



Published in final edited form as:

*Lancet Glob Health*. 2015 November ; 3(11): e678. doi:10.1016/S2214-109X(15)00159-X.

## Are post-Ebola reconstruction efforts neglecting public health laboratory systems?

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David Evans and colleagues (August, 2015)<sup>1</sup> modelled how the loss of health-care workers to Ebola virus disease (EVD) might have affected infant, under 5, and maternal mortality in Guinea, Liberia, and Sierra Leone. Unfortunately, laboratory workers were not included in the health-care worker definition used in their model. Laboratory workers are a central part of an effective health system. In the same issue, Ranu Dhillon and Robert Yates<sup>2</sup> propose five priorities for Ebola-affected countries. These also did not include the need for an effective public health laboratory system.

The Ebola epidemic repeatedly showed that delays in laboratory confirmation impeded control and prevention efforts. Without effective public health laboratory systems, public health responses will be delayed and global health security will be threatened. Strengthening public health laboratory systems should be a priority in the reconstruction and recovery efforts.

On the basis of our experience in enhancing public health laboratory systems in partner countries through the US President's Emergency Plan for AIDS Relief (PEPFAR), we suggest that consideration should be given to the following approaches:

1. Development of an integrated national laboratory strategic plan and policy that provides governance and guidance on how best to align assets from vertical as well as horizontal programmes such as the Global Health Security Agenda. The plan could define quality-assured diagnostic tests and standards, and regulatory processes at each level of the health system.
2. Establishment of a community laboratory corps volunteer initiative. This initiative could be part of an overall strategy to surge the healthcare workforce, as part of an effort to ensure access to diagnostic services in remote areas where outbreaks may occur. Such an effort exists currently in Thailand where about 750 000 village health volunteers are providing support to the national programme, with substantial success.<sup>3</sup> Training

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The views expressed in this report are those of the authors and do not necessarily represent the official position of the US Centers for Disease Control and Prevention.

We declare no competing interests.

should focus on best practices and standards for collecting, packaging, storage, and shipping of biological specimens to testing laboratories at regional or national levels. These health worker cadres should equally be trained on biosafety and quality standards in collecting and transporting biological specimens, as well as eHealth and information technology.

3. Exploration of novel approaches to specimen referral systems: the use of volunteer quality corps; hub and spokes; and unmanned aerial vehicles. Such vehicles are being used to transport tuberculosis specimens in Papua New Guinea, for example.<sup>4</sup>
4. Inclusion of a field laboratory training programme, similar to field epidemiology training programmes, to teach the leadership and management skills that are required to influence national policies.
5. The WHO Regional Office for Africa and the Africa Society for Laboratory Medicine could develop a scorecard to objectively evaluate the status of each country's laboratory network preparedness. A similar approach is currently underway in most African countries whereby a stepwise laboratory quality improvement process is being jointly implemented by these organisations.<sup>5</sup>
6. A comprehensive phased approach to implementing quality management systems using evidence-based tools such as the Strengthening of Laboratory Management Towards Accreditation, could be supported and implemented in the affected countries.<sup>6</sup>

No country can be prepared for the next health threat without a functional national public health laboratory system and the post-Ebola reconstruction efforts provide a valuable opportunity to strengthen these systems. The first step is to recognise the essential role of the public health laboratory and prioritise funding and technical assistance to strengthen systems that have been neglected for years.

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