

moreover, avoid drinking water contaminated by flooding for a cultural/psychological reason such as the presence of animal carcasses.

### ***Population displacement***

Movement of populations away from the areas affected by a disaster can affect the relative risk from communicable diseases in three ways. If the population moves nearby, the existing facilities and services in the receiving community will be strained. When resettlement occurs at some distance, the chances increase that the displaced population will encounter diseases not prevalent in their own community, to which they are susceptible. For example, nonimmunized, rural Andean populations brought together in camps after an earthquake may then be exposed to measles. Alternatively, displaced populations may bring the agents or vectors of communicable diseases with them. The latter concern frequently occurs when populations from low-lying coastal areas with malaria are evacuated further inland before a hurricane.



*Julio Vizarra, PAHO.*

**Residents walk down the flooded streets of Maraba, Brazil. Floods and other natural disasters frequently produce changes in the environment that may increase the risk of vector- and water-borne disease.**

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### ***Population density***

Population density is a critical factor in the transmission of diseases spread by the respiratory route and through person-to-person contact. Because of the destruction of houses, natural disasters almost invariably contribute to increased population density. Survivors of severe disaster seek shelter, food and water in less affected areas. When the damage is less severe, crowding may occur when people move in with other families and congregate in such public facilities as schools and churches. The resulting problems most commonly mentioned are acute respiratory illness, and include influenza and non-specific diarrheas.

### ***Disruption of public utilities***

Electricity, water, sewage disposal and other public utilities may be interrupted after a disaster. In a village with no electric power and where there are promiscuous defecation habits and contaminated sources of water in normal times, very little (if any) additional risk from communicable diseases follows the disaster. However, in economically more developed areas the extended disruption of basic services increases the risks of food-borne and water-borne disease. Insufficient water for washing hands and bathing also promotes the spread of diseases transmitted by contact.

### ***Interruption of basic public health services***

The interruption of basic public health services like vaccination, ambulatory treatment of tuberculosis and programs for the control of malaria and vectors are frequent, but often overlooked factors that increase the probability of disease transmission after disaster in a developing country. The risk of transmission increases proportionally to the extent and the duration of the disruption. An outbreak of communicable disease may, therefore, occur months or years after a drought, a famine or a civil disturbance. The interruption causing such an occurrence is usually the result of the diversion of staff and financial resources to the relief effort, beyond the critical period. In addition or in conjunction with this, the failure to reestablish resources at sufficient levels contributes to the interruption.

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