Leprosy Surveillance System Evaluation: Western Province 2019-2023

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Only 27% (10 out of 37) registered suspected cases are classified as true leprosy by clinical assessment

BACKGROUND

Leprosy, caused by *Mycobacterium leprae*, is a chronic infectious disease affecting the skin and peripheral nerves, leading to permanent disabilities if untreated. In 2021, there were 133,802 registered cases globally, with a prevalence of 16.9 cases per million. In Zambia, cases declined from over 16,000 in 1982 to around 206 in 2019. Western Province saw an increase from 22 cases in 2019 to 55 in 2020, but notifications dropped to 23 in 2022. In the absence of indications for a potential outbreak was suggestive of a gap in the surveillance system.

Main objective

To identify the strengths, weaknesses, and areas for improvement in the leprosy surveillance system, guiding actionable recommendations

Specific objectives

To conduct an assessment of the leprosy surveillance system in the Western Province, focusing on its acceptability, simplicity, data quality, sensitivity, and positive predictive value

METHODS

- We conducted a multistage-mixed-methods cross-sectional study adhering to *CDC guidelines (MMWR)*
- First, 5/16 districts were randomly selected. Then, 3 facilities within a 35-kilometer radius in each district were systematically chosen, totaling 15 facilities. Finally, 2 healthcare workers per facility were interviewed, resulting in 30 participants.
- Data on *surveillance attributes* was collected using a structured questionnaire in KoboToolbox and analyzed in Excel after thematic sorting.

RESULTS

Acceptability

(Refer to willingness of persons and health facilities to participate in the surveillance system)

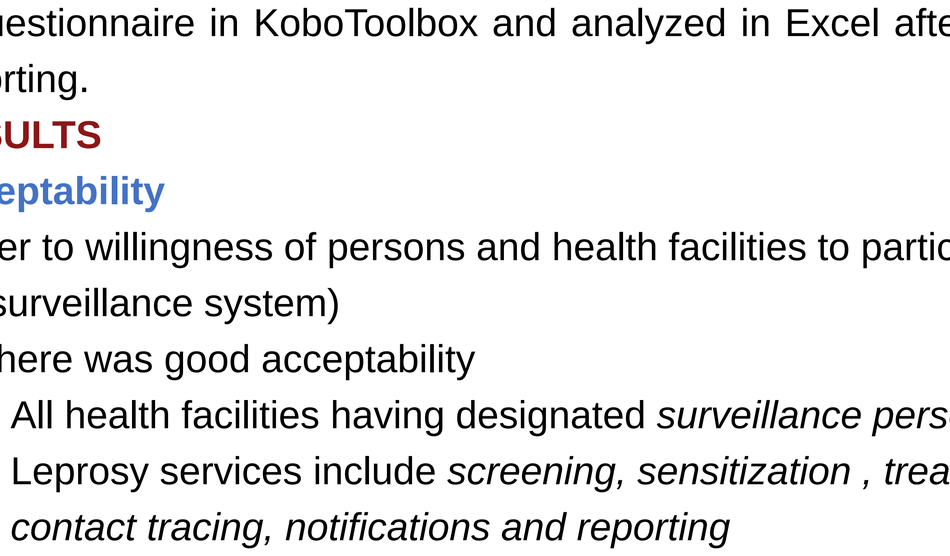
- There was good acceptability
  - ➢ All health facilities having designated *surveillance personnel*
  - ➢ Leprosy services include *screening, sensitization , treatment, contact tracing, notifications and reporting*
  - ➢ All facilities have Community Based Volunteers (CBVs) offering linkages between health facilities and community

Simplicity

(Refer to structure and ease of operation)

Figure 1.

Leprosy Programme Reporting Levels, Western Province 2019 - 2023



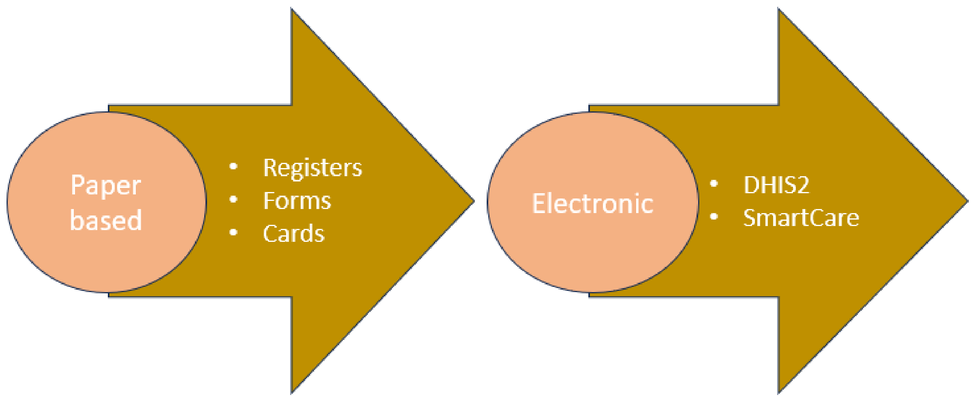
- Simple vertical operational at four levels from Health facility to National level (*Figure 1*)
- Any trained health worker easily fits in the surveillance system
- Integration of services during outreach programmes

Data quality

(Completeness and validity of data recorded in the leprosy surveillance system)

Figure 2.

Leprosy Data Collection Tools in Western Province, 2019 - 2023



- Data collection & storage is predominantly paper based at facility level
- One facility (7%) transitioning to computer systems on SmartCare platforms
- No missing elements in the registers
- Discrepancies in data were noted, such as 17 cases in registers versus 6 reported cases in 2023

Sensitivity

(Refer to the ability to detect outbreaks)

- Case definitions are utilized in the screening of case
- 27% (10 out of 37) registered suspected cases were classified as true leprosy by clinical assessment
- Active case search and contact tracing is conduct with help of CBVs

Positive Predictive Value

(proportion of reported cases that actually have the health-related event under surveillance)

- Not calculated
- None of the suspected cases were confirmed by lab tests.
  - ➢ 26% (4 out 15 facilities) have laboratory capacity to confirm leprosy

CONCLUSIONS

The leprosy surveillance system in Western Province, Zambia, shows good acceptability and simplicity, with active participation from health workers and volunteers. However, data quality issues and limited laboratory capacity affect accuracy. Addressing these gaps, especially in digital data management and case confirmation, is crucial for improving surveillance effectiveness.

ADDITIONAL KEY INFORMATION

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Conflicts of Interest

- No conflict of interest

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Reference

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