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Perspective

COVID-19 is Disrupting TB Diagnosis

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DESCRIPTION

Imagine a community health worker traveling door-to-door to test for COVID-19. An individual presents with a cough and is at risk for tuberculosis. What are the options?

In many low-income and middle-income countries, another worker using separate equipment running under a different funding scheme has to travel back for a second visit, or the patient needs to trek to a new location for a check-up. That's inefficient, costly and risks underdiagnoses. As lower-resource nations grapple to contain the COVID-19 pandemic, they're falling behind in fighting infectious diseases that have been killing millions of people for years; HIV, tuberculosis, and malaria.

The pandemic has undermined progress made in the last decade in part because access to timely diagnosis of these opportunistic infections has been displaced by the diversion of resources to COVID-19. That's in large part because diagnostic technology and the lab networks in which they operate is largely siloed, with technology designated for specific disease programs. Testing for different diseases often operates under separate rules and safety standards, requiring separate staff and transport requirements. SARS-CoV-2 detection itself in some countries is limited by weak and uncoordinated laboratory systems, insufficient laboratory equipment and personal protective equipment.

What's the best approach to using both existing and new technologies to address the COVID-19 pandemic and coexisting major public health challenges-without jeopardizing the gains in diagnostic access for TB, HIV, and other diseases?

Here's what needs to happen

Low-and middle-income countries should build on existing multiplex platforms to introduce COVID-19 testing and decentralize affordable and approved Rapid Diagnostic Tests. For nearly a decade, TB diagnosis has been transformed *via* rapid point-of-care technology, such as the GeneXpert, Truenat, and TB Lamp tests. These platforms can give results within hours, a significant improvement on prior tests that could take days. New molecular high-throughput platforms in the pipeline are suitable for integration with HIV, TB, COVID-19 and Hepatitis. They include Roche 6800/8800, Abbott m2000 sp, and Hologic Panther. GeneXpert is now operating in more than 145 low-and middle-income countries and can also be used for TB, HIV, Hepatitis B and C, HPV, and COVID-19 testing. Integrated, affordable multiplex technologies, particularly at the point of care and local and community levels, have the advantages of avoiding parallel diagnostic systems and duplication of activities such as referral and transport, equipment maintenance, human resource management, quality assurance, supply chain and quantification, training-and the added costs of those activities.

Community and political leaders should work to remove barriers to diagnostic integration. For example, much of this technology is centralized and limited to highly specialized biosafety level 2 or 3 labs because of rules for safety, human resources and the like. That means that while it's available, it's often underused.

Tailor approaches based on local context. Innovative approaches to diagnostic integration can maximize investments while increasing access but need a strategic approach adapted to each country. This will require mapping and optimizing the laboratory network, assessing the needs for detection capacity for each disease, and identifying the gaps so resources can be mobilized. Integrate information systems and dashboards to increase use of data, so health professionals and policy makers can make better informed decisions about patient care. We lay out more recommendations for a way forward in a paper recently published in a peer reviewed journal.

To be sure, if these efforts are not implemented properly, risks include suboptimal diagnosis and greater mortality. And merely having the machines will not translate into great improvements. Ministries of health, local public health programs and institutions, and the private sector need the political will, technical assistance, and investments to push these advances. But if we do not act to mitigate the threat, COVID-19 or inevitable future threats will lead to an upsurge in deaths from TB, HIV, and other opportunistic infections.

If we take an integrated approach, leveraging the infrastructure and resources already invested in and moving swiftly to strengthen the health system as a whole, we can step up the fight against both COVID-19 and other diseases of major public health importance and move toward universal health coverage.

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