

Impact of Communicable Diseases during Flood Disaster in Pakistan, What's Next?

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Dear Editor,

Unusual weather patterns have led to immense climatic transformation and the global concern over climate change is growing. Every part of the world is now being impacted by climate change, but the Asian and African continents are the most affected. Several climatic factors affecting the transmission of infectious diseases include humidity, precipitation, and temperature. Infectious disease transmission potential and vector density are both significantly affected by climate change [1].

The most grievous flood disaster that could ever affect Pakistan was in 2022, which started in June and continued to spread havoc. More than 1000 individuals have already died as a direct consequence of the floods as result of the floods that were brought on by the prolonged monsoon rains that began in mid-July in 116 of Pakistan's 154 districts. Rural areas such as Jafarabad and other areas of southeastern Sindh, with persistent health, education, and resource disparities, were the most affected. The current situation adds more burden on rural populations and has the potential to undo the moderate progress in improving access to healthcare, education, and employment prospects that have been accomplished over the past few years [2, 3]. As per the World Bank report, the total damage cost exceeds 30 billion USD and would require more than 15 billion USD for the reconstruction in the affected areas [4].

According to a preliminary assessment made by World Health Organization (WHO) and humanitarian partners, the current level of destruction is unprecedented and exceeds damages induced by the 2010 floods. According to Dr. Ahmed Al-Mandhari, (a Regional Director for the Eastern Mediterranean at WHO), WHO has launched an emergency operation to treat the injured, supply health centers with life-saving supplies, and support mobile health teams to prevent the transmission of diseases [5].

The general public's health is in danger. Doctors and aid workers have reported that more than 3 million people are suffering from emotional trauma as a result of the flooding. Hundreds of cases of diarrhea, skin infections, and other waterborne diseases have also been reported

among people of all ages. Early estimates indicate that five million people, including children, are at high risk from the outbreak of waterborne and vector-borne diseases [2]. According to information released by Khyber Pakhtunkhwa province, 350 dengue cases were reported in the province, and 1,241 cases are now active, bringing the total number of recorded cases this year to 4,538. Furthermore, the Punjab provincial health department reported that Punjab's metropolis Lahore recorded 62 dengue cases, followed by Rawalpindi, which recorded 80 new patients. This year, 3,101 dengue cases have been documented within the province. Additionally, the provincial health officials announced that the southern Sindh province experienced 388 new cases. There have already been 5,203 cases reported in the province so far this year [6, 7].

Women who are pregnant or nursing are particularly vulnerable, with more than 70,000 in their last trimester predicted to give birth soon. There is a risk of ongoing disease outbreaks, including watery diarrhea, cholera, typhoid, gastroenteritis, dengue fever, and malaria in flood-devastated areas where there is no access to clean drinking water. Malaria, polio, and COVID-19 are also more likely to occur especially in camps where water and sanitation infrastructure has been damaged [2]. 4531 new measles cases and 15 cases of wild-poliovirus have been recently reported in Pakistan. Current weather conditions as of July-August 2022 have disturbed the countrywide polio-vaccine campaign, particularly in affected areas [5].

According to previously published articles, the country's geographical location and extreme climatic conditions are key hotspots for vector-borne disease transmission [8]. There is a paucity of literature about the impact of climate change on vector-borne diseases in Pakistan [1]. According to Dr. Azra Fazal Pechuho (Minister for Health and Population Welfare, Sindh), waterborne diseases such as cholera and diarrhea are on the rise due to contamination of water following the province's heavy monsoon rains [9].

The ongoing weather situation has put further pressure on the already struggling healthcare system. Currently, people in Pakistan are suffering from typhoid, dengue, malaria, measles, and COVID-19. Symptoms like fever, headache, and body pain are more or less similar to these diseases. Definite diagnosis without accurate

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laboratory tests combined with antibacterial resistance has led to fewer choices of available antibiotic treatments for already drug-resistant bacterial strains. This would lead to future outbreaks of diseases and could lead to the spread of diseases to other countries. There is a dire need to restore key infrastructure on a priority basis: proper sanitation, availability of clean drinking water, and provision of proper waste management system in flood-affected areas. When available, drugs should be distributed to local populations to immunize them against infectious diseases. Awareness campaigns about hygiene practices should be developed to limit the spread of future infectious disease outbreaks.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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