# PANDEMONIUM OF DISEASES AFTER FLOODS – AN EMERGING MAJOR HEALTH ISSUE IN PAKISTAN

*Ikram Din Ujjan*
*Liaquat University of Medical & Health Sciences, Jamshoro, Pakistan*

**Correspondence:**
**Prof. Ikram Din Ujjan**
**Department of Pathology, Liaquat University of Medical & Health Sciences, Jamshoro, Pakistan**
**Email: ikramu-ujjan@lumhs.edu.pk**

DOI:
10.38106/LMRJ.2022.4.3-01

Received: 21.09.2022
Accepted: 26. 09.2022
Published: 30. 09.2022

**ABSTRACT**
Floods and heavy rain bring another disaster of diseases and pose a huge burden on the health care system. Pakistan is currently facing a major natural disaster of this decade, where Sindh and Baluchistan are badly affected. Millions of people are homeless and live in camps, shelter homes, or tent cities. The diseases that emerge immediately after floods include gastroenteritis with diarrhoea and vomiting, followed by vector-borne diseases (i.e. malaria and dengue fever) influenced by the growth of mosquitoes in the stagnant water. Due to unhygienic conditions and overcrowded camps, skin diseases emerge later. Altogether this situation causes major burden on the already weakened health care system, which is devastated due to rain and even destroyed in some places. Thus proper planning and preventive measures need to be taken on an urgent basis.

**Key Words**: Floods, water-borne diseases, vector-borne diseases

## INTRODUCTION

Monsoon rain has badly affected more than 66 districts of Pakistan, leaving Sindh and Baluchistan devastated. Thousands of households were under water, and millions of people were displaced to other areas, temporary shelter homes and tent cities. Many shelter homes are nearby the towns under water. The people living in crowds surrounded by water has drastically affected their health. Several diseases are emerging from these areas and also from the camps where flood affectees are living. These diseases can be broadly categorized as water-borne, vector-borne, and skin diseases.

### Water-borne diseases

Water-borne diseases emerge immediately after rain and floods(1). Due to floods, it is virtually impossible for local people to manage clean drinking water. Thus gastroenteritis arises as a significant health issue. Watery diarrhoea and vomiting in young children and the elderly can be lethal, raising the death toll. There are reports from Pakistan and other developing countries like Bangladesh where such disasters occur quite often. There was a report from Bangladesh where in 2004 immediately after floods, over 17000 acute diarrhoea cases were reported in a single centre (2). A similar situation was previously reported in Pakistan during floods in 2010 and 2011, where a considerably higher proportion of flood-affected children had multiple co-infections (22%) as compared to non-flood-affected children (6%)(3). Thus co-infection and then resistant pathogens lead to a significant problem which persists even after the flood victims return home and the situation normalizes. Then there is an additional risk of other water-borne diseases, such as typhoid,

worm infestation, and hepatitis A, which will be coming in the way, thus causing health emergency and posing a great burden on the health care system. Given the risk of polio in Pakistan, the water condition and damaged sanitation bring a threat of increasing polio cases in very young children. This kind of catastrophe needs proper planning in emergency situation.

### Vector-borne diseases

Vectors are common in Pakistan such as mosquitoes and flies. The flood-affected areas have stagnant water in the vast land of Sindh and Baluchistan, providing the conductive environment for mosquitoes to grow exponentially. Malaria and dengue fever are prevalent in Pakistan even before floods. Still, such a high level of growth of mosquitoes spreads malaria and dengue not only in the flood-affected areas but also in the neighbouring towns and cities. The literature shows that the average rain fall rate is directly proportional to the number of dengue cases(4). Malaria and dengue in such situations can be lethal. Flies, on the other hand, spread dirty material, facilitating disease by fecal oral route. Thus a great deal on the health care system is imminent.

### Skin problems

After such natural disasters, people are destined to live in camps with dirty, stagnant water and in unhygienic conditions. Due to these conditions skin diseases develop, and contiguous skin infections spread quickly, affecting children and adults equally. Both bacterial and fungal infections occur during these situations. A report from Taiwan analyzed 280 flood situations in 10 years' time, where skin and eye problems were reported to have emerged in a subacute phase after the decline of gastroenteritis(5). Thus, it can be suspected that the storm of the patients with skin diseases is on its way to hit the healthcare system in Sindh and Baluchistan.

## CONCLUSION

Considering all these situations, there is a dire need for preventive strategies, restoration of the damaged/ destroyed health care system and public awareness of the emerging health catastrophe. Given the disruption of the polio campaign, it is essential that the facility may be provided within camps so that the outbreak in younger children may be controlled. Medical camps are being arranged by philanthropists, government and non-government organizations but the camp for a short period may not control the outbreak of the diseases if they emerge. The establishment of small camp dispensaries with the availability of medicines round the clock and providing public awareness for the maintenance of hygiene may serve the purpose.

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