Spot to Tent Onion Model of Contact Investigation (STOM)
Project Final Report

Month/Quarter / Year	2022 - 2023
Country	Nigeria
State(s)	Akwa Ibom
Project Name	Spot to Tent Onion Model of Contact Investigation (STOM)
Project timeframe	October 2022 – November 2023
Reporting period	End of Project Final Report

Table of Contents

ACRONYMS

CBT	Competency Based Training
CHW	Community Health Worker
DOTS	Directly Observed Treatment Shortcourse
GPS	Global Positioning System
HF	Health Facility
HR	Human Resources
LGAs	Local Government Areas
ICF	Intensified Case Finding
M&E	Monitoring and Evaluation
MoH	Ministry of Health
NGO	Non-Governmental Organization
NSP	National Strategic Plan
NTBCLP	National Tuberculosis, Leprosy and Buruli Ulcer Control Program
NTP	National TB Program
ODK	Open Data Kit
Q1	Quarter One
Q2	Quarter Two
Q3	Quarter Three
SOP	Standard Operating Procedure
STP	State TB Program
TB CI	Tuberculosis Contact Investigation
TB LON	Tuberculosis Local Organization Network
TBLS	TB Local Government Area Supervisor
TPT	TB Preventive Therapy
USAID	United States Agency for International Development

I EXECUTIVE SUMMARY

Through a grant from the USAID-funded Tuberculosis Implementation Framework Agreement (TIFA) project, implemented by JSI Research and Training Institute, KNCV Nigeria implements the Spot to Tent Onion Model of Contact Investigation (STOM) project which employs a systematic approach of TB contact investigation to actively screen household contacts of index TB cases identified from treatment registers of DOT facilities across the thirty-one (31) Local Government Areas (LGAs) of Akwa Ibom state while placing eligible household contacts on TPT.

This STOM approach includes a "spot" of index patient household contact investigation and a "tent" of house-to-house screening of extended contacts of the index TB case within a 2-km radius of the spot location. This strategy helps reduce stigma and avoid any suspicion on why the index patient's household was visited to facilitate retrieval of missing and newly identified TB cases for linkage to care and treatment. Through innovative Competency Based Training (CBT) community health workers (CHWs) were trained on TB contact Investigation using the spot to tent onion model, managing contacts of confirmed Index TB patients and TB Preventive Therapy in contacts of TB cases. The CBT learning module ensures participants improve knowledge and competences on how to:1). Define contacts of TB patient 2). Identify priority contacts to be screened for TB 3). Describe how to manage contacts of TB patients 4). List the various TPT regimen 5). Administer and monitor TPT 6). Manage TPT interruption 7). Identify, document and manage adverse effects of TPT 8). Provide adherence support for TPT.

Objectives of the STOM project include.

- To develop policy documents and tools for contact tracing
- To improve the capacity of CHW on Contact Investigation through Competency Based Training approach.
- To increase proportion of bacteriologically positive TB cases that had their contacts investigated for TB (index patient coverage) from 67% to 80% in line with the NSP.
- To increase community case finding through the spot to tent onion model from 8% to 20%.
- To scale up TB preventive Treatment from 2% to at least 50% of eligible contacts of bacteriologically positive TB cases

The project which commenced on October 1st, 2022, spanned through November 2023 within a 14-month period covering the start-up, field activity and close-out phases. Leveraging the innovative spot to tent onion model, the project achieved significant success in identifying, screening and diagnosing TB cases across private and public facilities in the state using a community-based approach for referrals and linkages.

In the startup phase, robust advocacy and engagement strategies were employed to foster partnerships with the National and State TB Programs. Concurrently, community stakeholders were engaged to ensure local involvement and ownership of the STOM project. To provide a strategic overview for program implementation, health facilities were mapped using the hub and spoke model to support the referral and linkages from the community. In collaboration with the NTP and as part of efforts to develop policy documents and tools for contact tracing ,the STOM Standard Operating Procedure (SOP), virtual course modules and training manuals for CHWs were developed during the startup of the project. This phase also witnessed the engagement and training of seventy (70) Community Health Workers (CHWs)

who played a central role in facilitating screenings, referrals, and ensuring the seamless linkage of individuals to TB diagnosis and treatment.

The field activity phase was marked by targeted and impactful activities, ensuring the project's objectives translated into tangible outcomes. From identification and line-listing of index TB cases across supported facilities to TB screening of household and extended contacts of the identified index TB cases. Robust mechanisms for referrals and linkages were established, facilitating the seamless transition of identified index TB cases to diagnosis and subsequent treatment initiation, including TB Preventive Therapy (TPT) commencement.

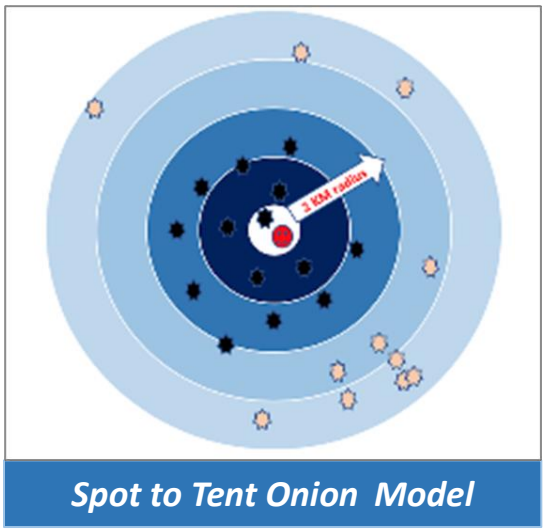
The field activity phase incorporated a Data Quality Assessment, emphasizing the importance of accurate and reliable information for decision-making. Monitoring and supervision activities were systematically conducted, providing essential oversight to sustain the quality and effectiveness of the field interventions.

The project close-out phase marked the culmination of efforts with a project dissemination meeting, which provides a platform where stakeholders at both the national and state levels convene to analyze and discuss the project's results and achievements. This meeting facilitates knowledge sharing and engages stakeholders in the findings from the STOM project, fostering collaboration and ensuring the sustainability of the project's impact. Beyond immediate outcomes, the project has produced lasting impacts, including empowered CHWs, fortified community collaborations, and a blueprint for dynamic TB case finding strategies.

This final STOM project report summaries the project activities across the three phases of project implementation.

1.2: THE STOM MODEL OF TB CONTACT INVESTIGATION

The Spot to Tent Onion Model (STOM) of contact investigation represents an innovative and effective approach for Active TB Case Finding (ACF) and to improve the uptake of TB preventive treatment within the community. The STOM model comprises two integral components: the "spot" involving the location of the index TB case where the CHWs conduct contact investigation among household contacts, while the "tent" involves a house-to-house TB screening of extended contacts within a 2-kilometer radius from the index TB case location. This strategy enables a more comprehensive reach, facilitating the identification of both missing and newly diagnosed TB cases while addressing the cultural sensitivities associated with household visits, promoting community cooperation and reducing stigma.



Spot to Tent Onion Model

By integrating both "spot" and "tent" the STOM model addresses multiple objectives simultaneously. It enhances TB contact investigation ensuring comprehensive coverage of household contacts at risk of TB and in closest proximity with the index TB patient identified from the DOT facilities. Simultaneously, the house-to-house screening of extended contacts within a 2-km radius serves as a proactive measure for active case finding, bringing undetected TB cases to light. This strategy maximizes the impact of TB contact investigation process making it a holistic strategy that contributes to TB case finding efforts through the additionality in TB cases identified from the "tent" approach.

To implement the STOM model, community health workers (CHWs) were enrolled in an innovative Competency Based Training (CBT) on TB contact investigation. This training equipped CHWs with the skills and requisite knowledge for conducting TB contact investigation and TB Preventive Therapy. The training was self-paced with gradings per module, and CHWs who achieved a pass-mark of 100% were awarded a certificate of course completion. The CBT modules which were adapted from the United States Agency for International Development (USAID) e-learning modules for TB contact investigation were adapted in collaboration with the National TB program and these modules post-course completion served as a reference resource for CHWs and a continuous learning platform in line with the project's objective to improve the capacity of CHWs on contact investigation through a CBT approach.

The STOM model aligns with KNCV Nigeria's commitment to advancing innovative approaches for TB control and the STOM project has been implemented as a proof of concept, demonstrating its potential to enhance contact investigation coverage and serve as a strategy for active case finding and TB preventive treatment.

2 PHASE I: START UP ACTIVITIES

2.1: ADVOCACY AND ENGAGEMENT WITH THE NATIONAL AND STATE TB PROGRAMS

At the start of the STOM project, formal project introductory letters were issued to the state and national TB programs. These letters conveyed objectives of the project and the proposed impact on enhancing TB control efforts in the country. This approach laid the groundwork for a collaborative and synergistic partnership with the state and national TB programs throughout the project's implementation. Also, a stakeholder engagement meeting was conducted with the state TB program, the meeting served as a crucial platform to communicate the project's objectives, anticipated outcomes, and overall strategy for implementation within Akwa Ibom state. This facilitated alignment of project goals and objectives with existing state-level TB strategies, fostering a collaborative working relationship.

As a result of these early stakeholder engagements, the STOM project was able to integrate seamlessly into the broader TB control framework, leveraging existing infrastructures and networks. The exchange of ideas and strategies during the stakeholder meetings and through the formal letters solidified a shared vision for improving contact investigation in Akwa Ibom State which greatly contributed to the project's success.

2.2: COMMUNITY STAKEHOLDER ENGAGEMENT

Through a community stakeholders' meeting, the STOM project engaged various levels of community gatekeepers to establish a collaborative framework that harnesses their collective strength of towards the success of the project. Stakeholders including traditional leaders, community youth leaders, influencers, and members of the community service organizations were actively engaged to foster a shared understanding of the project's goals, strategies, and anticipated outcomes within the communities across the thirty-one (31) Local Government Areas (LGAs) in the state.

The engagement meeting was designed not only to share project information but also to solicit valuable insights and local perspectives from community stakeholders. By actively involving these community stakeholders, the STOM project-built trust and ensured cultural sensitivity while aligning project activities with the community's needs and expectations. The inclusive nature of this engagement process laid the groundwork for a collaborative partnership with the community, facilitating a smooth implementation and fostering a sense of ownership among the stakeholders.

2.3 : MAPPING OF IMPLEMENTATION SITES

In collaboration with the Akwa Ibom State TB program and using a mapping checklist deployed on an Open Data Kit (ODK) app, a total of one-hundred and fourteen (114) health facilities were mapped as health facilities supporting intensified TB case finding (ICF) by KNCV Nigeria within the state, of the total number mapped fifty-six (56) facilities served as referral and linkage DOT facilities for diagnosed TB cases and index TB case identification in the TIFA-STOM project.

Mapping activities which included the identification of hub and spoke facilities for the referral and linkages of TB cases diagnosed within the community, shaped the SOFT project implementation strategy allowing for the strategic placement of Community Health Workers (CHWs) and the effective deployment of project resources.

The mapping activity was also aimed at providing a database of health facilities across the state for ease of enrolment to care and to avoid gaps in enrolment due to proximity to treatment facility. A mapping guide was also developed to serve as guidance for the enumerators using the ODK app for the GPS mapping activity. Enumerators also had the option of using the paper-based version of the mapping checklist to collect data and translate same to the online version. The successful mapping using the hub-and-spoke model resulted in a more organized, and interconnected system for an improved and efficient service delivery which also in turn strengthened the continuum of care for referrals within supported facilities.

2.4 : DEVELOPMENT OF SOPS AND ADAPTATION OF VIRTUAL COURSE MODULES & TRAINING MANUALS

In collaboration with key stakeholders, including the National Tuberculosis, Leprosy, and Buruli Ulcer Control Program (NTBCLP) and representatives from the Institute of Human Virology, Nigeria (IHVN), KNCV Nigeria developed a standardized STOM Standard Operating Procedures (SOPs) to guide the implementation of the STOM project. Drawing on the expertise and insights of these partners, the SOP was adapted to align with the National SOP for managing household contacts of Pulmonary Tuberculosis (PTB) index cases.

The SOP serves as a comprehensive guide, detailing the sequential steps involved in conducting a house-to-house TB screening within households of TB index cases and their extended TB contacts residing within a 2-km radius from the SPOT, which is the location of the index TB case. The need to plan the household visits in collaboration with Local Government TB Supervisors who play a pivotal role in coordinating with community leaders and gatekeepers was also emphasized. This ensures a coordinated and community-centric approach to TB case finding and contact investigation.

To support the deployment of an e-training system delivering competencies in contact investigation for community health workers in accordance with USAID TB CI standards, KNCV Nigeria conducted a review and adaptation of TBCI course materials based on the USAID TBCI modules alongside stakeholders from NTBCLP and IVHN. These modules covered a diverse range of topics, including Introduction to TB, TB Transmission, TB Diagnosis, The Basics of TBCI, Steps in TBCI, TBCI Communication Skills, Ethical Issues for Contact Investigations, and TBCI Data, Monitoring, and Evaluation. The reviewed modules underwent a harmonization process with the country-standardized training manual for DOT officers, healthcare workers, community TB workers responsible for TB screening. This harmonization ensured that the training content was not only in accordance with global standards but also integrated localized knowledge and skills crucial for CHWs conducting contact investigations.

2.5: ADAPTATION OF RECORDING AND REPORTING TOOLS

To establish effective monitoring and evaluation systems for the STOM project, recording and reporting tools were adapted from the TB Contact Investigation (TBCI) reporting templates utilized in the TB LON 1&2 project. The reporting indicators encompassed critical elements of TB contact investigation, such as the identification of index TB patients eligible for contact tracing, screening of contacts for TB, identification of household contacts, screening of household contacts for TB, identification of household contacts presumed to have TB, evaluation of presumptive clients for TB, diagnosis of contacts with TB (all forms), , commencement of treatment for all forms of TB, identification of household contacts eligible for TB Preventive Therapy (TPT), and placement of eligible household contacts on TPT.

The adapted reporting tools were used for extensive project data analysis, allowing for a thorough review of project data which proved instrumental in identifying gaps and initiating timely remedial actions, contributing significantly to the overall success of program implementation.

2.6: ENGAGEMENT AND TRAINING OF COMMUNITY HEALTH WORKERS

The engagement and training of seventy (70) community health workers for TB contact investigation within Akwa Ibom state was essential in securing competent personnel to implement the project strategies These CHWs were selected based on their extensive experience in non-governmental organizations (NGOs), familiarity with TB programming, proficiency in monitoring and evaluation, experience in community-led interventions, and meeting the specified educational qualifications. The training sessions, conducted in two batches, were designed to deepen their understanding of TB contact investigation protocols especially using the STOM SOP, ensure proficiency in utilizing reporting tools, and foster a comprehensive grasp of TPT implementation strategies.

Comprehensive pre and post-test assessments were employed to quantify the impact of the training. The analysis revealed a significant 29% percentage increase, highlighting the substantial knowledge gained by the participants due to the capacity-building efforts. This not only validated the effectiveness of the training program but also emphasized the strengthened capabilities of the CHWs towards the successful execution of the STOM project. The training modules covered a background information on the National and Global TB situation, steps in conducting the STOM model of contact investigation, use of TBCI reporting tools, communication skills for TBCI, and a session on the administration of TPT.

The training which took place in collaboration with the state TB program involved, role plays to simulate scenarios for practicing contact investigation and TPT implementation in realistic community settings and case scenarios with real-world examples to analyze and strategize responses to complex situations that may be experienced in the field.

2.7: VIRTUAL CBT TRAINING OF COMMUNITY HEALTH WORKERS

The development of an effective interactive learning Competency Based Training (CBT) training platform for CHWs in the STOM project provided a qualitative and easily accessible continuous learning resource on TB contact investigation . Working with a specialized CBT consultancy firm, KNCV Nigeria adapted the course modules from the USAID TB Contact Investigation (TBCI) framework, thereby creating a tailored TBCI competency framework translated into comprehensive learning modules and objectives. This innovative approach fused instructional design strategies, incorporating recorded live teachings, voice-over slides, quizzes, case scenarios, and demonstrations of best practices to facilitate an interactive and effective learning experience for CHWs in the STOM project.

Accessible through smart mobile devices, the CBT training platform empowered CHWs, allowing them to progress at their own pace while engaging in microlearning and scenario-based learning on TB contact investigation. Seventy (70) CHWs were successfully onboarded, received hands-on training on navigating the course modules and the platform. The platform afforded real-time monitoring and tracking of course progress for individual CHWs, to enable supportive guidance by the KNCV Nigeria team towards course completion. All 70 CHWs who completed the course received a certificate of course completion and a post-training evaluation reveals an impressive 29% increase in knowledge among participants, highlighting the tangible gains achieved through the CBT learning program.

This innovative approach not only enhanced the competency of our community healthcare workforce but also established a framework for continuous learning and adaptation in the ever-evolving landscape of TB program implementation.

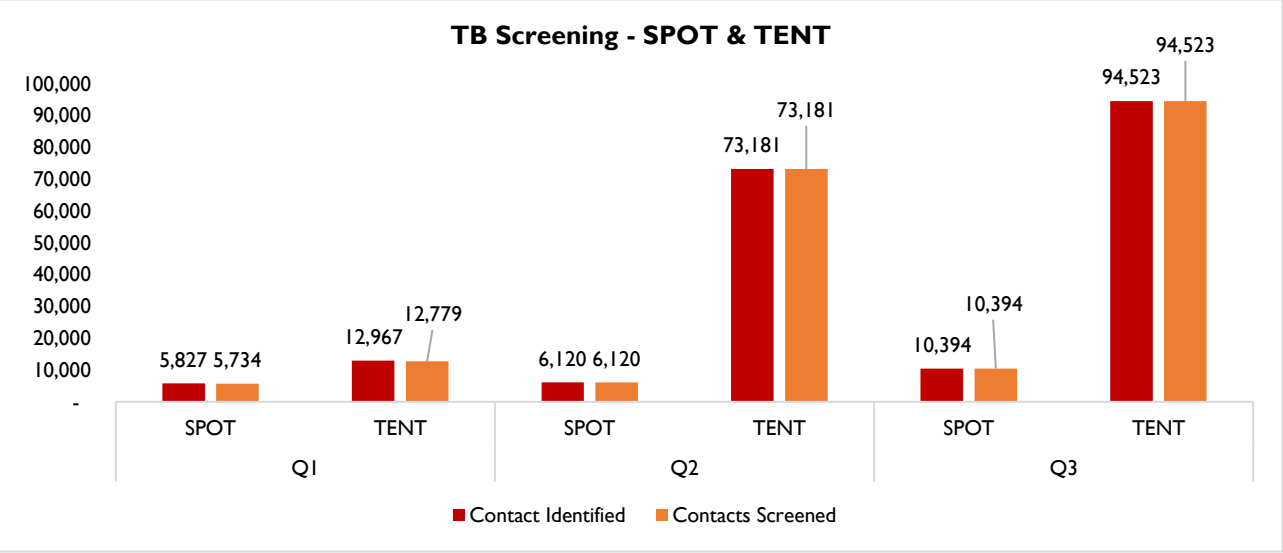
3 PHASE II: FIELD ACTIVITIES

3.1 HOUSEHOLD TB SCREENING

Central to the field implementation of the Spot to Tent Onion Model of Contact Investigation (STOM) project are the models of TB screening involving the screening of household contacts of index TB cases identified at the Directly Observed Treatment (DOT) facilities and the house-to-house TB screening of their extended contacts. In the STOM approach, the index patient household contact investigation serves as a "spot" while the house-to-house screening of extended contacts of the index TB case within a 2-km radius of the spot location serves as the "tent".

In Q1 (January – March 2023), one-thousand, four-hundred and fifty (1,450) index TB cases were identified, and all their contacts were screened for TB. Five thousand eight-hundred and twenty-seven (5,827) household contacts were identified, and five-thousand seven-hundred and thirty-four (5,734) household contacts were screened for TB. Twelve-thousand nine-hundred and sixty-seven (12,967) extended contacts were identified and twelve-thousand, seven-hundred and seventy-nine (12,779) extended contacts were screened for TB. In Q2 (April – June 2023), one-thousand, two-hundred and forty-four (1,244) index TB cases were identified, and all their contacts were screened for TB. Six thousand one-hundred and twenty (6,120) household contacts were identified and screened for TB while seventy-three thousand, one-hundred and eighty-one (73,181) extended contacts were identified and screened for TB. In Q3, one-thousand nine-hundred and seventy-one (1,971) index TB cases were identified, and all their contacts were screened for TB. Ten-thousand three-hundred and ninety-four (10,394) household contacts were identified and screened for TB and ninety-four thousand five-hundred and twenty-three (94,523) extended contacts were screened for TB.

Remarkably, the project surpassed the set objective of increasing the proportion of bacteriologically positive TB cases that had their contacts investigated for TB from 20% to 80% index patient coverage by achieving a 100% index coverage across the three quarters of field implementation. This outstanding accomplishment emphasizes the project's commitment to ensure that every contact of index TB cases identified was screened for TB. The success of reaching and exceeding the target not only demonstrates the efficiency of the STOM model and it's a significant contribution to the broader goal of tuberculosis control .

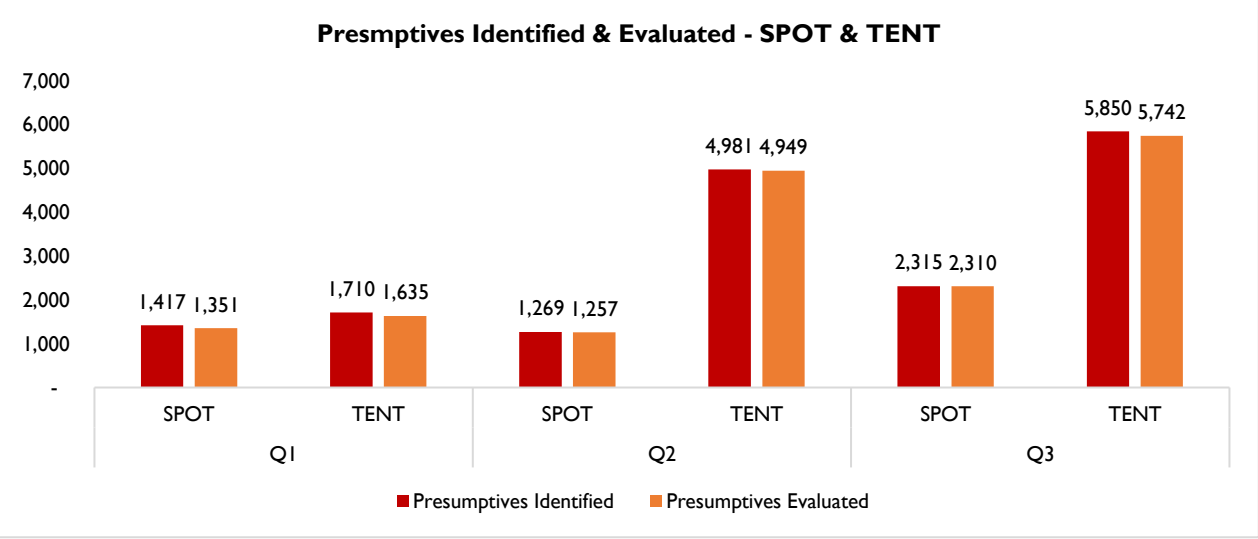


3.2 REFERRALS AND LINKAGES FOR TB DIAGNOSIS

Navigating the challenges posed by Genexpert optimization issues, the STOM project ensured efficient referrals and linkages for TB diagnosis through the sputum and stool sample transfers to TB diagnostic laboratories aided by the CHWs. Contacts unable to produce sputum were also provided escort services to chest x-ray diagnostic facilities for TB diagnosis. Despite the operational challenges with Genexpert machines, the project continuously redirected samples to nearby functional laboratories, showcasing adaptability and resilience in service delivery by KNCV Nigeria team. The teams strategically developed and maintained a streamlined process of identifying over-burdened laboratories and redirecting samples to alternative TB diagnostics solutions within the state including the TB LAMP machine which was largely used to sweep samples from the communities as well as the Truenat machine.

Through strategic planning and collaboration with the state TB program and the network of diagnostic facilities, the STOM project ensured that individuals identified through TB screening efforts had timely access to accurate TB diagnosis which reflects the project's commitment to providing comprehensive and effective TB diagnostic services in the context of local challenges. In Q1, one-thousand four-hundred and seventeen (1,417) household contacts were presumed to have TB and of this number one-thousand three-hundred and fifty-one (1,351)) were evaluated for TB. For extended contacts in TENT screening, one-thousand seven hundred and ten (1,710) were presumed to have TB and one-thousand six-hundred and thirty-five(1,635) extended contacts were evaluated for TB.

In Q2, one-thousand two-hundred and sixty-nine (1,269) presumptive TB cases were identified among household contacts and one-thousand two-hundred and fifty-seven (1,257) household contacts were evaluated for TB. For extended contacts in TENT screening, four-thousand nine-hundred and eighty-one (4,981) were presumed to have TB and four-thousand nine-hundred and forty-nine (4,949) extended contacts were evaluated for TB. In Q3, two-thousand three-hundred and fifteen (2,315) presumptive TB cases were identified among household contacts of which two-thousand three hundred and ten (2,310) were evaluated for TB. For TENT screening, five-thousand eight-hundred and fifty (5,850) extended contacts were presumed to have TB and five-thousand seven-hundred and forty-two (5,742) extended contacts were evaluated for TB.

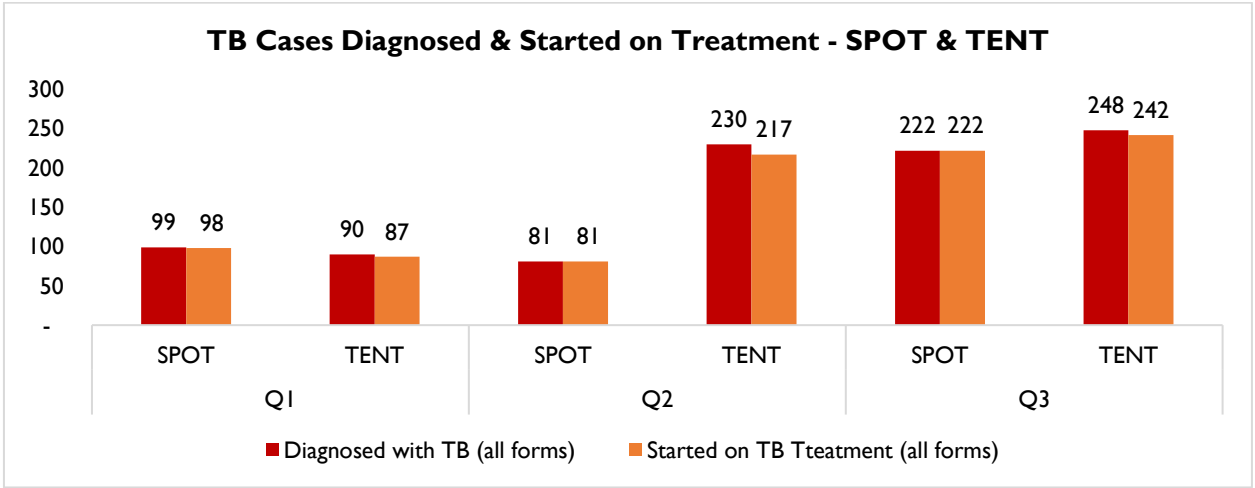


3.3 REFERRALS AND LINKAGES FOR TB TREATMENT AND TPT COMMENCEMENT

The STOM project implemented strategies for referral and linkage to TB care and treatment as well as TB Preventive Treatment. CHWs provided escort services to newly diagnosed TB cases from household and extended contacts to ensure a seamless transition from the community to the DOT health facilities. integral to the STOM initiative, played a pivotal role in ensuring the seamless transition of individuals diagnosed with TB from the community to health facilities. By facilitating referrals and linkages, the STOM project ensured that persons diagnosed with TB, as well as eligible contacts for TB Preventive Therapy (TPT), received timely and comprehensive care, reinforcing the project's commitment to improving the continuum of TB services within the community.

In Q1, ninety-nine(99) household contacts were newly diagnosed with TB and ninety-eight (98) placed on treatment, and ninety (90) extended contacts were diagnosed with TB and of that number eighty-seven (87) extended contacts were placed on treatment. In Q2, eighty-one (81) household contacts and all were placed on treatment, also, two-hundred and thirty (230) extended contacts were diagnosed with TB and two-hundred and seventeen (217) extended contacts were placed on treatment. In Q3, two-hundred and twenty-two (222) household contacts were newly diagnosed and placed on treatment and two-hundred and forty-eight (248) extended contacts were newly diagnosed with TB and two-hundred and forty-two (242) extended contacts were started on treatment. A total of ten-thousand three-hundred and thirty-seven (10,337) eligible household contacts were placed on TPT within the three (3) quarters of field implementation achieving a 47% uptake of TPT out of twenty-one thousand eight-hundred and forty-six (21,846) eligible household contacts for TPT. The substantial progress made in TPT uptake highlights an improvement from the previous 2% uptake, thereby contributing significantly to the overall goal of reducing the incidence of TB within the community and preventing TB among household contacts.

Several challenges contributed to the gaps in linkage to TB treatment, significantly, the optimization issues faced by Genexpert machines in various health facilities, necessitating the redirection of samples to nearby functional laboratories and created delays which subsequently impacted the timely initiation of treatment for identified cases. Other challenges included the religious beliefs and poor health seeking behavior observed by the CHWs, some contacts driven by deeply rooted religious convictions, were hesitant to seek medical attention promptly which resulted in delayed presentation at health facilities for TB treatment commencement. Despite these challenges, the STOM project worked collaboratively with community stakeholders, LGA TB supervisors and other community gatekeepers to enhance health literacy, dispel misconceptions, and promote the importance of timely TB diagnosis and treatment.



3.4 DATA QUALITY ASSESSMENT

KNCV Nigeria leveraged the data review meeting for September 2023 reporting period to conduct a Data Quality Assessment (DQA) exercise across all supported facilities within the state. The DQA focused on a review of documentation of TIFA-STOM achievements across primary and secondary source documents to the reported data within the period January – August 2023. The exercise was a joint activity with the state TB program and had in participation DOT providers across supported facilities, LGA TB Supervisors, CHWs and KNCV Nigeria central office team.

Observed gaps in documentation were closed and updated real-time while providing mentoring to the CBOs and CHWs on proper documentation practices for capacity building purposes. The exercise ensured that all TIFA achievements have been correctly and completely captured by the state TB programs and at the facility levels while showcasing KNCV Nigeria's commitment to quality data reporting in line with donor-specified guidelines.

3.5 MONITORING & SUPERVISION

Monitoring and supervisory visits implemented in the STOM project served as a dynamic framework for ensuring the project's success. By combining various modes of oversight, KNCV Nigeria maintained a high standard of service delivery and cultivated a collaborative system with the state TB program that played an essential role in achieving the project's objectives.

Virtual-support group via Whatsapp was set up to provide real-time support and technical guidance towards the daily and weekly monitoring of TBCI activities by the CHWs. This strategy provides an on-demand supportive monitoring of field activities and troubleshooting of any issues or gaps experienced during field implementation. A daily/weekly summary template was also developed to support CHW reporting of daily and achievements alongside comments to reflect any areas that require escalated support by the KNCV Nigeria team.

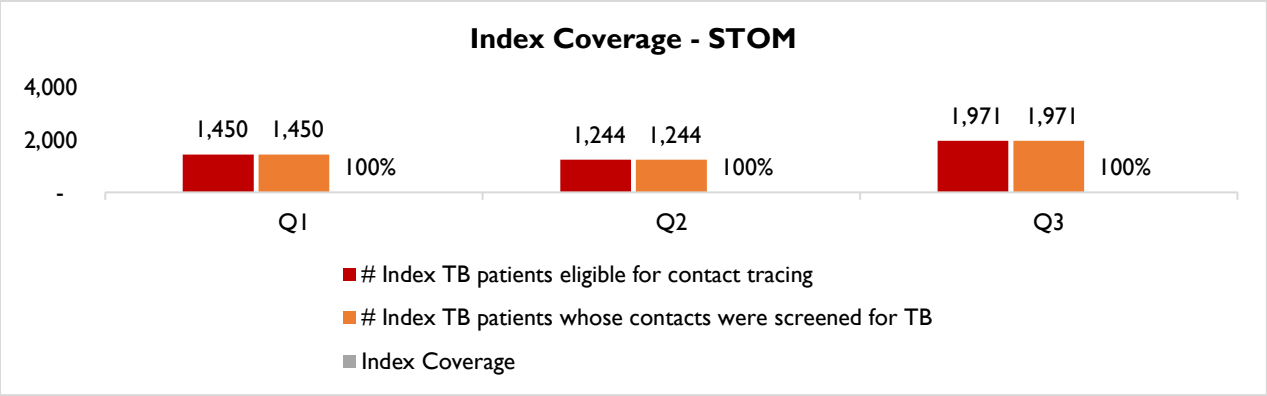
Monthly data review meetings were conducted within the quarter to review and collate monthly STOM achievements across the thirty-one (31) LGAs. These review meetings were held in clusters alongside the LGA TB supervisors, DOT officers of hub facilities, CHWs, representatives of the state TB program including the state M&E officer and the KNCV Nigeria team. The cluster approach allows for a thorough review of documentation and data triangulation of STOM project achievements in reporting tools with the state TB program report.

Joint supportive quarterly supervisory visits to health facilities and spot-checks of field activities enabled the evaluation of the effectiveness of contact investigation strategies. These visits were critical in identifying strengths and areas for improvement, enabling swift corrective actions that enhanced the overall quality of project service delivery. Concurrently, weekly check-in meetings with the state team served as forums for technical discussions, progress updates, and collaborative problem-solving. The virtual WhatsApp support groups further extended the support system to the CHWs, enabling real-time troubleshooting, and promoting knowledge sharing.

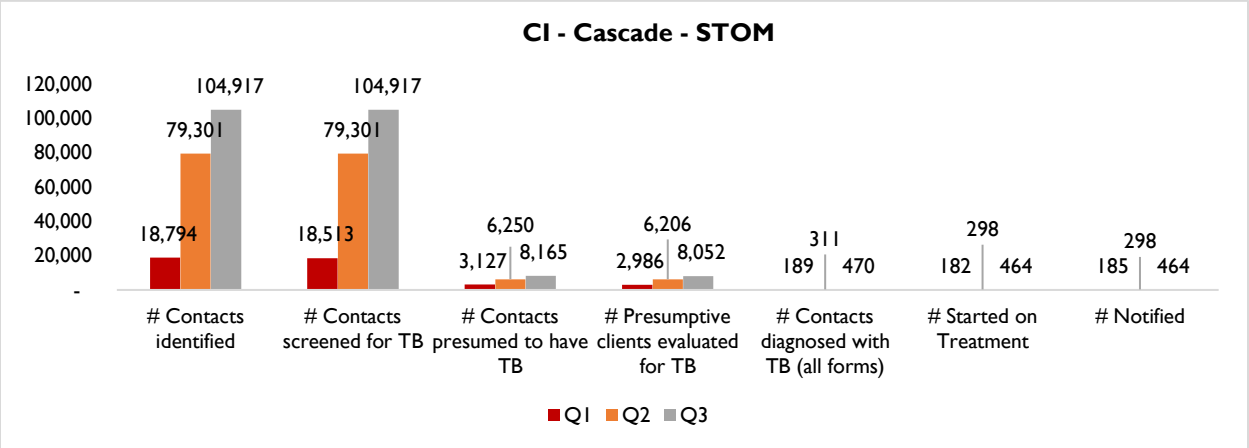
4 PROJECT ACHIEVEMENTS

4.1: PERFORMANCE INDICATOR CHARTS

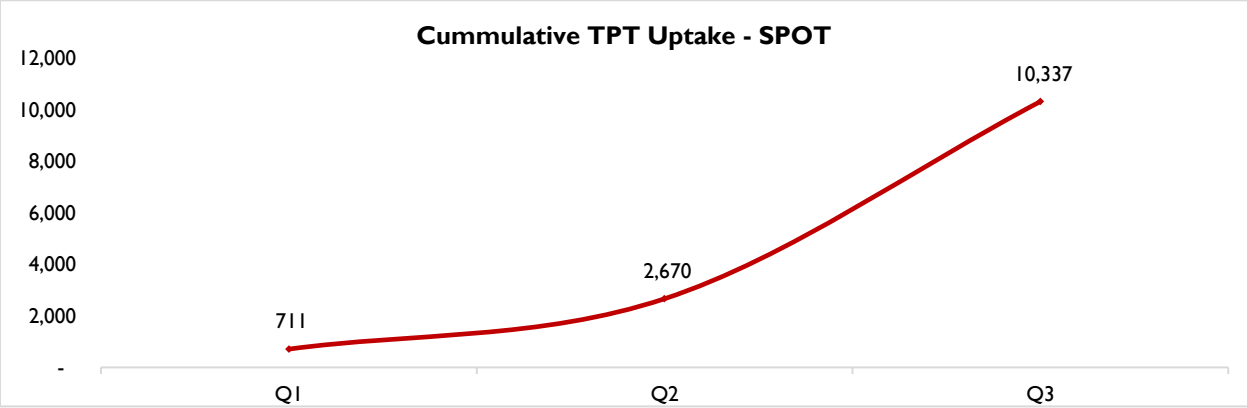
Following three (3) quarters of field activities, 4,665 index TB cases were identified, and contact traced resulting in 100% index coverage for the STOM project. A total of 22,341 household contacts were identified alongside 180,671 extended contacts within 2km radius of the index TB case identified, totaling 203,012 household and extended contacts identified. Of the total number of contacts identified, 202,731 contacts were screened for TB at a cumulative TB screening coverage of 100%, of which 22,248 household contacts and 180,483 extended contacts were screened for TB. 5,001 household contacts screened were presumed to have TB out of which 4,918 household contacts were evaluated for TB at a 98% evaluation rate for the SPOT intervention while 12,541 extended contacts were identified as presumptive TB cases, and 12,326 extended contacts were evaluated for TB at a 98% evaluation rate for the house-to-house TENT intervention. This resulted in an 8% TB yield from 402 household contacts newly diagnosed for TB and a 5% TB yield from 568 extended contacts newly diagnosed for TB in the SPOT and TENT interventions respectively.



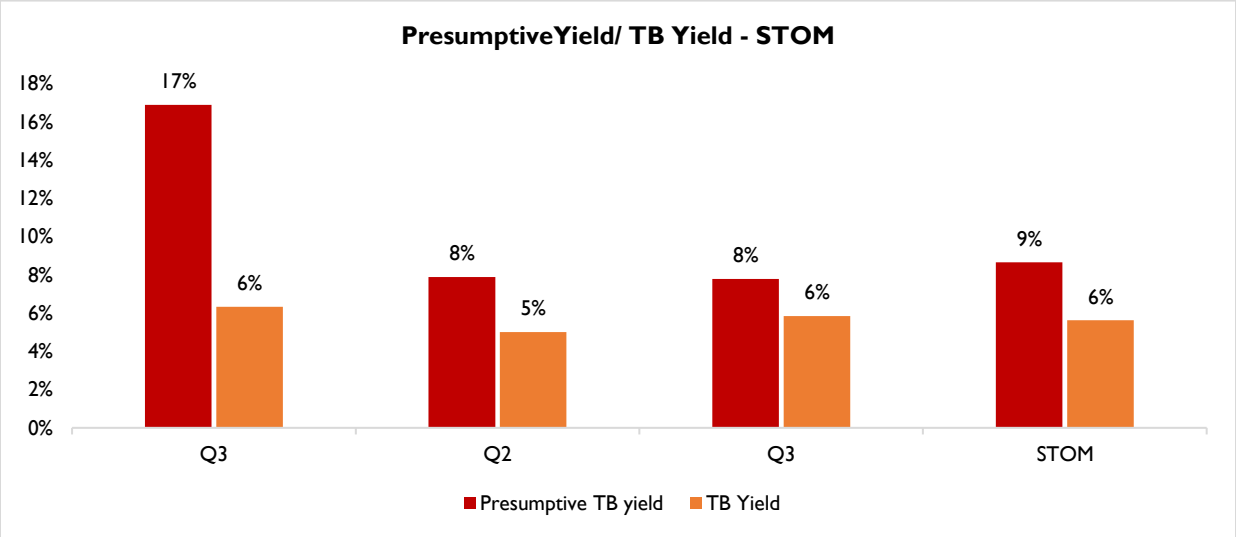
In the three quarters of field implementation, the STOM project maintained 100% index coverage, the dip in index TB cases identified within the second quarter was due to the government policy on fuel subsidy removal which resulted in a significant dip in hospital attendance resulting in a lower number of index TB cases identified due to high cost of transportation. KNCV Nigeria through collaborative efforts with the state TB program employed adaptive strategies to improve the narrative which reflected in the increased number of index TB cases identified in the subsequent quarter.



The progressive increase in indicators across the Contact Investigation (CI) cascade across the quarters of field implementation highlights the STOM project's strategic efforts to continuously improve on the state's CI coverage and process as a strategy for active case finding and TB Preventive Therapy (TPT). Within 9-months of field activities, 203,012 household and extended contacts were identified, and 202,731 of them were evaluated for TB, 17,542 presumptive TB cases were identified and 17,244 were evaluated for TB resulting in a 98% evaluation rate. 970 household and extended contacts were newly diagnosed with TB at a 6% TB yield and 98% enrolment and notification rate.



Cumulatively, 10,337 eligible household contacts were placed on TPT in the three quarters of project field implementation. The low uptake experienced in Q1 and Q2 was due to the low stock of TPT within the state and logistics constraints surrounding the prompt distribution of available stock. Following learnings from the field experience, KNCV Nigeria collaborated with the state TB program to facilitate a mop up of TPT stock from nearby states to buffer the state supply while supporting the logistics and distribution of these kits to health facilities leveraging STOM project data reviewing meetings and onsite visits to the supported health facility. This strategy alongside active counseling on the importance of TPT by CHWs during home visits is responsible for the significant leap in TPT uptake and target achievement.



From 5,001 presumptive TB cases identified from 22,248 household contacts screened for TB, the SPOT intervention has a presumptive yield of 22% while TENT intervention had a presumptive yield of 7% from 17,542 presumptive TB cases identified from 202,731 extended contacts in the TENT intervention. For the TB yield, the SPOT intervention reported an 8% yield from 402 newly diagnosed TB cases and a 5% yield from 568 newly diagnosed TB cases from the TENT intervention. Cumulatively, the STOM project reported a 9% presumptive TB yield and 6% TB yield from both interventions.

Despite the TENT intervention reporting a lower TB yield at 5% from the 568 newly diagnosed TB cases, and a lower presumptive TB yield, it is essential to recognize the significance of the absolute number of TB cases. The identification of 568 new TB cases represents a substantial contribution to the overall TB case detection efforts of the STOM project and the comparison of TB yields between the two intervention models underscores the nuanced nature of TB case finding, emphasizing the need for a multi-faceted approach that considers both absolute numbers and the proportion of presumptive cases to achieve a comprehensive and impactful result as reported.

TIFA STOM - Contact Investigation Cascade Results vs Achievements												
				STOM Achievements			STOM Annual Targets			Annual % Achievement		
Reporting Indicators	Q1	Q2	Q3	SPOT	TENT	TOTAL	SPOT	TENT	TOTAL	SPOT	TENT	TOTAL
Number of index TB patients eligible for contact tracing	1,450	1,244	1,971	4,665		4,665	3,150		3,150	148%		148%
Number of index TB patients whose contacts were screened for TB	1,450	1,244	1,971	4,665		4,665	3,150		3,150	148%		148%
Number of household contacts identified	18,794	79,301	104,917	22,341	180,671	203,012	15,750	151,443	167,193	142%	119%	121%
Number of household contacts screened for TB	18,513	79,301	104,917	22,248	180,483	202,731	15,750	151,443	167,193	141%	119%	121%
Number of household contacts presumed to have TB	3,127	6,250	8,165	5,001	12,541	17,542	3,938	19,688	23,626	127%	64%	74%
Number of presumptive clients evaluated for TB	2,986	6,206	8,052	4,918	12,326	17,244	3,741	18,703	22,444	131%	66%	77%
Number of contacts diagnosed with TB (all forms)	189	311	470	402	568	970	374	1,870	2,244	107%	30%	43%

TIFA STOM - Contact Investigation Cascade Results vs Achievements												
Reporting Indicators	Q1	Q2	Q3	STOM Achievements			STOM Annual Targets			Annual % Achievement		
				SPOT	TENT	TOTAL	SPOT	TENT	TOTAL	SPOT	TENT	TOTAL
Number of contacts diagnosed with DR-TB	7	-	-	3	4	7						
Number of DS-TB cases who were started on treatment	182	298	464	399	545	944	355	1,777	2,132	112%	31%	44%
Number of DR-TB cases who were started on treatment	3	-	-	2	1	3						
Total number of TB cases (all forms) started on treatment	185	298	464	401	546	947	374	1,870	711	107%	29%	133%
Number of eligible household contacts placed on TPT	711	1,959	7,667	10,337		10,337	6,900		6,900	150%		150%

5. SUCCESS STORIES

5.1: FINDING TB IN HARD TO REACH COMMUNITIES

Eastern Obolo is a coastal local government area in Akwa Ibom State with 16 villages and two major clans Okorete and Iko both prone to tidal influence and coastal flooding due to its location directly boarding the Atlantic Ocean.

As part of the STOM project's mandate to increase contact investigation coverage in the state, the two existing health facilities in Eastern Obolo, Health Center Iko Town and PHC Okoroete were listed as the TIFA-STOM facilities in the state. Through physical trainings, continuous learning through the Competency Based Training approach and on-site capacity building sessions, the two CHWs engaged were equipped with requisite skills on contact investigation.

Due to skeletal activities in the health facilities and low hospital attendance, only two (2) index cases were reported within the last 6-months pre-commencement of the TIFA-STOM project. The CHWs had to rely heavily on the "tent" model of STOM to conduct house-to-house screening of extended contacts within the community.

Mr. Gabriel conducting TB screening in the community.

This strategy led to ten (10) newly diagnosed TB cases in both health facilities, with TIFA-STOM project as the only source of referral for these cases diagnosed. It also raised awareness within these coastal villages on TB prevention, identification and referral of presumptive TB cases of diagnosis, and TB treatment as most community members were prone to attribute their source of cough and other symptoms of TB to the cold wet weather commonly experienced in the communities.

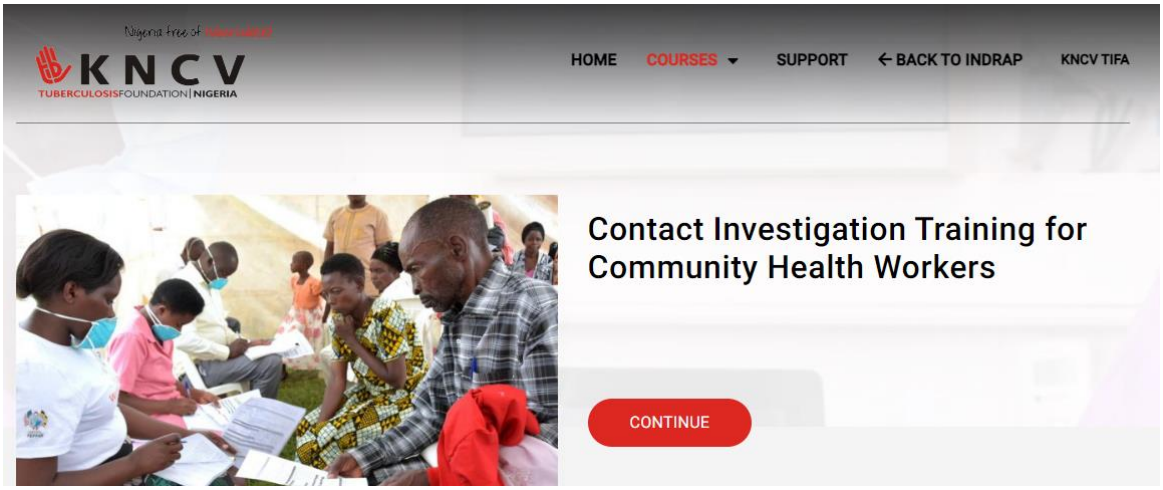
One of the CHWs in Eastern Obolo, Mr. Gabriel who shared his excitement on the intervention said, " I'm happy that this intervention came to Eastern Obolo because they always forget us, having 10 cases is a big thing for us and I'm grateful to TIFA for this opportunity".

5.2: EFECTIVENESS OF THE CBT TRAINING

The Competency-Based Training (CBT) program implemented STOM project has proven to be a transformative force, significantly improving the capabilities of community health workers (CHWs) involved in TB contact investigation. The continuous learning model of CBT program provides a unique way of building the capacity of healthcare workers on TB contact investigation with the aim of finding the missing TB cases in our communities. Through the self-paced course CHWs were allowed to re-take modules and lessons as part of a continuous learning process which significantly improved their contact investigation skills.

Leveraging the knowledge gained from the CBT course, A CHW deployed to Etinan LGA of Akwa Ibom State, Ms. Peace Henry applied these skills in the prompt identification of both pulmonary and extra-pulmonary TB cases. While conducting house-to-house tent TB screening, she identified an elderly man with swelling in the spine who claimed he had attributed the swelling to old-age and posture.

Snapshot of the CBT course modules



Snapshot of the CBT course platform interface

With the support of the KNCV Nigeria team she facilitated his referral to a TB diagnostic health facility for clinical diagnosis of and with technical oversight from the state TB program he was successfully clinically diagnosed with extra-pulmonary TB and commenced on TB treatment. He is currently on his EPTB medication, and he is happy to have received the services provided through the TIFA project.

In his words " I would not have known what was wrong with me if she did not visit me that day"

Ms. Peace says "I feel empowered with the knowledge through the CBT course and all other trainings I have received through the TIFA-STOM project, I can confidently identify someone that has any form of TB and link them to care and treatment.

EPTB case identified by Ms. Peace

6.CHALLENGES & MITIGATION MEASURES

Challenges	Mitigation Measures
• High cost of transportation due to fuel subsidy removal by government.	• Increase in transportation support for CHWs to enable them meet up present transportation cost demands to and from households within the communities
• Logistics supply of TPT affecting uptake across supported facilities	• KNCV Nigeria worked state TB program to facilitate supply of buffer stock from nearby state
• Low uptake of pediatric TPT due to unavailability of pediatric TPT regimen in the state	• KNCV Nigeria liaised with the state TB program to mop up limited pediatric TB regimens in available facilities to facilities in need.
• Difficulty in utilizing chest x-ray diagnostic platforms in hard-to-reach LGAs like Eastern Obolo, Ini and Obot Akara	• KNCV Nigeria facilitated a pooled transportation support to convey presumptive TB cases identified in these far-reached communities to chest x-ray diagnostic platforms
• Genexpert Laboratory optimization issues across the state resulting in overutilization of functional laboratories	• KNCV Nigeria supported in bridging the evaluation gaps through sample redirection to functional diagnostic laboratories

7. PHASE III: CLOSE OUT

7.1: PROJECT DISSEMINATION MEETING

At the end of the STOM project, the project dissemination meeting aims to share the comprehensive findings and project impact with stakeholders at both the national and state levels. The meeting serves as a platform for knowledge exchange, where details of the project's success, challenges, and lessons learned are presented and discussed. With the participation of stakeholders from the National and State TB programs, State Ministry of Health, Department of Public Health, implementing partners and a diverse mix of private and public stakeholders, the meeting serves as a collaborative forum to bridge insights and align strategies, for informed decision-making in future TB programming endeavors.

The dissemination meeting is not merely a concluding event but a strategic initiative to foster a unified understanding of the project's outcomes. By engaging with stakeholders at various levels, KNCV Nigeria creates a shared narrative on TB contact investigation that extends beyond project closure. Through interactive sessions, presentations, and open discussions, the dissemination meeting not only highlights achievements but provides an opportunity to address any challenges, thus contributing to the continuous improvement of the STOM model of TB contact investigation in Nigeria.

7.2: LESSONS LEARNED

Tailoring TB case finding strategies to local contexts : Recognizing the variations in TB yields between SPOT household TB screening intervention model and the house-to-house TENT TB screening intervention model, the STOM project demonstrated the need for combined approaches to ensure optimal outcomes in TB case finding.

Leveraging technology for continuous learning: The implementation of the Virtual CBT platform emerged as a valuable lesson in leveraging technology for continuous learning. The platform not only facilitated capacity building but also provided an ongoing learning resource which emphasizes the potential of technology-enabled approaches in building and sustaining healthcare workforce competency.

Consideration of religious beliefs and health-seeking behavior in project implementation: The project shed light on the influence of religious beliefs on health-seeking behavior, contributing to gaps in linkage to treatment. Acknowledging these socio-cultural factors is critical for designing targeted interventions that address community-specific barriers to the commencement of TB treatment.

Flexibility in Implementation: Adapting strategies based on real-time feedback, community needs, and unexpected challenges enabled the project to navigate bottle-necks such as the hike in transportation costs effectively.

Capacity Building of CHWs: The STOM project emphasized the importance of robust capacity-building of community health workers who are the foot soldiers in the communities. Beyond training for project needs, investing in the continuous development of healthcare workers ensures that they evolve with emerging strategies and guidelines for TB programming.

7.3: CONCLUSION

With funding from the United States Agency for International Development (USAID) through the John Snow Incorporated (JSI) TIFA project, the Spot to Tent Onion Model of TB Contact Investigation (STOM) project has achieved milestones that showcase its impactful contribution to TB contact investigation in Akwa Ibom State. From the development of a STOM Standard Operating Procedure (SOP) to the adoption of a Competency Based Training (CBT) approach to significantly enhance the capabilities CHWs in TB contact investigation thereby ensuring a skilled and proficient workforce, maintaining a commendable 100% index TB screening coverage across three quarters and surpassing targets in TB Preventive Therapy (TPT) uptake, the STOM project has excelled in its key program objectives.

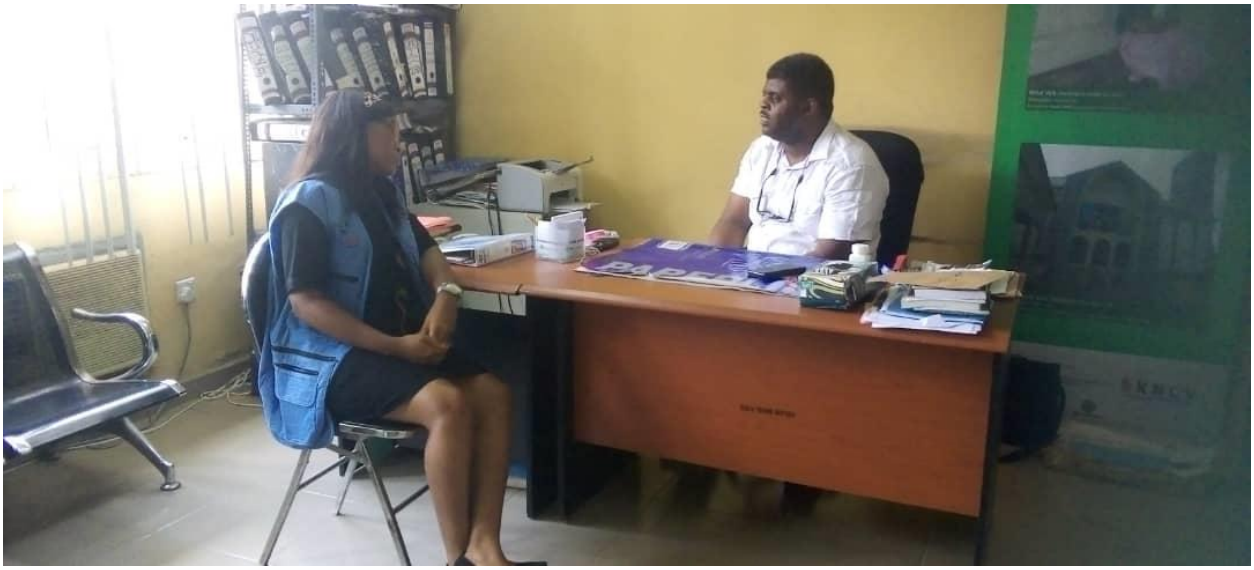
Reaching four-thousand six-hundred and sixty-five (4,665) index TB cases and screening all their contacts within nine-months of project field implementation through rigorous screening of household contacts and extended contacts within 2-km radius. The project has contributed nine-hundred and seventy (970) newly diagnosed TB cases and thrown light to the dynamics of TB case fining within Akwa Ibom State. The nuanced comparison between the TB yields of SPOT household TB screening and TENT house-to-house TB screenings underscores the nuanced nature of TB case finding, emphasizing the need for a multi-faceted approach that considers both absolute numbers and the proportion of presumptive cases to achieve a comprehensive and impactful result.

Moreover, the STOM project has reinforced the value of trained CHWs and their pivotal role in the continuum of TB care. By leveraging their local networks, the CHWs conducted screenings, facilitated referrals, and ensuring the linkage of individuals to TB diagnosis and treatment. Establishing a culture of ongoing capacity building of CHWs contributed not only to project success but also to the long-term resilience and adaptability of the healthcare workforce.

The STOM project has not only contributed to the immediate goals of TB case finding and improved TPT uptake but has also left an enduring legacy in the form of empowered CHWs, strengthened community collaborations, and a blueprint for responsive and adaptable TB screening strategies as a testament to the power of community-led initiatives in the fight against tuberculosis.

8. PROJECT PHOTOS

Cross section of participants in a batch of training for CHWs



Advocacy visit and project progress debrief by the project coordinator, Iboro Gordon to the Akwa Ibom State TB program manager, Dr Bassey Akpan

TB screening of children during house-to-house TENT screening

Sample collection using sputum boxes by CHWs.

CHWs conducting contact investigation with index TB cases.

CHWs logging in samples collected at a TB diagnostic facility.

KNCV Nigeria State Program Manager, Dr Oloruntobi Nissi facilitating a capacity building session during monthly data review meetings.

KNCV Nigeria M&E officer Blessing Noah and Program Associate Aniebiet Josiah reviewing reports of CHWs during monthly data validation meetings.

Review of reporting tools and spot checks during quarterly supervisory visits by the KNCV Nigeria central team