

four-week intervals; typhoid, paratyphoid, and cholera vaccines confer only partial protection, which may last only several months; and for the communicable diseases most likely to occur, effective vaccines have not yet been developed. The most prevalent diseases in populations stricken by disaster are food intoxication due to bacterial toxins, salmonellosis, shigellosis, nonspecific diarrhea, infectious hepatitis, and influenza.

The clinical manifestations of infectious hepatitis can be reduced by gamma globulin, but gamma globulin does not reduce infection or transmission. In most developing countries, it is also too costly to use. Vaccination against influenza should be restricted to the elderly, patients with chronic debilitating disease, and essential personnel before disease appears in the community. The vaccine used for this purpose is a potent, antigen specific influenza vaccine. Neither gamma globulin nor influenza vaccine is recommended for mass immunization after disaster.

Experience has shown that it is usually impractical to attempt mass immunization immediately following a disaster and that when attempted, it detracts from the overall relief effort without producing a discernible benefit. Effective immunization requires prior planning, good systems of communication and transport, and access to the populations at risk. These requirements cannot be met in the immediate postdisaster period. Efforts to achieve mass vaccination in the relief phase also drain whatever limited manpower, communication facilities, and transportation exist. In addition, the improper handling and storage of certain vaccines, particularly of those which require refrigeration (yellow fever, measles, poliomyelitis) leads to unacceptably high wastage, or administering vaccines which lack potency.

Primary vaccination should be considered for young children whenever populations are expected to remain encamped longer than thirty days. Older children should be offered boosters at the appropriate time. The strategy, age groups, vaccine, schedule and so forth adopted for vaccinations should be in accordance with that of the National Expanded Programme of Immunization (EPI). This includes vaccinations against diphtheria, pertussis, tetanus, poliomyelitis, measles, and tuberculosis (BCG administration). Proper concern must be given to the preservation of vaccine potency, through attending to the cold chain as well as documenting coverage by keeping immunization records.

As a component of the routine screening of persons entering camps, immunization can be offered and continued as part of primary health care service. Of the total encamped population, children are targeted for vaccination and women of childbearing age for tetanus immunization. This is because most older children and adults in previously well-immunized populations will already be protected by vaccination; in unimmunized populations, older individuals have already acquired natural immunity; and the logistical problems previously associated with mass campaigns are reduced when concentration of effort is placed only on the susceptible population.

Exceptions to these rules may be occasionally necessary for isolated populations in which diseases such as measles, poliomyelitis and influenza are not in routine circulation. Small island populations or isolated mountainous groups, evacuated for safety or displaced by a disaster, are examples of such populations.

Immunization has a real, but a limited role in adequately immunizing relief workers against the endemic diseases to which they may be susceptible (poliomyelitis, measles and immune serum globulin). The rationale for immunizing relief workers is that it preserves critically needed manpower by preventing unnecessary episodes of communicable disease. The immunizations required for volunteers from industrialized countries are the same as those recommended for other international travelers (19). These are ideally completed before departure to the disaster-affected area. If it is not possible to do so, second doses and booster doses should be administered in the field.

Manuals are available from the Pan American Health Organization/World Health Organization on immunization practices and the cold chain (54-56).

Chemotherapy

The mass administration of anti-infective drugs in disaster-affected populations is not recommended. Scientific reasons why this is so include the fact that antibiotics are not effective against viral diseases, such as influenza, hepatitis and the common cold; no single antibiotic provides adequate coverage against all potential bacterial or rickettsial diseases; and antibiotics have to be taken indefinitely to prevent infection with a susceptible organism. Moreover, anti-infective agents can induce allergic reactions and toxic side effects which include death. The
