



**Accelerating progress
to end TB**

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Lessons learnt on the TB yield during the implementation of digital chest X-ray (DCXR) screening for TB in the Global Fund supported districts in South Africa

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Presentation Outline

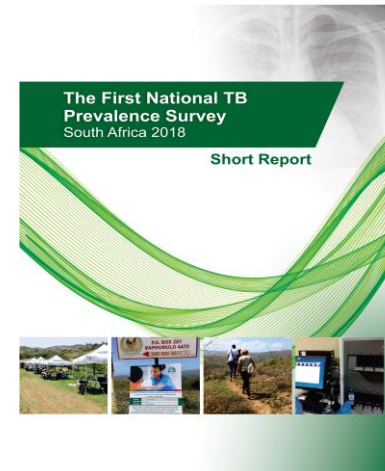
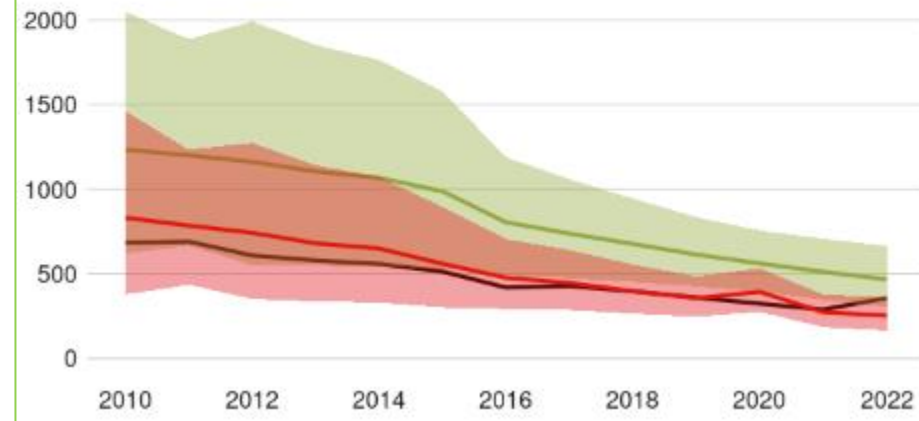
- Background.
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Background

- TB remains a major clinical and public health issue in South Africa.
- Despite progress made in reducing the TB incidence in recent years, the TB burden is still very high.
- The national TB prevalence survey conducted in 2018 estimated the TB prevalence at 737/100,000.
- Notably 58% of the bacteriologically positive cases in the survey were asymptomatic and only identified through Digital Chest X-Ray (DCXR).
- This highlighted the need for chest X-Ray based screening at primary healthcare facilities (PHCs) and community level.

Incidence, New and relapse TB cases notified, HIV-positive TB incidence

(Rate per 100 000 population per year)



Methodology

- The National Department of Health (NDOH), with support from the Global Fund implemented a DCXR TB screening project from November 2020 using fifteen containerized and 23 mobile DCXR units, equipped with computer-aided detection (CAD) software and an integrated M&E system.
- The containers are placed in high TB burden PHC facilities and the mobile vans are deployed in communities that are identified as hotspots in districts supported by the Global Fund.
- Each container and mobile van are staffed with a Radiographer, Enrolled Nursing Assistant (ENA) and a data capturer/driver.
- People presenting at the container and mobile units, are screened by the ENA using a structured questionnaire which includes the WHO-recommended four symptom screening (4SS) tool.
- Eligible clients are referred for DCXR screening and sputum is collected and tested to confirm TB using GXP.
- DCXR images are interpreted by CAD software and findings and reports automatically populated into patient's profile in the M&E software.



Results

A total of 177,807 visits were made to 28 DCXR units from November 2020 to January 2024, and results are as follows:

Symptoms alone	DCXR alone	TB Symptoms and DCXR
<ul style="list-style-type: none"> 177,797 were screened using the WHO 4SS. <p><i>** 10 clients did not have screening results</i></p>	<ul style="list-style-type: none"> 177,807 screened with DCXR. 	<ul style="list-style-type: none"> 177,792 screened using symptoms and DCXR. <p><i>** (excluding 15 clients).</i></p>
<ul style="list-style-type: none"> 59,693 screened symptom positive. 	<ul style="list-style-type: none"> 28,851 DCXR suggestive of TB. 	<ul style="list-style-type: none"> 26,215 screened positive either on symptoms and/or DCXR.
<ul style="list-style-type: none"> 1,946 tested X-pert positive. 	<ul style="list-style-type: none"> 2,752 tested Xpert positive 	<ul style="list-style-type: none"> 4,698 tested Xpert positive
<ul style="list-style-type: none"> TB screening yield = 1,0% 	<ul style="list-style-type: none"> TB yield = 1,5% 	<ul style="list-style-type: none"> TB yield = 2,6%
<ul style="list-style-type: none"> Number needed to test to find 1 TB positive (NNT) = 31 	<ul style="list-style-type: none"> NNT = 6 	<ul style="list-style-type: none"> NNT = 6

Lessons Learned

- Screening for TB using DCXR has a better yield at 1,5% compared to TB symptom screening alone at 1,0%.
- The number needed to test after screening using DCXR was lower (6) compared to symptom screening (31).
- Combining symptom and DCXR screening has a better yield at 2,6%.

Recommendations

- Using a combination of DCXR and symptom screening is recommended as it has a better yield and has a fewer NNT to find TB cases.

Thank You!

Acknowledgments



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