

very exotic and fatal, or uncommon, diseases are reported frequently to health authorities, common communicable diseases are grossly under-reported, even where the physicians have the legal obligation to do so. For example, in the United States it has been demonstrated in telephone surveys that, prior to the current national effort to eliminate the disease, only about 10% of measles cases were reported (31). In a national survey only 11% of gonorrhoea cases treated by private physicians were shown to have been actually reported (33). Results of a state survey were that 42% of cases with gonorrhoea listed in physicians' medical records were reported to authorities (34).

### **Surveillance Sources following Disaster**

If only 10-20% of all notifiable diseases are reported under optimal conditions, how does an epidemiologist set up a meaningful system of communicable disease surveillance, and plan for control of disease after a major disaster? Should the epidemiologist not be familiar with the local conditions in a disaster stricken area, this is an even more pertinent question.

The first principle is to maximize use of preexisting surveillance data for "baseline" information, and to modify established epidemiologic surveillance systems to meet disaster conditions. At present there is a designated epidemiologist and a national surveillance unit within the health ministry of every country in Latin America and the Caribbean (See Annex 1). In addition, there are considerable health and surveillance data available to relief agencies, from Pan American Health Organization offices in twenty-seven countries (See Annex 2). Additional, intercountry resources of the Organization include officials in the Caribbean Epidemiology Center (CAREC) in Port-of-Spain, Trinidad, and staff epidemiologists located in larger countries.

The need for coordination of efforts after disaster with the normal surveillance activities in the health sector must be emphasized. The usual impulse after disaster is, however, for relief authorities to set up a separate postdisaster surveillance/assessment system. Of the three factors which aid and abet this tendency, perhaps the most critical is that the national authority responsible for coordinating health activities after a disaster in countries throughout the Americas is usually not the health ministry or the principal health provider of normal times. A fundamental objective of the Emergency Preparedness and Disaster

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Relief Coordination Program of the Pan American Health Organization is, therefore, to encourage health relief coordinators to better use those health resources already available in the country (35).

The second factor contributing to the unfortunate tendency to separate routine and emergency surveillance is that international relief agency authorities are not always familiar with existing systems and epidemiologic resources. They may, thus, inadvertently duplicate efforts. Thirdly, because of the understandable inclination to provide rescue and relief immediately, administrators try to avoid unnecessary red tape procedures such as documenting predisaster conditions and organizing systems of surveillance. Becoming familiar with the epidemiology of endemic diseases and with the national surveillance system is, however, the proper response of epidemiologists contributing to relief. Since the lead time between an acute disaster and secondary epidemics of communicable disease can be weeks or months, opportunity for epidemiologists to assimilate the available surveillance data and to anticipate communicable disease problems is usually sufficient.

The health authorities of countries that are very poor, or in which there is civil disturbance, often lack an institutionalized mechanism for epidemiologic surveillance in the areas affected by disaster. Still, every effort should be made to coordinate the relief surveillance of communicable diseases with activities of national health authorities.

Any attempt to establish a traditional form of surveillance systems in an affected area during the immediate postdisaster period is fruitless. Since unofficial reporting systems may still be operational they should, however, be exploited to the fullest extent possible. Intelligence (albeit frequently in the form of rumors) spreads from affected areas extremely rapidly via the media, survivors and relief officers returning from the field, even when telephone services and road travel have been interrupted. Invaluable documentation, which may never be actually communicated to persons at the central level, may also exist in hospitals and clinics at the intermediate level.

In addition to using the official and unofficial surveillance systems, in a disaster relief effort the epidemiologist has the opportunity to develop and employ a supplemental, ad hoc surveillance system in which the medical relief workers take part. This third option may not be called for where the infrastructure in public health is a strong one or where relief efforts are only of short duration. Surveillance information from ad hoc relief sources are, however, critical in areas hit by di-

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