Communicable disease risk among populations affected by flooding in Pakistan

August 2010

Background

Monsoon rains in Pakistan have caused severe flooding, resulting in an affected population currently estimated as greater than one million. The number of persons displaced is unclear. Many hundreds are known to have been injured and there has been significant loss of life. The full extent of the damage has yet to be determined as damaged infrastructure and communication networks have hindered the initial assessment. Access to the public health system, which was already inadequate, has also been severely affected, reducing the capacity of the surveillance system to detect and respond to epidemics.

Communicable disease risk

The communicable disease risks in Pakistan and the interventions necessary to decrease this risk in disaster-affected populations have been described previously by WHO[1]. The endemic and epidemic-prone diseases likely to affect the flood-affected populations are largely unchanged from previous assessments. In short, the risk of transmission of certain communicable diseases is increased in flood-affected populations[2].

Immediate risks include **water-related diseases**, due to consumption of unsafe drinking water, including cholera, typhoid fever, shigellosis and other diarrhoeal diseases, as well as hepatitis A and E. Emphasis should be placed on multidisciplinary preventive measures for all water-related diseases; safe water and sanitation, early detection, and rapid response to outbreaks. Vaccination for cholera[3] could be considered by health authorities, however experience has shown that the operational challenges of completing a two-dose vaccine campaign requiring large human and logistical resources (including cold chain) are formidable[4]. The feasibility and impact of cholera vaccine use must be considered within the context of larger emergency public health priorities. Leptospirosis is present on the Indian subcontinent, and some increase may occur due to crowding together of rodents and humans.

Overcrowding among the displaced can lead to an increased risk of transmission of measles and meningitis, as well as acute respiratory infections.

Vector breeding. Flooding can result in the proliferation of vector breeding sites, increasing the medium-term (weeks to months) risk of **malaria** as well as **dengue**.

Risk of transmission of **vaccine-preventable diseases** such as measles and polio may be increased, especially where routine immunization coverage is low, and mass vaccination of high risk groups may be warranted with these antigens.

Table 1. Routine vaccination coverage, 2008, Pakistan

Antigen	% coverage*
MCV (measles-containing vaccine)	85
Diphtheria–pertussis–tetanus, 3rd dose	73
Polio, 3rd dose	81

* Official country estimates reported to WHO/UNICEF, 2008

Malnutrition and transmission of communicable diseases. In Pakistan in 2008, 31% of children age <5 years were moderately or severely underweight (UNICEF, 2008). Malnutrition compromises natural immunity, leading to more frequent, severe and prolonged episodes of infections. Severe malnutrition often masks symptoms and signs of communicable diseases, making prompt clinical diagnosis and early treatment more difficult.

---

[1] South Asia Earthquake-affected areas, 2005: Communicable disease risk and interventions. Available at: http://www.who.int/diseasecontrol_emergencies/publications/cd_south_asia_earthquake/en/index.html

[2] Flooding and communicable diseases fact sheet: Risk assessment and preventive measures. WHO, 2005. Available at: http://www.who.int/diseasecontrol_emergencies/publications/who_cds_2005.35/en/index.html

[3] Cholera vaccines: WHO position paper. World Epidemiological Record No. 13, 2010, 85, 117–128, 26 March 2010. Available at: http://www.who.int/wer/2010/wer8513.pdf

[4] Use of the two dose cholera vaccine in the context of a major natural disaster. WHO 2006. Available at: http://www.who.int/topics/cholera/publications/final_tsunami.pdf

Disease Control In Humanitarian Emergencies (WHO/HSE/GAR/DCE)
cdemergencies@who.int