

**Preliminary Report
Post-Hurricane Mitch Needs Assessment
American Red Cross International Services
Centers for Disease Control and Prevention
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I. Background:

In late October and early November 1998, Hurricane Mitch, one of the strongest, most devastating hurricanes of this century, caused widespread destruction throughout Central America. El Salvador was battered for several days by high winds and torrential rains that caused enormous losses of life and catastrophic damage to the infrastructure of this country. The American Red Cross International Services (ARC) was requested to address relief efforts related to health in the hurricane-affected areas of Central America and requested CDC to perform a needs assessment to assist in directing its efforts.

II. Methods and Materials:

Household surveys were performed during the week of January 25, 1999 using a modified cluster-sampling method. The most heavily damaged regions were identified by the in-country ARC delegates and were subsequently divided into clusters based on the distribution of an estimated 5304 households affected by the hurricane. Using a random number generator, we selected 30 clusters with probability proportional to the number of households within a cluster. One adult family member was interviewed from each of 7 randomly selected households within each cluster. Two hundred and twenty-five interviews were completed, representing 1305 people.

A questionnaire in Spanish to utilized to address health care needs and availability, food and water availability, housing, and storm warning and preparation. The interviewers were local Red Cross personnel and volunteers guided by the principal investigator.

Data was entered and analyzed in Epi Info 6.1. Frequencies of variables were calculated for the population as a whole.

III. Results:

Demographics:

Of the households interviewed, 92% were living in their home at the time of the survey. Seventy percent of households did not sustain any damage to their home during the hurricane. Within the households that had experienced damage, 22% had damage, but were able to live in their home and 5% had damage that had been repaired. Only 3% of the households were completely destroyed. The mean household size of the population interviewed was 5.8 people (range 1-16 people) before the hurricane and remained the same after the hurricane.

Children 2 years of age and under were in 42% of households and people 65 years of age or older were in 34% of households. Eight percent of households had a pregnant woman. A death had occurred due to the hurricane in 1.8% of households

Health and Health care:

Overall, the percentage of households with access to health care did not change since the hurricane. Fifty-two percent of households reported access to health care before the hurricane and 52% reported access after the hurricane. However, those households with the access to care before and after the hurricane may be different. Similarly, access to a pharmacy remained at 59% before and after the storm. Health care was provided mostly from a clinic (64%) or health promoter (30%) with only 1% of households relying on care from disaster services.

Health care information was collected for conditions needing attention in the past month and conditions needing attention at the time of the survey. Within the month prior to interview, 9% of the households had 1 or more members who had sustained an injury, a total of 23 people.

Table 1 Injuries in the Past Month

Type of Injury	Number of Household with Cases
Injuries overall	20/225 (9%)
Lacerations	4/225 (2%)
Puncture Wounds	4/225 (2%)
Fractures	6/225 (3%)
Head Injury	2/225 (0.9%)
Burns	4/225 (2%)
Other	2/225 (0.9%)

During the same time period, 76% of households reported having one or more members who had been ill: respiratory illness (51.5%), gastrointestinal illness (21.7%), chronic illness (11.6%), stress reaction, including insomnia and poor appetite (4.9%), and malaria (3.6%). The total number of people with illness over the past month was 382 of 1305 people. Fifty nine percent of the households reported needing medications representing a total of 310 people

Table 2 Illness in the Past Month

Type of Illness	Percentage of Households with Illness
Illness Overall	(76%)
Respiratory	(52%)
Gastrointestinal	(22%)
Chronic	(12%)
Stress	(5%)
Malaria	(4%)
Other	(5%)

Thirty-four percent of the households had one or more members who were in need of health care at the time of the survey ranging in age from newborn to 95 years. The predominate type of illness was pain reported by 27% of people needing care. This category includes arthritis, headache and other general pain complaints. Gastrointestinal illness (14%) including diarrhea, vomiting and abdominal pain and respiratory illness (10%) including complaints of cold, cough or other respiratory symptoms were the next highest categories. Fever and infections were 8%.

Food:

Before the hurricane, 66% of families reported having enough food every day of the week. This decreased slightly to 64% at the time of the interview. The mean number of days a week without sufficient food was 2 days for both time periods. Food was reported as the most important need in 16% of households.

Services:

Services available to households included electricity (61% public and 5% generator), telephone (23%), transportation (76% public and 5% private), and waste disposal (7%). Information was obtained by radio in 61% of the households and the same percentage of households received information from TV (61%).

Water and Sanitation:

Wells were the source for water in 47% of the households before the hurricane and remained the same after the hurricane. Running (piped) water was available in 34% of households before and after the hurricane. The remaining households were relying on bottled water (2%) or other sources (17%) such as the river, a spring or community fountain. Fifty-five percent of households treated their water before drinking; 45% with chlorine and 9% by boiling and 6% by using some type of detergent. Latrines were available for 79% of households and bathrooms 2%.

Reported Needs:

At the time of the survey, households reported medical services (20%), medication (16%) and food (16%) as their greatest needs. In the households which reported a second need (109), the same needs were reported, but medication was reported in 30%, food (16%), and medical services (11%).

Hurricane Warning Information:

Sixty-eight percent of households reported having information about the hurricane prior to its arrival. However, 39% of households reported receiving warning \leq 24 hours. Television was the main medium for information on the hurricane, with 42% of households receiving warning from TV. Radio provided warning to 35% of households. The remaining households were notified by neighbors, newspaper or relief workers.

Hurricane Preparation:

Although 68% of the households had warning, 60% did not do anything to prepare. Those who did prepare either stored food and water (27%) or secured the house (5%).

IV. Conclusions:

1. The needs identified by this assessment reflect long term problems with respect to access to medical services and supplies countrywide.
2. The timing of hurricane warning is often inadequate for preparation.
3. Appropriate preparation usually does not occur.

V. Recommendations:

1. Community access to services and supplies should be enhanced in the context of the existing health care system.
2. Reexamine the current disaster warning system to increase the amount warning time given to communities. Consider defining a plan that encourages collaboration of media personnel, meteorologists, NGOs, etc.
3. Develop or strengthen instructional programs on appropriate disaster preparation for communities. Consider utilizing preexisting educational materials developed by several organizations.