Ebola in the Democratic Republic of the Congo: 1 year on

The Ebola virus disease outbreak in DR Congo is the second longest and largest in history. Talha Burki reviews the response and looks to the future.

Aug 1, 2019, will mark 1 year since the Ebola virus disease outbreak in the Democratic Republic of the Congo was officially declared by the country's Ministry of Health (although it probably started a few months earlier). As of July 2, 2019, there have been 2354 cases and 1586 deaths. Dozens of new cases are still being reported every week. The disease is reappearing in areas where the response had previously succeeded in preventing its spread. Only 55% of new cases have been identified as contacts of previous cases, a sure sign that surveillance measures have limited penetration. Many cases are only identified after post-mortem testing of individuals who died outside of specialised Ebola treatment centres. And the poorly equipped and fragmented local health system continues to amplify transmission.

All of these factors indicate that the epidemic is far from under control. WHO's Zabulon Yoti has attended 14 separate Ebola outbreaks. "My experience is that it usually takes about a month to establish the capacity for infection prevention and control in health-care centres", he said. "But in DRC we are continuing to see transmission to patients and health workers in these settings. The only other time that happened was during the [2013–16] west African epidemic."

In mid-June, Uganda detected three cases of Ebola, after a family had crossed the border after attending a funeral in DR Congo. The Ugandan authorities reacted rapidly, vaccinating 1275 people and following up almost 100 contacts. As *The Lancet Infectious Diseases* went to press, further spread had apparently been averted. But WHO stresses that there remains a high risk of Ebola spilling into South Sudan, Uganda, Rwanda, or Burundi, four of the nine nations that share a border with DR Congo.

The DR Congo Government is coordinating the response to the outbreak, with assistance from WHO. This is the tenth time that the disease has broken out in the sprawling nation. It took less than 3 months to put an end to the previous Ebola outbreak in DR Congo in 2018. Control measures are known and there is a highly effective, albeit unlicensed, new vaccine. But DR Congo has never seen an outbreak on this scale. Efforts to tackle the epidemic have been badly impeded by inaccessibility, security concerns, and widespread mistrust among the affected communities. And these factors look unlikely to improve.

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The epidemic is in two provinces in the northeastern borderlands. North Kivu and Ituri are among the most forbidding places in the world. The central government is largely absent; the capital of DR Congo, Kinshasa, lies 1000 miles to the west. Violence is ever present. Ebola is concentrated in North Kivu, which has a population of around 8 million, 1 million of whom are internally displaced. The province is more or less a war zone, with at least 100 militias. Beni, on the fringes of the Ituri forest near the porous border with Uganda, experiences regular raids, massacres, and kidnappings. Last September, 21 people in the city were killed by thugs armed with machetes and rifles, prompting an interruption to the response to the Ebola outbreak.

Beni has seen about 350 cases of Ebola. The scrubby villages nearby, where the epidemic first took hold, are dangerous and difficult to access. Roads are in terrible condition, although the population is nonetheless highly mobile, and the forest is home to the Allied Democratic Forces, a fearsome rebel insurgency. In neighbouring Ituri, which has reported about 220 cases of Ebola, tens of thousands of people have fled their homes in the wake of fierce communal violence that picked up in late 2017. Their misery has been compounded by a huge measles outbreak as well as seasonal malaria and diarrhoeal diseases.

In February, 2019, Ebola treatment centres run by Médecins Sans Frontières (MSF) in Butembo and nearby Katwa came under attack. Buildings were set on fire. The organisation suspended activities in the two places, at the epicentre of the epidemic. In the first 6 months of this year, there were 174 documented attacks on health-care facilities and workers in DR Congo. In March 2019, a policeman guarding an Ebola treatment centre in Butembo was murdered. The following month, Richard Mouzoko, a WHO

Pablo Garrigos/MSF

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epidemiologist working on Ebola at the university hospital in the same city was shot and killed.

The reasons behind the attacks are complex, but a key driver is suspicion of any activity that is backed by outsiders, a category which includes the central government. False rumours concerning Ebola abound. A survey of almost 1000 people in Beni and Butembo published by *The Lancet Infectious Diseases* earlier this year found that a quarter believed that Ebola did not exist. A third of the respondents contended that the disease had been fabricated for financial gain, and an even higher proportion believed that it had been invented to destabilise the region. "We identified low levels of trust in government institutions and widespread belief in misinformation about Ebola virus disease", wrote the authors.

In an analysis of information circulating on social media and in the local press and radio in North Kivu from February to April, 2019, Rachel Sweet and colleagues drew similar conclusions. Messages incited violence, made allegations of corruption (in particular that the response teams were bribing community and religious leaders), and questioned why the epidemic was still running despite the resources deployed against it. There were even suggestions that patients were being murdered. Voting in last year's presidential elections in Beni and Butembo, which are opposition strongholds, was postponed as a result of the Ebola outbreak, a decision widely thought to be politically motivated.

Because of threats against the response from armed groups, it is now impossible for contact tracers, burial teams, and vaccinators to access many areas without security escorts. But this can, in turn, alienate communities and increase the risk of pushback. Locals see money poured into addressing Ebola by a government that has historically declined to provide them with basic security or infrastructure. They wonder why such resources have not been made available for malaria. Some people believe that Ebola was deliberately imported to wipe out the Nande ethnic group. Aid workers are visibly richer than the locals; the view that Ebola is business has gained traction. Oxfam and the Red Cross report being frequently asked why the Ebola response teams are renting expensive vehicles yet they do not have enough vaccine to go around, and why there is money to fight Ebola but not the rebels whose raids cause such mayhem.

Yoti says that the availability of a vaccine has kept down the number of cases and thus far restricted the outbreak to two provinces in DR Congo. More than 140 000 people in DR Congo have been vaccinated with Merck's rVSV-ZEBOV vaccine, as well as over 9000 front-line health workers in Uganda, South Sudan, and Rwanda. A ring vaccination strategy has been adopted. "Ring vaccination proved very effective in Guinea", notes Preben Aavitsland, of the Norwegian Institute of Public Health. "It really is the only strategy available for the DRC; the supply of vaccine is limited and so it is needed for those most at risk." But ring vaccination depends on contact tracing, the levels of which remain suboptimal (people in the region typically do not want to be traced). Earlier this year, the WHO's Strategic Advisory Group of Experts recommended expanding the population eligible for the vaccine to include, for example, villagers in places where new cases are reported, as well as adjusting doses on the basis of risk stratification.

On June 14, 2019, the WHO Emergency Committee once again advised against declaring the outbreak in DR Congo a Public Health Emergency of International Concern (PHEIC). The committee worried that announcing a PHEIC could prove counterproductive, giving countries at low risk the mistaken idea that Ebola was an immediate threat and perhaps causing DR Congo's neighbours to close their borders and suspend regional trade. "It could possibly increase community resistance to the response in DRC", said Aavitsland, acting chair of the committee. Nonetheless, he noted that if the epidemic hits Goma, the bustling capital of North Kivu, the calculus would change.

All the while, a funding crisis is threatening the sustainability of control efforts. WHO has asked for US$98 million to cover its Ebola activities in DR Congo, less than half of which has been received. The organisation has resorted to running down its core funding. "It means that other services suffer, because you are moving money away from one area to another", said Yoti. "We have now reached the limit with this. If we do not get additional funding, it is going to seriously impact on the response."

Building community trust will require more than money. MSF advocates supporting health systems rather than Ebola-specific activities. "The important thing is to have an integrated, local approach, so if people come in to test for Ebola they can also be checked for other things", said Antoine Gauge (MSF, Goma, DR Congo). Aavitsland agrees. "We have to make this a local response, where the community is in charge", he said.

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