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Ebola: lessons learned from HIV and tuberculosis epidemics

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Amidst concerns of Ebola virus disease (EVD) becoming a pandemic, the global medical community has mounted a critical response. As the U.S. CDC director said, “We have to work now so this is not the world's next AIDS.”¹ While different from HIV/AIDS, we might apply lessons learned from HIV and tuberculosis epidemics to address the Ebola crisis. This experience suggests four near-term objectives.

First, as with HIV, a rapid, point-of-care test is imperative to quickly identify Ebola-infected people to reduce transmission. While first-generation lab-based HIV tests were essential to confirmed disease, rapid HIV tests allowed widespread screening of asymptomatic people in resource-limited settings.² As with first-generation HIV tests, current diagnostic Ebola tests are too expensive, time consuming, and equipment dependent. Two companies, Senova and Corgenix, are developing rapid finger-prick whole blood tests, and their efforts should receive strong international support.³

Second, the stigma and fear of Ebola must be addressed. HIV taught us that stigma and fear drive people away from testing and/or medical attention, thereby perpetuating transmission. An accessible test does not automatically translate into people tested; 54% of HIV-infected people are still unaware of their status.⁴ If perceived fears outweigh perceived benefits, erecting treatment centers may not facilitate care seeking. For HIV, stigma/fear have been addressed through information campaigns, peer education, and access to therapy; the same will likely be necessary for Ebola.

Third, all exposed persons should be screened for EVD. Successful tuberculosis control programs have included contact tracing of infected people and testing of exposed persons. While 87% of West Africans with EVD had a fever,⁵ missing 13% in a screening algorithm is not acceptable. Persons exposed to Ebola-infected patients, including health workers, should be tested for infection, regardless of symptoms. Availability of a rapid Ebola test will aid these efforts, and could be used to screen international travelers.

Fourth, protection of health care workers must be paramount. Infection control practices, including personal protective equipment (PPE) and isolation practices, were developed largely in tuberculosis control programs. Poor infection control practices lead to increased transmission to health workers and patients. As with successful tuberculosis control

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programs in developed countries, those treating Ebola-infected patients need full training and access to use PPE, before encountering patients, and capacity to isolate infected patients.

Confronting the HIV and tuberculosis epidemics has required a massive, coordinated response—the same will be required for Ebola. However, our collective experience with HIV and tuberculosis has demonstrated that such a response is possible.

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References

1. Westcott, L. CDC Director draws parallels between Ebola outbreak and HIV/AIDS epidemic. Newsweek; Oct 9. 2014 <http://www.newsweek.com/cdc-director-draws-parallels-between-ebola-outbreak-and-hivaids-epidemic-276466>. [Nov 14, 2014]
2. Drain PK, Hyle EP, Noubary F, et al. Diagnostic point-of-care tests in resource-limited settings. *Lancet Infect Dis.* 2014; 14:239–49. [PubMed: 24332389]
3. Vogel G. Testing new Ebola tests. *Science.* 2014; 345:1549. [PubMed: 25258059]
4. World Health Organization. UNAIDS report shows that 19 million of the 35 million people living with HIV today do not know that they have the virus, Press Release. World Health Organization; Geneva: Jul 16. 2014 <http://www.unaids.org/en/resources/presscentre/pressreleaseandstatementarchive/2014/july/20140716prgagpreport/>. [Nov 14, 2014]
5. WHO Ebola Response Team. Ebola Virus Disease in West Africa – the first 9 months of the epidemic and forward projections. *New Engl J Med.* 2014; 371:1481–95. [PubMed: 25244186]