

Report addresses challenges in implementing new diagnostic tests where they are needed most

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Easy-to-use, inexpensive tests to diagnose infectious diseases are urgently needed in resource-limited countries. A new report based on an American Academy of Microbiology colloquium, "Bringing the Lab to the Patient: Developing Point-of-Care Diagnostics for Resource Limited Settings," describes the challenges inherent in bringing new medical devices and technologies to the areas of the world where they are needed most. Point-of-care diagnostics (POCTs) bypass the need for sophisticated laboratory systems by leveraging new technologies to diagnose infectious diseases and other health concerns at the bedside, or "point-of-care". Diagnostics account for 2% of the cost of health care, yet can affect 60-70% of treatment decisions. In resource limited areas where advanced laboratory services are not available, access to POCTs may be the difference between making a treatment decision that is informed by an accurate diagnosis versus one that is ineffective or even harmful.

Despite the urgent need for POCTs, deploying them in resource limited settings can be fraught with difficulty. "POCTs are developed by researchers and engineers and implemented by a separate group of public health professionals at a local level. There are so many variables that can make or break the effectiveness of any test, and so often the scientists and engineers developing the test are not aware of them." said Keith Klugman, who chaired the colloquium. "POCTs that perform well in testing may not function 'on the ground' in resource limited areas,

where there may not be running water, electricity, or trained personnel to administer the test."

Recognizing the need to connect the scientists and engineers developing the POCTs with the [health care workers](#) implementing them, the American Academy of [Microbiology](#) convened a colloquium in September of 2011 to discuss how to develop POCTs that can be effectively integrated into resource limited settings. The participants discussed which tests were needed most urgently, features that should be incorporated in the design of the test to make it more effective in the field, and how collaborations between communities could foster an environment of success for new POCTs.

The resulting report makes recommendations in several areas. It details a list of POCTs that would make the biggest impact, for example, tests to detect drug resistance, or effectively monitor viral load in HIV patients. The report describes qualities needed in tests to be effective in resource limited settings such as minimal power requirements, simple interfaces, and integrated instructions on use and quality control protocols. Finally, it recommends changes in how POCTs are regulated, approved, and brought to market to help foster a more conducive environment for POCT development.

"POCTs can fundamentally change the quality of [health care](#) received in resource limited settings, but only if scientists, engineers, and health care professionals work together to develop simple, effective POCTs.", said Jeanne Jordan of George Washington University, one of the colloquium participants. "Bringing the Lab to the Patient: Developing Point-of Care Diagnostics for Resource Limited Settings" is a step forward in forming productive collaborations between these groups to bring POCTs to the people that need them the most.

More information: A PDF of Bringing the Lab to the Patient:

Developing Point-of-Care Diagnostics for Resource Limited Settings
can be found online at: bit.ly/pointofcaredx

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