

Malaria in the time of Ebola

Health services have all-but collapsed in the three countries most affected by Ebola. In other countries, individuals have their temperature taken and anything unusual... is trouble. Prof William Brieger reports

Epidemiologists have traced the current West African Ebola outbreak to an African 2-year-old child.¹ Patient Zero as he would become known died on December 6, 2013, just a few days after falling ill in a village in Guéckédou, in southeastern Guinea. Bordering Sierra Leone and Liberia, Guéckédou is at the intersection of three nations, where the disease found an easy entry point to the region.

A week later, Ebola killed the boy's mother, then his 3-year-old sister, then his grandmother. All had fever, vomiting and diarrhoea, but no one knew what had sickened them. Mourners at the grandmother's funeral carried Ebola back to their villages, and from there the epidemic began. Suddenly funerals became hotspots for Ebola transmission.² Over half of those infected have died, and a disproportionate number of deaths are among health workers who responded to the challenge.

Previous Ebola outbreaks had been confined to rural areas like Guéckédou, with the exception of one in the Democratic Republic of the Congo that reached the city of Kikwit where it was still contained. People descending on the capitals of Liberia, Guinea and Sierra Leone, where the disease was uncontrollable in the urban slums was a new experience for epidemiologists and health workers.³

Differentiating the Diseases

A major setback in identifying and tackling the Ebola virus disease resembles other diseases like malaria and typhoid fever.⁴ People in the region started asking 'Is it Malaria?' 'Not infrequently in the last few weeks I've encountered people complaining of a headache or a night of intense sweating. They slide off to the hospital and reappear a day or two later with a bag full of drugs, and they laugh it off, 'Oh yeah, there are so many mosquitoes at this time of year,' they say. Better it be 'normal' malaria than death (Ebola).⁵

Ebola blocks malaria care. Misinformation and denial are keeping sick people from getting help. Some people are hiding from government officials and medical teams because they fear that if they go into quarantine, they will never see their loved ones again. Since the early symptoms of malaria and Ebola are similar

(Table 1), many malaria patients are not getting treatment. This crisis jeopardises progress toward improving access to healthcare generally.⁶

Both Ebola and malaria disproportionately affect the poor and ill-informed. Because Ebola and malaria have common early symptoms, such as fever, headache and vomiting, there may be confusion about the cause of illness among both those who are ill and healthcare providers. While malaria is curable, Ebola is not. But there is real concern that the mortality rate from malaria may rise because patients will not seek treatment. Therefore, it is critical to get accurate, life-saving messages to people in these areas.⁷

Symptoms	Ebola	Malaria
Fever (greater than 38.6°C or 101.5°F)	✓	✓
Chills		✓
Severe headache	✓	✓
Muscle pain	✓	✓
Weakness	✓	✓
Diarrhoea	✓	
Vomiting	✓	✓
Abdominal (stomach) pain	✓	
Unexplained hemorrhage (bleeding or bruising)	✓	

Table 1: Comparing Ebola and malaria symptoms⁸

The Ebola scare that forced Malaga's Carlos Haya Hospital (Andalusia, Spain) to launch emergency protocols turned out to be a false alarm. It was feared that a 40-year-old Nigerian man had contracted the deadly virus on a trip home. The hospital eventually confirmed that the man is suffering from malaria, after tests dismissed the possibility of Ebola.⁹

Additional Malaria Mortality

Additional mortality results beyond Ebola deaths. The lethal virus has bred a larger medical crisis, Dr. Liu, president of Médecins Sans Frontières said. In Liberia's capital, Monrovia, the health system collapsed as workers and patients fled hospitals out of fear of Ebola, allowing diseases like malaria, pneumonia and diarrhoea to kill children who would otherwise have been saved.¹⁰

Ebola is the tip of the iceberg in terms of the overall death toll from infectious diseases in Africa. Diseases like malaria, typhoid, the common cold, and diarrhoeal diseases like cholera annually kill more people than Ebola across Africa.¹¹

Unfortunately, trust has been damaged in several

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ways. First there is long standing distrust of government agencies in areas that have experienced violent civil wars. Then during the current outbreak governments have used police and soldiers to block roads and even whole urban neighborhoods. For days people could not seek proper care for malaria, let alone go out and buy food, creating 'social chaos'.¹² Trust is also reduced when government officials try



to interfere with local practices, such as eating of bush meat and cleaning bodies at funerals. Even though health workers know the epidemiology behind such bans, the local people are left in the dark and suspicions grow.

Finally when contacts are traced and taken to the Ebola treatment centres, many do not return, so again local people distrust health workers whom they blame for spreading Ebola. The situation became so bad in Guinea that a health education team heading to remote villages was murdered. 'The three doctors and three journalists disappeared after being pelted with stones by residents when they arrived in the village of Wome - near where the Ebola outbreak was first recorded,' and only one escaped alive.¹³

Erika Hayden and *Nature magazine* explain that it is not surprising that the Ebola outbreak has brought malaria control efforts to a standstill in the three affected countries. Malaria drugs are sitting in government warehouses, especially in Liberia and in Guinea, where medical supply trucks have been attacked by people angry with the government's handling of the Ebola outbreak. Liberia had planned a national campaign to distribute bed nets this year, but Roll Back Malaria reports that it may be difficult to launch that now. Routine healthcare has collapsed during the outbreak, and without proper treatment malaria can develop into a severe form that is often fatal.¹⁴

Finding Solutions to Both Diseases

Community involvement

The problem of Ebola will not therefore be solved on a medical basis only. Strong community engagement and involvement are needed so that community members do

not feel like victims, but become partners in controlling the disease.

Sierra Leone has begun relying on its cadre of trained community health workers (CHWs) to reach out to the community, and provide information and help trace contacts.¹⁵ CHWs are community members, chosen by their neighbours and already are trusted by the community.

Julia Frisbee reported that, 'United Methodist health workers equipped by Imagine No Malaria to fight malaria are now also fighting Ebola. The same trained and skilled health professionals are on the front lines... Today, fighting malaria means fighting Ebola. Imagine No Malaria alone is not equipped to launch an emergency response to the Ebola epidemic,' but it is possible by being part of a global effort.¹⁶

Also getting correct information to the community that is unfamiliar with Ebola, such as in the West African region is crucial. Julia Frisbee further notes that 'If people don't trust health workers they won't come to get help (whether for malaria or Ebola). Imagine No Malaria is using pastors, Sunday school teachers to share information about Ebola.'

Infection prevention

Many diseases spread through contact with infected bodily fluids, which means health workers who test and care for clients are at risk unless measures are taken to prevent contact with these fluids. Health workers caring for Ebola patients (whether they realise the person is infected with Ebola or not) are at special risk. Ideally all clinical activities that involve testing of blood, urine and stool samples should be undertaken with appropriate safety measures, even including the drawing of blood for malaria parasitological testing, and dispos-

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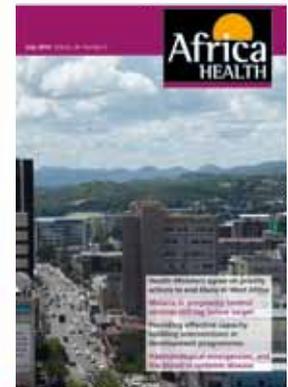


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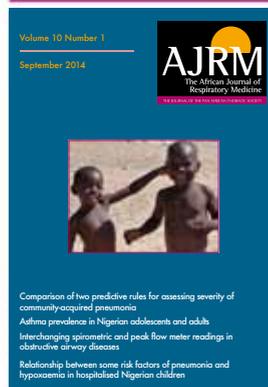
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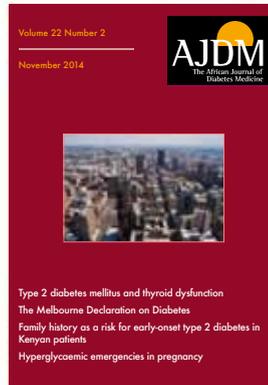


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ing of the used testing materials. Malaria itself will not spread through blood contact, but the suspected malaria patient may have bloodborne diseases that can infect health workers and other clients.

In order for infection prevention to work in healthcare settings, including community case management, three major conditions must be in place. National infection prevention guidelines must be in place. These guidelines must be disseminated to all health care providers through appropriate training activities and job aids. Finally the healthcare providers must have the supplies and equipment to keep themselves safe and safely dispose of waste products from testing procedures and care provision. These three components are reinforced through active on-site supervision and monitoring. Guidance is needed particularly for health workers and facilities in low resource settings.¹⁷

Based on its work in HIV/AIDS and quality clinical performance improvement, Jhpiego, with programmes in Liberia, Guinea and Nigeria, has adapted its infection prevention tools and learning materials to the Ebola outbreak. 'Jhpiego is working with our partners to help ensure healthcare providers are fully informed on infection prevention measures, appropriately trained and empowered to provide lifesaving care in a safe environment.'¹⁸ In Liberia, for example, 'Jhpiego has worked closely with the Ministry of Health and Social Welfare to provide additional training in appropriate hand washing, use of protective gear and safety equipment, proper disposal of waste, warning signs of Ebola, and appropriate follow-up if exposure to Ebola is suspected. Jhpiego staff helped advance this capacity-building along with colleagues and partners. This assistance is continuing and includes training of support staff in health facilities in how to prevent the spread of the infection, and outreach to key civic and religious leaders and groups.'

Basic infection prevention and control is plagued by an unstable supply of running water and insufficient personal protective equipment, which facilitates spread of communicable diseases.¹⁹ Even when resources are available, health workers are often lax in complying with minimal infection prevention measures.²⁰ Yusuf and colleagues report from Nigeria that 'Nigerians have never take infection prevention and control measures or environmental sanitation very seriously, despite the efforts of the government and advocates. However, amazingly with the Ebola outbreak, we have seen relatively improved compliance to the World Health Organization infection control practice guidelines of 'clean care is safer care.' The deaths of other health workers appears to have spurred a change in attitude and practice.

In conclusion malaria and Ebola have been intertwined from the beginning of the West Africa outbreak almost one year ago. Challenges have ranged from the initial presenting similarities of the two diseases to the Ebola-induced collapse of health services that have effectively denied malaria control services to the public, resulting in excess non-Ebola mortality. Solutions ultimately need to be similar. Community involvement that is a hallmark of current malaria control efforts should

have been used in the Ebola response to avoid losing the trust of the community. Likewise, good clinical practices like infection prevention are needed at all levels to respond to both infections.

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