

Summary

This report is an attempt to evaluate the health impact of hurricane David on the population of Dominica. The purpose of the study was to define and to measure the importance of medical needs relative to other disaster-related problems. A representative 6 % sample (n = 5,977) of the total island population was surveyed by household interviews 8 months after the hurricane struck on 29 August 1979.

Hurricane damage and reconstruction (housing, utilities, agriculture, employment, food) as well as injuries, care, communicable diseases and impact on pregnancy have been analysed in detail.

Attention also has been given to the human perception of the effects of the hurricane and of the assistance received.

The major conclusions follow:

1. Lack of money, resulting from loss of income in the post-disaster period, scarcity of building materials and shortage of skilled tradesmen, were the main reasons for the delay in restoring houses. The high proportion of temporary repairs, many of which are becoming semi-permanent, may result in a long term deterioration of the housing stock.
2. An unexpectedly large number of private pit latrines was damaged. Also, four fifths of the people interviewed who used public toilets found them damaged or destroyed. Unlike toilets in private homes, nine months later, the vast majority had not still been repaired or replaced by the authorities.
3. Significant provisions of food aid came to the island after the hurricane. It would have been more constructive had some of the funds designated for food purchase been used instead to replace lost animals. Depending on how such a scheme was operated, a project to replace lost animals could assume a developmental character.
4. Health problems were relatively unimportant and were the main worry of only a small minority.
Of the people surveyed 4.3 % were reported injured due to the disaster. Differences in age-specific injury rates were statistically significant

and ranged from less than 10 per thousand for the under-fives to over 120 per thousand for men aged 45-49. There were no significant differences for sexes.

5. The head of a household at the time of the disaster was in a vulnerable position regardless of age.
Land labourers and housewives were the occupational groups found to be significantly at risk.
6. There was no correlation between injuries and the extent to which the house or facilities had been damaged or disrupted. Injuries that occurred in both urban and rural environments stayed roughly in proportion to their populations.

Of all the injuries, 40 % occurred in the first few hours ; 20 % later in the day and a surprisingly large proportion (40 %) occurred after the cyclone had passed, in the days and even in the weeks that followed. Most of the injuries occurred when people were trying to seek protection from the hurricane's force. Next in frequency came injuries that occurred during the process of clearing up and reconstructing homes. Over 80 % of the injuries were caused by building materials which were scattered about when the hurricane winds blew houses apart.

A large proportion of injuries were relatively minor. Of those who were injured, about 70 % obtained medical help and 30 % did not. There was no correlation between settlement types and the proportion of injuries that people felt they could manage to treat themselves. In each instance self-help was the preferred method of treatment for about 15 % of all injuries.

Three-quarters of village or small town dwellers who got help were seen either locally or at health centres. The number treated in each of these ways was almost equal. Very few villagers or people from small towns went to hospital. It seems likely that Roseau's hospital served

not only as the country's central hospital but also as a centre of primary health care for the population of the capital.

Seventy per cent of those who were injured and for whom we have information walked to get medical help. This percentage was virtually equal among villagers, townfolk, and those from the capital. A quarter used motor transport. Only one member of the sample was air-lifted to hospital by the emergency medical rescue team. It is interesting to note that over half of those seeking medical treatment for leg or foot injuries arrived at the medical facility on foot.

The hypothesis that the shock, possible injury and stress occasioned by the hurricane might have affected the outcome of pregnancies adversely could not be sustained. Early and late miscarriages did not exceed the normal rates.

Laboratory records for the months following the disaster were compared with the records for the previous three years. No evidence of increase in typhoid fever was noted in the months following hurricane David. On the other hand, there was a clear outbreak of bacillary dysentery, which peaked in the second and third months after the disaster. It could have been associated with the destruction and slow repair of latrines together with a reported increase in the fly population during the months following the hurricane.

Diarrhoea cases occurred in 7.3 % of surveyed households. Eighty per cent of these cases occurred during the first three months following the hurricane. This parallels and thus lends support to the laboratory findings for dysentery.

1. Introduction

THE SETTING

Dominica, the most northerly of the Windward islands, lies approximately 15°N and 61°W and forms part of the chain of the Lesser Antilles. It is extremely rugged and although the total land area is only about 800 square km the peaks of the central mountains rise to between 1,200 and 1,500 m. Tropical temperatures and high rainfall result in much of the interior being forested. The population is predominantly rural and agricultural. Densities are not high compared with West Indian standards, the largest concentration of population being in Roseau, the capital on the west coast.

CYCLONES IN THE CARIBBEAN REGION

The Caribbean is hurricane-prone. The West Indies have already experienced some thirty-eight hurricanes in the twentieth century, although, because of the comparative narrowness of the path of a cyclone, individual islands suffer damage relatively infrequently. The hurricane season begins in August and lasts until October ; September being the month with the most severe storms. The hurricane tracks travel across the Caribbean and its islands in a north westerly direction swinging round eastward to the North American coast. Most hurricane damage is due to the wind, to the accompanying rain or, in low-lying coastal areas, to sea surge.

HURRICANE DAVID

On 29th August 1979, Dominica was struck by a hurricane, code-named "David." Winds --which at times exceeded 250 km per hour-- swept the island from 11 a.m. to about 5 p.m. The whole island suffered and was declared a disaster zone by the government. Over forty people died ; roughly 3,000 were treated for injuries. The majority of the houses were damaged and most of the maincrop --bananas--was reported destroyed. Roads were impassible, utilities put out of action and many public buildings demolished.