Nigeria an example of how to contain Ebola

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Health care workers at the Texas Health Presbyterian Hospital in Dallas waited for the arrival of a possible Ebola patient on Wednesday. (Getty Images)

Last week witnessed two notable events in the 2014 Ebola outbreak, one heartening, one disturbing. Nigeria, after initial struggles, appears to have contained its Ebola outbreak. The United States endured its own struggles in dealing with its first case of Ebola, however, as it delayed for several days after the first patient sought medical care. The two highlight an important but often overlooked aspect of response to the epidemic: diagnosis.

Ebola's emergence in late July in Lagos, Nigeria, which has a population of 21 million, could have been cataclysmic. Nigeria's national and local government and citizens should be congratulated for the exceptional effort to contain its spread, as should our own Centers for Disease Control, which assisted them. But their success depended on their ability to diagnose the patient who brought Ebola into Nigeria. Remarkably, there were not one but two labs in the same city poised to detect Ebola. Together they could rapidly confirm cases, allowing the country to quickly move to contact tracing and containment.

When Dallas faced its first patient last week, it had not a single lab in the city able to test for Ebola. Instead, samples were sent to Austin and to the CDC in Atlanta. Most American cities, in fact, cannot test for Ebola locally. This is not because of any technical difficulty of detecting the virus: it is a straightforward and affordable test for many existing labs. Rather, it is because medical policies and practice have encouraged centralized testing of many dangerous but rarely seen microbes.

The reasons for centralized testing are understandable. It is in everyone's interest to ensure that diagnostic testing is highly accurate. This is especially true for Ebola. False positive results (a false report of Ebola) can lead to unnecessary panic, and false negative results can mean that infected patients spread the disease. For rarely tested diseases like Ebola, this caution meant in practice that all diagnostic testing was done by the CDC, which has the expertise to handle it well.

It has also been a widespread policy to treat Ebola and similar microbes as so dangerous that any suspicion of them triggers a full disease response, with hazmat-style suits and full patient isolation. This caution is understandable, but it has the perverse effect of making doctors more reluctant to test for these microbes, as if the test were the danger rather than the disease. We have been acutely aware of this issue as researchers studying Lassa virus, which causes another deadly hemorrhagic fever.

One thing that Dallas showed, though, is that our highly cautious approach to testing has its own dangers. There, in fact, it caused at least a two-day delay in treating the patient even when the patient returned to seek care a second time. Once the hospital had been informed that Thomas Duncan was a potential Ebola case, they still waited 24 hours before ordering an Ebola test. They delayed because they were doing other lab work to see whether an Ebola test was warranted. Along with the delay from sending the samples out of town, this meant that two days, rather than a few hours, went by before doctors got a diagnosis. In this kind of case, while physicians are waiting for results, they still have to make critical decisions about treatment and about isolating the patient; without prompt testing, they will make those decisions based on circumstantial evidence, which is more prone to error than any lab test. Moreover, each non-Ebola test run and exam performed still exposes individuals to the disease. Similar delays have been playing out in Spain and in other suspected Ebola cases in the US.

The current approach also has financial costs. Performing a test for Ebola on-site would cost less than $100, while holding a patient overnight in isolation awaiting results can easily cost thousands of dollars. And since the great majority of patients currently being tested for Ebola are not infected, those costs of isolation are being wasted. Of more concern, these ancillary costs incurred by sending samples out of state are discouraging health workers from ordering tests.

It took almost two days to find out whether the patient in Dallas was infected with Ebola.

The CDC is well aware of the need to now make Ebola testing more widely available. They have been coordinating the distribution of FDA-approved test kits to state labs, which are moving rapidly to get certified in their use. The lab in Austin that carried out one of the Ebola tests would not have been able to do so a few weeks earlier; our state lab in Massachusetts was certified just this week.

We can do more, though, to get testing for Ebola as close to the caregiver and the patient as possible. Laboratory technology has improved to the point that accurate, safe, and rapid testing could be made available in every state and in every major city. We can do that while still addressing legitimate concerns about safety and accuracy. Safety can be assured by inactivating samples chemically and by using closed working environments, for example, while accuracy can be maintained by requiring multiple tests, with subsequent validation by regional labs or the CDC.

Ebola is hardly the only disease for which we could use better access to diagnostic tests. Emerging diseases — SARS, MERS, H1N1, Chikungunya, and more — have been appearing with dismaying frequency in recent years. Even in responding to the current West African outbreak, Ebola is not the only virus we need to keep tabs on. The West African Lassa fever season is just beginning, and Lassa fever is more common in this region than Ebola. We should not be blindsided if returning Ebola aid workers bring Lassa virus back with them.

The current Ebola outbreak is going to get worse, possibly much worse, before it gets better, and it will last many months. We have to adapt to a world in which Ebola could arrive unannounced anywhere on the globe, including any emergency room in the United States. Diagnostic labs in every state and major city should have the equipment, safety, training and authorization to test for Ebola, and policies should encourage testing whenever there is any reasonable suspicion of infection. Detecting Ebola quickly is in all our best interests, but is also vital to sustaining a vigorous response in West Africa. As Nigeria showed, it is only by containing the outbreak in new nations that we can hope to have the resources available to stop the epidemic in the nations where it is raging. Improving access to diagnosis is hardly the only necessary step, but it is a fundamental one in responding to a threatening global crisis.

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