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Context

In Kenya, the burden of TB is a significant concern. Despite significant progress, there is a need to ensure the roll-out of systematic TB screening using portable digital chest X-rays and computer-aided detection software. This initiative aims to improve TB detection rates, reduce the prevalence to notification gap, and ensure that individuals receive timely and appropriate treatment. By addressing barriers identified in the survey, such as the lack of awareness among the population and suboptimal health-seeking behavior, this comprehensive approach, supported by a collaborative effort and a focus on capacity building, aims to address the challenges surrounding TB detection and appropriate treatment, ultimately improving the well-being of its population.

Activity Impact

Out of the 250 patients identified, 200 patients were screened using the portable digital X-ray machine roll-out. The screening was done in collaboration with the local health facilities, ensuring that healthcare providers could identify potential health issues at an early stage, leading to better treatment outcomes and the potential to save lives. Additionally, the integration of computer-aided detection (CAD) software, recently recommended by the World Health Organization (WHO), has been incorporated to enhance the effectiveness of the screening process.

Evidence

Randomized clinical trials showed significant improvements in the detection of TB using portable digital X-ray machines equipped with CAD software. The sensitivity and specificity of CXR and CAD combined were found to be significantly higher than using CXR alone. Furthermore, the implementation of the novel dual technology revealed the need for collaborative planning involving all stakeholders, such as national and county programs, the National TB Program, and the Kenya Nuclear Regulatory Authority.

Facilitators

The CXR subcommittee, led by USAID TB ARC II and NTLD, developed a policy for screening and triaging facilities in Kenya. Eight sites were chosen based on at-risk populations, including urban slums, high HIV/TB burden areas, fisher folk communities, and refugee populations. The facility selection required that the site selected have access to healthcare services, including CXR machines and laboratory services.

Challenges

As with any complex implementation process, challenges arose along the way. During the course of implementation, there were several instances of equipment failure, including malfunctioning CXR machines and inadequate CXR machine coverage in certain regions. Additionally, the procurement of protective equipment such as mobile lead shields and lead gowns was required to ensure the safety of healthcare providers.

Lessons Learned

Implementation of the novel dual technology revealed the need for collaborative planning involving all stakeholders, such as the National TB Program, the Kenya Nuclear Regulatory Authority, and the Christian Health Association of Kenya. Despite the introduction of X-ray machines in the healthcare facilities, many of which did not have such equipment previously, the functionality of the machines was limited due to these regulatory constraints. The CXR subcommittee, led by USAID TB ARC II and NTLD, developed a policy for screening and triaging facilities in Kenya. Eight sites were chosen based on at-risk populations, including urban slums, high HIV/TB burden areas, fisher folk communities, and refugee populations. The facility selection required that the site selected have access to healthcare services, including CXR machines and laboratory services.

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