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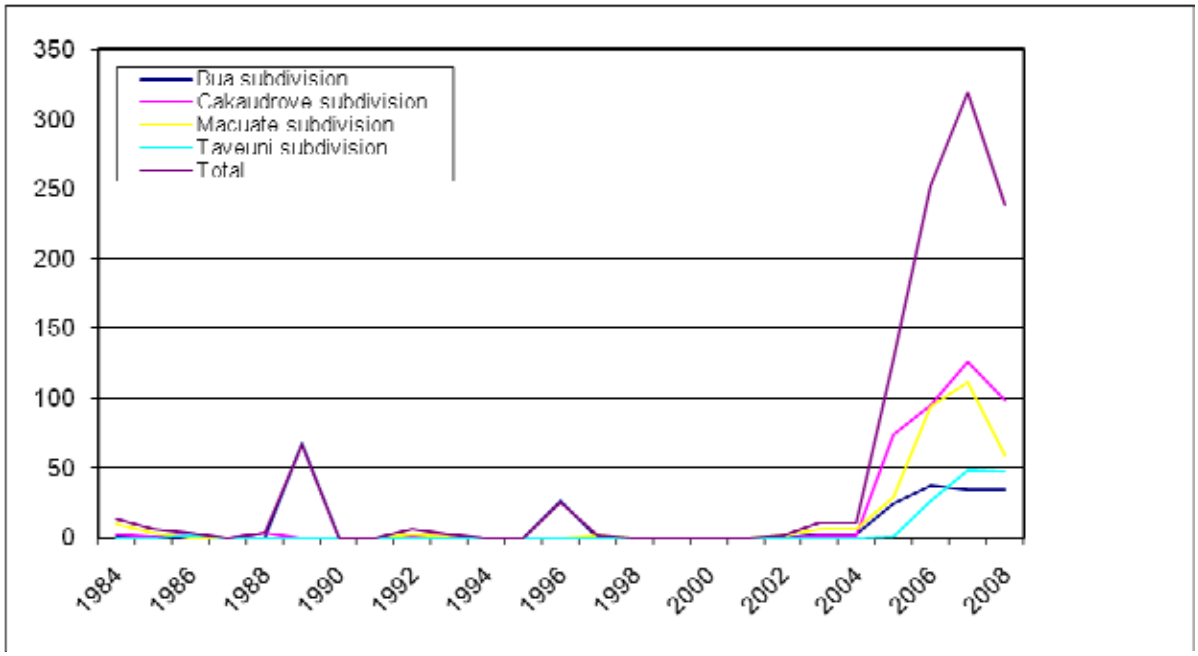
Typhoid fever outbreaks in the Northern Division of Fiji Islands, 2008

Introduction

In 2008, outbreaks of typhoid fever occurred in Fiji Islands, mainly in the Northern Division on the island of Vanua Levu. In the last report to Inform 'ACTION in 2005, typhoid fever outbreaks were also predominantly in the Northern Division. In fact, outbreaks of typhoid fever have been reported from the Northern Division of Fiji Islands since 1984, as shown in Figure 1.0. In the mid-1980s these outbreaks were confined to areas in one or two medical subdivisions in the north. However, since 2005, outbreaks have extended to neighbouring areas and subdivisions, notably areas adjacent to the main southern highway (Hibiscus Highway) in the Cakaudrove subdivision. There is some indication in Figure 1.0 that recent outbreaks of typhoid fever in the Northern Division are closely linked to those of previous years.

Figure 1.0. Number of laboratory-confirmed typhoid fever cases in the Northern Division of Fiji Islands, Jan. 1984–Oct. 2008



A typhoid fever burden of Illness assessment conducted by experts from the World Health Organization (WHO) and the Secretariat of the Pacific Community (SPC) in 2006 reported the incidence rate for the Northern Division in Fiji Islands to be

Inform'ACTION n°30
ISSN 1029-3396
Information for action / Information pour action

about 136–1,052 cases per 100,000/yr. The report identified the Northern Health Division of Fiji Islands as being comparable with regions with the highest incidences of typhoid in the world, such as India and China.

Background

The Northern Division refers to the second largest island (Vanua Levu) in the Fiji group. The Division has a total population of 140,000, of which 53 per cent are indigenous Fijians, 41 per cent are Indo-Fijians and 6 per cent come from other ethnic groups. The majority of households (about 98%) in urban centres like Labasa and Savusavu as well as main business and government centres in Taveuni and Nabouwalu have access to treated water and adequate sanitary facilities. In rural areas, 94 per cent of households have access to running water and only 62 per cent have access to proper sanitary facilities. However, the frequent flooding, intermittent water supply and mobility of chronic carriers are some of the factors that contribute to the rapid spread of typhoid fever in the north.

There are four medical subdivisions in Northern Division with their own hospitals that can manage uncomplicated cases of typhoid fever; complicated cases are referred to the divisional hospital in Labasa.

Typhoid fever outbreaks in the Northern Division in 2008

From January to the end of October 2008, there were 239 laboratory-confirmed typhoid cases in the Northern Division of Fiji Islands (Table 1.0). A confirmed case of typhoid fever is defined as: *A resident of the Northern Division in Fiji Islands presenting with sustained fever of 38◦C or over and other signs and symptoms plus isolation of Salmonella typhi in blood and/or stool cultures*.

Table 1.0. The number of laboratory-confirmed *S. typhi* cases from medical subdivisions in the Northern Division of Fiji Islands, January–October 2008.

Subdivision/area	No. of cases	No. of fatalities
Bua subdivision	34	0
Cakaudrove subdivision	99	2
Macuata subdivision	59	0
Taveuni subdivision	47	0
Total	**239**	**2**

Inform'ACTION n°30
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Information for action / Information pour action

Two deaths were attributed to complications associated with typhoid fever. In both cases the person presented dead on arrival at the hospital. Indigenous Fijians were more often affected by typhoid fever (93%) than other ethnic groups. There were slightly more men (55%) affected than women (45%). The 20–39 age group was the most commonly affected age group (53%).

The public health response

The public health response by the divisional outbreak response team and its stakeholders has been rapid in 2008 with case identification and management. Each subdivision activated its outbreak response teams to react quickly and investigate incidents, conduct tracing and initiate immediate prevention and control measures. Other activities included health promotion projects, community awareness, water testing and treatment and environmental sanitation.

The outbreaks in the Northern Division became a national issue in the media as sporadic cases were detected on the mainland (Viti Levu) that had links to cases in the north. In April 2008, a national typhoid symposium was held at Savusavu in Cakaudrove subdivision (where most confirmed cases in the Northern Division were detected). National typhoid prevention and control issues were discussed and strategies mapped out to assist the Northern Health Service with resources and technical assistance. The forum formulated several short- and long-term prevention and control strategies at local, divisional and national levels. The adaptation of these strategies by the Northern Division is as follows:

- Strengthen divisional and subdivisional outbreak response teams (SORT) through capacity building and provision of additional resources. Two divisional training sessions were conducted: disease outbreak investigation and response and Epi-info data analysis. They were followed by four subdivisional outbreak team training sessions. The training strengthened the active surveillance of typhoid fever in the division and enhanced capacity of SORT to respond effectively.
- The Northern Division typhoid task force was established with the Commissioner Northern (government administrative head) as its head. As a result all essential government departments were involved with key stakeholders (e.g. Rotaract) and donors (e.g. the Japanese government).
- A COMBI (communication for behavioural impact) plan was activated at the national level by M-RIP (massive, repetitive, intensive and persistent) messages through mass media and community awareness programmes.
- The subdivisional management teams consisting mainly of district government departments that are also closely linked to divisional task force

Inform'ACTION no 30
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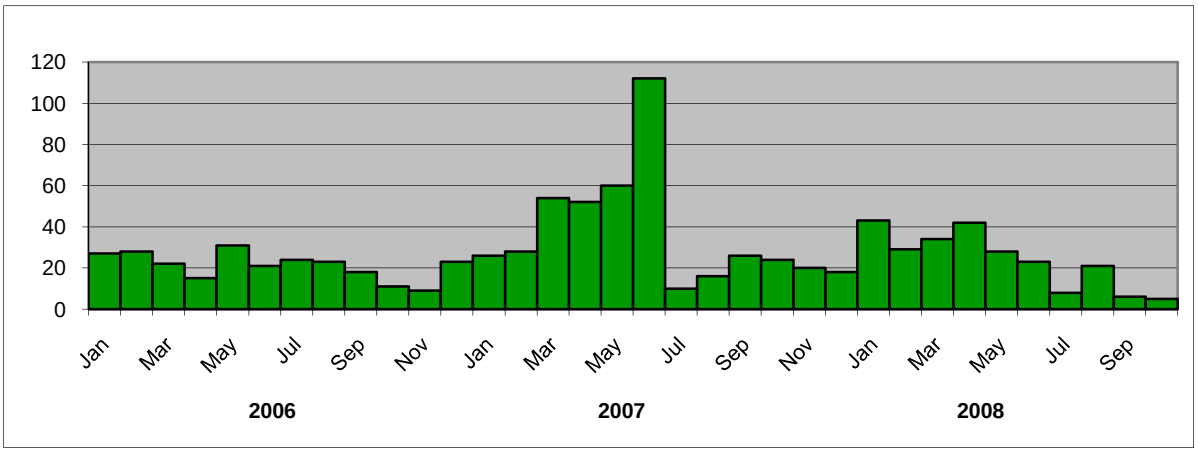
Information for action / Information pour action

were active in providing logistic support and sharing resources such as transport with the investigating teams.

- The Ministry of Health deployed additional technical staff from other divisions to supplement the human resource capacity at the subdivisions that were most affected.
- Advocacy by the divisional team aimed at government and donor agencies resulted in an increase in water and sanitation projects at highly endemic or typhoid risk/hotspot areas in the north.
- Several innovative control strategies were developed, such as typhoid fever contingency plans for mass gatherings, and training and restrictions for food handlers at social/cultural functions.

The reduction of reported typhoid cases from the health facilities in the North is attributed to the increased efforts of the Northern Health Service with the assistance of the Ministry of Health and the collaborative effort of government and stakeholders, as shown in Figure 2.0.

Figure 2.0 The number of laboratory-confirmed typhoid fever cases in the Northern Division of Fiji Islands, January–October 2008.



Inform'ACTION no 30
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Lessons learned

The most important lesson in this outbreak is that efficient coordination and integration of other sectors into public health responses is critical to the prevention and control of the disease. The frequency of typhoid fever outbreaks in the north can be further curtailed to controllable levels with strong commitment through a multisectoral approach that involves key stakeholders in government and non-governmental organisations. The capacity of health teams to detect and respond effectively is enhanced with regular refresher training on disease surveillance, outbreak investigation, and data analysis and control measures. The challenge remains to sustain all the positive gains from the beginning of the year.

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