

PROJECT HOPE NIGERIA

REPORT OF BASELINE EVALUATION FOR THE TB REACH WAVE 11 INTERVENTION IN NIGER STATE

Table of Contents

Report writing team 4
List of acronyms 4
List of Tables 7
Executive summary 8
CHAPTER ONE: BACKGROUND AND OBJECTIVES 10
Introduction 10
Disease burden 10
Access to care issues 11
Lack of integration 11
Implementation context 12
Niger state 12
Health system context 12
Local TB burden and TB programme 13
Implementation LGAs 13
Table 1: LGA summary of key statistics 14
Objectives of the baseline assessment 14
CHAPTER TWO: METHODS AND WORKPLAN 15
2.1 Design and Methods 15
2.1.1 Quantitative Facility Data Collection 15
2.1.2 Qualitative interviews 15
2.1.3 Patient Satisfaction Survey 15
2.2 Geographical Site 15
2.3. Study population and data collection 16
2.4 Variables 16
2.5. Sample size 16
2.6 Data analysis 16
2.7. Ethical consideration 16
Table 2: Project HOPE TB REACH Baseline assessment Work Plan and key deliverables 18
CHAPTER THREE: KEY FINDINGS AND IMPLICATIONS 19
Current state of care access for TB, Pneumonia and Asthma – in selected facilities 19
Table 3: Summary Table of one-year Case finding at Baseline 19
Health system readiness – qualitative research findings 19

Gurara Local Government Area 19
Suleja Local Government Area 22
Paikoro Local Government Area 25
Patient satisfaction survey – person-centered care 27
Participants demographic characteristics 28
Description of thematic satisfaction profile 29
Other remarks from patients revealing quality of care at facilities 32
CHAPTER FOUR: DISCUSSION 33
CHAPTER FIVE: KEY ACTIONABLE RECCOMENDATIONS 36
Increasing case finding for TB, Pneumonia, and Asthma 36
Case finding 36
Client flow – community and health facility 36
Service delivery (re)arrangements 36
Hub and Spoke approach to upgrade service delivery in the LGAs 36
Strengthening of Referral Systems for TB Samples 37
Childhood TB and TPT 37
Emphasis on improving childhood TB diagnosis 37
TPT Scale-up 37
Capacitating the health system 37
Training for Staff 37
De Novo Documentation tools 38
Equipment and Consumables Stock-up 38
Recommendations from PSS: 38
ACKNOWLEDGEMENTS 40
REFERENCES 41
SUPPLEMENTARY MATERIALS 43
Informed Consent Form 44
Qualitative interview guide (for facility HCWs) 46
Qualitative interview guide (for TBLSs) 47
Baseline Quantitative Tool for Data Collection 49
PATIENT SATISFACTION SURVEY 52

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List of acronyms

AFB – Acid Fast Bacilli

BP – Blood Pressure

CHEW – Community Health Extension Worker

CHIPS - Community Health Influencers, Promoters and Services

CHO – Community Health Officer

DOTs – Directly Observed Therapy Short course

DSNO – District Surveillance and Notification Officer

FMC – Federal Medical Centre

GAC - Global Affairs Canada

GH – General Hospital

GX - Genexpert

HCW – Health Care Worker

HIV – Human Immunodeficiency Virus

ID - Identification

IDI – In-depth Interview

IMCI - Integrated Management of Childhood Illness

JAN - January

JUL - July

J-CHEW – Junior Community Health Extension Worker

KII – Key Informant Interview

LAB - Laboratory

LF-LAM - Lateral Flow Urine Lipoarabinomannan Assay

LGA – Local Government Area

MDG – Millenium Development Goal

M&E – Monitoring and Evaluation

MOU – Memorandum of Understanding

NGO – Non-governmental Organisation

NiCare - Niger State Contributory Health Scheme

NTBLCP - National Tuberculosis, Leprosy and Buruli Ulcer Control Programme

OIC – Officer in-charge

OPD – Outpatient Department

PHN – Project Hope Nigeria

PLHIV – People Living with HIV

PHC/PHCC – Primary Health Centre

PNC – Postnatal Care

PPM – Public-Private Mix

PSS – Patient Satisfaction Survey

R&R – Recording and Reporting tools

RA – Research Assistant

RMNCH - Reproductive, Maternal, Newborn, and Child Health

SDG – Sustainable Development Goal

QUANT - Quantitative

QUAL - Qualitative

TB - Tuberculosis

TB-LAMP - Tuberculosis Loop-Mediated Isothermal Amplification

TBLS - Tuberculosis and Leprosy Supervisor

TPT – Tuberculosis Preventive Therapy

U5M - Under-five Mortality

WHO – World Health Organization

WRD – WHO Recommended Rapid Molecular Diagnostics for TB

Xpert MTB/RIF – GeneXpert MTB/RIF Assay test for TB

List of Tables

Table 1: LGA summary of key statistics 12

Table 2: Project HOPE TB REACH Baseline assessment Work Plan and key deliverables.....16

Table 3: Table 3: Summary Table of one-year Case finding at Baseline.....17

Table 4: Demographic Characteristics of participants for Patients satisfaction survey.....25

Table 5: Patient satisfaction profile for Patient Satisfaction Survey.....27

Table 6: Summary of availability and quality of TAP services in selected health facilities.....35

Executive summary

Respiratory infections continue to cause health challenges that affect our health systems. Due to similarities in their presentations and treatment, current efforts are geared towards integration of management of these disease conditions. TB REACH Wave 11 project for the organisation, Project Hope Nigeria is another avenue to integrate TB program intervention with the management of other respiratory diseases such as Asthma and Pneumonia. We conducted a baseline assessment of the health services provided by facilities that will host the health intervention in Niger State, Nigeria. The objectives of the assessment were to:

1. To determine the state of indicators of care services for TB, Asthma, and Pneumonia at the selected health facilities in Niger state
2. To explore the health system related issues affecting care and treatment services for TB, Asthma, and Pneumonia at the selected health facilities in Niger state
3. To gauge the level of satisfaction among patients and clients who accessed TB, Asthma and Pneumonia related services at the selected health facilities

The assessment adopted a mixed methods approach comprising a quantitative data abstraction of key indicators, qualitative exploration of health system-related aspects of care and a patient satisfaction survey.

Gurara LGA has 3 functional DOT sites (PHCC Izom, PHC Kabo and PHCC Tufa), Paikoro LGA has 1 functional DOT site (Hope Model Clinic) and one DOT site (PHC Kafin-koro) that can become functional with upgrade for AFB testing while Suleja LGA has 5 sub-functional DOT sites that all require upgrade to run AFB testing. 46% of the facilities involved in the Patient Satisfaction Survey had their respondents expressing 100% satisfaction with the state and approach of services rendered to them. With a total of 43 complaints from the respondents concerning different thematic areas, Gurara LGA led with 25 complaints from 3 facilities (PHCC Izom with 11; PHC Lambata with 9; Lefu PHC with 5) dealing with distance to facilities, appearance of facilities and ease of contacting HCW at night/weekends.

We are recommending several measures that will assist in a successful intervention. They include an upgrade of several facilities in each LGA to serve as models of excellence for this project, targeted staff trainings to address knowledge gaps, strengthening of childhood TB diagnosis and TPT services,

engagement of trained locum staff to provide certain services (emergency Asthma management) in selected facilities at night.

This work provides valuable insights about the situation of health services in Niger State. They offer a springboard for a successful launch and execution of TB REACH Wave 11 project by Project Hope Nigeria and hopefully, will help with meeting of the set targets of the program.

CHAPTER ONE: BACKGROUND AND OBJECTIVES

Introduction

Disease burden

Nigeria continues to face the triple burden of tuberculosis (TB), TB/HIV co-infection, and drug-resistant TB (DR-TB)(1). The country is ranked among the top 10 on the WHO list of high-burden countries for these categories and is 6th globally among the 30 high TB burden nations(2). Nigeria also holds the highest TB burden in Africa, with an estimated incidence rate of 219 cases per 100,000 population and a mortality rate of 40 per 100,000 among HIV-negative TB patients(2). Undernutrition and HIV are the leading drivers of TB in Nigeria, alongside contributing factors such as diabetes, alcohol use disorders, and smoking(2).

Over the past four years, Nigeria has achieved significant and sustained progress in TB notification and program performance. TB case notifications increased by 13% from 106,533 in 2018 to 120,266 in 2019, and by 15% to 138,591 in 2020(3–5). Remarkably, during the COVID-19 pandemic, Nigeria was among the few countries globally that recorded an increase in TB notifications. The upward trend continued with a 50% rise in notifications from 138,591 in 2020 to 207,785 in 2021, which was recognized in the Global TB Report 2022 as a notable achievement(6).

In 2022, notifications grew by 37% to 285,561 cases, and in 2023, the program surpassed the 300,000 mark for the first time, reaching 371,019 cases—a 30% increase compared to the previous year(7). Despite these achievements, over 120,000 TB cases remained undetected in 2023, posing a significant public health challenge(2). Each undetected TB patient can infect an estimated 10–15 individuals annually, perpetuating community transmission(8).

The proportion of childhood TB cases among newly notified cases consistently ranged between 7% and 8%, falling short of the 15% target until 2023. An innovative Childhood TB Testing Week increased the proportion to 10%, with childhood TB notifications rising by 77% from 20,411 in 2022 to 36,197 in 2023(2). Nigeria has the second-highest global burden of malnutrition, affecting 17 million children(9,10). Given that undernutrition is the leading risk factor for TB in the country, integrating TB screening into nutritional services offers a promising strategy for identifying TB cases among children and achieving the 15% target for childhood TB notifications.

In Nigeria, pneumonia is a leading infectious killer of children under five, accounting for over 94,000 deaths per year, or 258 children every day making the country the largest single contributor to the global deaths from this disease(11–13). Nigeria contributes 20% of the global child mortality from the disease(11). Pneumonia accounts for about 12% of all under-five deaths in Nigeria annually(11). Local survey data showed that 88% of children (<15y) admitted for pneumonia in a northern Nigerian state also had other co-morbidities(12). With 20% of the population being children under 5(14), Nigeria's 50 million young children are at significant risk of losing their lives to this vaccine preventable and curable disease. Key drivers of childhood pneumonia include malnutrition, indoor air pollution, short gestation for birth weight, and ambient particulate matter pollution(15). Vaccination has been shown to be highly effective in preventing pneumonia, and in combination with early diagnosis and prompt treatment leads to significant decline in pneumonia deaths.

Access to care issues

Only 30% of the children requiring antibiotics, although the National coverage of the Pneumococal conjugate vaccine is 70%(16). Niger state in particular remains one of the poorest performing states at 39% coverage(16). Similarly in TB, the state has a treatment coverage rate (65%) less than the national coverage (74%)(17). Comprehensive National and state level data could not be assessed for Asthma.

Lack of integration

The 8th objective of the NTBLCP National Strategic Plan 2021-2026 focuses on integrating TB services with services of associated co-morbidities(18). Poor integration of TB services into activities of other sectors and health service areas was recognized in the NSP as a weakness in the TB program(18). However, the plan identified the opportunity of using the United Nations High Level Mission commitments to achieve integration of TB into other disease control efforts including NCDs leveraging on strategies such as The National Integrated Pneumonia Control Strategy & Implementation Plan(19). The WHO Practical Approach to Lung Health has not been operationalized in-country(20).

The rationale for integrated service delivery is to achieve universal health coverage and SDG3 through the provision of accessible, affordable, and quality health care for a wide range of diseases(21). ISD will address the barriers and access, coverage, and improve cost-efficiency and quality of care, supply chain, and health Safety Issues. The potential benefits of the integrated approach include the provision of holistic, equitable, comprehensive health services that will increase uptake of

healthcare services for a wide range of disease conditions leading to a reduction of morbidity and mortality associated with endemic disease conditions(18).

Implementation context

Niger state

Geographically, the state is located in the North-Central geo-political zone of Nigeria, lying between latitudes 10°22' and 0°00' North, and longitudes 5°39' and 0°00' East(22). It covers an area of 76,363 square kilometres making it the largest state in Nigeria by land mass size. The State is bordered on the north by Kebbi & Zamfara, Kaduna to the northeast, Kogi to the southeast and Kwara to the South(22). The Federal capital territory is on the Niger State eastern border and the Republic of Benin is on its western border. The state has 3 senatorial districts (North, South and East) and 25 Local Government Areas (LGAs)(22).

The projected population for the state in 2025 is about 7,456,151 (based on the National 2006 population census and state specific growth rate of 3.36%) representing 2.8% of the country's population(14). The population for the state is typical of a predominantly young population, children aged 0-14 accounts for 45.8% of the population, the youths age 15 – 24 represent 18.2%, while the productive age group (25 – 59) accounts for 32.5% of the population. The elderly (60 years and above) represent 3.5% of the population. About 51% (3,836,797) of the population are males while 49% are females (3,619,654) representing a male: female ratio of 1.04(22).

Health system context

According to the National Health facility registry, the state has a total of 1,678 registered formal health facilities out of which 455 and TB DOTS sites giving a health facility service coverage of 27%(23). All the three tertiary hospitals in the state, two faith-based hospitals, and 22 public secondary health facilities are TB DOT sites. However, of the 1,090 PHCs, only 135 are TB DOTS sites.

By the end of 2014, there were 278 doctors, 1029 midwives, 790 nurses and 3556 community health extension workers (CHEWS) working in Niger state. There were also 109 pharmacists, 26 Medical laboratory scientists and 30 medical records officers in various public health facilities within the state(23). The State has a very high rate of under-five mortality (U5M) at 103 per 1000 live births when compared to the National average of 118 per 1000 live births(24). Under-five mortality rate is a useful

indicator of health system performance as it underscores the challenges of delivering care in Nigeria through the primary health care system.

Local TB burden and TB programme

Niger state is among the band 2 states (25+1 states) that accounts for about 71% of TB burden in the country(17). Over the past ten years TB case notification in the state has markedly improved from 1,532 in 2014 to 10,327 (considering the calendar year between October 2023 and September 2024 for which data was available for this baseline assessment). In 2024, the state achieved a treatment coverage of 65% for all forms of TB below the national coverage of 74%. Despite this significant improvement, gaps remain as the total TB burden of estimated incident TB stands at 15,792 implying that over 5,400 men women and children with TB disease went undiagnosed untreated or unreported (missing cases)(17).

The state has 14 GeneXpert platforms for TB diagnosis distributed across 13 LGAs. At present, 49 out of the 56 available modules are functional with only 12 machines connected to the GX Alert system. Although all 14 GX sites accept stool sample for TB diagnosis, the yield has been sub-optimal. Of the 237 stool samples received across all the sites in Q3 2024 no TB case was diagnosed(17). The state has one TB LAMP machine, four sites that use LF-LAM urine test for diagnosis amongst PLHIVs, 78 AFB microscopy sites across all 25 LGAs, and an undetermined number of portable digital X-ray machines.

The state TB programme is led by the state Programme manager and his team which comprises M&E officer, quality assurance officer, DRTB focal person, PPM focal person, logistician, an accountant and 25 LG TB Leprosy and Buruli Ulcer Supervisors in the LGAs. There are no assistants for any of the state level officers or TBLS.

Implementation LGAs

Three intervention local government areas have been selected for the integrated lung health intervention, and they include Suleja, Gurara and Paikoro LGAs. They are high TB burden LGAs with low TB case finding as their treatment coverages range from 41% to 58%, all below the overall state coverage of 65%. Likewise, childhood TB contribution is far less than the National expected of 15%.

Table 1: LGA summary of key statistics

	Suleja	Paikoro	Gurara	State level
Population	408,794	298,390	171,715	7,456,151
Population under 15 years	194,586	142,033	81,736	
Population under 5 years	81,759	59,678	34,343	
Women of childbearing age	89,935	65,646	37,777	
TB burden (Annual expected TB incidence)	895	653	376	15,792
One-year Case notification	521	266	170	10,327
Treatment coverage	58%	41%	45%	65%
Childhood TB contribution	22 (4%)	16 (6%)	8 (5%)	510 (5%)
TBLS & assistant	1	0	1	
DOTS Facilities	22	49	32	
WRD Diagnostic platform	1	1	0	13
AFB Monitoring	10			
Specimen transport system	Functional	Sub-optimal	Functional	

Objectives of the baseline assessment

The key objectives of the baseline assessment were to:

1. To determine the state of indicators of care services for TB, Asthma, and Pneumonia at the selected health facilities in Niger state
2. To explore the health system related issues affecting care and treatment services for TB, Asthma, and Pneumonia at the selected health facilities in Niger state
3. To gauge the level of satisfaction among patients and clients who accessed TB, Asthma and Pneumonia related services at the selected health facilities

CHAPTER TWO: METHODS AND WORKPLAN

2.1 Design and Methods

The baseline assessment adopted a mixed methods approach comprising quantitative data abstraction of key indicators, a qualitative exploration of health system-related aspects of care, and a patient satisfaction survey.

2.1.1 Quantitative Facility Data Collection

This cross-sectional study was conducted from December 2024 to January 2025 evaluating records from registers such as the health facility daily out-patient department (OPD) register, health facility monthly summary form, health facility tuberculosis central register (NTBLCP/TB8), and the tuberculosis clinic suspect (presumptive) register (NTBLCP/TB2) as well as other tools which the health facility may use to record and report data.

2.1.2 Qualitative interviews

This aspect of the data collection entails Key Informant Interviews with OICs and TBLSs/DOT officers in each selected facility and an In-depth interview with the LG TBLS of the three LGAs and the State TB Program manager. The semi-structured interviews allowed for in-depth data collection by probing into the direction of the participant's response related to the study objectives.

2.1.3 Patient Satisfaction Survey

This adopted a cross-sectional approach with data gathering involving interviewing at least 5 patients per facility assessing their level of satisfaction with the use of the services of the facility

2.2 Geographical Site

This baseline evaluation was carried out in 15 primary health facilities in 3 local government areas in Niger state where Project Hope will be implementing its TB REACH Wave 11 project. The LGAs evaluated were Suleja, Paikoro, Gurara LGAs of Niger state. In each LGA, 5 facilities were selected to participate in the evaluation, making up 15 facilities.

2.3. Study population and data collection

Patients who are 18 years and older who have been users of each facility, and consent to participate in the study were recruited into the patient satisfaction survey to assess the patient satisfaction profile of each facility. Research Assistants collected data by counting records from facility registers with records of Tuberculosis, Asthma, and Pneumonia service delivery. In-depth interviews were conducted with the State TB program manager and Key informant interviews with the TBLSs of each LGA. Furthermore, the OIC and DOT officer were interviewed on service delivery for the conditions of interest.

2.4 Variables

For the Patient satisfaction survey, the sociodemographic data of interest was gender, age and satisfaction profile. For the facility evaluation, interest was on gaps in service delivery and areas of need for health system strengthening.

2.5. Sample size

The patient satisfaction survey evaluated 64 patients. A total of 22 key informant interviews were carried out, and 1 in-depth interview with the State TB Program Manager. Facility evaluation recorded all service delivery for Tuberculosis, Asthma, and Pneumonia from quarter 4 2023 to quarter 3 2024 for all 15 health facilities selected by Project Hope Nigeria.

2.6 Data analysis

The qualitative data were analyzed thematically by identifying overarching themes from the interviews while quantitative data on facility assessment and patient satisfaction survey were analyzed using Microsoft excel and R programming language.

2.7. Ethical consideration

Ethical approval was gotten from the local ethical committee of the Department of Planning Research and Statistics of the Niger State Ministry of Health. Written informed consents were obtained from all patients before administering the questionnaire. Equally, written informed consents were obtained from each participant before Key informant interviews and In-depth Interviews. The study staff ensured that the participant understood the content of

the informed consent by answering questions they had regarding the study and explained that their participation was voluntary. Once the participants had signed the informed consent, the study staff gave them a copy of the document.

Table 2: Project HOPE TB REACH Baseline assessment Work Plan and key deliverables

S/No	Activity	Person Responsible	Timeline
1.	Contracting	Project HOPE Admin – Key Milestone	Day 1 – Day 3
2.	Identification of facilities	Project HOPE Admin	Day 1 – Day 5
3.	Identifications of Research Assistants (RAs)	Project HOPE Admin	Day 1 – Day 5
4.	Finalization of data collection tools	Project HOPE Staff	Day 1 – Day 5
5.	Development of electronic data collection tools	Consultant	Day 1 – Day 5
6.	Training of RAs and field data collectors	Consultant – Key Milestone	Day 6
7.	Field data collection (Quant & Qual)	Project HOPE Staff	Day 7 – Day 14
8.	Supervision of Data Collection	Consultant	Day 7 – Day 14
9.	Quant. Data analysis	Consultant	Day 15 – Day 21
10.	Qual data transcription and validation	Consultant	Day 15 – Day 19
11.	Coding and framework thematic analysis	Consultant	Day 19 – Day 23
12.	Generation of key findings	Consultant	Day 24
13.	Development of report	Consultant – Key Milestone	Day 25 – Day 28
14.	Feedback and report submission	Project HOPE/ Consultant	Day 29
15.	Close-out meeting for the baseline evaluation	Project HOPE/ Consultant	Day 30

CHAPTER THREE: KEY FINDINGS AND IMPLICATIONS

Current state of care access for TB, Pneumonia and Asthma – in selected facilities

Table 3: Summary Table of one-year Case finding at Baseline

LGA/Facility	TB notification	Pneumonia	Asthma
Suleja			
Mamman Gambo MDGs PHC	0	0	0
BHC Dije Bala	3	0	0
Mallam Shehu SDGs PHC	0	0	0
CHC Madalla	3	0	0
CHC Maje	7	3	0
Gurara			
Lambata PHC	4	0	14
Kabo PHC	0	0	0
PHCC Izom	0	0	0
PHCC Tufa	0	17	3
PHCC Lefu	0	6	3
Paikoro			
Model clinic Paiko	7	0	0
PHCC Tutungo	0	0	0
PHCC Tungan Mallam	0	0	0
PHCC Kwakuti	0	0	0
PHCC Kafin-Koro	0	0	0

Health system readiness – qualitative research findings

Gurara Local Government Area

Officer Interviewed, Duration of Stay in the facility and Work Hours

The officers-in-charge in all the 5 PHCs were interviewed. 4 of them except for the OIC for Lambata PHCC which was 4 years in his post, had spent over 10 years in their facility. They all ran services for 24 hours although Lambata PHCC alluded to the fact that they had security challenges with running all round the clock services due to absence of a perimeter fence and lack of electricity and water in the facility.

Staff Strength and cadre in the facilities

4 out of the 5 health facilities had reasonable number of health staff comprising of CHOs, CHEWs, J-CHEWs, lab technicians and health attendants. However, Lambata PHCC had only 5 permanent staff with one currently in school. 3 out of the 5 facilities equally had volunteers including CHIPS which have proved useful in galvanising their community participation in health services.

Facility processes and presence of health insurance that cover services for patients accessing care

Clients obtain cards from the record unit, then move to OPD where details and vital signs are taken. Afterwards, they see the officer on duty for consultation. Following that, those clients that require laboratory investigation (TB) are sent for laboratory test while in 3 out of the 5 facilities, they initiate treatment for asthma and pneumonia clients with antibiotics. The other 2 facilities (PHCC Izom and Lambata PHCC) do not manage asthma and pneumonia patients. The clients sent for laboratory investigation later return to the OPD with their results and are commenced on treatment. Most clients are charged little money because of the drug revolving fund system. TB treatment is free. However, only Kabo PHC had one health insurance service available for their clients.

Lab services and equipment available for TB, Asthma and Pneumonia

2 out of the 5 facilities have functional microscopes (PHCC Izom and PHCC Tufa), but they are not attached to the TB program. They are used for other lab services unrelated to these 3 disease conditions. There are no Genxpert machines, no functional microscopes for the TB program and no spirometers in the facilities. The laboratory services for TB in the LGA are done at General Hospital Suleja and General Hospital Sabon-Wuse. The AFB test is done at FMC Bida. Free X-ray services are available at Alpha Clinics in Gowon Babangida for adults and children whose samples are Genxpert negative but are still having TB symptoms. No stool samples were mentioned in any of the facilities.

"NTBLCP signed an MOU with Alpha Clinic in Gowon Babangida to provide free X-ray services for all presumptive clients (adults and children) who tested Genxpert negative but are still having TB symptoms. The microscope for the program in Dikko facility has been bad; the lens was having problem, and it was picked up and sent to Minna for 1 year as we were told that the Federal Government will repair microscopes. It was later returned as they said that the organisation that promised

to repair it is not yet ready. The lab person in Dikko has been helping us by using his personal microscope to run lab services for us. None of the program microscopes in the PHCs is functional"- TBLS Gurara LGA.

Treatment commodities for TB, Asthma and Pneumonia

3 out of the 5 facilities besides PHCC Izom and PHCC Lambata have antibiotics for managing pneumonia and asthma cases. TB drugs are not usually available in facilities except when they have a positive Tb client that they are managing in the facility. The drugs are all kept in the referral facilities (General Hospital Suleja and General Hospital Sabon-Wuse). None of the facilities has nebulizers or spirometers.

Documentation Tools for TB, Asthma and Pneumonia

4 out of the 5 facilities had presumptive and treatment registers for documentation for their TB clients except PHCC Kabo. All the facilities had OPD and general registers for documentation for asthma and pneumonia cases as there is no specific R & R tool for documenting asthma and pneumonia management within available program tools at the PHC level.

Trainings for management of TB, Asthma and Pneumonia

All the respondents from the facilities except the OIC in Lefu PHC have not received any training for the management of TB, Asthma and Pneumonia. OIC in Lefu received some training in management of TB and pneumonia but it was done a long time ago.

" I attended a training for TB management a long time ago. I have a certificate for it. I also attended a workshop about pneumonia: also, a long time ago. I have not attended any training for asthma management"- OIC Lefu PHCC.

Referral activities in the facility

All the respondents were well knowledgeable about referral processes for clients from their facilities to higher health centers and they all had a protocol for it. However, PHCC Lambata had no referral form in their facility.

Supportive Supervision for the facility

All facilities enjoyed regular supportive supervision (monthly or quarterly) from the LGA (TBLS) and NGOs.

Final comments from the respondents

Generally, they solicited for support in form of diagnostic equipment (Genxpert machines, Spirometers, Stethoscopes, Sphygmomanometers), perimeter fencing and drugs.

"We need support here; as you can see, this facility has no fence, and it affects our work. We also need electricity and water" – OIC Lambata PHCC.

" Patients in Kabo will spend between 4k - 5k on transport to for a visit to the General Hospital in Sabon-Wuse and this limits their interest and participation"- TBLS Gurara LGA.

Suleja Local Government Area

Officer Interviewed, Duration of Stay in the facility and Work Hours

The officers-in-charge and their DOT officers were interviewed simultaneously for all five selected facilities of the LGA. The OICs on the average have spent between 1 -3 years in the facility except for the OIC in Mamman Gambo PHC who had spent 8 years in his facility. Asides Mamman Gambo PHC that runs 13 hours of service, the rest of the facilities run 24-hr service.

Staff Strength and cadre in the facilities

Most of the facilities have CHOs, CHEWs, J-CHEWs and health attendants. 3 out of the 5 facilities have nurses including midwives while only BHC Dije Bala facility has a general practitioner doctor as staff.

Knowledge about facility processes and presence of health insurance that covers services for patients attending the health facility

Clients obtain cards from the record unit, then proceed to OPD where details and vital signs are taken. Afterwards, they see the officer on duty for consultation. Following that, those clients that require laboratory investigation (TB) are sent for laboratory investigations while in 3 out of the 5 facilities, they initiate treatment for asthma and pneumonia clients with antibiotics. The other 2 facilities (CHC Madalla and Mamman Gambo) do not manage asthma and pneumonia patients. The clients sent for laboratory investigation later return to the OPD with their results and are commenced on treatment. Most clients are charged little money because of the drug revolving fund system. TB treatment is free. However, only SDG Mallam Shehu PHC had any health insurance service operational in their facility to cater for the health services offered there.

Lab services and equipment available for TB, Asthma and Pneumonia

There are no Genxpert machines, no microscopes for the TB program and no nebulizers or spirometers in any of the selected facilities. The lab services (TB testing) for TB in the LGA are done at General Hospital Suleja. However, the TBLS Suleja said that 9 PHCs in addition to GH Suleja have functional microscopes for AFB tests in the LGA. No stool samples were mentioned in any of the facilities.

"10 facilities in our LGA run AFB tests; 9 PHCs have functional microscopes while GH Suleja also has one so when they (GH Suleja) are choked, we send them to those other facilities"- TBLS Suleja.

Treatment commodities for TB, Asthma and Pneumonia

CHC Madalla and Mamman Gambo PHCs do not treat asthma and pneumonia cases at all. They refer them to secondary facilities. All the facilities do not have TB drugs. They only get them when they have a positive TB client to manage.

Documentation Tools for TB, Asthma and Pneumonia

4 out of the 5 facilities had presumptive and treatment registers for documentation for their TB clients except SDG Mallam Shehu PHC that does not have a treatment register. All the facilities had OPD and general registers for documentation for asthma and pneumonia cases as there is no specific R & R tool for documenting asthma and pneumonia management within available program tools at the PHC level.

Trainings for management of TB, Asthma and Pneumonia

Apart from the staff at CHC Madalla and SDG Mallam Shehu PHCs that had some training on TB management, there has been no training for staff of the other facilities on management of any of the 3 diseases under review,

Referral activities in the facility

All the respondents were well knowledgeable about referral processes for clients from their facilities to higher health centers and they all had a protocol for it.

"let's say we have a client having high BP and there is proteinuria and that is a sign of preeclampsia. We refer her to see a doctor; including her gestational age and when it started, what we have done despite that, and it persists, and we refer"- OIC BHC DIJE BALA

" Referrals are made for TB samples from PHCs to GH Suleja and in some cases, diagnosed TB clients in GH Suleja are sent to PHCs that are closer to them for TB treatment. We recently organised a meeting between the OICs and the GH Suleja management where referrals were encouraged among the facilities"- TBLS Suleja

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Supportive Supervision for the facility

All facilities enjoyed regular supportive supervision (monthly or quarterly) from the LGA (TBLS) and DSNO.

Final comments from the respondents

Each facility had a different need that they requested support for, ranging from training on management of the disease conditions under review to need for Genxpert machines in their facility. One facility (Mamman Gambo PHC) that was offering less than 24 hr services asked for security to enable them scale-up their services.

“We want to be doing night duty sometimes, but because of the security we don't have, that is why we are referring some of our patients. Because if we are doing night, I know there will not be need for some cases to be referred. Some need 24 hours supervision for in-patients which we cannot provide now”- OIC, MAMMAN GAMBO PHC

"Our documentation tools are manned by volunteers, so they need incentives to encourage them in the work or we risk having the work not done properly"- TBLS Suleja

Paikoro Local Government Area

Officer Interviewed, Duration of Stay in the facility and Work Hours

Different staff (OICs, DOT officer) were interviewed. 3 out of the 5 facilities had spent less than a year except the staff interviewed for Hope Model Clinic who had spent 3 years in that facility and the DOT officer for PHCC Kwakuti who’s 20 years in service. All the facilities run 24 hr services except PHCC Kwakuti and PHC Tutungo who run 8 hrs. (due to lack of staff) and 9 hrs. (due to low patronage) respectively.

Staff Strength and cadre in the facilities

3 out of the 5 facilities had Midwives, CHO, CHEWs and Health attendants. 4 out of the 5 facilities have lab technicians.

Knowledge about facility processes and presence of health insurance that covers services for patients attending the health facility

Clients obtain cards from the record unit, then proceed to OPD where details and vital signs are taken. Afterwards, they see the officer on duty for consultation. Following that, those clients that require laboratory investigation (TB) are sent for laboratory investigations while in all the facilities except PHC Kwakuti, those with asthma and pneumonia are started on treatment with antibiotics. PHC Kwakuti does not manage asthma and pneumonia patients. The clients sent for laboratory investigation later return to the OPD with their results and are commenced on treatment. Clients in

3 out of the 5 facilities are charged little money because of the drug revolving fund system. TB treatment is free. NiCare health insurance scheme is available only in PHC Kwakuti and PHC Kafin koro.

Lab services and equipment available for TB, Asthma and Pneumonia

Use of Genxpert for diagnosing TB happens at the General Hospital and IBB Hospital. Hope Model Clinic and PHCC Kafin-koro have microscopes for AFB tests. All the facilities are familiar with the specimen referral strategy but refer mostly sputum specimen and no stool samples for diagnosing childhood TB. Additionally, PHC Kwakuti refers TB clients instead samples to the secondary facilities.

Treatment commodities for TB, Asthma and Pneumonia

4 out of the 5 facilities do not have consumables for TB; 3 out of the 5 facilities have some consumables for asthma and pneumonia treatment. None of the facilities has nebulizers or spirometers. Only Model Clinic showed all the characteristics of a fully functional DOTS site that offers treatment and TPT services with available consumables and recording and reporting tools.

Documentation Tools for TB, Asthma and Pneumonia

3 out of the 5 facilities do not have R & R tools for documentation of TB management. OPD registers are available in all the facilities for documenting asthma and pneumonia cases as there is no specific R & R tool for documenting asthma and pneumonia management within available program tools at the PHC level.

Trainings for management of TB, Asthma and Pneumonia

There has been no recent training for staff for the management of these disease conditions with the most recent training being on TB management as reported by Model Clinic OIC and it held in 2022. Overall, there is significant training need across this LGA on these conditions

Referral activities in the facility

Referral protocol exists for the facilities, and they usually refer complicated cases to higher health centers. Although some facilities refer presumptive TB clients instead of TB samples (PHC Kwakuti)

Supportive Supervision for the facility

All the facilities enjoy supportive supervision (monthly or quarterly) from TBLS and occasionally, from some NGOs as well as the state TB team and LGA DSNOs.

Final comments from the respondents

Different facilities solicited for different assistance – mentorship, provision of mobility equipment for outreach activities.

Patient satisfaction survey – person-centered care

In this baseline Patient Satisfaction Survey, 64 patients from 15 facilities were profiled for satisfaction against 10 thematic areas which include:

1. Ease of making appointments for checkups (physical exams, routine follow-up appointments)
2. Ease of accessing healthcare services when sick or unwell
3. Ease in contacting your doctor/healthcare worker when the facility is closed (nights and weekends)
4. Waiting time in our health facility
5. Ease in obtaining follow-up information and care (test results, medicines, care instructions)
6. Overall medical care at your doctor's/healthcare worker's office
7. Our facility's appearance
8. Our facility's convenience (location, hours)
9. The way we teach you about improving your health
10. The way your doctor/healthcare worker involves other doctors/healthcare workers and caregivers in your care when needed

Participants demographic characteristics

Table 4: Demographic Characteristics for Patient Satisfaction Survey

Demographic Characteristics	**Category**	**Frequency (n)**	**Percentage**
Gender	Male	18	28%
	Female	46	72%
Age group	18-24	16	25%
	25-34	34	53%
	35-44	8	13%
	> 45	6	9%
Lowest age	18		
Highest age	78		
Average age	30		
Facility usage	< 1 year	12	19%
	1-4 years	14	22%
	5-9 years	13	21%
	>10 years	24	38%
Visits in 12 months	1 visit	3	5%
	2 visits	7	11%
	3 visits	11	17%
	4 visits	6	9%
	5 visits	8	13%
	+6 visits	29	45%

A total of 64 patients took part in the Patient Satisfaction Survey most of which are female (46: 72%). Most participants fall between the age group 25 – 34 (53%), the youngest 18 years, and the oldest 78 with an average age of 30. Of the 64 participants, only 19% are new users

while the rest have used the facility for more than one year and 45% of which have visited the facility more than six (6) times within the past 12 months.

Description of thematic satisfaction profile

The satisfaction profile measured based on ten (10) thematic areas outlined in this baseline evaluation reveals 100% patient satisfaction in some facilities in Paikoro and Gurara LGA listed below:

- Gurara PHC Tufa
- Model Clinic Paiko
- PHCC Tutungo
- PHCC Tungan Mallam
- PHCC Kwakuti
- PHCC Kabo Gurara
- PHCC Kafin-koro

These facilities represent 46% of the total facilities evaluated at baseline. Other facilities which report patient dissatisfaction based on the thematic areas outlined in this baseline evaluation are shown in the table below:

Table 5: Patient satisfaction profile for Patient Satisfaction Survey

Facilities	1. Ease of making appointment for checkups (physical exams, routine follow-up appointments)?	2. Ease of accessing healthcare services when sick or unwell?	3. Ease in contacting your doctor/ healthcare worker when the facility is closed (nights and weekends)?	4. Waiting time in our health facility?	5. Ease in obtaining follow-up information and care (test results, medicines, care instructions)?	6. Overall medical care at your doctor's/ healthcare worker's office?	7. Our office's appearance?	8. Our office's convenience (location, hours)?	9. The way we teach you about improving your health?	10. The way your doctor/ healthcare worker involves other doctors/ healthcare workers and caregivers in your care when needed?	Total patient diss-atisfaction per facility
Bhu Dije Bala					1		2				3
Chc Madala							2				2
Gurara PHC Lambata		1	1	2	1		2	2			9
Lefu Health Facility	1		1	1			1	1			5
MDGS Mamman Gambo	1						2	1			4
PHC Izom Gurara			2			1	5	3			11
SDGS Mallam Ashehu						1	2	1			4
CHC Maje		1	1		1		1	1			5
Total dissatisfaction across thematic areas	2	2	5	3	3	2	17	9	0	0	43

Of the eight (8) facilities that recorded one or more patient dissatisfaction across the 10 thematic areas, PHC Izom Gurara shows the worst satisfaction coming highest with a total of 11 patient dissatisfaction, this is followed by Gurara PHC Lambata (9). Lefu health facility and PHC Maje came 3rd in patients' dissatisfaction rating recording 5 dissatisfactions each across thematic areas of this baseline satisfaction survey.

At PHC Izom Gurara, (5/11) respondents reported dissatisfaction with the overall facility appearance, 3/11 were dissatisfied with the facility location and working hours, 2/11 patients are recorded to have problems contacting their doctor/healthcare worker when the facility is closed during the night or at weekends, while 1 respondent is dissatisfied with the overall medical care when interacting with doctors/healthcare workers at the facility.

PHC Lambata shows a wider dissatisfaction across thematic areas (6 out of the 10 thematic areas) with one or more participant's reporting dissatisfaction with the following thematic areas:

- Ease of accessing healthcare services when sick or unwell
- Ease of contacting doctor/healthcare worker when the facility is closed (nights and weekends)
- Waiting time at the health facility
- Ease of obtaining follow-up information and care (test results, medicines, care instructions)
- Overall facility appearance
- Facility location and working hours

In Lefu health facility, dissatisfaction was recorded along the thematic areas of:

- Ease of making appointments for checkups (physical exams, routine follow-up appointments)
- Ease of contacting doctor/healthcare worker when the facility is closed (nights and weekends)
- Waiting time at the health facility

- Overall facility appearance
- Facility location and working hours

While in CHC Maje, dissatisfaction was along

- Ease of accessing healthcare services when sick or unwell
- Ease of contacting doctor/healthcare worker when the facility is closed (nights and weekends)
- Ease of obtaining follow-up information and care (test results, medicines, care instructions)
- Overall facility appearance
- Facility location and working hours

Other remarks from patients revealing quality of care at facilities

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"We need waiting area" - (MDGS Mamman Gambo)

"Patient is satisfied with some services rendered, but complained about late resumption of some staffs" - (Gurara PHCC Lambata)

"I want drugs to be available all the time, am happy with the solar available now anytime I come my child can be immunized." - (MDGS Mamman Gambo)

"Hospital space is too small." - (PHC Izom Gurara LGA)

"We need more drugs here, sometimes he writes for us to go and buy" – (PHC Izom Gurara LGA)

"The location of the hospital is far from town" – (Gurara PHCC Lambata)

"The facility needs to improve on neatness" – (PHCC Kafankoro)

"Lack of water supply" – (CHC Madala)

"The Hospital is too far from the town making the patients spend a lot of money" – (CHC Maje)

CHAPTER FOUR: DISCUSSION

The findings from the PHN Baseline Assessment Report reveal critical gaps in Niger State's capacity to address tuberculosis (TB), pneumonia, and asthma, undermining Nigeria's progress toward SDG3 (health for all). Despite Nigeria's progress in TB case notification nationally, Niger State lags significantly, with a treatment coverage rate of 65% (vs. 74% nationally) and over 5,400 undiagnosed TB cases annually(17). This gap perpetuates community transmission, as each undiagnosed TB patient can infect 10–15 individuals yearly. Childhood TB remains severely underprioritized, constituting only 4–6% of cases—far below the 15% target—highlighting missed opportunities for early diagnosis in high-risk populations(25). Pneumonia, a leading cause of under-five mortality, is exacerbated by low vaccine coverage (39% in Niger vs. 70% nationally) and fragmented integration with TB services. Asthma care, meanwhile, suffers from near-total data invisibility, highlighting a systemic neglect of non-communicable respiratory diseases.

Health system weaknesses in Niger State exacerbate these challenges. Diagnostic infrastructure is critically deficient in the areas of interest; none of the facilities possess GenXpert machines, 46% of them lack functional microscopes, and essential tools like spirometers or nebulizers are absent which delays diagnosis thereby compromising treatment. The underdiagnosis of childhood TB is an important gap seen in the baseline assessment. Children often present with non-specific symptoms requiring specialized tools like stool-based testing, which were rarely utilized. Staff training gaps are equally alarming, with 80% of healthcare workers lacking updated training in TB, pneumonia, or asthma management. Patient satisfaction surveys revealed a mixed picture: while 46% of facilities achieved 100% satisfaction, others faced complaints (notably in Gurara's PHC Izom and Lambata) over dilapidated infrastructure, long wait times, and inadequate after-hours access. These disparities underscore inequities in primary healthcare resourcing, particularly in rural LGAs like Gurara, where patients incur prohibitive transport costs (₦4,000–5,000) to access healthcare which risks deterring care-seeking, worsening disease transmission (TB spread) and increasing morbidity from preventable and curable illnesses (details contained in supplementary files).

The report's recommendations—such as adopting a hub-and-spoke model to centralize advanced diagnostics and training resources in "Star PHCs", ensuring equitable access. This approach has succeeded in similar contexts, by strengthening referral networks. The prioritization of childhood TB diagnostics (e.g., scaling up of stool testing) and preventive therapy (TPT) for childhood contacts could close TB detection gaps while integrating TB screening into maternal and child health programs

is a practicable solution. However, success hinges on addressing systemic barriers; securing funding for equipment, prioritizing staff training, erratic drug supplies, poor data integration and strengthening policy alignment with national Integrated Management of Childhood Illness (IMCI) guidelines(26). Multi-sector collaboration, including public-private partnerships for diagnostic access will be vital in addressing these challenges. Ultimately, these findings underscore the need for integrated, patient-centered strategies to transform respiratory care and accelerate progress toward national and global health targets.

Table 6: Summary of availability and quality of TAP services in the selected health facilities

	Suleja					Gurara					Paikoro				
	Mamman Gambo MDGs PHC	BHC Dije Bala	Mallam Shehu SDGs PHC	CHC Madalla	CHC Maje	Lambata PHC	Kabo PHC	PHCC Izom	PHCC Tufa	PHCC Lefu	Model clinic Paiko	PHCC Tutungo	PHCC Tungan Mallam	PHCC Kwakuti	PHCC Kafin-Koro
TB services available on site															
TB medications available on site															
TPT regimens available on site															
R&R tools for TB services															
HCW trained in TB care															
Pneumonia services available onsite															
Pneumonia medications onsite															
HCW trained in pneumonia care															
Asthma services available onsite															
Asthma medication available onsite															
HCW trained in care for Asthma															
Nebulizers available on site															
Functional microscope at facility lab															
24-hour service available															
Health Insurance available															
Client dissatisfaction	4	3	4	2	5	9		11		5					

CHAPTER FIVE: KEY ACTIONABLE RECCOMENDATIONS

The landscape for the TB REACH Wave 11 project in the selected LGAs of Niger State presents a unique opportunity for impact and program improvement if the following recommendations are addressed. Within the timeframe of the TB REACH project PHN can support the State TB programme in these key areas.

Increasing case finding for TB, Pneumonia, and Asthma

Case finding

From the baseline assessment the issue of rapidly improving case finding and treatment for all the three diseases is paramount. The three LGAs have low TB treatment coverage with most of the chosen facilities not reporting even a single case for a whole year. Similarly, Pneumonia and Asthma numbers are low. There is need for demand creation activities and TB screening in different settings within the LGAs using all means available such as ANC, Immunization clinics, house-to-house vaccination campaigns, improved contact tracing, and enhanced diagnostic access.

Client flow – community and health facility

We reckon that careful consideration needs to be given to the proposed flow of clients from communities through screening and referral to the health facilities for service delivery, similarly clients visiting the facilities for other services can also be linked to the integrated services for screening especially considering the growing importance of asymptomatic TB in Nigeria.

Service delivery (re)arrangements

Hub and Spoke approach to upgrade service delivery in the LGAs

From the baseline evaluation, each facility has a unique problem that it may be impossible to address all of them. We, therefore, recommend an adoption of five facilities per LGA as STAR PHCs where all intended programs in the TB REACH Wave 11 project are fully functional. This will include all services that are needed for TB, Asthma and Pneumonia management. These Star PHCs will then serve as mini hubs for the other PHCs where they can refer their patients for the duration of the program. This will ensure that all the targets of the program are met.

Strengthening of Referral Systems for TB Samples

There is also need for strengthening of referral systems for TB samples in Niger State. Sputum and stool samples as well as TB treatment monitoring with AFB testing require strengthening to maximize present gains. Additionally, the two-way referral pathway needs to be reviewed as most PHCs informed us that referral centers do not usually send them feedback concerning their referred patients.

Childhood TB and TPT

Emphasis on improving childhood TB diagnosis

One of the most important findings in our baseline evaluation was the near absence of childhood diagnosis. Nearly all the facilities did not mention anything about childhood diagnosis during the evaluation showing that they may not be aware of it, or it is a neglected area in the TB program in Niger State. As shown in the table 1 childhood TB contribution across the LGAs ranges between 4-6% as against the global and National benchmark of 10-12%. With the presence of TB LAMP machines in Niger State, this is an area that can be enhanced with this project with greater emphasis on stool sample collection from presumptive children and improvement of its referral process to increase childhood diagnosis of TB.

TPT Scale-up

One aspect of the TB program that will need to be scaled up is TPT initiation and completion among contacts of diagnosed TB clients. Contact tracing and TPT initiation and completion were rarely discussed by the respondents in the baseline suggesting that it is an area that receives little attention and this needs to be addressed. This will also involve strengthening the supply chain for the different regimen used for TPT to ensure that this matches the expected surge from the demand creation the project will attract.

Capacitating the health system

Training for Staff

There is a need for targeted training for the staff of the selected PHCs. One common finding was that training for TB, Asthma and Pneumonia are not regularly conducted for the staff. These training courses would offer opportunities to address knowledge gaps in disease management, share the vision for Wave 11 as well as set early guidelines for achieving the project targets.

The Integrated Management of Childhood Illnesses (IMCI) guidelines, the national TB programme training toolkit attached in the appendix can be used as guides to facilitate the trainings.

De Novo Documentation tools

There was a general absence of R&R tools for TB in many facilities and PHN can liaise wth the State TB logistician to ensure adequate supply of the tools to the facilities coupled with training on how to use them. Equally important is the absence of any tool currently to adequately capture the care cascade for Pneumonia and Asthma at the PHC level in Nigeria. The NHMIS tools only capture Under-5 Pneumonia diagnosis but not the full cascade and do not capture Asthma. We suggest that a register to capture the TB-Pneumonia-Asthma cascades be developed with a Monthly Summary Form that can feed into the HMIS system in the future.

Equipment and Consumables Stock-up

There are gaps in the facilities in terms of available equipment and consumables needed for the management of TB, Asthma and Pneumonia. There is need to provide nebulizers, spirometers and pulse oximeters for these facilities as well as interface with the State program to ensure adequate and regular supply of antibiotics, hypodermic syringes to the facilities. Additionally, there is need to repair existing microscopes within the TB program to facilitate effective AFB testing for the monitoring of TB treatment for positive TB clients.

Recommendations from PSS:

- Given the importance Primary health care as sole source of care for remote rural communities, usage does not necessarily reflect satisfaction but a lack of options. facilities with high usage still need health system strengthening to improve service delivery.
- Improved service provision to ensure shorter patient journeys in seeking health care at the facility level.
- For infectious diseases like tuberculosis, there is a need to reduce patient waiting time at the facility level to reduce nosocomial infection: there is therefore need to introduce a triage system.
- Modalities should be put in place to ensure service provision into the weekend and at night

- There is a need to have a doctor/healthcare worker on-call during weekends and at night or at least a referral arrangement to ensure emergencies are catered for adequately.

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Luka Israel

IN MEMORIAM

A soldier has fallen
A warrior is gone
Like a wind that passes
With strength that can move objects in its path
Mallam Usman was a force of nature
Diligent in his task
Dedicated to his craft
He gave his all for his job
Sadly, like is the way of all men
He has exited the scene
But he will not be forgotten
For his works will keep speaking for him
Adieu Great man!

Post humous ode to the TBLS of Paikoro LGA Mallam Usman who passed on during the data collection period for this assessment.

REFERENCES

1. WHO releases new global lists of high-burden countries for TB, HIV-associated TB and drug-resistant TB [Internet]. [cited 2024 Oct 1]. Available from: https://www.who.int/news/item/17-06-2021-who-releases-new-global-lists-of-high-burden-countries-for-tb-hiv-associated-tb-and-drug-resistant-tb

2. Global Tuberculosis Report 2024 [Internet]. [cited 2025 Feb 3]. Available from: https://www.who.int/teams/global-tuberculosis-programme/tb-reports/global-tuberculosis-report-2024

3. World Health Organization. Global tuberculosis report 2019 [Internet]. [cited 2023 Sep 7]. Available from: https://www.who.int/publications-detail-redirect/9789241565714

4. Global tuberculosis report 2020 [Internet]. [cited 2022 Nov 27]. Available from: https://www.who.int/publications-detail-redirect/9789240013131

5. World Health Organization. Global Tuberculosis Report 2021 [Internet]. [cited 2022 Nov 27]. Available from: https://www.who.int/teams/global-tuberculosis-programme/tb-reports/global-tuberculosis-report-2021

6. Global Tuberculosis Report 2022 [Internet]. [cited 2022 Nov 27]. Available from: https://www.who.int/teams/global-tuberculosis-programme/tb-reports/global-tuberculosis-report-2022

7. Global Tuberculosis Report 2023 [Internet]. [cited 2024 Oct 1]. Available from: https://www.who.int/teams/global-tuberculosis-programme/tb-reports/global-tuberculosis-report-2023

8. Cui Z, Lin D, Chongsuvivatwong V, Graviss EA, Chaiprasert A, Palittapongarnpim P, et al. Hot and Cold Spot Areas of Household Tuberculosis Transmission in Southern China: Effects of Socio-Economic Status and Mycobacterium tuberculosis Genotypes. Int J Environ Res Public Health. 2019 May 27;16(10).

9. Nigeria-equity-profile-nutrition.pdf.pdf [Internet]. [cited 2025 Mar 27]. Available from: https://www.unicef.org/nigeria/media/1646/file/%20Nigeria-equity-profile-nutrition.pdf.pdf

10. Nutrition | UNICEF Nigeria [Internet]. [cited 2025 Mar 27]. Available from: https://www.unicef.org/nigeria/nutrition

11. Wonodi C, Obi-Jeff C, Falade A, Watkins K, Omokore O. Pneumonia in Nigeria: The way forward. Pediatric Pulmonology. 2020 Jun 1;55.

12. King C, Siddle M, Adams O, Ahmar S, Ahmed T, Bakare AA, et al. Prevalence of pneumonia and malnutrition among children in Jigawa state, Nigeria: a community-based clinical screening study. bmjpo. 2022 Oct;6(1):e001640.

13. Iuliano A, Aranda Z, Colbourn T, Agwai IC, Bahiru S, Bakare AA, et al. The burden and risks of pediatric pneumonia in Nigeria: A desk-based review of existing literature and data. Pediatric

Pulmonology [Internet]. 2020 Jun [cited 2025 Mar 27];55(S1). Available from: https://onlinelibrary.wiley.com/doi/10.1002/ppul.24626

14. Reports | National Bureau of Statistics [Internet]. [cited 2025 Mar 27]. Available from: https://www.nigerianstat.gov.ng/elibrary/read/1241422

15. Iuliano A, Aranda Z, Colbourn T, Agwai IC, Bahiru S, Bakare AA, et al. The burden and risks of pediatric pneumonia in Nigeria: A desk-based review of existing literature and data. Pediatric Pulmonology [Internet]. 2020 Jun [cited 2025 Mar 27];55(S1). Available from: https://onlinelibrary.wiley.com/doi/10.1002/ppul.24626

16. National_Integrated_Pneumonia_Control_Strategy_Implementation_Plan.pdf [Internet]. [cited 2025 Mar 27]. Available from: https://stoppneumonia.org/wp-content/uploads/2020/02/National_Integrated_Pneumonia_Control_Strategy_Implementation_Plan.pdf

17. NTBLCP FM of H. Anual Report of the National Tuberculosis Leprosy and Buruli Ulcer Control Programme. Abuja; 2024.

18. National Strategic Plan | NTBLCP | National Tuberculosis & Leprosy Control Programme [Internet]. 2023 [cited 2025 Mar 27]. Available from: https://ntblcp.org.ng/resources/national-strategic-plan/

19. Report of the Joint United Nations High Leve lMission on Non-communicable Diseases andTuberculosis [Internet]. [cited 2025 Mar 27]. Available from: https://uniatf.who.int/publications/m/item/report-of-the-joint-united-nations-high-level-mission-on-non-communicable-diseases-and-tuberculosis

20. Practical approach to lung health : manual initiating PAL implementation [Internet]. [cited 2025 Mar 27]. Available from: https://www.who.int/publications/i/item/WHO-HTM-TB-2008.410

21. The End TB Strategy [Internet]. [cited 2025 Mar 27]. Available from: https://www.who.int/teams/global-tuberculosis-programme/the-end-tb-strategy

22. About Niger [Internet]. Niger State Official Website. 2024 [cited 2025 Mar 27]. Available from: https://nigerstate.gov.ng/about-niger/

23. Federal Ministry of Health. National Health Facility Registry. hfr site:health.gov.ng;

24. Maternal, Neo-natal & Child Health [Internet]. RAiSE Foundation. 2021 [cited 2025 Mar 27]. Available from: https://raisefoundation.org.ng/maternal-neo-natal-child-health/

25. Ugwu C, Chukwulobelu U, Okeke E, Igboekwu C, Onyima A, Ibeziako V, et al. Integrating TB screening into house-to-house polio vaccination campaigns. public health action. 2023 Mar 21;13(1):7–11.

26. Child Health and Development [Internet]. [cited 2025 Mar 27]. Available from: https://www.who.int/teams/maternal-newborn-child-adolescent-health-and-ageing/child-health/integrated-management-of-childhood-illness

APPENDICES

1. Informed Consent Form for Baseline Evaluation for Facility TB, Asthma, And Pneumonia Service Provision
2. Qualitative interview guide (for facility HCWs)
3. Qualitative interview guide (for TBLSs)
4. Quantitative data collection tool for facility assessment
5. Patient Satisfaction Survey

SUPPLEMENTARY MATERIALS

1. Qualitative framework synthesis from all facilities
2. Availability and quality of TAP services at the selected health facilities
3. PowerPoint Slide Deck of the report summary

Informed Consent Form

BASELINE EVALUATION FOR FACILITY TB, ASTHMA, AND PNEUMONIA SERVICE PROVISION

This study is a baseline evaluation of treatment and care for Tuberculosis, Asthma, and Pneumonia in selected facilities in Sulejah, Piakoro, and Gurara LGAs of Niger State Nigeria. We will also examine the accessibility and usability of services for this disease condition in your settings.

If you agree to participate in this Key In-depth Interview (KII), you will answer questions related to your experience with these disease conditions. The interview will last approximately 30–60 minutes.

Both discussions and interviews will be recorded (audio only) to ensure accurate data collection. Your identity will remain confidential, and no names or personal identifiers will be used in any report or publication resulting from the study.

Risks: The study poses no risk to you and shall not, research procedure is not expected to expose you to any physical or psychological harm. Your participation in this research will not cost you anything.

Benefits: While there is no direct benefit to you for participating, your input will help improve the design, implementation, and effectiveness of the TB REACH WAVE 11 project in you settings.

Voluntary Participation: Your participation in this study is completely voluntary. You may refuse to participate or withdraw at any time without penalty or loss of benefits to which you are otherwise entitled. Refusing to participate will not affect your access to health services or your relationship with healthcare providers.

Confidentiality: All information provided during this study will be kept confidential. Audio recordings will be stored securely and will only be accessible to the research team. Data will be anonymized, meaning your name or other identifying details will not appear in any reports or presentations.

Compensation: You will not be paid any fees for participating in the research.

Statement of person Obtaining Informed Consent:

I have fully explained this research to _____ and have given sufficient information, including about risks and benefits, to make an informed decision.

Date: _____ Signature: _____

Name: _____

Statement of the person giving consent:

I have read the description of the research or have had it translated into a language I understand. I have also talked it over with the health staff to my satisfaction.

Date: _____ Signature/ Thumb print: _____

Name: _____

Contact information of Research/Project Supervisor:

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Qualitative interview guide (for facility HCWs)

Objectives of the assessment:

1. To determine the state of indicators of care services for TB, Asthma, and Pneumonia at the selected health facilities in Niger state
2. To explore the health system related issues affecting care and treatment services for TB, Asthma, and Pneumonia at the selected health facilities in Niger state
3. To gauge the level of satisfaction among patients and clients who accessed TB, Asthma and Pneumonia related services at the selected health facilities

Methods:

The baseline assessment will adopt a mixed methods approach comprising quantitative data abstraction of key indicators, qualitative exploration of health system-related aspects of care and a patient satisfaction survey.

Qualitative interview guide (for facility HCWs)

1. Introduction: Can you tell us your age, sex, and professional cadre?
2. For how long have you worked in this health facility?
3. At what times can a patient access service in this facility? (*probe for how many days a week facility opens, do they run 24 hours services, do the staff reside in the facility*)
4. What are the various kinds of health staff working in this hospital? (*probe for paediatricians, pulmonologists, doctors, nurses, CHOs, CHEWs, JCHEWs, health attendants, health volunteers, CHIPS, community informants etc.*)
5. Can you describe the processes an individual that visits the facility passes through to get health services? (*probe for points of payment, user fees and purchase of medicines etc.*)
    a. TB
    b. Pneumonia
    c. Asthma
    d. Probe for mental health services
6. Can you talk to me about the laboratory services for TB/Pneumonia/Asthma which are offered in your facility? (*probe for presence of lab services onsite or by sample or patient referral, how they diagnose, monitor*)

7. What equipment is available for these laboratory services for TB/Pneumonia/Asthma in your facility and how often do these services run? (*probe specifically for functional stethoscopes, Genexpert, Trunat, TB LAMP, LF-LAM, Spirometry etc)*
8. Describe the treatment facilities/commodities for these diseases: TB, Asthma and Pneumonia in this facility (*probe for TB medicines, antibiotics for Pneumonia, salbutamol/Ventolin, ipratropium bromide, other medicines, ask for nebulizer and nebules*)
9. Are there registers and documentation tools to cover TB, Asthma and Pneumonia services? (*probe for NHMIS registers, TB service registers etc*)
10. Can you describe the trainings you have participated as a health officer involved in TB/Pneumonia/Asthma services and how often have they held? (*probe for specific training on how to use available equipment: spirometer, nebulizer, administer the medicines, document in registers, and other tools*)
11. How does referral work in the facility? Can you tell us about a situation where you had to refer case(s) that are complicated beyond what can be handled at this facility? (*probe for linkages with general or tertiary hospitals nearby*)
12. Is there supportive supervisory support for the staff in this facility? (*probe for the TBLS supervision, DSNO supervision, other state supportive supervision specifically for TB asthma and pneumonia*)
13. Do you have any other thing that you will wish to tell me as we conclude this discussion?

Qualitative interview guide (for TBLSs)

1. Introduction: Can you tell us your age, sex, and professional cadre?
2. For how long have you worked as the TBLS in this LGA and what facilities are under your supervision?
3. At what time(s) can a patient access TB services within the facilities you oversee? (*probe for how many days in a week these facilities under his/her supervision open, do they run 24 hours services, do the staff reside in the facility*)
4. What are the various kinds of health staff working in these hospitals? (*probe for paediatricians, pulmonologists, doctors, nurses, CHOs, CHEWs, JCHEWs, health attendants, health volunteers, CHIPS, community informants etc.*)

5. Can you talk to me about the TB laboratory services offered in the facilities you supervise? (*probe for presence of lab services onsite or by sample or patient referral, how they diagnose, monitor*)
6. What equipment are available for these TB laboratory services in these facilities and how often do these services run? (*probe specifically for functional Genexpert, Trunat, TB LAMP, LF-LAM, etc)*
7. Describe the treatment options/commodities for TB in these facilities (*probe for TB medicines*)
8. Are there registers and documentation tools to cover TB services at these facilities? (*probe for TB service registers etc*)
9. Can you describe the training you have participated in as a health officer involved in TB services? (*probe frequency of such training, specific training on how to use available equipment, administer treatment, documentation, quarterly report, and use of other tools*)
10. How does referral work in these facilities? *(Probe tell us about a situation where you had to follow-up a case(s) for referral that are complicated beyond what can be handled at these facilities? probe for linkages with general or tertiary hospitals nearby*)
11. What does your supportive supervision of these facilities involve?
12. Is there something else this interview did not cover that you want me to know?

Baseline Quantitative Tool for Data Collection

Facility ID:

S/No	Indicator (Jul – Dec 2023 & Jan – Jun 2024)	Male		Female		Total
	TB	< 15	≥ 15	< 15	≥ 15	
1.1	Total number of clients for clinic attendance					
1.2.	Number of people screened					
1.3.	Number of presumptive persons with TB identified					
1.4.	Number of people tested/evaluated for TB					
1.5.	Number of people diagnosed with bacteriologically confirmed TB (Xpert MTB/RIF; TB LAMP; TrueNat)					
1.6.	Number of people with all forms of TB					
1.7.	Number of people with TB initiated on treatment					
1.8.	Number of people with TB successfully completing treatment					
1.9.	Number of people with follow-up test done at month 2, 5 & 6 respectively					
2.0.	Proportion of bacteriologically diagnosed index TB patients during the review period who had their household contacts traced					
	RMNCH					
2.1.	Number of pregnant women seen/attended the clinic					
2.2.	Number of people eligible for (TB) screening					
2.3.	Number of people screened (For TB)					
2.4.	Number of people identified as presumptives/referred for further evaluation					

2.5.	Number of people who had further evaluation/tests done					
2.6.	Number of people that received a confirmatory diagnosis of the disease					
2.7.	Number of people with “comorbidity/condition” that received specific treatment of care					
2.8.	Number of people that received complementary service/treatment in addition to 2.4 e.g. nutrition support, cash transfer (social protection)					
	ASTHMA					
2.9.	Number of people eligible for screening					
3.0.	Number of people screened					
3.1.	Number of people identified/referred for further evaluation					
3.2.	Number of people who did undergo evaluation/tests (Spirometry; Peak Flow; Meters, etc)					
3.3.	Number of people who received a confirmatory diagnosis of the disease					
3.4.	Number of people with “comorbidity/condition” that receive specific treatment or care					
3.5.	Number of people that received complementary service/treatment in addition to 2.4. e.g. nutrition support, cash transfer					
3.6.	Number of people with complicated disease condition referred for further evaluation					
	PNEUMONIA					
3.7.	Number of people eligible for screening					
3.8.	Number of people screened					
3.9.	Number of people identified/referred for further evaluation					

4.0.	Number of people who did undergo evaluation/tests using Spirometer and Peak Flow meter					
4.1.	Number of people that received a confirmatory diagnosis of the disease					
4.2.	Number of people with “comorbidity/condition” that receive specific treatment or care					
4.3.	Number of people that receive complementary service/treatment in addition to 2.4. e.g. nutrition support, cash transfer					
4.4.	Number of people with complicated disease condition referred for further evaluation					
	OTHERS					
	What is your OPD Attendance					
	Antenatal Attendance					
	PNC Attendance					

Facility Assessment

S/No	Facility Assessment	Yes	No
1.1	Does the facility run 24h services?		
1.2.	What is the number of staff working at this facility?		
1.3.	Have the staff received relevant training?		
1.4.	Does the facility test for TB, Asthma, and pneumonia?		
1.5.	Are medications available for the treatment of TB, Asthma, and pneumonia?		
1.6.	Does the facility offer DOT services?		
1.7.	Number of DOT officers		

PATIENT SATISFACTION SURVEY

Health facility:

_____

We are interested in receiving your feedback about the care provided at our health facility. Please take a few minutes to complete this survey and return it to us. Your responses are important to us.

Please circle your responses.

How satisfied are you with the following?	Extremely Dissatisfied	Very Dissatisfied	Satisfied	Very Satisfied	Extremely Satisfied
1. Ease of making appointment for checkups (physical exams, routine follow-up appointments)?	1	2	3	4	5
2. Ease of making appointments for sickness?	1	2	3	4	5
3. Ease in contacting your doctor/healthcare worker when the facility is closed (nights and weekends)?	1	2	3	4	5
4. Waiting time in our health facility?	1	2	3	4	5
5. Ease in obtaining follow-up information and care (test results, medicines, care instructions)?	1	2	3	4	5
6. Overall medical care at your doctor's/healthcare worker's office?	1	2	3	4	5
7. Our facility's appearance?	1	2	3	4	5
8. Our facility's convenience (location, hours)?	1	2	3	4	5
9. The way we teach you about improving your health?	1	2	3	4	5
10. The way your doctor/healthcare worker involves other doctors/healthcare workers and caregivers in your care when needed?	1	2	3	4	5
How caring would you say the following individuals are?	**Extremely Uncaring**	**Very Uncaring**	**Caring**	**Very Caring**	**Extremely Caring**
13. Your doctor?	1	2	3	4	5
14. Our medical staff?	1	2	3	4	5
15. Our office staff?	1	2	3	4	5
	Definitely Not	**Probably Not**	**Not Sure**	**Probably**	**Definitely**
16. Would your recommend your doctor to your family or friends?	1	2	3	4	5

These questions pertain to the patient to whom this survey was addressed:

17. Age in years:

<1	10-19	40-49	66-75
1-4	20-29	50-59	75+
5-9	30-39	60-65	

18. Gender: Male Female

19. How long have you been a patient in this health facility?

Less than 1 year 1-4 years 5-9 years 10 years or more

20. How many times have you visited this health facility in the past 12 months for medical care? | 0 | 1 |l 2 | 3 | 4 | 5 | 6 or more

Comments: