DIGITAL HEALTH TECHNOLOGIES FOR TUBERCULOSIS
INNOVATIVE PLATFORMS FOR SCALE-UP

SOUTH AFRICA

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NEW DELHI, INDIA

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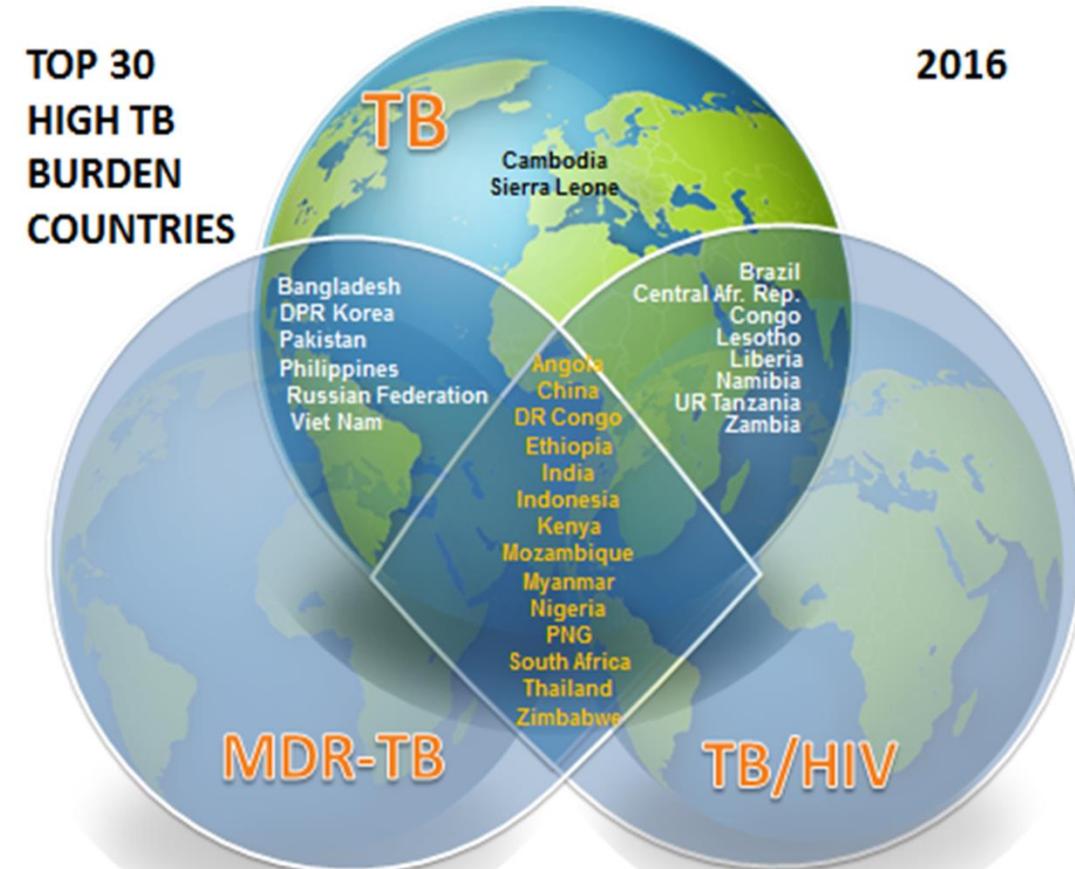# Background: TB and M/DR-TB in SA

- South Africa faces a quadruple burden of disease: HIV/AIDS and sexually transmitted diseases, TB, maternal and child mortality, as well as non-communicable diseases

- SA rated 6th amongst 22 high burdened TB countries globally

- In 2016 - SA reported 237,266 DS-TB cases with a treatment success rate of 81.6% amongst All TB cases

- For same period: 10,722 DR-TB cases were notified with a MDR-TB success rate of 53% and XDR-TB success rate of 48%
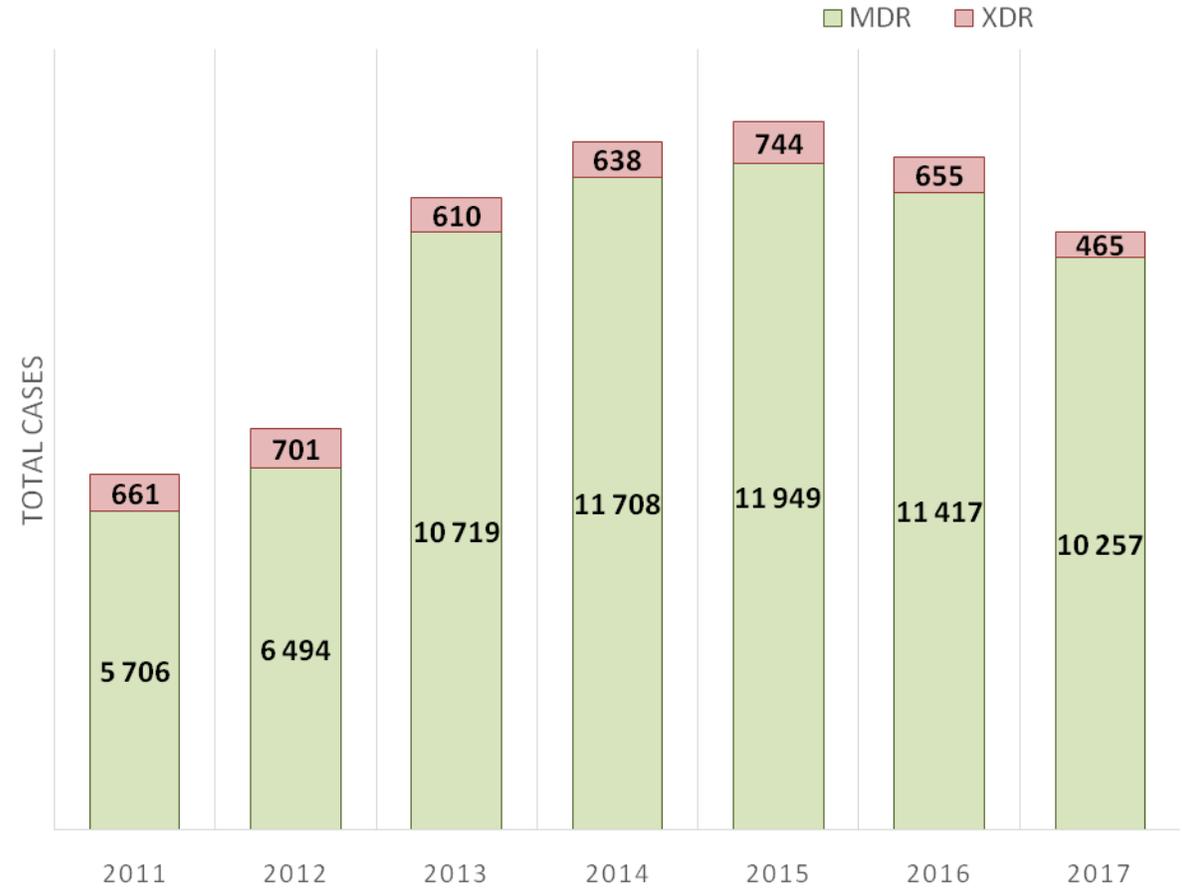

TOP 30 HIGH TB BURDEN COUNTRIES

2016

TB
Cambodia
Sierra Leone

Bangladesh
DPR Korea
Pakistan
Philippines
Russian Federation
Viet Nam

Brazil
Central Afr. Rep.
Congo
Lesotho
Liberia
Namibia
UR Tanzania
Zambia

Angola
China
DR Congo
Ethiopia
India
Indonesia
Kenya
Mozambique
Myanmar
Nigeria
PNG
South Africa
Thailand
Zimbabwe

MDR-TB

TB/HIV
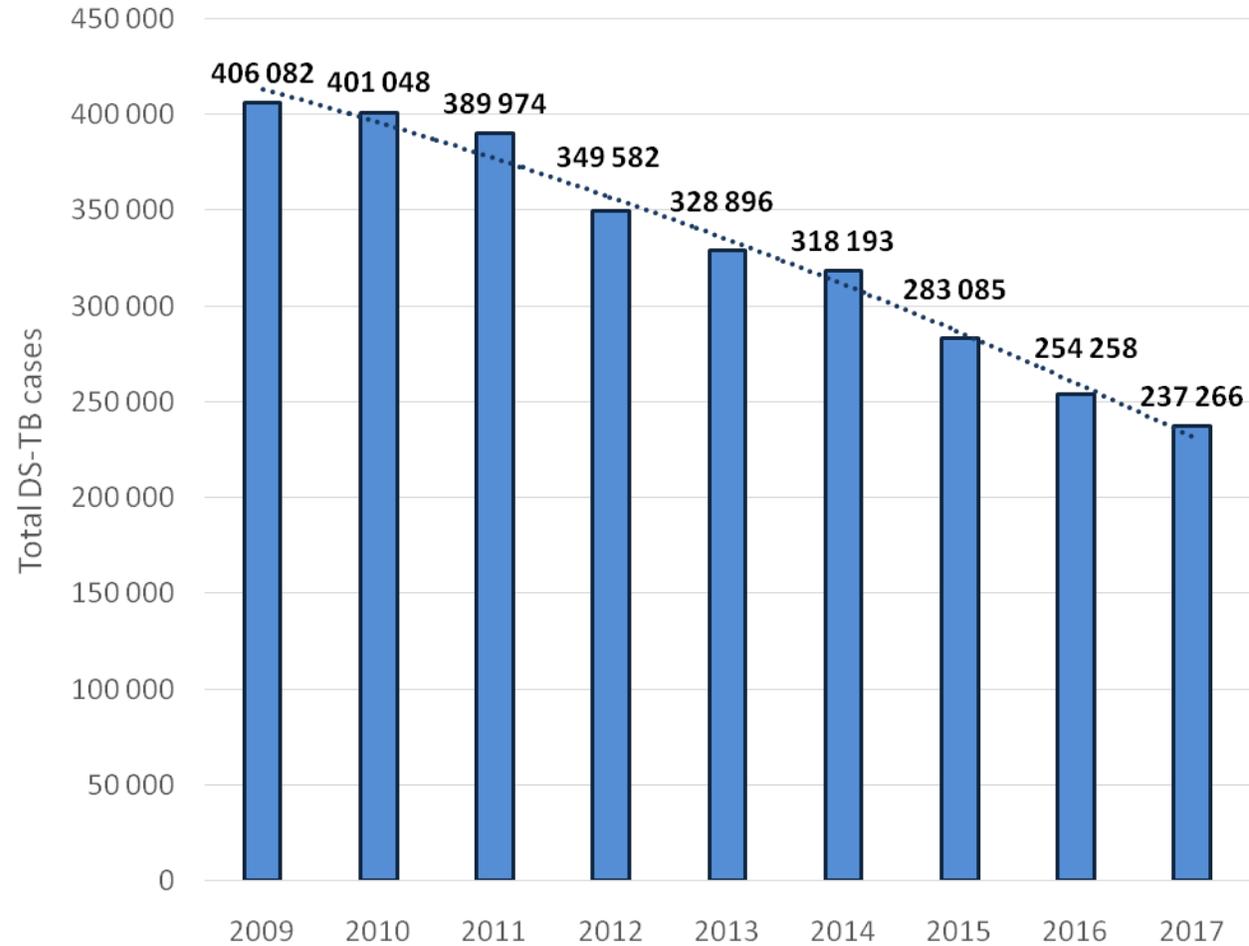
TB and M/DR-TB in SA

Overview digital health solutions for TB in South Africa

- The National TB Programme maintained a simple yet robust TB recording and reporting system since late 1990s

  - Consisted of standardized data collection tools, paper registers & electronic information systems - ETR.Net (DS-TB) and EDRWeb (DR-TB)

- In 2011, National HIV Programme implemented ART digitisation in facilities and retired paper ART registers

- Given high rates of HIV and TB co-morbidity in SA - vertical HIV and TB information systems seen as antithetical to increased integration of clinical services and as compromising patient management and clinical outcomes

- In 2015, the National Department of Health (NDOH) took the decision to integrate facility-based TB and HIV information systems (THIS) into a single, non-networked electronic system, that is TIER.Net.

- TIER.Net has been the lynchpin of the HIV M&E system in South Africa since 2011

  - Grounded in the digitisation of HIV data (HIV testing, pre-ART data and ART data) and lately presumptive TB and DS-TB outcomes from the patient clinical record in health facilities

- TIER.Net is the lynchpin of the HIV M&E system in South Africa (cont…)

  - Supports the day-to-day management of patients through the expression of "line lists" designed to address leakage across the ART and TB treatment cascades

  - Enabled reliable reporting of ART cohort data

  - Interoperable with the routine health information system (webDHIS)

  - TIER.Net is being implemented in nearly 4,000 health facilities

- THIS process commenced in earnest in April 2017

- In the process of replacing ETR.Net with TIER.Net (TB functionality) – i.e. point is to institute a single HIV/TB/PMTCT information system

> The process has not been seamless.

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Challenges

- Non-networked solution has enabled the national footprint – however there are inherent constraints to a non-networked solution

  - Updating versions of software manual process

  - Flow of electronic dispatches up the administrative chain

- Paucity of unique identifier data in HIV and TB data

  - Highly mobile patient population which results in duplication of patient level data

- Integration process makes prescriptions re: patient admin processes in-facilities (which extends to integration of historically separate clinical records) – very challenging to get right

- Weak data demand and data use at facility and district level

- Inconsistent stewardship and technical guidance from sub-national governance structures

Evidence of impact

- Improved patient administration processes at facility level

- Improved coordination amongst HIV, TB and PHC managers at (sub)district levels

- Integrated information system process in its infancy – can only make provisional inferences about impact on clinical outcomes

- Pilots/learning implementations conducted across several PHC facilities in 3 provinces
    - Integrated TB/HIV Information Systems being implemented in these facilities for over 2 years
    - Temporal trends suggest improvements in TB treatment initiation and success rates post implementation of the integrated TB/HIV Information Systems process

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Opportunities to advance digital solution for TB at scale

- Integrated TB/HIV Information Systems initiative has already been taken to scale in SA

- Nearly half of South Africa's 9 provinces are almost fully digitising TB and HIV data in TIER.Net

  - Implementation process of around 15-18 months

- In the process of mapping out integration of TIER.Net with national Health Patient Registration System (which houses demographic and unique identification data for significant number of patients)

- Centralisation of HIV and TB patient level data (that is, the "TIER data") is currently underway

TB case identification results outstanding list

TB case identification tests requested but not yet back from the laboratory after 7 days (42 days for culture)

Folder Number	Name	Surname	Date Of Birth	Test Type	Test Date	Lab Reference
20326112	Khaya	Dubula	17/06/1978	Smear	31/05/2016	
28316677	Nina	Modise	18/10/1991	Smear	31/05/2016	

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Acknowledgments

Discussion