EDITORIALS

Holding back Ebola

Domestic public health infrastructure is the best defence

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On 11 June 2019, the Ugandan Ministry of Health confirmed that a child infected with Ebola virus had crossed into Uganda from the Democratic Republic of the Congo (DRC). The following day two more related cases were confirmed. The spread of the virus to Uganda was not unexpected since it is one of the three countries that border the two affected provinces in the DRC and some 100 000 people are believed to cross these borders every day.¹

Uganda's efficient response seems to have contained the event for now, suggesting that preparedness activities in neighbouring countries are reducing the risk of international spread at present. How to proceed within the DRC, however, is less clear. There the outbreak continues to spread, raising important questions about what constitutes effective intervention in an unstable landscape and what might mitigate the scale of a future outbreak.

As of 9 July, the number of confirmed Ebola cases in the DRC was 2343 with 1552 reported deaths.² In the preceding three weeks, 247 new confirmed cases were reported across the affected Ituri and North Kivu provinces, reflecting a continuing high incidence of new cases and a steady increase in the geographical spread of the outbreak. A case has now been reported in Goma, a large gateway city close to the border of Rwanda. Recent resurgences in previously affected areas including Mandima, where officials believe the outbreak began, indicate that even in areas of sustained attention the response is struggling to gain traction.

Current challenges

Ebola outbreaks tend to be driven by "superspreaders": individuals who generate a disproportionate number of secondary cases.^{3,4} This means that missing just one or two could bring about a surge of new cases. The growing number of infections among healthcare workers, a known source of superspreaders, adds to the precariousness of the current situation.²

Important gaps are still apparent in core surveillance activities, including in contact tracing. Effective contact tracing works by identifying and liaising with people known to have been in contact with someone with Ebola while they were still infectious. If one of these contacts then develops symptoms indicative of Ebola they can be swiftly isolated and tested before anyone else

becomes infected. Ideally, all new cases should occur in known contacts, but at present the figure is around 55%.⁵ The gap seems to be due to a mix of administrative errors, inadequate listing of contacts when new cases are identified, and, most concerning, cases arising from undocumented chains of transmission. In a recent press conference, the World Health Organization executive director for health emergencies estimated that up to a quarter of new cases might be being missed.⁶

Underlying the troubled response is the volatile and poverty stricken setting of northeastern DRC. Armed groups hamper containment efforts by restricting the movement of Ebola response teams and by displacing already mobile at-risk populations. Since early June some 300 000 people have been displaced from the affected Ituri province.⁷ A recent rise in attacks targeting response workers has further hindered containment efforts.⁸ Ebola interventions are effective only with the willing participation of the relevant community, and at present this vital element is lacking.⁹

Preventive action

Setting aside the security issues in eastern DRC, the question of what can be done to prevent future outbreaks getting to this point needs an answer. Since it is impossible to predict exactly where in west or central Africa the next outbreak will surface, the solution seems to be to lift the levels of primary healthcare and basic public health infrastructure across most of the continent.

The first few cases of the next outbreak, critical to early containment, are unlikely to be fielded by a dedicated Ebola response team.^{10,11} The outbreak will emerge as a person, or small cluster of people, developing symptoms indistinguishable from those of far more common infectious diseases.¹² Whether the outbreak stops there or escalates into a large epidemic will, in part, depend on whether those infected have access to a healthcare facility with the rudimentary diagnostic tests needed to quickly rule out common diseases and basic protective equipment such as gloves and disinfectant.¹³ Of potentially greater importance though, will be the presence of well-resourced local public health officers, especially at the district level. These are the people best placed to raise the alarm

and initiate the cheap, low tech interventions effective against Ebola—quarantines, safe supervised burials, and community engagement.

The current outbreak is probably beyond the domestic capabilities of the DRC. It would be a mistake, however, to take from this that large scale international responses are the solution to the problem of Ebola outbreaks. As is the case with so many other infectious diseases, the likelihood of a large Ebola outbreak would be greatly reduced by ensuring a basic level of domestic public health infrastructure across west and central Africa. It is no coincidence that the countries where the largest Ebola outbreaks have proliferated are among those most in want of soap and local public health officials.^{14 15}

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