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War within a War:

Controlling a Fatal Disease Outbreak in a Conflict Situation: The Ebola Epidemic in Gulu, Uganda

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Ebola Haemorrhagic Fever erupted in war-ravaged Gulu District, Uganda, between October 2000 and February 2001. Of 425 cases of the disease, 224 died, including 17 medical personnel. The epidemic created long lasting fear and psychosocial trauma, even resulting in an uneasy truce between the warring factions that made it easier to access the affected communities.

Population mobility increased the risk of spreading the disease, and complicated surveillance. This Technical Briefing Paper describes the multi-sector national and international response, including security cover from the military. Though costly, the action limited the spread, fatality and duration of the epidemic.

Background

For 17 years Gulu District in northern Uganda (population 468,407, in 2002 census) has been the scene of insurgency by the Lord's Resistance Army (LRA) against the Government of the Republic of Uganda. Targeting mainly civilians, LRA rebels roam the villages abducting children as fighters and for domestic and sexual services. They kill and maim men, women and children and loot property. As a result, nearly two-thirds of the population is displaced into protected but overcrowded camps.

The population outside the camps is unstable, continuously moving for safety from the rebels, who are themselves highly mobile. Government has deployed soldiers to protect the camps and to hunt down the rebels. AMREF started operations in Gulu in 1998 to strengthen capacities for essential health services and improve access to safe water in the camps. When Ebola struck, AMREF joined the response to control the epidemic.

Ebola Outbreak

On 8 October 2000, Gulu District Director of Health Services announced the outbreak of a mysterious febrile disease, characterised by diarrhoea, vomiting, headache, red eyes and bleeding tendencies, and killing rapidly with a high case fatality rate. The disease first hit the village of Rwot Obilo, where it wiped out a whole family before spreading to other families. The National Institute of Virology (NIV), South Africa, confirmed it as Ebola Haemorrhagic Fever (EHF) on 15 October 2002.

The famed social safety network of the African extended family virtually collapsed.

The Gulu outbreak of EHF was caused by *Ebola-Sudan* sub type of the Ebola virus. The natural reservoir of the virus is unknown. Between humans it is readily transmitted by direct contact with infected body fluids: blood, urine, vomitus, pus, stool, semen, saliva and sweat. The easy spread posed a serious risk to people living in crowded camps with shared facilities, to caregivers at home and to health care providers. Ebola spread to Masindi and Mbarara districts as a result of population movements and caused minor epidemics there.

A total of 425 Ebola cases (66% females) were recorded from the districts of Gulu (393), Mbarara (5) and Masindi (27). Of these, 31 were health workers. A total of 195 were "laboratory confirmed". In all, 224 Ebola patients died of the disease and 201 survived, giving a case fatality rate of 51%. Seventeen of the 31 infected health workers died. There was a total of 5,600 contacts.

Impact of the Ebola Epidemic on the Community

The Ebola epidemic had far-reaching psychosocial impact. It led to secret migration to neighbouring Masindi District, and as far as Mbarara. Communities dreaded physical contact and isolated suspected cases immediately. In some cases, when a person was diagnosed with Ebola and hospitalized, their hut and all property therein were immediately set on fire. Returning survivors were not allowed to re-enter the homesteads. Husbands were rejected by their wives and wives by their husbands.

The 555 children orphaned (below 18 years, at least one parent lost) by Ebola were treated with a lot of suspicion and forbidden access to community resources like water points.

At international level Ugandans experienced travel and trade restrictions. Some patients who sneaked into Kenya were isolated and repatriated. An Acholi Elders' Conference in Nairobi was cancelled and participants repatriated. Some countries even rejected Uganda coffee.

Response to the Epidemic

The response focused on breaking the transmission cycle, containing the disease and reducing the psychosocial impact. Control activities included coordination and logistical support, clinical case management, active surveillance, and social mobilization for Ebola prevention and control. The general insecurity in Gulu was taken into account in the response, and surprisingly there was uneasy truce between the rebels and the government troops. AMREF was a core member of the Ebola District Task Force that coordinated the entire operation. AMREF's specific roles were community mobilisation through creating awareness of the disease and its dangers, and provision of protective materials. AMREF was also a member of the District Technical Committee.

Coordination and logistical support. The Ministry of Health in Kampala urgently set up a national team to assess the outbreak and institute control measures. National and district Ebola task forces were constituted to guide the response and coordinate resource mobilisation and utilisation. A District Ebola Technical Committee was formed to provide technical leadership to the epidemic response.

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The international response, mobilised by the World Health Organisation (WHO), provided technical and logistical support. Technical teams from WHO and the Centres for Disease Control and Prevention (CDC), Atlanta, arrived in Gulu within a week of laboratory confirmation of EHF.

Clinical case management. Isolation wards were established at Lacor and Gulu hospitals. CDC set up a field laboratory at Lacor Hospital, supplemented by CDC/Atlanta and NIV in South Africa. Medecins sans Frontières (MSF) provided medical support. A WHO/CDC case definition was used to identify suspected cases of EHF. All those who screened positive were admitted to the isolation wards for further assessment and management. Protective clothing, caps, masks and gloves were procured and distributed to health workers for protection and infection control. In the hospitals, health workers practised strict barrier nursing and took up all responsibility for the patient, except infants requiring the mother's care. No drug is known to be effective against Ebola and survival depends on supportive care such as intravenous fluids.

Active surveillance. Active surveillance was initiated to determine the extent of the outbreak, identify the locuses of

the disease and detect cases as early as possible. Three case notification categories were established: “alert”, “suspect” and “probable”. The “alert” case was defined by sudden onset of high fever, any haemorrhagic sign and sudden death. The community used the “alert” case definition to notify mobile teams. The “suspect” case was defined by fever and contact with a suspected case of EHF, plus unexplained bleeding. Or fever with any three extra symptoms of headache, vomiting, loss of appetite, diarrhoea, weakness or severe fatigue, abdominal pain, body aches, joint pains, difficulty in swallowing or breathing, or hiccups, and all unexplained deaths.

Mobile teams and peripheral health unit staff used the “suspect” case definition to identify cases for transfer to hospital.

Mobile teams and peripheral health unit staff used the “suspect” case definition to identify cases for transfer to hospital. The “probable” category was the same as the “suspect”, with the requirement that a physician describe it. Cases were designated “laboratory confirmed” or “not a case” after laboratory examination.

A total of 150 mobile-team volunteers were trained to scrutinise the disease distribution in the community. Owing to the urgency of the situation and the difficult access to most of rural Gulu, team members were recruited from Gulu municipality and environs and ferried to the field every day. Walkie-talkies were procured and issued to the teams for ease of communication. Transportation of the teams proved to be very costly.

A 21-day follow-up protocol for contact tracing was established, but the insecurity was a serious constraint as some areas were accessible only with a military escort. The involvement of the military was essential, but had inherent issues of sensitivity and bureaucracy.

Community mobilisation for Ebola prevention and control.

Information, education and communication (IEC) materials were quickly produced and disseminated, panel discussions of “frequently asked questions” were broadcast on radio stations, and film, drama and music shows were presented. AMREF provided leadership in community mobilisation and trained hundreds of trainers who trained community mobilisers. Communities were educated on protective measures, surveillance, referral of suspected cases and household hygiene including the use of sodium hypochlorite (household bleach) for disinfection. An exclusive Ebola burial ground was established so that Ebola deaths could be interred safely and with dignity. Burial teams were trained and equipped with protective clothing.

Achievements and Results

- The rapid, well coordinated epidemic response limited the case fatality rate to 53%; this compared well with previous Ebola epidemics, e.g., 88% in Zaire (1976), 62% in Sudan (1979) and 78% in Gabon (1996).
- The effectiveness of the response, especially given the complex war situation, also limited the duration and spread

of the epidemic and WHO declared Uganda Ebola-free on 27 February 2001.

- A total of 5,600 Ebola contacts were successfully followed up despite the insecurity.
- Community awareness of the disease was raised, and the stigma and rejection associated with the disease reduced.
- An effective community-based disease surveillance system in the midst of instability was established.
- Institutional capacity and health workers’ skills for handling highly contagious and fatal disease improved.

Lessons Learned

The Ebola epidemic demonstrated the need for vigilance against new emerging and re-emerging infections, and the urgency of establishing and maintaining an inventory of local and international expertise for rapid mobilisation when an epidemic strikes. The epidemic also showed that:

- Disease outbreak provides an opportunity for collaboration that transcends social and political differences.
- Reliable and frequent sharing of information, including use of mass media, helps contain rumours and stimulate community participation.
- Community-based initiatives for disease surveillance are critical in managing the epidemic in Gulu. Community members understood the dangers and were willing to participate in control measures despite personal risk.
- Response to a fatal disease outbreak must integrate mitigation of psychosocial impact for best results. Support for survivors of an epidemic and affected persons must be considered in a well thought out exit strategy.
- Rapid, well coordinated response and commitment at local, national and international levels is essential to effective epidemic control, especially in a war situation. WHO leadership in mobilising and coordinating international response to the epidemic was vital.
- Case fatality can be reduced if an epidemic response is well coordinated and community-based initiatives are instituted to prevent further spread of the disease
- There is real danger of hospital acquired infections as demonstrated by deaths of health workers. In handling fatal disease outbreaks it is important to observe strict isolation, guard against false sense of security and provide health workers with maximum protection. The issue of compensation of health workers in accordance with existing laws is a challenge.

Tribute

The health workers involved were fully aware of the risks. Thirty one became infected and seventeen paid the ultimate price. All volunteered to provide care.

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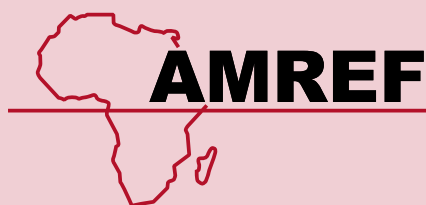
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AMREF defines the disadvantaged as people who suffer a high prevalence and impact of major health problems and challenges including malaria, HIV/AIDS, STI and TB adolescent and reproductive health problems, low access to water and basic sanitation, and who have poor access to health care.

AMREF headquarters has been in Nairobi, Kenya, since it was founded in 1957. It has country programmes in Kenya, Ethiopia, Uganda, Tanzania and South Africa, and major projects in southern Sudan and Somalia.

To achieve its mission, AMREF implements its projects through and across its country programmes, learning from those projects and using the information and knowledge gained to inform and influence others.

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