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## Record flooding in Pakistan poses major health risks

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The recent record floods in Pakistan are the biggest natural disaster in the history of the country. Satellite images show the great extent of land submerged in inland lakes.<sup>1</sup> The United Nations secretary general António Guterres described the flooding as a “monsoon on steroids.”<sup>2</sup>

More than 1100 people have been killed so far and three million others have been affected in one of the country's worst monsoon seasons in over a decade.<sup>2,3</sup> Rescue efforts have been hampered thus far due to socioeconomic and geopolitical factors. Swathes of villages and towns have been washed away or submerged in flood waters. The unprecedented floods have destroyed houses, cattle, and crops that were ready for cultivation.

Climate activists and experts say that although Pakistan only contributes 1% to global carbon emissions, its share of the catastrophic effects of climate change is colossal.<sup>4</sup> The areas most destroyed by floods are rural, with prevailing health, education, and resource inequities. The floods have not only added to the burden these areas face, but could unravel the minimal progress that has been made in elevating quality of life with access to health, education, and livelihood opportunities. The assessment of the total damage of the flooding, including loss of lives, houses, infrastructure, cultivable land, and livelihoods is not yet complete. The statistics are likely to unveil a bleaker situation.

Public health is at risk. Early estimates indicate that five million people, including children, are at a high risk from the outbreak of waterborne and vectorborne diseases.<sup>5</sup> Doctors and relief workers have reported that many people are experiencing emotional trauma because of the flooding, as well as hundreds of cases of diarrhoea, skin infections, and other waterborne diseases among all age groups. Pregnant and lactating women are at particular risk, with more than 70 000 women expected to deliver in September 2022.<sup>6</sup> Clean drinking water is not available in areas that were ravaged by floods and there is a risk of outbreaks of diarrhoea, cholera, typhoid, gastroenteritis, dengue, and malaria.<sup>5,7</sup> Diseases like malaria, polio, and covid-19 are more likely to flare up, particularly in camps where water and sanitation facilities have been damaged.

Before the floods and subsequent devastation, Pakistan had reported more than 4500 cases of measles and 15 cases of wild poliovirus in 2022.<sup>7</sup> The rains and floods have disrupted the nationwide polio vaccination campaign in affected areas.<sup>7</sup> Immunisation schedules and access to paediatric healthcare will be thrown into disarray, leaving millions of children at elevated risk of morbidity and mortality. Damage to schools and the knock-on impacts of this on access to education has not yet

been assessed and emergency education plans have yet to be devised.

The lack of access to health services and rehabilitative efforts will harm public health. Pakistan has been facing unprecedented economic inflation and the ineffective allocation of resources, having to take out hefty loans from the International Monetary Fund (IMF). The government has stated it lacks the necessary funds for the rescue, recovery, and rehabilitation of the affected population. Almost 900 health facilities have been damaged from the floods, leaving millions of people without access to healthcare and medical treatment.<sup>7</sup>

Bleak socioeconomic conditions, poor monitoring of resources, and inequitable distribution of resources are adding to the challenges facing those affected by the floods. The existing infrastructure of healthcare services is already inadequate and this, coupled with challenges of resource availability, will add to the burden on healthcare services.

Public health protects the continuity and survival of the population. However, in times like these, it is the moral and social responsibility of everyone, including the private sector, non-governmental organisations, researchers, and the government to join hands and work for the rehabilitation of the people affected by the flooding. The educational and corporate sectors and other welfare institutions and communities across Pakistan are rising to assist people by way of donations, deployment of relief teams, and mobilisation of medical equipment. Researchers should gather evidence based data that report the extent of the damage from the flooding and inform the government on policy and strategies to mitigate ongoing problems. Public awareness campaigns should be developed to create greater empathy for continued support. Emergency education services should be planned and initiated as soon as possible to mitigate the emotional trauma experienced by children and young people. Support and counselling groups should be created for people affected by the floods to help them cope with what they've lost.

Above all, we as global healthcare agents of change, should advocate at all levels about the risks, devastation, multigenerational poverty, and adverse transgenerational health outcomes that the climate emergency will bring. Health is hope and it can only be retained if we are aware of and act on the impacts of the climate emergency.

Competing interest: The author declares no competing interest. SB works for an academic medical centre which is closely engaged in flood relief by providing basic healthcare.

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