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might compromise their ability to sensitively recognise and respond to children's cues or distress.<sup>7</sup> Children are well attuned to adults' emotional states; exposure to unexplained and unpredictable behaviour is perceived by children as a threat, resulting in a state of anxiety. Even children younger than 2 years will notice the absence of regular caregivers (eg, grandparents) and become unsettled and upset, seeking their return. Conversely, children and adolescents' anxiety can also manifest in challenging externalising behaviours, such as acting out or arguing, rather than more typically assumed tearful, sad, or worried responses.

Although adults often want to know how children are feeling, adults often do not set an example by sharing some of their own feelings, and conversations might well be dominated by the practical aspects of illness.<sup>3</sup> Research has highlighted that parents sometimes specifically use technical or factual language to try and minimise their children's distress.<sup>8</sup> An absence of emotion-focused conversations might leave children anxious about the emotional state of the adults around them. This anxiety can inadvertently result in children's avoidance of sharing their own concerns in an attempt to protect others, leaving children to cope with these difficult feelings alone.<sup>2</sup>

Adults need to be authentic about some of the uncertainty and psychological challenges of the pandemic, without overwhelming children with their own fears. This honesty not only offers a coherent explanation for what children are observing, but also grants permission for children to safely talk about their own feelings. Normalising their emotional reactions and reassuring children about how the family will look after each other helps to contain anxiety and provides a shared focus.

Mental health responses to previous emergencies and disasters have included widespread psychological first aid, focusing on psychoeducation about normative

reactions and coping strategies.<sup>1</sup> Providing information<sup>9</sup> and prioritising communication with children about COVID-19 is an essential component of any universal, community-led response to the pandemic. Health-care workers are experiencing unprecedented demands caring for a predominantly adult patient population, magnifying the invisibility of children's urgent psychological needs. However, ignoring the immediate and long-term psychological effects of this global situation would be unconscionable, especially for children and young people, who account for 42% of our world's population.<sup>10</sup>

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## Mental health considerations for children quarantined because of COVID-19

To control the transmission of coronavirus disease 2019 (COVID-19), the Chinese Government has implemented strict domestic quarantine policies. As of March 24, 2020, more than 80 000 individuals with COVID-19, and 690 000 individuals who have come

into close contact with individuals with COVID-19 have been registered and quarantined, including a large number of children.<sup>1</sup> This quick action has effectively slowed the spread of new cases of infection on both the Chinese mainland and the rest of the world.



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However, researchers have realised that such measures might have adverse psychological effects on children who are quarantined. For children who are quarantined at home with their parents or relatives, the stress caused by such a sharp change in their environment might be eased to some degree.<sup>2</sup> However, children who are separated from their caregivers require special attention, including children infected with or suspected of being infected with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), who are quarantined in local hospitals or collective medical observation centres; and children whose caregivers are infected with SARS-CoV-2 or who have died from the disease and are thus under the care of social charity groups. These children might be more susceptible to mental health problems because of their higher risk of infection, and the grief and fear caused by parental loss or separation.

Companionship is essential for children's normal psychological development and wellbeing.<sup>3</sup> Separation from caregivers pushes children into a state of crisis and might increase the risk of psychiatric disorders.<sup>4</sup> Sprang and colleagues<sup>5</sup> reported that children who were isolated or quarantined during pandemic diseases were more likely to develop acute stress disorder, adjustment disorder, and grief. 30% of the children who were isolated or quarantined met the clinical criteria for post-traumatic stress disorder.<sup>5</sup> Furthermore, separation from parents or parental loss during childhood also has long-term adverse effects on mental health, including a higher risk of developing mood disorders and psychosis, and death by suicide in adulthood.<sup>6,7</sup> The age of the initial separation is known to be relevant to psychological development. The parent-child separation initiated in the first few years after birth might disrupt the ongoing attachment processes, which might be associated with poorer mental health outcomes.<sup>8</sup>

The Chinese Government has implemented a series of strategies to prevent the potential mental health problems that might arise among children who are quarantined during the COVID-19 pandemic. For example, in many Chinese tier 1 cities—typically the largest and wealthiest—like Shanghai, Guangzhou, and Hangzhou, nurses are guaranteed to be available 24 h per day in the children's isolation ward. Nutritionists are invited to give professional guidance for children's diets according to their medical conditions and

normal developmental requirements. To reduce fear and other psychological discomfort, children who are quarantined can communicate with their parents via mobile devices at any time. Many citizens from the local community or district volunteers act as temporary mothers to care for recovered children after their discharge, when their caregivers are not available because of infection, quarantine, or death. In response to the notice on improving rescue and protection for children without effective guardianship issued by the Ministry of Civil Affairs, many cities like Zhengzhou opened free psychological counselling hotlines, which were available 24 h per day.<sup>9</sup> Most recently, the National Health Commission of China issued guidelines and listed specific intervention strategies for children who are quarantined in collective medical observation centres. For example, these measures seek to increase children's communication time with their parents; increase children's access to disease information via comic books and videos; guide children to establish a regular activity schedule; provide night lights and small gifts; and provide timely referrals to psychiatrists when children feel mental discomfort, such as worry, anxiety, difficulty sleeping, and loss of appetite.<sup>10</sup>

Although great efforts have been made across China, the emerging psychological interventions are unlikely to be provided nationwide because most local support for unaccompanied children focuses only on meeting children's basic daily needs. We propose that paediatric health-care workers should receive formal training to facilitate the early identification of children's mental health problems by learning to discern children's normal and abnormal behaviours, recognise red flags indicating further intervention or referral are needed, and standardise the use of rapid screening tools for mental health. Furthermore, mental health professionals should establish evidence-based guidelines and easy operational strategies to cope with COVID-19 pandemic-related mental health problems in children. We also believe that children's access to mental health services can be improved through collaborative networks that are established nationwide and consist of psychiatrists, psychotherapists, researchers, and community volunteers. Additionally, the post-pandemic surveillance of mental disorders among these children should be considered. Since the global transmission

of COVID-19 began, the total number of cases in countries other than China have already exceeded that in China. Following WHO's recommendation, an increasing number of countries have learned from China's experience with regard to quarantine policies. We suggest that the specific response to the mental distress of children who are quarantined should also be considered when designing psychological intervention strategies in response to COVID-19.

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## Prioritisation of the human papillomavirus vaccine in a time of constrained supply



Human papillomavirus causes cancer in women and men at multiple anatomical sites. Annually, there are 630 000 new cancers related to human papillomavirus, of which more than 85% are cancers of the cervix and approximately 90% of these cervical cancers occur in low-income and low-income to middle-income countries.<sup>1,2</sup> The incidence of cervical cancer is projected to increase for the foreseeable future. In some countries, cervical cancer fatality rates exceed 50% because of the inadequacy of screening, diagnostic tests, and treatment.<sup>1</sup> Although prophylactic vaccines for human papillomavirus are safe and effective,<sup>3</sup> the introduction of these vaccines to many countries with the highest burden of cervical cancer has been delayed, resulting in a lack of access to vaccination for many girls with the greatest need.<sup>4</sup>

Many countries that have not yet introduced human papillomavirus vaccines are keen to do so, often with ambitious plans to maximise impact through multiage cohort vaccination. In 2018, the WHO Director General called for a commitment to increase

awareness of cervical cancer and eliminate it as a public health problem. The preliminary elimination strategy emphasises the importance of vaccination of adolescent girls as an essential tool to achieve this long-term goal. However, many of these introductory efforts are being limited, or prevented, by a substantial, current shortage of human papillomavirus vaccine. For example, Gavi, The Vaccine Alliance, which financially supports vaccine purchases for lower-income countries, has been unable to procure the needed supply to meet the demands and applications of the countries they subsidise. The anticipated shortfall in vaccine supply is 29 million doses (of the 40 million needed), which resulted in a delay in vaccine introduction to countries currently without the human papillomavirus vaccine, with more delays expected in 2020.<sup>5</sup> Constraints on vaccine supply are anticipated to last until the mid-2020s; however, the extent and duration of the shortfall are highly dependent on the vaccination strategies for human papillomavirus that are implemented worldwide.



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