

# Assessment of health effects, preparedness and coping with floods: the case of Kumi district, eastern Uganda

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## Introduction

Globally, floods account for over 40% of natural disasters. Uganda is prone to several natural, manmade (technological) and a hybrid of disasters. During July to November 2007, Uganda experienced prolonged floods that affected the eastern and northern regions including Kumi district.

## Objective

To assess the health effects of the 2007 floods in Kumi district, preparedness and how the district coped.

## Methods

The study design was both cross-sectional and retrospective and was conducted in Kumi district in 2008. Quantitative and qualitative techniques of data collection were used. Quantitative data were collected from all the 26 health facilities using record reviews and checklists, while 17 key informant interviews were conducted for the qualitative data. Quantitative data were analyzed using EPINFO 3.2.2 and SPSS 13.0 computer softwares while qualitative data were analyzed using a Manifest-Content Analysis.

## Results

During the 2006-2008, the leading causes of morbidity in Kumi district were malaria (OPD:45.44% and IPD:53.13%), respiratory infections (OPD:14.14% and IPD:9.42%), injuries/trauma (OPD:3.40% and IPD:3.71%), and diarrhoeal diseases (OPD:3.17% and IPD:1.25%), while the leading causes of mortality were malaria (27.36%), respiratory infections (9.92%) and trauma/injuries (4.62%). The highest case fatality rates during the floods were due to diarrhoeal diseases (4.42%), followed by injuries/trauma (3.09%) and respiratory infections (1.57%).

The most affected age group admitted during the floods were under 5s (OR=1.06, 95% CI 1.01-1.11) compared to 5 years and above. Females had a slightly greater odds of being admitted during the floods than before or after (OR=1.05, 95% CI 1.00-1.10) compared with males. Under 5s had a slightly greater odds to die during the 4 months of the floods compared to before the floods (OR=1.72, 95% CI 1.22-2.69) and after the floods (OR=1.76, 95% CI=1.15-2.61).

During the floods, more than half of the health facilities (15/26) had disruption of their routine services, all (26/26) received assistance from development partners and the Office of the Prime Minister (OPM), and all (26/26) had adequate medical supplies throughout the floods in addition to food items, clothing/blankets and Insecticide Treated Nets. However, there was no district work plan for disaster management and only 3/26 health facility in-charges had had training in disaster preparedness prior to the floods.

The main challenges experienced in response to the flood health effects included a low district budget for disaster preparedness, inadequate support to NGO facilities, understaffing, lack of health education equipment and sustainability of clean safe water in the aftermath of the floods.

## Conclusions and recommendations

The main causes of morbidity and mortality were communicable diseases (malaria, respiratory infections and diarrhoeal diseases) and trauma/injuries. Children under 5 and women were more vulnerable in Kumi. Although the district with support of key stakeholders (MoH and Office of the Prime Minister) was swift to respond to the floods, there was inadequate preparedness of the district authorities and health system despite having received warnings of the disaster.

There is need for districts to develop a disaster risk reduction and management/response plan. Focus should be put on communicable disease control particularly malaria, respiratory infections and diarrhoeal diseases as well as non-communicable diseases like trauma/injuries, and on the vulnerable population of under 5s and women during the response and recovery period of disasters. Health workers should also get continuous in-service training on disaster preparedness and response. The central and local governments should, therefore, increase its resource mobilization and budget for disaster preparedness and response, as well as the ability to set up early warning systems to improve disaster risk reduction and management.