



LETTER TO EDITOR

Global Floods and Public Health: Anticipating Outbreaks of Vector-Borne and Waterborne Diseases in Vulnerable Countries

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Dear Editor,

Floods create insidious epidemics within the public health that are usually discovered too late. Floods are not mere natural tragedies; cost of flooding will be far greater than drowned villages and forced families. The 2022 flood in Pakistan affected 33 million lives ². The recent 2025 flood, which have yet to be actively recorded in literature, have alarmingly trends. Stagnant water provided the breeding grounds to the mosquitoes leading to the outbreaks of malaria and dengue ³. The contaminated water sources caused a large-scale eruption of diarrhea and cholera particularly among those children under the age of five ⁴. According to the World Health Organization (WHO), over 8 million people sought medical help in Pakistan in just a few months because of flood-related diseases ⁵. These figures are rather grim: as the floods could not be stopped, and only time can tell the damage it will cause to public health.

Pakistan is not the lone sufferer of flood associated miseries. Other countries have also experienced similar catastrophes, such as the 2014 Southeastern Europe floods, the 2018 Kerala floods, in India, and the 2020 Yangtze River basin floods, in China ⁶. These disasters reveal that most nations are unprepared and that international cooperation is needed in efforts to save lives. In 1998, after extensive flooding in South Asia, a huge epidemic of cholera was witnessed in several countries with limited healthcare facilities due to the lack of water and sanitation ⁷. The message is simple: floods and epidemics cannot be separated because of the situation where water, sanitation infrastructure, and health systems are weak. This can be seen far beyond South Asia. In Sub-Saharan Africa, malaria is commonly fueled by recurrent floods ⁸. Mozambique has repeatedly faced malaria epidemics, alongside outbreaks of respiratory illnesses and diarrhea ⁹. Likewise, in Nigeria and Sudan, floodwater is usually contaminated, thereby triggering epidemics of cholera, leptospirosis, typhoid, and hepatitis A ¹⁰. Flooding increases the pre-existing deficits and transforms natural risks into long-term social health catastrophes.

Climate change worsens this problem every year. Floods are becoming common and adverse due to changes in temperature and the distribution of rain. The Intergovernmental Panel on Climate Change (IPCC) has warned that countries with fragile infrastructure and limited resources will bear the greatest impact of floods by the climate change ¹¹. Environmental stressors have also been shown to induce long-term biological and epigenetic alterations that increase susceptibility to metabolic and inflammatory diseases ¹². Moreover, disease epidemics do not follow geographical boundaries. The devastations of the floods in Pakistan, the cholera outbreak in Bangladesh and the malaria pandemic in Africa are lessons that apply across the board. Regardless of these evidences, during flood response planning there is a tendency that public health is a secondary concern. The first response of relief is usually centered on food distribution, shelter, and rebuilding of infrastructure. These priorities are necessary but often delay the urgent medical interventions. A cholera epidemic can roll back decades of child health advances; a malaria outbreak can bring whole neighborhoods to their knees; a diarrheal epidemic can wipe out malnourished communities. Unless addressed, the results of these health impacts may be even deadlier than the floods themselves ¹³.

Governments, humanitarian agencies, and international donors need to change their priorities in order to address this issue. Flood response needs to involve strong public health management, such as developing prompt disease surveillance systems in flood-prone regions to monitor the outbreak of malaria, dengue, cholera, and diarrhea ¹⁴. A delivery of safe drinking water, chlorine tablets, and temporary sanitation facilities to displaced people. By providing mosquito nets, insecticides, and other preventive strategies against the transmission of water-borne diseases ¹⁵. Educating communities about hygiene, water purification, and mosquito prevention ¹⁶. These measures are not optional rather a guide plan for flood recovery initiative. The well-being of the survivors is not just a will-have-it-fast, but the basics on which recovery relies ¹⁷. A society ravaged by disease is unable to resettle houses, reconstruct lives, and school its children.

In developing countries like Pakistan, Bangladesh, and Mozambique, floods are more destructive to human lives than the infrastructure. They create opportunities for diseases to spread, and cause agony while paralyzing the healing bodies. To deal with floods without laying stress on the health of the people is like fixing fences with a broken frame. To reduce the human cost of floods, prediction and prevention of the public health crisis should be regarded as the priority. Only then the effected communities can really get back on their feet, not just in terms of better roadways and bridges, but improved quality of life, health, and dignity.

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