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From 3% TO 7% Five-Quarter Trends in Childhood Tuberculosis Notification and Case Finding in Ekiti State, Nigeria

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Abstract—

Background: ***Childhood tuberculosis (TB) remains under-recognized in many settings because children can present with nonspecific symptoms, microbiological confirmation is often difficult, and health systems may rely heavily on passive presentation. Routine TB notification data can provide an important signal of programme performance, but changes in notifications must be interpreted carefully because they may reflect changes in disease burden, case finding, diagnosis, reporting or several factors simultaneously.***

Objective: ***To describe five-quarter trends in childhood TB notification in Ekiti State, Nigeria, and to interpret changes in childhood TB notifications and age distribution within the context of documented programme strengthening activities.***

Methods: ***This descriptive programme-based analysis used validated Ekiti State DHIS2/HMIS data presented in the September 2026 Childhood TB Update. Data included total TB notifications, childhood TB notifications and the percentage of childhood TB among all notified TB cases for Q2 2025 through Q2 2026. Age-specific childhood TB counts were available for Q1 and Q2 2026. Programme information on training and mentorship, integration of childhood TB screening into primary health care, strengthened contact investigation, improved access to chest X-ray and molecular testing, improved specimen referral, HIV and nutrition collaboration, and LGA monitoring was considered in interpreting the trends. Descriptive counts, proportions and absolute changes were examined.***

Results: ***Childhood TB notifications were 7, 4, 16, 9 and 20 cases across Q2 2025, Q3 2025, Q4 2025, Q1 2026 and Q2 2026, respectively. Childhood TB represented 3%, 2%, 6%, 4% and 7% of all notified TB cases in the corresponding quarters. Q2 2026 had both the highest childhood TB count and the highest childhood TB proportion in the five-quarter series. Total TB notifications also reached their highest level in Q2 2026, at 302 cases. From Q1 to Q2 2026, notifications among children aged 0–4 years increased from 4 to 12 cases, while notifications among children aged 5–14 years increased from 5 to 8 cases.***

Conclusion: ***The Ekiti notification curve changed substantially over the five quarters, with childhood TB increasing from 3% of all notified TB cases in Q2 2025 to 7% in Q2 2026. The increase occurred alongside documented programme strengthening. The findings are therefore consistent with improved detection being an important possible contributor, although the available data cannot establish causality or distinguish improved case finding from changes in underlying disease incidence. Future monitoring should link notification trends to screening coverage, household contact investigation, diagnostic access, referral completion and preventive treatment outcomes.***

Keywords— ***childhood tuberculosis; TB notification; case finding; routine health information system; DHIS2; HMIS; Nigeria; children under five; programme performance; Ekiti State.***

I. EXECUTIVE SUMMARY

The phrase 'from 3% to 7%' captures the most visible change in the Ekiti State childhood TB dataset. In Q2 2025, childhood TB accounted for 3% of all notified TB cases. One year later, in Q2 2026, it accounted for 7%. The number of childhood TB cases rose from seven to twenty. At first glance, the change could be interpreted as an increase in childhood TB burden. A programme perspective, however, requires a more careful question: did the state become better at finding children with TB?

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The supplied programme update provides several reasons to consider improved detection as a possible contributor. During the review period, the state reported training and mentorship of health workers, integration of childhood TB screening into PHC services, strengthened contact investigation, improved access to chest X-ray and molecular testing, improved specimen collection and referral, collaboration with HIV and nutrition programmes, and improved LGA-level monitoring.

The data also show that the increase was not limited to one age group. Childhood TB notifications among children aged 0–4 years increased from four to twelve between Q1 and Q2 2026, while notifications among children aged 5–14 years increased from five to eight. The larger increase among under-fives is important because this group is recognized as particularly vulnerable and is a priority for contact investigation.

The combined five-quarter dataset contains 1,291 total TB notifications and 56 childhood TB notifications. On a simple aggregate basis, childhood TB therefore represented approximately 4.3% of notified TB cases across the five quarters. This aggregate should not be interpreted as population prevalence or incidence.

The central lesson is that notification data are an outcome of both disease and health-system visibility. When a programme increases its ability to screen, diagnose and report childhood TB, notifications may rise. A successful programme can therefore experience a short-term increase in notifications while improving long-term outcomes. This is why programme review should examine notification counts together with the activities that generate them.

The next phase of Ekiti's childhood TB monitoring should move from describing how many children were notified to understanding how they were found. The state should be able to determine the proportion of childhood cases detected through PHC screening, household contact investigation, child welfare clinics, nutrition services, HIV clinics, paediatric services, community outreach and private-sector referral. Such information would allow the programme to identify which approaches are producing the greatest yield.

II. INTRODUCTION

Tuberculosis is usually thought of as a disease of adults, yet children remain an important part of the epidemic. The burden is difficult to measure because childhood TB is frequently underdiagnosed and under-notified. The clinical presentation may be nonspecific, young children may have difficulty producing respiratory specimens, and the disease can occur in settings where clinicians are more accustomed to common childhood infections.

Notification data are consequently valuable but imperfect measures of childhood TB burden. A notification represents a child who has successfully entered the health system, been recognized as having TB and been recorded by the programme. Children who remain undiagnosed do not appear in the notification system. This distinction becomes especially important when a programme deliberately increases case finding.

Routine programme data are nevertheless powerful for identifying changes that deserve investigation. A sustained rise in childhood TB notifications may indicate increased transmission, improved detection, improved access to diagnostics, better reporting or some combination. A sustained decline may represent reduced transmission and disease, but it may also reflect service disruption or missed cases. Interpretation requires knowledge of what the health system was doing during the same period.

The Ekiti State Childhood TB Update provides a clear example of why this distinction matters. The state reviewed five quarters of validated DHIS2/HMIS data and documented both notification trends and programme actions. The notification series was 7 cases in Q2 2025, 4 in Q3 2025, 16 in Q4 2025, 9 in Q1 2026 and 20 in Q2 2026. The corresponding childhood TB proportions were 3%, 2%, 6%, 4% and 7%.

The Q2 2026 result is particularly striking. It represents the highest number of childhood TB notifications in the reviewed series and the highest proportion of childhood TB among all TB notifications. It also occurred in a quarter with the highest overall TB notification count, 302 cases. The increase therefore reflects both a larger TB notification denominator and a larger childhood component.

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An additional signal comes from age. Children aged 0–4 years increased from four cases in Q1 2026 to twelve cases in Q2 2026. Children aged 5–14 years increased from five to eight. The under-five increase is especially important because young children can progress rapidly after infection and may present with less specific symptoms.

The programme update identifies multiple interventions intended to improve childhood TB detection. These include training and mentorship using WHO rapid advice, integration of screening into PHC services, strengthened contact investigation, improved access to chest X-ray and molecular testing, improved specimen collection and referral, collaboration with HIV and nutrition programmes and stronger LGA-level monitoring.

This manuscript therefore treats the five-quarter notification series as a programme signal rather than a simple disease-incidence curve. The main question is what the changing notification pattern can tell us about childhood TB visibility and programme performance in Ekiti State.

III. BACKGROUND

3.1 Childhood TB as a hidden burden

Children with TB may not present with the classic symptoms seen in adults. Symptoms such as persistent cough, fever, poor appetite, weight loss or failure to gain weight may overlap with other common childhood conditions. In young children, severe disease can develop before TB is considered. The result is a diagnostic environment in which clinical suspicion is critical.

WHO guidance emphasizes that children and adolescents require approaches that account for age, clinical presentation, specimen availability and the role of caregivers. Diagnosis is strengthened when clinical assessment is combined with exposure history and appropriate investigations rather than relying on a single test.

Childhood TB is also closely connected to household transmission. A child diagnosed with TB should prompt questions about possible source cases, while an adult with infectious TB should trigger investigation of children in the household. This makes case notification and contact investigation two sides of the same prevention strategy.

3.2 Why notification trends matter

Notification trends are one of the most accessible indicators available to subnational TB programmes. They can be reviewed by quarter, LGA, age group, sex, facility type and diagnostic category when the underlying data are available. In settings with strengthened case finding, the trend can provide early evidence that a programme is becoming more successful at identifying previously missed patients.

However, notification trends are not self-explanatory. The same upward curve can arise from very different processes. More disease can generate more notifications. Better screening can generate more notifications. More diagnostic capacity can generate more notifications. Better reporting can generate more notifications. Programme managers therefore need to triangulate notification data with process indicators.

Ekiti's five-quarter series is particularly useful because the programme update includes contextual information about service strengthening. This allows the notification trend to be interpreted alongside documented programme changes rather than in isolation.

3.3 Nigerian context

Nigeria remains a high TB-burden country, and national TB control depends heavily on finding people who are missed by passive facility-based approaches. Childhood TB requires additional attention because diagnosis is complex and because children may be seen across multiple health platforms. Primary health care, paediatric services, HIV clinics, nutrition programmes, child welfare clinics, community services and private providers can all contribute to case finding.

Ekiti's programme response reflects this integrated reality. The state has identified childhood TB case finding across PHC facilities, general hospitals and paediatric clinics, HIV clinics, nutrition services, community outreach, household/contact investigation and private health facilities. This broad service footprint creates opportunities for earlier detection but also creates a need for coordinated referral and reporting.

IV. AIM AND OBJECTIVES

Aim

To describe five-quarter trends in childhood TB notification in Ekiti State and interpret the changing notification pattern within the context of documented programme strengthening and childhood TB case-finding activities.

Specific objectives

- To describe total TB notifications and childhood TB notifications for each quarter from Q2 2025 to Q2 2026.
- To describe the proportion of all notified TB cases represented by childhood TB in each quarter.
- To identify the quarter with the highest childhood TB notification count and proportion.
- To describe the change in childhood TB notifications among children aged 0–4 years and 5–14 years between Q1 and Q2 2026.
- To examine the programme context surrounding the observed notification changes.
- To identify implications for routine monitoring, case finding and childhood TB programme improvement.

Research questions

- What pattern is observed in childhood TB notifications over the five quarters?
- How did the childhood TB proportion among all notified TB cases change?
- What was the magnitude of the increase between Q2 2025 and Q2 2026?
- What changed among children aged 0–4 years and 5–14 years between Q1 and Q2 2026?
- Could documented programme strengthening plausibly have contributed to improved detection?
- What additional data are needed to distinguish improved detection from changes in underlying disease burden?

V. METHODS

5.1 Study design

A retrospective descriptive programme analysis was undertaken using aggregated validated DHIS2/HMIS data and programme implementation information from the Ekiti State Childhood TB Update, September 2026.

5.2 Study setting

The study setting was Ekiti State, Nigeria. The programme update describes childhood TB services delivered through PHC facilities, general hospitals and paediatric clinics, HIV clinics, nutrition services, community outreach, household/contact investigation and private health facilities.

5.3 Data source

The primary data source was the validated DHIS2/HMIS quarterly notification dataset presented in the programme update. The quantitative variables available were total TB cases, childhood TB cases and childhood TB percentage. The update also provided age-group counts for Q1 and Q2 2026.

5.4 Programme context variables

- Training and mentorship on WHO rapid advice for childhood TB diagnosis.
- Integration of childhood TB screening into PHC services.
- Strengthened contact investigation.
- Improved access to chest X-ray and molecular testing.
- Improved specimen collection and referral.
- Collaboration with HIV and nutrition programmes.
- Improved LGA-level monitoring.

5.5 Data analysis

Quarterly counts and proportions were described. Absolute changes were calculated. The percentage change in the childhood TB count between Q2 2025 and Q2 2026 was calculated as $(20–7)/7 \times 100$, giving approximately 185.7%. The childhood TB proportion increased by four percentage points, from 3% to 7%. From Q1 to Q2 2026, the 0–4-year group increased by 8 cases and the 5–14-year group increased by 3 cases.

5.6 Interpretation

The analysis does not infer incidence or causality from notification trends. Changes are interpreted as changes in notified disease and considered alongside programme strengthening. No population denominators, case-detection ratios or individual-level exposure data were available.

5.7 Ethical considerations

The supplied dataset is aggregated programme information without individual identifiers. Any future study using individual-level data should obtain appropriate ethical and data-governance approvals.

VI. RESULTS

6.1 Five-quarter notification trend

The five-quarter series demonstrates a fluctuating but overall upward pattern in childhood TB notification. The count declined from 7 cases in Q2 2025 to 4 in Q3 2025, then rose sharply to 16 in Q4 2025. It declined again to 9 in Q1 2026 before reaching 20 in Q2 2026.

The childhood TB proportion followed a similar pattern: 3% in Q2 2025, 2% in Q3 2025, 6% in Q4 2025, 4% in Q1 2026 and 7% in Q2 2026. Thus, the Q2 2026 quarter represented a new high in both absolute notification and relative contribution.

The 13-case increase from Q2 2025 to Q2 2026 corresponds to a 185.7% increase in the number of notified childhood TB cases. Over the same comparison, total TB notifications increased from 254 to 302, an increase of 48 cases or approximately 18.9%. The childhood TB component therefore increased much faster than total TB notifications.

Across all five quarters, the programme recorded 56 childhood TB cases among 1,291 total TB notifications, giving a simple combined proportion of approximately 4.3%. This is a descriptive aggregation, not an incidence estimate.

Table 1. Five-quarter childhood TB notification pattern

Quarter	Total TB	Childhood TB	Childhood TB %	Change in child TB vs prior quarter	Comment
Q2 2025	254	7	3%	—	Starting point
Q3 2025	237	4	2%	-3	Lowest point in series
Q4 2025	268	16	6%	+12	Sharp increase
Q1 2026	230	9	4%	-7	Decline from Q4
Q2 2026	302	20	7%	+11	Highest point in series

Source: Ekiti State Childhood TB Update, September 2026; validated DHIS2/HMIS data.

6.2 The Q2 2026 peak

Q2 2026 deserves particular attention because it produced the highest childhood TB count in the reviewed period. Twenty children were notified, compared with nine in Q1 2026 and sixteen in Q4 2025. The quarter also had the highest total TB notification count, 302 cases.

The 7% childhood TB proportion is important because it indicates that children represented a larger share of the TB notification workload than in any previous quarter in the series. The programme update explicitly identifies Q2 2026 as the highest childhood TB proportion and count.

The combination of high total TB notifications and high childhood TB notifications suggests that the result cannot be explained by a shrinking denominator. The state was identifying more TB overall while also identifying more children.

From a programme-management perspective, the Q2 2026 result should trigger a structured review. Managers should ask which facilities contributed the increase, where children were identified, which service platforms generated referrals, how many were household contacts, what diagnostic pathways were used and whether the increase was associated with specific training, mentorship or service-delivery changes.

6.3 Age-specific findings

The age-group comparison reinforces the Q2 2026 signal. Children aged 0–4 years increased from 4 cases in Q1 2026 to 12 in Q2 2026. Children aged 5–14 years increased from 5 to 8 cases. The absolute increase was therefore 8 cases among under-fives compared with 3 among older children.

In relative terms, the under-five group increased three-fold, while the 5–14-year group increased by 60%. The under-five group accounted for approximately 44.4% of childhood TB notifications

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in Q1 2026 and 60% in Q2 2026. These calculations are based on the age-group counts supplied in the presentation.

This shift is programmatically important because under-fives are a priority population for household contact investigation and TB prevention. It also suggests that programme review should pay close attention to the pathways through which young children were identified.

Table 2. Age-group comparison of notified childhood TB, Q1 versus Q2 2026

Age group	Q1 2026	Q2 2026	Absolute change	Relative change
0–4 years	4	12	+8	+200%
5–14 years	5	8	+3	+60%
Total	9	20	+11	+122.2%

Note: Relative change is calculated from the Q1 count. The dataset contains aggregated counts; these are not population incidence rates.

VII. INTERPRETATION OF THE FINDINGS

The most defensible interpretation of the five-quarter data is that childhood TB became more visible to the Ekiti TB programme during the latter part of the review period. The evidence for increased visibility is the simultaneous rise in childhood TB notification and documentation of activities designed to improve identification and diagnosis.

This interpretation should be separated from the question of disease incidence. The available data do not tell us whether transmission increased, decreased or remained stable. There are no population denominators, estimates of missed disease, or longitudinal individual-level records. It would therefore be scientifically inappropriate to state that childhood TB incidence increased by 185.7%. The correct statement is that notified childhood TB increased by 185.7% between Q2 2025 and Q2 2026.

This distinction is not merely academic. If improved case finding contributed to the rise, then an increase in notifications could represent a positive programme development. A health system that identifies more previously missed children is performing better, even if its notification numbers initially rise.

The programme context supports this interpretation as a plausible hypothesis. Training and mentorship can increase clinical suspicion. Integration of screening into PHC services can increase the number of children assessed. Strengthened contact investigation can identify exposed children who might not otherwise present. Improved molecular testing and chest X-ray access can increase diagnostic confirmation. Improved specimen collection and referral can reduce diagnostic losses. Collaboration with HIV and nutrition programmes can reach children already engaged with other services.

At the same time, other explanations remain possible. A true increase in childhood TB transmission, changes in referral patterns, changes in health-seeking behaviour, improved reporting completeness or local outbreaks could contribute. The current dataset cannot quantify the contribution of each mechanism.

The most useful response is therefore to move from interpretation to verification. The programme should link quarterly notifications to process measures that show how cases were found. If the proportion of childhood cases detected through active screening or household contact investigation rises at the same time as notifications, the case-finding hypothesis becomes more credible.

The age-specific increase strengthens the need for this verification. Under-fives are difficult to diagnose and are also a priority for prevention. If many of the additional under-five cases came from child welfare clinics, nutrition services or household contact investigation, that would provide important evidence that integration is working.

The Ekiti experience therefore illustrates a broader principle in public health: programme success can change the shape of the data. When detection improves, the observed disease curve may initially rise because previously hidden cases enter the system. Data interpretation must account for the sensitivity of the surveillance system.

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VIII. PROGRAMME CHANGES THAT MAY HAVE INFLUENCED DETECTION

8.1 Training and mentorship

The programme reports training and mentorship of health workers on the use of WHO rapid advice for childhood TB diagnosis. Training can influence detection by increasing recognition of TB-compatible symptoms, improving use of exposure history and strengthening confidence in paediatric diagnostic pathways. The data do not quantify the number of workers trained or the timing of training relative to each quarterly notification change, so a causal effect cannot be established.

8.2 Integration into PHC

Integration of childhood TB screening into PHC services broadens the entry points for case finding. PHC facilities may encounter children with respiratory symptoms, poor growth, recurrent illness or known household exposure before they reach specialist services. Integrating TB screening into routine child health therefore has the potential to reduce dependence on referral to hospitals.

8.3 Contact investigation

Strengthened contact investigation provides an active mechanism for finding children who may not be sick enough to seek care. It is especially relevant to the observed under-five increase because children younger than five are a priority group for contact screening and preventive treatment.

8.4 Diagnostic access

The programme reports six GeneXpert machines available for childhood TB diagnosis using stool and free chest X-ray support for children aged 0–5 years at two designated sites. Increased diagnostic access can convert presumptive cases into confirmed diagnoses and can also increase clinician willingness to investigate suspected TB.

8.5 Specimen collection and referral

Improved specimen collection and referral address a practical bottleneck in paediatric TB diagnosis. A child who is screened but cannot complete diagnostic evaluation remains a missed case. Better referral therefore improves the sensitivity of the case-finding system.

8.6 HIV and nutrition collaboration

Children living with HIV and children affected by malnutrition have particular TB-related vulnerabilities. The programme's collaboration with HIV and nutrition services creates additional opportunities to identify children with symptoms or household exposure. Nutrition services can also provide a platform for growth assessment and TB screening.

8.7 LGA-level monitoring

Improved LGA-level monitoring can strengthen accountability and allow programme managers to identify facilities with unusually high or low notification. Such variation should be used for learning rather than simple ranking. A high-notification facility may be detecting more cases because it has a stronger screening model, while a low-notification facility may have either lower disease burden or missed opportunities.

IX. DISCUSSION

This analysis provides a clear descriptive picture of changing childhood TB notification in Ekiti State. Across five quarters, childhood TB notifications increased from a low of four cases in Q3 2025 to a high of twenty in Q2 2026. The proportion of childhood TB among all notified TB cases increased from 2% at the low point to 7% at the high point. The Q2 2026 result represents a substantial change in programme visibility.

The scale of the change is striking. Childhood TB notifications increased by 185.7% between Q2 2025 and Q2 2026, while total TB notifications increased by approximately 18.9%. This means the childhood component expanded far more rapidly than the overall TB notification workload. Such a pattern deserves programme attention because it may indicate improved recognition of a subgroup that was previously under-detected.

The observed rise is consistent with the direction of programme activities described by Ekiti. The state has moved toward deliberate childhood TB case finding through PHC integration, contact investigation, improved diagnostics, specimen referral and collaboration with child-focused programmes. Each of these changes can increase the probability that a child with TB enters the notification system.

However, the interpretation must remain cautious. Programme data do not provide a counterfactual. We cannot know how many childhood TB cases would have been notified if the programme interventions had not occurred. Nor can we quantify the number of children who remained undiagnosed. The appropriate scientific language is therefore that programme strengthening may have contributed to increased detection and that the observed pattern is consistent with improved case finding.

The under-five pattern is perhaps the most compelling element for future study. Notifications in children aged 0–4 years increased from four to twelve between Q1 and Q2 2026. Under-fives are among the groups most likely to benefit from proactive contact investigation. They may also be more dependent on caregivers to access care and more difficult to diagnose microbiologically. An increase in this group may therefore signal improved reach into a previously difficult-to-detect population.

At the same time, the concentration of childhood TB notifications at CHC Okesa, which the programme update reports as 90% of all childhood TB cases in the state through collaboration with the child welfare clinic and nutrition programme, provides an important health-system learning question. The available data cannot determine whether the concentration reflects population distribution, referral patterns, disease clustering or stronger detection. A facility that finds most cases may be a model of good practice rather than evidence of excessive disease.

Routine data should be used to identify such outliers and then investigate them. If CHC Okesa has a higher screening rate, better contact investigation, stronger referral completion or more effective collaboration with child welfare and nutrition services, those practices could potentially be adapted in other LGAs. If the concentration instead reflects referral or reporting artefacts, the programme can address those issues.

The findings also demonstrate why programme indicators should move beyond notification. Notification tells us the endpoint of detection. It does not tell us how many children were screened or how many children were lost before diagnosis. To understand the case-finding system, Ekiti needs a cascade beginning with the population of children reached and ending with treatment or prevention outcomes.

The five-quarter trend also illustrates the importance of maintaining data quality. The programme identifies the data as validated DHIS2/HMIS information. Validation is essential because small absolute numbers can produce large percentage changes. In childhood TB, where quarterly counts may be relatively low, a change of a few cases can materially alter the percentage. Managers should therefore review both counts and proportions.

From a policy perspective, the most important lesson is that an increase in notification should not automatically trigger concern about programme failure. If detection is improving, increased notification may be expected. The real performance question is whether additional cases are being found earlier, treated effectively and accompanied by appropriate contact investigation and prevention.

Future evaluation should therefore pair surveillance data with programme-process data. A useful analysis would compare the number of children screened, the proportion with presumptive TB, the proportion completing diagnostic evaluation, the number diagnosed, the number of household contacts and the number started and completing TPT. This would provide a much stronger explanation for future notification changes.

Finally, the Ekiti experience supports the use of routine data for programme learning. The state does not need to wait for a large research study before acting on the signal. Quarterly trends can be used to identify facilities and LGAs for supportive supervision, test whether service integration is functioning and improve the completeness of contact and referral data.

X. COMPARISON WITH THE EVIDENCE BASE

WHO guidance emphasizes that childhood TB requires integrated approaches that combine clinical assessment, exposure history, appropriate diagnostic testing, treatment and prevention. The Ekiti programme's approach is broadly consistent with this direction, particularly its emphasis on PHC integration, contact investigation, molecular testing,

chest radiography and collaboration with HIV and nutrition services.

International studies have demonstrated that systematic contact investigation can identify active TB and children eligible for preventive treatment. Programme experience from several African countries has shown that contact investigation can be incorporated into routine services, including among children under five and people living with HIV.

Community-based approaches have also been evaluated. Trials in Cameroon, Uganda and other settings suggest that community health workers can contribute to household contact screening and preventive-treatment support. These findings are relevant to Ekiti because community and PHC platforms may reduce barriers to repeated facility attendance.

The Ekiti data differ from these studies because they are aggregated routine programme data rather than a prospective contact cohort. Consequently, this manuscript cannot claim a contact-investigation yield comparable to published studies. Instead, the evidence base is used to support the programme rationale and identify indicators for future evaluation.

The main contribution of the Ekiti experience is therefore contextual: it shows how a subnational programme can use routine surveillance data alongside service-strengthening activities to identify a changing childhood TB detection pattern.

XI. PROGRAMME IMPLICATIONS

- Interpret notification trends alongside case-finding effort and diagnostic access.
- Track both counts and proportions because small childhood TB numbers can produce large percentage changes.
- Disaggregate childhood TB notifications by age group, LGA, facility type and source of referral where possible.
- Add source-of-detection indicators to routine reporting, including household contact investigation, PHC screening, child welfare, nutrition, HIV, community and private-sector pathways.
- Track the diagnostic cascade from presumptive TB to specimen collection, testing, result return and treatment initiation.
- Monitor under-five detection separately because of their higher vulnerability and the observed increase in Q2 2026.
- Use facilities with strong childhood TB identification as learning sites and investigate the practices behind their performance.
- Do not interpret higher notification automatically as higher incidence; triangulate with surveillance, screening and programme-process indicators.
- Strengthen feedback loops between state, LGA and facility teams so that quarterly trends lead to specific corrective actions.
- Build a prospective evaluation component into future contact-investigation activities so the programme can estimate yield and preventive-treatment outcomes.

XII. RECOMMENDATIONS

1. Establish a standard childhood TB dashboard at state and LGA levels that displays quarterly notifications, childhood TB proportion, age distribution and facility contribution.
2. Add a source-of-detection variable to the childhood TB register so that each child can be classified by household contact investigation, PHC screening, paediatric service, HIV service, nutrition service, community outreach or private-sector referral.
3. Create an early-warning review trigger for unusually large quarterly changes in childhood TB notification, followed by rapid programme investigation rather than automatic interpretation.
4. Prioritize under-five case finding and contact investigation, given the marked increase observed between Q1 and Q2 2026.
5. Maintain and expand diagnostic referral arrangements, including access to stool-based molecular testing and designated chest X-ray services.
6. Track turnaround time from screening to diagnostic result and from diagnosis to treatment initiation.
7. Strengthen the use of child welfare and nutrition platforms for TB screening, building on the programme experience reported at CHC Okesa.
8. Integrate TB-HIV and TB-nutrition review indicators into routine programme meetings.
9. Document the full contact-investigation and TPT cascade so that future analyses can distinguish case-finding success from disease-burden changes.

10. Develop a prospective operational research study to evaluate the effectiveness, yield, acceptability and cost of intensified childhood TB case finding in Ekiti State.

XIII. STRENGTHS AND LIMITATIONS

13.1 Strengths

- The analysis uses validated DHIS2/HMIS data presented by the state TB programme.
- The five-quarter period allows comparison over time rather than a single cross-sectional snapshot.
- The data are interpreted alongside documented programme-strengthening activities.
- The manuscript clearly distinguishes notification from incidence.
- The findings generate practical monitoring and operational research questions.

13.2 Limitations

- The dataset contains only five quarterly observations.
- No population denominators are available for age groups or LGAs.
- No individual-level information is available to determine exposure, symptoms, diagnostic results or outcomes.
- No direct measure of contact-investigation coverage is available.
- No TPT initiation or completion data are numerically available.
- The analysis cannot establish causality between programme interventions and notification increases.
- The dataset does not provide the timing of each intervention sufficiently to conduct a formal interrupted time-series analysis.
- The 90% contribution reported for CHC Okesa cannot be independently explained using the available aggregate data.

XIV. PROPOSED NEXT-STAGE ANALYTICAL STUDY

The present analysis should be considered the descriptive phase of a stronger programme evaluation. The next study should link individual-level childhood TB cases to their route of identification and, where feasible, to household contact investigation records.

14.1 Proposed design

A retrospective cohort or prospective implementation study could enroll children identified through the programme and classify them according to the pathway through which they were detected. A separate household-contact cohort could follow children exposed to bacteriologically confirmed index cases.

14.2 Suggested outcomes

- Childhood TB detection yield per 100 children screened.
- Active TB yield among household contacts.
- Diagnostic completion rate.
- Time from screening to diagnostic evaluation.
- Time from diagnosis to treatment initiation.
- TPT eligibility and initiation rates.
- TPT completion rates.
- Proportion of cases detected before severe clinical presentation.
- Cost per additional childhood TB case detected.
- Cost per child completing TPT.

14.3 Suggested comparison

If data permit, facilities can be compared according to whether they implemented intensified screening, contact investigation or integrated child welfare/nutrition approaches. Such comparisons should be adjusted for facility catchment and population characteristics where possible.

XV. CONCLUSION

The Ekiti State five-quarter childhood TB notification series shows a clear change in programme visibility. Childhood TB notifications increased from seven cases in Q2 2025 to twenty cases in Q2 2026, while the childhood TB proportion among all notified TB cases increased from 3% to 7%. The increase was accompanied by a rise in overall TB notifications and occurred in the context of documented strengthening of childhood TB case finding and diagnosis.

The increase among children aged 0–4 years from four cases in Q1 2026 to twelve cases in Q2 2026 is particularly important. It suggests that the programme may be reaching more of the youngest children, a group for whom delayed diagnosis and progression can have serious consequences.

The data do not demonstrate an increase in childhood TB incidence. They demonstrate an increase in notified childhood TB. The distinction is essential. Improved screening, contact investigation, diagnostic access, specimen referral, integration with child-focused services and improved reporting can all increase notification.

The programme should therefore use the Q2 2026 peak as a learning opportunity. Rather than asking only why the number increased, it should ask how the additional children were found. The answer can guide investment in the most productive case-finding pathways.

The next step is to make these pathways measurable. If Ekiti captures the source of detection, contact-investigation cascade, diagnostic completion and TPT outcomes, future analyses will be able to demonstrate whether the shift from passive to deliberate childhood TB identification is translating into earlier diagnosis and better prevention.

The central message is therefore not simply 'from 3% to 7%'. It is that better visibility changes the data. The public health objective is to ensure that every additional child identified represents an opportunity for timely treatment, family investigation and prevention of future TB.

XVI. PROPOSED FIGURES AND TABLES FOR JOURNAL SUBMISSION

Figure 1. Five-quarter trend in childhood TB notifications
Line chart displaying 7, 4, 16, 9 and 20 childhood TB notifications from Q2 2025 through Q2 2026. A separate line can display the childhood TB proportion of 3%, 2%, 6%, 4% and 7%. The figure should label the measures as notification counts and notification proportions.
Figure 2. Childhood TB as a proportion of total TB notification
A percentage trend chart displaying 3%, 2%, 6%, 4% and 7%. This figure emphasizes the changing contribution of children to the total TB notification workload.
Figure 3. Age-group comparison
Clustered bars showing Q1 versus Q2 2026 for children aged 0–4 and 5–14 years.
Figure 4. Proposed interpretation framework
A conceptual diagram showing the pathways that can influence notification: underlying disease burden + case-finding intensity + diagnostic access + reporting completeness = observed notification.

Table 3. Recommended routine indicators
The programme should add screening coverage, source of detection, diagnostic completion, turnaround time, treatment initiation and TPT outcomes to the existing notification indicators.

XVII. DATA SOURCE AND REPORTING NOTE

The quantitative figures in this manuscript are taken from the supplied Ekiti State Childhood TB Update. The presentation identifies the data as validated DHIS2/HMIS information and reports the five-quarter notification series, age-group comparison, programme achievements, case-finding platforms and identified gaps. The manuscript does not create unreported Ekiti data.

For final journal submission, the reference list should be checked against the target journal's preferred citation style and the bibliographic details of each source should be verified. Additional Nigeria-specific or Ekiti-specific datasets can be incorporated if made available.

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