



Surveillance of TB in the Western Cape: Comparison of laboratory with the public-facing Western Cape TB dashboard (2023)

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NICD, South Africa
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WCE

WORLD CONGRESS OF EPIDEMIOLOGY 2024



Background

- TB, caused by *Mycobacterium tuberculosis*, is the leading cause of death in the Western Cape Province (WC)¹
- WC is one of four provinces in SA accounting for 76% of the TB burden²

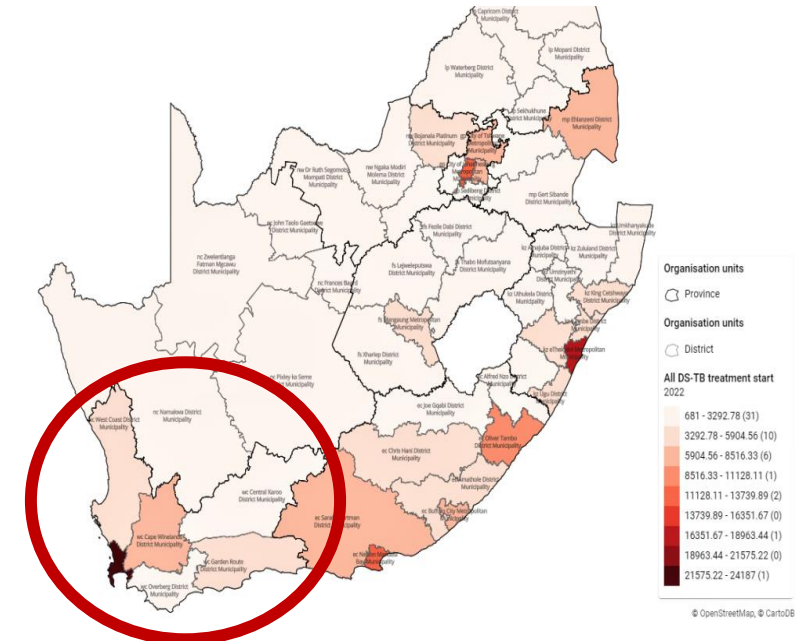


Figure 4: Distribution of DS-TB notifications across districts, 2022 (DHIS)

- Different TB data systems exists in the Western Cape
- Too many reporting systems create confusion and are time consuming
 - Capturing
 - Data triangulation needed for reporting

Background


- Reporting systems
 - TIER.NET, EDR.Web, NMCSS, NICD/NHLS microbiologically confirmed TB, WC TB dashboard
- Both the NICD/NHLS microbiological report and the WC TB dashboard can be used to monitor the TB response for:
 - Tests conducted
 - TB positive results
 - Positivity rate
- Not dependent
 - Manual capturing
 - Patient starting treatment

Reporting system	Detail
TIER.NET / *PHCIS	Collection of case-based data for DS TB (and HIV) patients, which was developed as an extension of its predecessor, i.e., ETR.Net
	Data from TIER.NET is aggregated for reporting purposes into DHIS2
EDR.Web	Web-based tool for collection of case-based DR-TB records from the DR-TB facilities
Notifiable Medical Conditions Surveillance System (NMCSS)	Notification of all suspected and confirmed cases of TB
**NICD/NHLS microbiologically confirmed TB report	All laboratory confirmed TB cases tested through the NHLS, including tests conducted
WC TB Dashboard	Tests conducted, confirmed TB cases, TB mortality

*Primary Health Care Information System (PHCIS)
 **NICD/NHLS: National Institute for Communicable Diseases / National Health Laboratory Services

NICD/NHLS Microbiologically confirmed TB report (mTB report)

- Generated quarterly (calendar quarters)
 - Each province
 - South Africa
- Utilizes data from the Corporate Data Warehouse (CDW)
- Deduplicated (Centre for TB)
- Report: Sub-district level
 - Tests conducted compared to target
 - Positivity rate
 - Number of positive patients
 - Resistance profile

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Reference: PTB Surveillance (Quarterly)

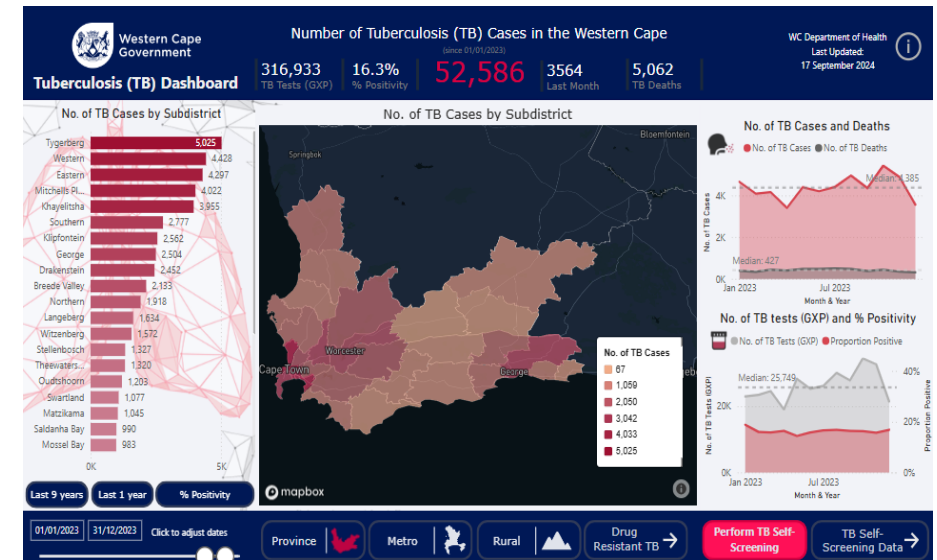
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ALERTS:

1. The updated NHLS test codes for Xpert XDR tests which were implemented on 16 September 2023 have now been incorporated into the quarterly reports. As a result counts of MDR, Pre-XDR and XDR cases are likely to differ from the previous quarterly report.
2. Implementation of the BD MAX TB diagnostic platform was commenced in 14 laboratories in Q4 of 2023. The BD MAX test results are included in this report.
3. The Summary table has been amended to reflect changes in testing platforms. Specifically, the replacement of LPA first and second-line tests with the Xpert XDR tests has resulted in "No. of RIFR cases on L/C, not on G" (previously row 7 on the summary table), "No. of RIFR cases on G, regardless of L/C" (previously row 9), and "No. of RIFR cases on G that are RIF susceptible on L/C" (Line 13) being no longer relevant. These items have been removed from the quarterly reports. This change has necessitated the removal of the "Indicator Summary" tab. New indicators are being devised to replace these indicators.

WC TB Dashboard

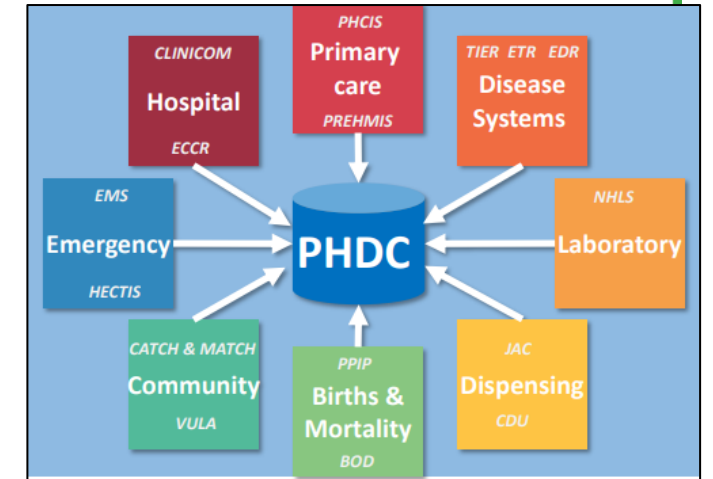
- Western Cape Province developed a comprehensive and user-friendly public access dashboard
 - Launched in 2021 following consultations with civil societies
 - Aids in effective data dissemination
 - Informs data driven decision making and governance
- Dashboard: Sub-district level
 - Tests conducted
 - Positivity rate
 - TB positive patients
 - Laboratory confirmed, x-rays and clinical diagnosis
 - TB mortality
 - Spatial mapping



<https://www.westerncape.gov.za/site-page/provincial-tb-dashboard>

WC TB Dashboard

- The TB dashboard pulls data from the Provincial Health Data Centre (PHDC)
- The PHDC consolidates patient-level data into one place from routine information systems³
 - Using the folder number
- Data curation takes place
 - Cleaning
 - Mapping data
 - Health conditions are inferred
- Presented: Single patient viewer and TB dashboard
 - Data available and actionable



Aim

- Compare the mPTB report with the WC TB Dashboard and describe the differences and strengths of the systems
- In an effort to integrate the data for programme use

Methods

- Data obtained from both systems
- Quarter 1 to quarter 4, 2023
- Different systems compared
- Data presented in graphs and tables

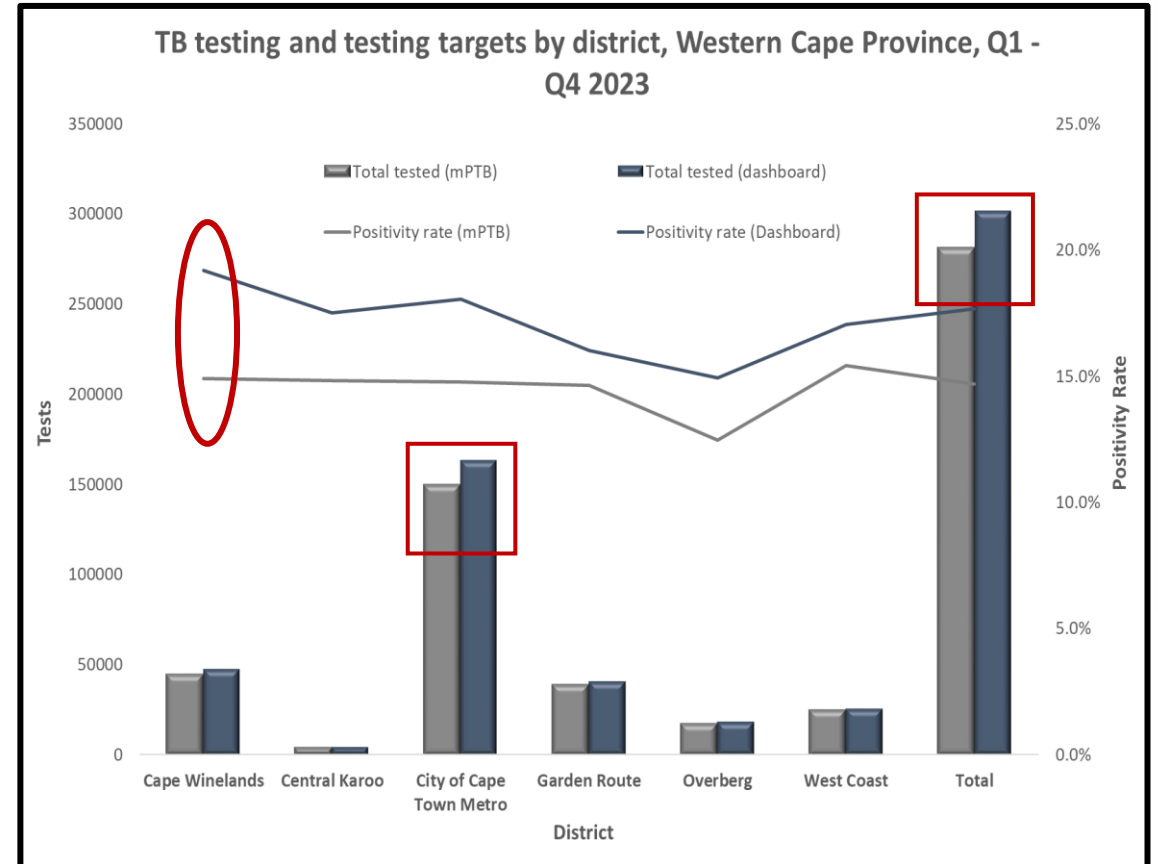
Comparison of two systems

- mTB reports
 - Resistance profile (MDR-TB, Pre-XDR TB, XDR-TB)
- Dashboard
 - Clinically diagnosed cases, TB-related mortality

Variable	mPTB	Dashboard
GeneXpert tests	Yes	Yes
Laboratory confirmed positive patients	Yes	Yes
Clinically diagnosed positive patients	No	Yes
Rifampicin-resistant positive patients	Yes	Yes
MDR-TB positive patients	Yes	No
Pre-XDR TB positive patients	Yes	No
XDR-TB positive patients	Yes	No
TB-related mortality	No	Yes

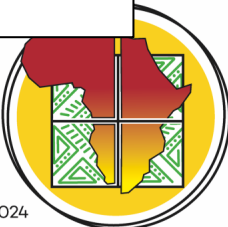
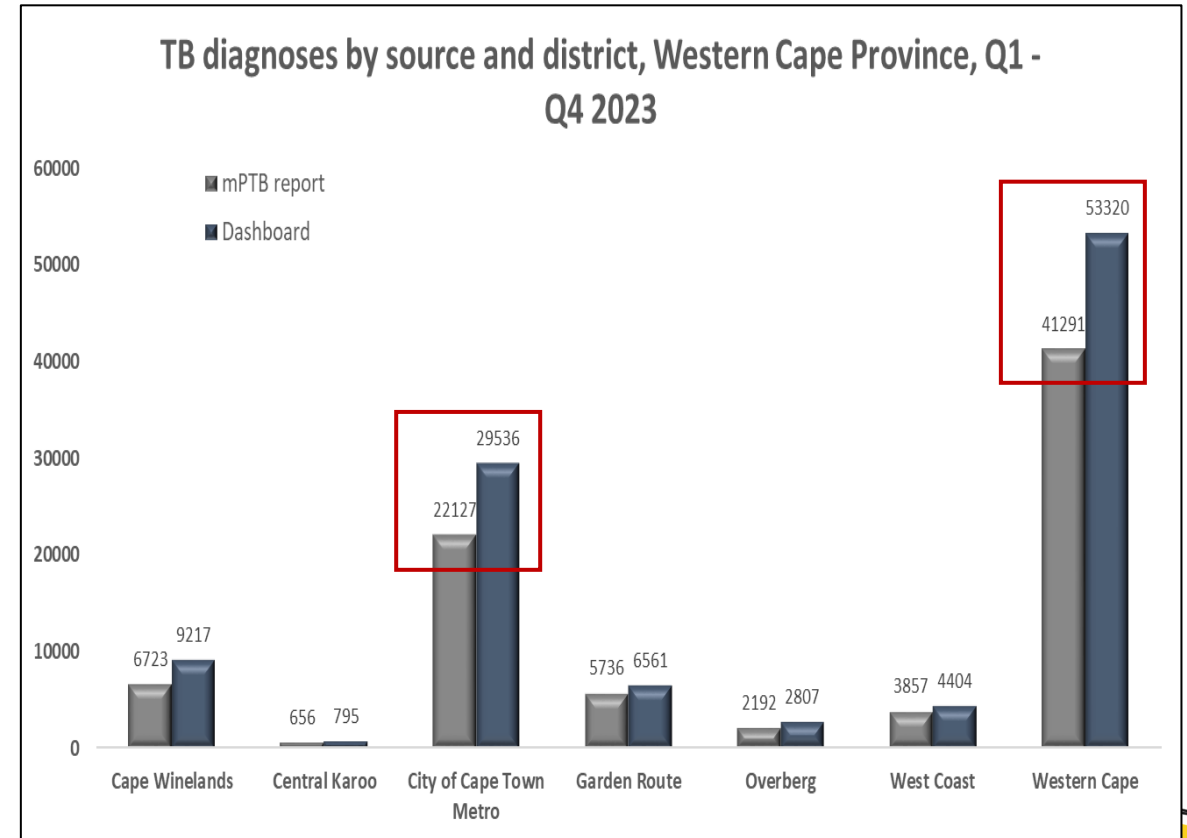
Results: GeneXpert tests conducted

- Dashboard reported more GeneXpert tests conducted
 - 20 598 more tests for WC
- Biggest difference: City of Cape Town
 - 13 726 more tests
- Dashboard: higher positivity rate (3% higher in WC)
- Biggest difference: Cape Winelands
 - 4.3% higher positivity rate (14.9% vs 19.2%)



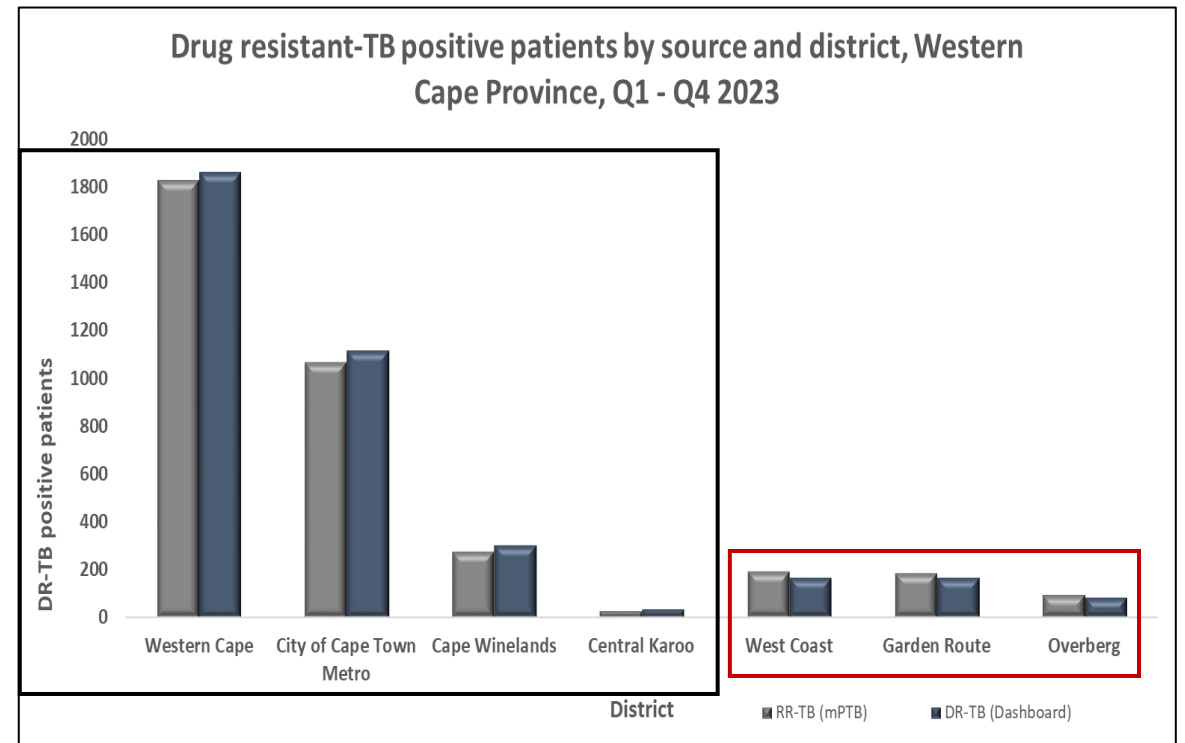
Results: TB positive patients

- Dashboard reported more TB positive patients
 - 12 029 more positive patients
- Biggest difference: City of Cape Town
 - 7 409 more positive patients



Results: Drug-resistant TB

- Dashboard reported more DR-TB positive patients for WC (32) and 3 districts
 - City of Cape Town (51)
 - Cape Winelands (27)
 - Central Karoo (7)
- mPTB report more RR-TB positive patients for 3 districts
 - West Coast (25)
 - Garden Route (16)
 - Overberg (12)



Discussion

- WC TB dashboard reported more tests and positive patients
 - Difference might be due to different processing algorithms and the inclusion of clinical diagnoses
- mPTB report provides a resistance profile till XDR
 - Dashboard only report drug-resistant data: confidentiality (public-facing dashboard)
- Both systems have strengths
- Integrated
 - Local level use

Conclusion

- Need to integrate systems
 - Drive decision making
- Investigate to determine the reason for gaps in data

References

1: Western Cape Government. “Yes, we can end tuberculosis (TB) as a public health threat in the Western Cape. 20 March 2024

<https://www.westerncape.gov.za/news/yes-we-can-end-tuberculosis-tb-public-health-threat-western-cape>

2: National Department of Health. National TB Recover plan 2.0. April 2023 – March 2024. <https://tbthinktank.org/wp-content/uploads/2023/09/TB-Recovery-Plan-2.0-April-2023-March-2024.pdf>

3: Western Cape Government. Provincial Health Data Centre.

https://www.westerncape.gov.za/sites/www.westerncape.gov.za/files/provincial_health_data_centre_pullup_poster_final.pdf

Acknowledgements

- Centre for TB, NICD/NHLS
- Western Cape Department of Health and Wellness
- Provincial Health Data Centre

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