sharing deeply personal experiences of mental health challenges and supporting each other. These approaches have allowed us to challenge stigma by reminding young people of our shared humanity. The potential of arts-based and digital tools to foster inclusive engagement and participation is important, and our capacity to empower young generations is dependent on our ability to harness these and other resources to understand their values and experiences.

For more on **My Mind Our Humanity** see www.globalmentalhealthcommission.org/youth-campaign

The WHO–UNICEF–*Lancet* Commission invites us to think holistically about children and their rights to be heard and respected, and emphasises the role of community engagement in promoting the health and development of the world's children. Children's participation goes far beyond formal, high-level platforms. Having a voice—or lacking one—defines every relationship and interaction children experience at home and in school, work, leisure settings, and other spaces they inhabit. Children are empowered when they feel safe and welcome at home and school; when they have someone to talk to if something is wrong; and when family, friends, and teachers hear their concerns and appreciate their ideas. Indeed, family togetherness and connection to one's culture are crucial for health and wellbeing, according to the children consulted by the Commission, from communities across New Zealand, Lebanon, Nigeria, and Argentina. The potential of shared experiences to harness children's health and wellbeing is enormous. By fostering a culture of connectedness and mutual respect, we meet children's needs for self-esteem and confidence and strengthen their ability to make a difference.

The WHO–UNICEF–*Lancet* Commission presents a candid assessment of the threats children face and the sombre implications for their future. But the Commission also presents a clear vision for making a better world, for them and with them. Too often have we seen young people sidelined while those who have the power to make a change hesitate. For too long have young people been silenced, mocked, and judged for their bold ambitions to challenge the status quo. We will not be deterred. Now and always, the voices of children will call for an inclusive, fair, and sustainable future.

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COVID-19: what is next for public health?

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The WHO Scientific and Technical Advisory Group for Infectious Hazards (STAG-IH), working with the WHO secretariat, reviewed available information about the outbreaks of 2019 novel coronavirus disease (COVID-19) on Feb 7, 2020, in Geneva, Switzerland, and concluded that the continuing strategy of containment for elimination should continue, and that the coming 2–3 weeks through to the end of February, 2020, will be crucial to monitor the situation of community transmission to update WHO public health recommendations if required.

Genetic analysis early in the outbreak of COVID-19 in China revealed that the virus was similar to, but distinct from, severe acute respiratory syndrome coronavirus (SARS-CoV), but the closest genetic similarity was found in a coronavirus that had been

isolated from bats.[1] As there was in early January, 2020, scarce information available about the outbreak, knowledge from outbreaks caused by the SARS-CoV and Middle East respiratory syndrome coronavirus (MERS-CoV) formed the basis for WHO public health recommendations in mid-January.[2] However, the availability of more evidence in the past month has shown major differences between the outbreaks and characteristics of COVID-19 compared with those of SARS-CoV.

Recognising the Wuhan-focused and nationwide outbreak responses in China, WHO has encouraged countries with heavy air travel exchange with Wuhan to take precautionary public health measures[2] and, if there is imported infection, to undertake activities that could lead to the elimination of the virus in human populations as occurred during the 2003 SARS outbreak.[3] After the SARS outbreak, a few follow-on outbreaks occurred, including accidents in laboratories researching SARS-CoV.[4] SARS-CoV is thought to have been eliminated from human populations during 2003, and there have been no reports in the medical literature about SARS-CoV circulation in human populations since then.

The 2003 SARS outbreaks are thought to have originated from the spillover of a mutated coronavirus from animals sold in a live animal market in Guangdong province in China to a few humans, and it then surfaced as a large cluster of pneumonia in health-care settings in Guangdong province.[5] Although the causative agent was then unknown, an infected medical doctor who had been treating patients in Guangdong province travelled to Hong Kong when he became ill and became an index case for hospital-associated and community outbreaks in Hong Kong and in three countries outside of China. The causative agent was later identified as a coronavirus and named SARS-CoV. The SARS outbreaks were at times characterised by several superspreading events—eg, hotel-based transmission from one infected hotel guest to others who travelled to Canada, Singapore, and Vietnam.[6] One large apartment complex-based outbreak of SARS was later found to be caused by aerosolisation of virus contaminated sewage.[6]

COVID-19 is thought to have been introduced to human populations from the animal kingdom in November or December, 2019, as suggested by the phylogeny of genomic sequences obtained from early cases.[7] The genetic epidemiology suggests that from the beginning of December, 2019, when the first cases were retrospectively traced in Wuhan, the spread of infection has been almost entirely driven by human-to-human transmission, not the result of continued spillover. There was massive transmission in a matter of weeks in Wuhan, and people in the resulting chains of transmission spread infection by national and international travel during the Chinese New Year holidays.

COVID-19 seems to have different epidemiological characteristics from SARS-CoV. COVID-19 replicates efficiently in the upper respiratory tract and appears to cause less abrupt onset of symptoms, similar to conventional human coronaviruses that are a major cause of common colds in the winter season.[8] Infected individuals produce a large quantity of virus in the upper respiratory tract during a prodrome period, are mobile, and carry on usual activities, contributing to the spread of infection. By contrast, transmission of SARS-CoV did not readily occur during the prodromal period when those infected were mildly ill, and most transmission is thought to have occurred when infected individuals presented with severe illness, thus possibly making it easier to contain the outbreaks SARS-CoV caused, unlike the current outbreaks with COVID-19.[6]

COVID-19 also has affinity for cells in the lower respiratory tract and can replicate there, causing radiological evidence of lower respiratory tract lesions in patients who do not present with clinical pneumonia.[8] There seem to be three major patterns

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of the clinical course of infection: mild illness with upper respiratory tract presenting symptoms; non-life-threatening pneumonia; and severe pneumonia with acute respiratory distress syndrome (ARDS) that begins with mild symptoms for 7–8 days and then progresses to rapid deterioration and ARDS requiring advanced life support (WHO EDCARN clinical telephone conference on COVID-19, personal communication with Myoung-don Oh [Seoul National University Hospital] and Yinzhong Shen [Shanghai Public Health Clinical Center])

The case fatality ratio with COVID-19 has been difficult to estimate. The initial case definition in China included pneumonia but was recently adjusted to include people with milder clinical presentation and the current estimate is thought to be about 1–2%, which is lower than that for SARS (10%).[9] The actual case fatality ratio of infection with COVID-19 will eventually be based on all clinical illness and at the time of writing information on subclinical infection is not available and awaits the development of serological tests and serosurveys.

Presently COVID-19 seems to spread from person to person by the same mechanism as other common cold or influenza viruses—ie, face to face contact with a sneeze or cough, or from contact with secretions of people who are infected. The role of faecal–oral transmission is yet to be determined in COVID-19 but was found to occur during the SARS outbreak.[10]

The lock-down of Wuhan City seems to have slowed international spread of COVID-19; however, the effect is expected to be short-lived (WHO modelling group). Efforts are currently underway in China, in the 24 countries to which infected persons have travelled, and in public conveyances, such as cruise ships, to interrupt transmission of all existing and potential chains of transmission, with elimination of COVID-19 in human populations as the final goal. This WHO-recommended strategy is regularly assessed each week by STAG-IH on the basis of daily risk assessments by WHO as information becomes available from outbreak sites.

A plausible scenario based on the available evidence now is that the newly identified COVID-19 is causing, like seasonal influenza, mild and self-limiting disease in most people who are infected, with severe disease more likely among older people or those with comorbidities, such as diabetes, pulmonary disease, and other chronic conditions. Health workers and carers are at high risk of infection, and health-care-associated amplification of transmission is of concern as is always the case for emerging infections. People in long-term care facilities are also at risk of severe health consequences if they become infected.

Non-pharmaceutical interventions remain central for management of COVID-19 because there are no licensed vaccines or coronavirus antivirals. If the situation changes towards much wider community transmission with multiple international foci, the WHO strategy of containment for elimination could need to be adjusted to include mitigation strategies combined with the following activities currently recommended by STAG-IH on the WHO website.

First, close monitoring is needed of changes in epidemiology and of the effectiveness of public health strategies and their social acceptance.

Second, continued evolution is needed of enhanced communication strategies that provide general populations and vulnerable populations most at risk with actionable information for self-protection, including identification of symptoms, and clear guidance for treatment seeking.

Third, continued intensive source control is needed in the epicentre in China—ie, isolation of patients and persons testing positive for COVID-19, contact tracing and health monitoring, strict health facility infection prevention and control, and use of other active public health control interventions with continued active surveillance and containment activities at all other sites where outbreaks are occurring in China.

Fourth, continued containment activities are needed around sites outside China where there are infected people and transmission among contacts, with intensive study to provide information on transmissibility, means of transmission, and natural history of infection, with regular reporting to WHO and sharing of data.

Fifth, intensified active surveillance is needed for possible infections in all countries using the WHO-recommended surveillance case definition.[11]

Sixth, preparation for resilience of health systems in all countries is needed, as is done at the time of seasonal influenza, anticipating severe infections and course of disease in older people and other populations identified to be at risk of severe disease.

Seventh, if widespread community transmission is established, there should then be consideration of a transition to include mitigation activities, especially if contact tracing becomes ineffective or overwhelming and an inefficient use of resources. Examples of mitigation activities include cancelling public gatherings, school closure, remote working, home isolation, observation of the health of symptomatic individuals supported by telephone or online health consultation, and provision of essential life support such as oxygen supplies, mechanical ventilators and extracorporeal membrane oxygenation (ECMO) equipment.

Eighth, serological tests need to be developed that can estimate current and previous infections in general populations.

Finally, continued research is important to understand the source of the outbreak by study of animals and animal handlers in markets to provide evidence necessary for prevention of future coronavirus outbreaks.

We declare no competing interests.

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