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Clinical virology laboratory services in resource-limited settings

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In resourcelimited countries, there is often minimal diagnostic virology testing primarily due to lack of resources. This includes few qualified virology testing personnel, limited funding, distant training, minimal Laboratory Information System (LIS) capability and functionality, few IT software engineers with a working knowledge of laboratory workflows, and a lack of understanding of operational efficiencies. Too often the current outcome is little or no virology testing,with delayed reporting which impacts patient care. As a result, service levels do not meet the health care needs of the country. Other constraints may be due to strategic decision makersnot necessarily understanding the laboratory systems from specimen collection and transport, to analytical testing and reportingas well as prioritizing their importance in health care.

A key component of a clinical virology laboratory is the test menu. While seemingly complex and difficult to initiate, given available resources, a test menu can be organized into three levels: core, intermediate and advanced. Sample menus, flow charts, criteria for evaluation and selection, and factors influencing test menu selection will be presented. Testing schema for diagnostic confirmation and supplemental patient management will be discussed.

There are multiplesolutions to make diagnostic virology testing more available within resource limitedcountries. The goals of harmonization, interoperability and collaboration within countries or regions will add value to strengtheningnational health laboratory systems and improving patient care. Standardization of testing platforms, LIS, interfaces, databases, messaging and proficiency testing will reducecost and provide needed quality testing services where made available. For example, a standardized External Quality Assurance (EQA) module for HIV testing has wide application in many situations and each country may not need to incur individual cost for database configuration for the same HIV test. Other potential solutions include the establishment of regional virology user groups and workflow efficiency models, as well asglobal partnershipsbetweenpublic and private entities. In the United States, the ongoing dynamic in public health laboratories is shared services and this model can be applied to limited resource settings. Such initiatives will enable resource limitedcountriesto move towards the establishment of sustainable quality clinical virology laboratories.

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