Is respiratory protection appropriate in the Ebola response?

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We write to express our concern about one aspect of the response to the current epidemic of Ebola that has, so far, received little attention,[1] lacks an evidence base, and might be counterproductive.

The primary mode of transmission of Ebola virus is through contact with infected patients' secretions (such as blood, vomit, or faeces) directly and indirectly (for example, from contaminated needles). This transmission occurs via close family contact or in health-care settings, particularly when placing orotracheal intubation or when caring for a patient who is vomiting or bleeding. Ebola is rarely transmitted via an airborne route.[2] Although these routes of transmission are well known,[3,4] most agencies, including governmental agencies responsible for repatriating western patients, apply infection-control measures appropriate for airborne diseases.

Excessive precautions could offer reassurance to those responding to Ebola, yet complete respiratory protection is expensive, uncomfortable, and unaffordable for countries that are the most affected. Worse, such an approach suggests that the only defence is individual protective equipment, which is inaccessible to the general population. Moreover, the image of workers with spectacular protective clothing might contribute to the panic in some communities. If this leads people to flee affected areas it could increase the spread of infection. It also reinforces the view that some lives are more valuable than others, already engendered by decisions about the use of experimental Ebola drug ZMapp.[5]

We contend that the systematic application of precautionary measures that protect health-care personnel and others from direct contact (ie, gloves and waterproof smocks, goggles, masks, and individual rooms or wards in the hospital) are sufficient to manage most patients (who do not experience haemorrhage or vomiting). In fact, goggles and masks might not even be necessary to speak with conscious patients, as long as a distance of 1–2 metres is maintained (the maximum distance that infectious droplets might reach). Exceptional precautions, such as pressurised suits with oxygen tanks, should be reserved for interventions that generate aerosols (invasive explorations or intubations), specific situations (eg, massive haemorrhage), or in laboratories where the virus is cultivated. They are unnecessary in the settings where the virus is most rampant.

In western Africa now there is a need for rational and efficient use of protective equipment. This can only be achieved by communicating a consistent message that the disease is essentially transmitted through direct contact.

In control of infectious diseases, more is not necessarily better and, very often, the simplest answer is the best.

We declare no competing interests.

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1 Roddy P, Weatherill D, Jeffs B, et al. The Médecins Sans Frontières intervention in the Marburg hemorrhagic fever epidemic, Uige, Angola, 2005. II. Lessons learned in the community. *J Infect Dis* 2007; **196:** S162–67.

2 Alimonti J, Leung A, Jones S, et al. Evaluation of transmission risks associated with in vivo replication of several high containment pathogens in a biosafety level 4 laboratory. *Sci Rep* 2014; **4:** 5824.

3 CDC. Ebola hemorrhagic fever information packet. Atlanta, GA: Centers for Disease Control and Prevention, 2009. http://www.cdc.gov/vhf/ebola/pdf/fact-sheet.pdf (accessed Aug 27, 2014).

4 WHO. Interim infection prevention and control guidance for care of patients with suspected or confirmed filovirus haemorrhagic fever in health-care settings, with focus on Ebola. Geneva: World Health Organization, 2014. http://www.who.int/csr/resources/who-ipc-guidance-ebolafinal-09082014.pdf (accessed Aug 27, 2014).

5 Brady O. Scale up the supply of experimental Ebola drugs. *Nature* 2014; **512:** 233.

Department of Error

Raffi F, Rachlis A, Stellbrink H-J, et al. Once-daily dolutegravir versus raltegravir in antiretroviral-naive adults with HIV-1 infection: 48 week results from the randomised, double-blind, non-inferiority SPRING-2 study. Lancet *2013; **381:** 735–43*—The final sentence in the second paragraph of the Procedures section of the Methods should have read "Genotypic and phenotypic analyses (reverse transcriptase and integrase) of plasma samples from day 1 and from time of suspected virological failure for all patients with protocol-defined virological failure, were done with GenoSure, Standard Phenosense, GeneSeq Integrase, and PhenoSense Integrase assays (Monogram Biosciences, San Francisco, CA, USA)." This correction has been made to the online version as of Sept 5, 2014.