Increasing Case Detection of Tuberculosis in Nigeria

Design and Test Phase Report - Breakthrough ACTION Nigeria

USAID FROM THE AMERICAN PEOPLE

Breakthrough ACTION FOR SOCIAL & BEHAVIOR CHANGE

Thank you

First, we would like to acknowledge and thank the communities and people who generously shared their time and experience with us. We were humbled by their generosity of spirit, passion to improve health in their communities, and their resilience to overcome the adversities they may face.

We would also like to thank the National Tuberculosis and Leprosy Control Programme for their leadership throughout this process and all of the partners and healthcare professionals who gave so willingly of their time to be part of the co-design team. It is only through their insight, dedication, and creativity that we have been able to achieve the progress we have thus far.

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Abbreviations

ACSM	Advocacy, Communication, and Social Mobilization
CTW	Community Tuberculosis Worker
DOTS	Directly Observed Treatment, Short-Course
DS-TB	Drug Sensitive TB
EPI	Expanded Program on Immunization
FAST	Find cases Actively, Separate safely, and Treat effectively
HCD	Human-Centered Design
HEWAN	Health Writers Association of Nigeria
IEC	Information, Education, Communication
IHVN	Institute of Human Virology, Nigeria
KNCV/CTB	Dutch Tuberculosis Foundation
LGA	Local Government Area
LOE	Line of Engagement
NGO	Non-governmental Organization
NTBLCP	National Tuberculosis and Leprosy Control Programme
NURTW	National Union of Road Transport Workers
PFN	Pentecostal Fellowship of Nigeria
PPMV	Patent and Proprietary Medicine Vendor
SBC	Social and Behavior Change
SBCC	Social and Behavior Change Communication
SHOPS+	Sustaining Health Outcomes through the Private Sector Plus
STBLCP	State Tuberculosis and Leprosy Control Programme
TB	Tuberculosis
TBLS	Tuberculosis and Leprosy Supervisor
USAID	United States Agency for International Development
WOW	Wellness on Wheels

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Executive summary

Breakthrough ACTION, in collaboration with the National Tuberculosis and Leprosy Control Programme through the support of the United States Agency for International Development, is conducting a program of work that seeks to increase case detection of tuberculosis (TB) in Nigeria. This report covers the first three weeks of the third phase of work, the Design and Test Phase, which is focused on the "Desirability" of a number of candidate interventions. We brought together a design team of 42 people from 14 different stakeholder organizations in this phase.

Five primary interventions were designed through Breakthrough ACTION's unique human-centered design social and behavior change innovation process. The process focuses heavily on exposing ideas early to the target audience in order to test and refine the concepts. Our core design team exposed their concepts to over 750 people in the process, both in digital environments and in real life. We focused these interactions on learning how the interventions can be improved and strengthened.

The feedback on the interventions all showed encouraging levels of desirability and promise. The objective of this phase is to generate many ideas and get early feedback, identifying which ones are worth further investment and which ones should not be pursued. These activities are designed to focus our efforts and reduce the risks of designing and scaling undesirable ideas.

This report details the five candidate interventions, their heritage from the previous "Discovery" phase, and their evolution through the idea generation and field-testing process.

The process generated more than 760 initial ideas, which were narrowed down to 12 finalists by the stakeholder teams. The 12 finalists were then evaluated using a set of criteria, combining similar ideas and prioritizing the most promising concepts. The group of stakeholders was then split into five teams to further detail and test the five top candidate ideas into possible interventions.

The interventions were iterated and refined through rapid prototyping and testing for two weeks with members of the public in four states:

- Lagos
- Kano
- Enugu
- Nasarawa

We recommend continuing to test and improve the interventions with a focus on feasibility prior to scaling any ideas to a national level.

Summary of the five candidate interventions

The suggested interventions are:

- A simplified "cough testing" **referral method aimed at patent and proprietary medicine vendors** that builds on existing programs by increasing usability and reducing effort required, resulting in more referrals of presumptive cases.
- A process and co-design approach to activate **local religious institutions and leaders to deliver TB education** and testimonials in religious settings, as well as providing on-site testing and results delivery, thereby decreasing public stigma and increasing referrals from the community.
- A **cough companion service** operating from directly observed treatment, short-course clinics that utilizes former TB patients to accompany new patients to their homes the day they are diagnosed with TB, allowing for immediate contact tracing, TB screening, and sputum sample collection; systematic capture of precise patient address; infection prevention and control measures; and individualized counseling.
- An intervention aimed initially at hospitals using a **recognition and reward system** to raise the motivation of other health care professionals to refer TB presumptive cases to improve referral rates for TB testing within the hospital.
- A **"Brother's Keeper" integrated social and behavior change campaign** that draws on people's desire to help others get tested for TB.

The above interventions may be implemented individually or collectively. They aim to address different barriers to improving case detection of TB. In some instances, the interventions would be complementary if implemented together. While it is not necessary to implement all five interventions, we have found they could potentially work well as a portfolio of interventions.

Recommendations and next steps

We recommend progressing into a 12-week “Feasibility Stage” as soon as possible to capitalize on the momentum and partnerships created through the process to date.

The Feasibility Stage seeks to round out key points in the ideas to reduce the risk of failure and increase effectiveness. We recommend conducting the Feasibility Stage in two locations (e.g. Kano and Lagos).

We recommend breaking up the five interventions into smaller steps, assessing which parts of the ideas should form the scope of the next stage, and removing or pausing other parts until a later stage. In addition, we recommend moving the portfolio of interventions forward as a single set of complementary parts rather than continuing to design and assess them as five separate interventions.

The Feasibility Stage will provide data that can be used to assess impact. Following this stage, we expect to gain clarity on the most successful parts of the portfolio, including those that are ready to move forward at scale.

1 \\ Project background

[1] World Health Organization (2017). *Nigeria Tuberculosis Profile*.

Project overview

Tuberculosis is in the top causes of mortality for men and women in Nigeria. Despite this, Nigeria has one of the lowest rates of TB case detection in the world, with about 24 percent of cases being notified to the National Tuberculosis and Leprosy Control Programme (NTBLCP). Over one-third of the population has at least one of the six symptoms of TB (i.e., cough, sputum, chest pain, hemoptysis, body weight loss, and fever), but health-seeking behaviors vary.

Although awareness is high, knowledge of TB transmission, symptoms, and prevention is low. TB can be cured within six months if treated appropriately; however, lack of adherence to treatment is a driver of multidrug-resistant TB. While there is a lot of movement in this space, it is not translating into significant increases in case detection.

The scope of the Design and Test Phase of this project is to conceive of and prototype new interventions with the aim of increasing the rate of incident cases being notified.

Target shifts for each audience

Beyond the overall goal of increasing the rate of TB detection, key stakeholders (pictured below) agreed to a number of shifts that would also indicate success during the Intent Phase of this project. (See the Intent Statement on the next page.) These shifts were related to the perspectives of specific groups involved in the TB space, including people with TB, healthcare providers, development partners, government, and community members. Some of these shifts include:

For people with TB—

- Patients are confident in seeking care and avoid stigmatization.
- Communities support and encourage care-seeking behaviors.

For healthcare providers—

- Providers have an accurate understanding of TB and positive attitudes and behaviors towards patients.
- Patients are correctly triaged and referred where cases are above patent and proprietary medicine vendors' (PPMV) jurisdiction.

For development partners—

- Development partners use human-centered design (HCD) to develop and design TB projects.
- Research identifies critical intervention points and strategies for case detection.

For government—

- Increased and consistent expertise through regular capacity building and quality assessment.
- Defined and inclusive engagement approach.

For community—

- Religious leaders understand TB and collaborate with healthcare workers to refer for testing and encourage treatment adherence.
- Community leaders are better informed about TB and better able to share this knowledge.

Intent Statement: Project on a page

Purpose: *To understand key audiences and their positive and negative drivers and influences of behavior related to TB in Nigeria, and to identify and test opportunities to increase case detection.*

CURRENT STATE

CURRENT STATE

The challenge

Tuberculosis (TB) is one of the **top causes of mortality for men and women in Nigeria**. Despite this, Nigeria has one of the lowest rates of TB case detection in the world, with **only 24% of cases being notified** to the National TB and Leprosy Control Programme.

Awareness is high but knowledge of transmission, symptoms, and prevention is low. TB can be cured within six months if treated appropriately; however, lack of adherence to treatment is a driver of multidrug-resistant TB.

While there is a lot of movement in this space, it is not translating into significant increases in case detection.

What are the design considerations?

- Data suggest that TB has a high impact on men in urban areas but this needs to be tested.
- We assume there are large sections of undiagnosed populations.
- Efforts will have limited geographic focus until further evidence justifies scale up.

THE CHANGE

HOW DO WE GET THERE?

What are the shifts we are seeking to make?

From	To
"We have the data"	*"We understand the stories behind our data"*
"We can't act until we know"	*"We don't know but we can act to learn"*
"We design services to attract patients"	*"We understand the lived experiences of patients and our services are designed to suit them"*

What are we going to do?

This project will be delivered in two phases:

1. **Discovery** will deliver a set of audience profiles that identify key behaviors and influences on health-seeking behaviors and opportunities for intervention.
2. **Design** will consist of rapid design sprints where opportunities identified in phase one are rapidly developed into prototype solutions and tested in the community. Successful solutions will be recommended for scale.

Focusing question

How might we increase TB case detection rates in Nigeria?

FUTURE STATE

FUTURE STATE

Outcome

In the future, you will see genuine understanding of the lived experience of TB that links data, context, and environment. We will have:

1. An understanding of the socio-cultural barriers to health-seeking related to TB.
2. A set of audience profiles that can inform future targeting and program design.
3. Input to the NTBLCP Advocacy, Communication and Social Mobilization (ACSM) strategy.

Success from different perspectives

The NTBLCP will say

"We understand why case detection is low and are moving forward."

Implementing partners will say

"We are invested in this solution because we deeply understand it and built it ourselves."

Development partners will say

"We see meaningful action being taken to identify TB cases."

Social and behavior change and human-centered design

To help bring these shifts about, we chose to use the Breakthrough ACTION Social and Behavior Change (SBC) design method. This method integrates research, behavioral science and economics, human-centered design (HCD), communication, and community capacity strengthening into a cohesive, flexible approach.

Our SBC process for this Design and Test Phase had a special emphasis on HCD in order to generate new potential ideas and explore them while designing them. HCD starts with the users of the system, including patients, healthcare workers, and community members, to build insights about what is happening on the ground.

HCD focuses on starting with the human experiences of the users or key participants of the system and working out from there.

HCD views people's experiences as the most valuable resource available to inform the overall process. Whether it is patient stories of their journey with TB, provider experiences of treating patients and working within the system, or community anecdotes of how TB is perceived and managed in the public sphere, we see all of these stories as fuel for the process.

Understanding the SBC process

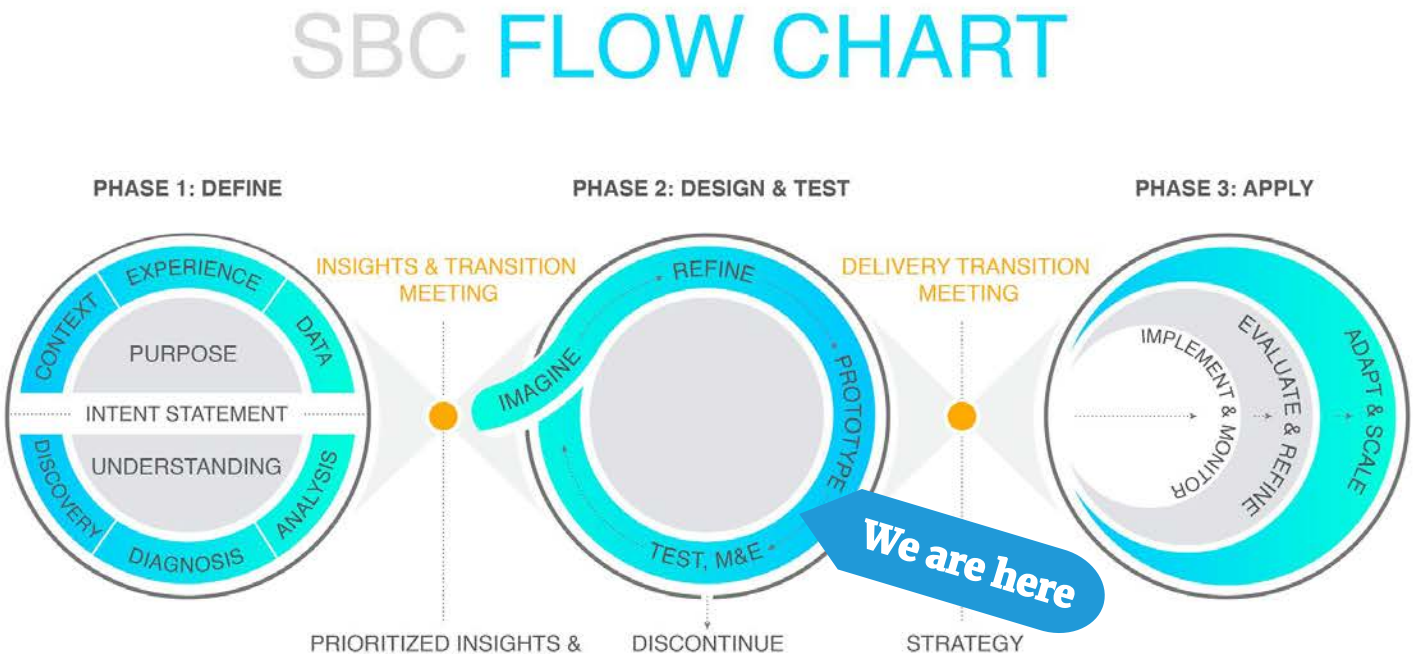
SBC and HCD follow a rigorous, tested methodology as illustrated in the *SBC Flow Chart* below.

The first phase, "Define," focuses on clarifying the purpose and building understanding using context, data, and experience. The output is an overarching intent statement as well as key insights from qualitative research into the situation.

The Define Phase of this project was completed in May and June of 2018.

We are now moving through the second phase, "Design & Test." During this phase, the insights from the Define Phase are used as springboards for generating ideas and promising concepts are selected, developed, and improved through iterative cycles of prototyping, testing, and refinement.

As part of this project, we have completed the Imagine stage and have iterated multiple times between the Refine and Prototype stages.



Insights from the Define Phase

People's stories uncovered in the Define Phase were the primary ingredients for building our key insights, personas and journey maps. These artifacts then served as the jumping off point for all of our idea creation. All of our proposed interventions can be traced back to what we heard from the actual users of the system. The SBC process is one of divergence and convergence: iteratively exploring broadly, then deciding how to act. This process is essentially one of inventing, experimenting, learning, and trying again.

Below are the summary headlines of each insight. For the full detail of each insight, see *Appendix B: Insights, personas, and journey maps.*

1. People go to multiple places to seek help but may not be correctly diagnosed or referred.
2. An inability to immediately test sputum samples can mean presumptive cases do not receive their diagnosis.
3. Incomplete or incorrect data entry results in missed opportunities for diagnosis.
4. Providers lack systems to follow-up presumptive cases and patients.
5. There are real and perceived costs in getting diagnosed for TB despite free testing and treatment.
6. Stigma exists across communities and professionals, which can be a barrier to health-seeking behaviors.
7. Myths and misconceptions about TB transmission are prevalent in the community and among health professionals.
8. TB providers and program managers can often identify high-risk areas for TB in their communities.
9. Some private facilities offer high-quality health services but do not want to be associated with TB.
10. Counseling is difficult because it needs to be tailored to be effective.

How to determine “good” in an SBC process

It is important to understand that we do not approach this work with the expectation that our first answer is going to be the right answer. On the contrary, we work under the belief that everything we do or make can be improved and we must put our ideas into action in order to learn how to improve them.

We do not seek to *validate* our ideas but rather to identify how they could be made better, pruning away what is irrelevant, reinforcing what is successful, and changing track when required by having potential users interact with early, rough but tangible versions of the concepts.

Our goal is not to prove unequivocal success at this point in the process, but rather to demonstrate with confidence that we are proceeding in an effective direction.

We know that the concepts will evolve as we continue to prototype and refine. This is a crucial part of the design process and means we must judge our progress in a different way.

The question is not to determine if we think we have the *right* answers in a full and complete form but rather do we think we are exploring *good* answers that have the potential to be highly effective if they are developed and scaled up.

Project team and the value of co-design

Our SBC methods leveraged a multi-stakeholder co-design approach where we involved partners from across the healthcare system to directly participate in the project. This meant that the concepts that we developed were conceived by or directly informed by the voices of the people involved in the system.

This phase of the project involved 42 professionals representing 14 different organizations associated with SBC, TB, and healthcare across Nigeria. These participants not only contributed to the development of the concepts but also began to develop a mastery of the SBC process. For a full participant list, see *Appendix C: Team journey and participants*.

- Breakthrough ACTION Nigeria
- ThinkAction
- NTBLCP
- TB Network
- Association of Reproductive and Family Health (ARFH)
- Health Writers Association of Nigeria (HEWAN)
- Institute of Human Virology, Nigeria (IHVN)
- Kano State TB and Leprosy Control Programme (STBLCP)
- Rivers STBLCP
- Enugu STBLCP
- Lagos STBLCP
- Dutch TB Foundation (KNCV)
- Sustaining Health Outcomes through the Private Sector Plus (SHOPS+)
- TB patients

Additionally, the team members benefited from the opportunity to work together, building bridges and cementing bonds that will serve as the foundations for future collaborations. The long-term value of this capacity building and relationship strengthening cannot be overstated.

2 \\ Design and Test Phase


760+
ideas
12
major concepts
5
prioritized interventions

The Imagine Stage

In the Imagine Stage, the co-design team divided up into seven groups, each focusing on a different persona and journey map in conjunction with the 10 primary detection insights developed in the Define Phase. The journey maps each posed a set of challenges and barriers in a question format to inspire a number of possible solutions. Using structured invention techniques, the teams collectively developed over 760 different ideas.

These ideas were then reviewed and prioritized by the groups based on how much potential impact and how difficult each idea would likely be to implement. This culminated in the emergence of 12 major concepts. The concepts collectively addressed all of the major insights and covered a broad range of potential interventions, including technology, media, community, and religious centers.

The 12 concepts were then further considered, with some concepts being merged into richer, more powerful ideas. The concepts were then prioritized a final time using criteria such as their potential impact on case detection, the cost and ability to rapidly prototype, the uniqueness of the concepts, and the sustainability and potential business model of the concept.

Addressing key insights

The final collection of ideas included five concepts that the team felt covered a broad spectrum of interventions while also addressing the vast majority of problem areas identified in the insights and personas.

It should be noted that while the prioritization exercises converged on five concepts, other potential high-value ideas were not discarded. A register has been maintained of significant ideas that could be pursued in the future as the chosen concepts continue to be progressed (see *Appendix: Other ideas)*.

We wanted to be sure that the selected concepts sufficiently addressed the issues identified in the Discovery Phase so we mapped all of the insights to the five prioritized concepts. Not only was every insight addressed to some extent, several of the more significant insights were addressed by multiple concepts, demonstrating a potential combinative effect of the concepts.

When further refined and executed, it is possible that some of the concepts will actually build off of, and be supported by, the success of other concepts. The overlap of the concepts may enhance the effectiveness of each other.

Prototype development and testing approach

Once the concepts were selected, the co-design team was reconfigured into five new teams, each focusing on developing a different concept.

The teams fleshed out the concepts further by using storyboards, which help to visualise how the idea would play out, the specific experiences they would deliver, how the concepts could be prototyped to help the teams learn what aspects would and would not work, and how the concepts could be improved.

The concepts were then developed into prototypes and taken out to real-world environments to see what we could learn by putting them into actual contexts of use.

Testing locations

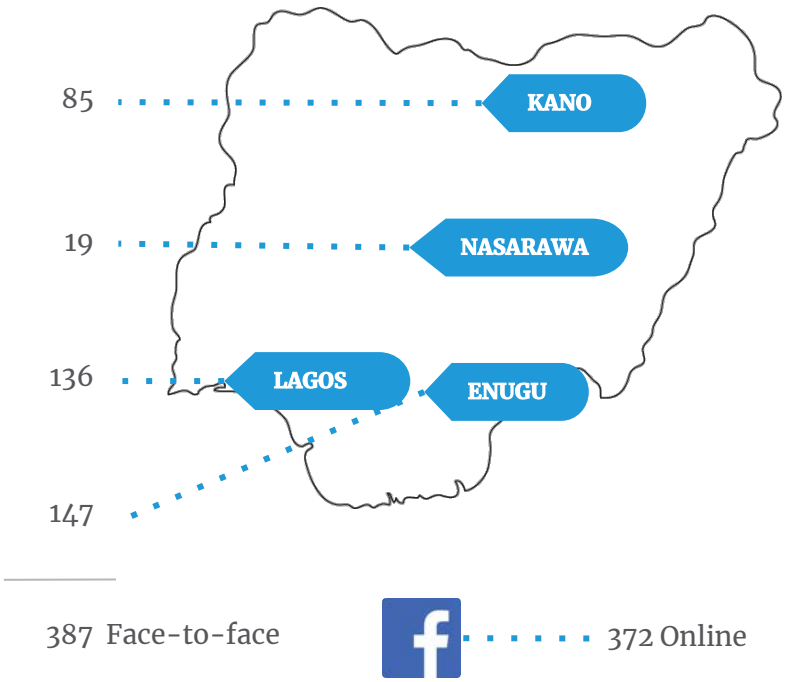
The prototype testing was carried out in four geographical regions, include the North and South, as well as urban and peri-urban locations to test the flexibility and potential applicability of the concepts across the different regions of Nigeria.

We conducted testing with people in the environments that are relevant to them and to our challenge, such as motor parks, markets, shopping centers, bus stops, PPMVs, densely populated areas, hospitals, and directly observed treatment, short-course (DOTS) facilities. This meant that we were learning not only from what people say, but also from how they react to our prototypes in the intended environment. We also learned from the environment itself—practicalities and insights that would otherwise be lost if we brought people out of these environments and into a research lab.

One of the groups also tested part of their concepts as a digital campaign, which meant prototypes were tested online as well.

More than 380 people were involved in the face-to-face testing with another 370 participating online. In total, we had more than 750 people involved in the testing.

750+ people interacted with our ideas



3 \\ The five refined interventions in detail

Breaking the interventions into components

Each intervention is complex and consists of a number of activities, materials, or other functional aspects. In order to better understand the way that each intervention works, we have broken them down into 'components'. These components are discrete parts of a process or are enabling elements for an intervention.

The interventions have components that have differing importance. Some components are critical to the intervention's core design; other components might be considered 'nice to have' or enhancers. We have labelled these in three categories:

- **Primary components:** *critical to the intervention functioning.*
- **Secondary components:** *desirable to the intervention.*
- **Tertiary components:** *optional components that increase the impact of the idea.*

The components are listed in full in *Appendix A: Components*. Each intervention description features a table of its specific components, for example:

ID	Component description	Importance
01	Targeting TB high-risk areas and mapping key institutions (e.g., DOTS, hospitals, religious, medicine vendors, high-density residential)	Primary component
08	Monitoring and evaluation of store referral quality	Tertiary component

Stories from the field

During the activities of this project, the individual co-design teams learned a great deal about their individual concepts, as well as about the SBC process generally. Each of the teams shared small experiences and learnings that affected both the development of their concepts, as well as their personal development as designers and innovators.

Throughout the process, the teams were asked to capture any little interactions they noticed outside of the explicit prototyping tests themselves, that taught them something about their concept or about the SBC process.

We've captured these insights here, as small vignettes of what participants said, what it meant, and how it might affect the concepts.


Intervention A:
Simplified referrals from medicine stores
USAID
PPMV Referral Card
Give a card to anyone with a cough for more than 2 weeks.
08 001
CURE YOUR COUGH
If you have a cough for more than 2 weeks, call 08038053578 for help.
08038053578 for help.
Referral Card
THANK YOU FOR CARING
End of slips
Please call 08038053578 for more slips
Kangaro HP-45
12 DIGIT

Overview

The current situation

Many people with TB struggle to find the correct diagnosis and cure for their cough. They may spend months going from one medicine vendor to another, to traditional herbalists, and to religious leaders for help. As their condition worsens, many avoid going to the health facility for a variety of reasons, including stigma and real or perceived costs. Some believe they cannot afford the charges. However, both the test and treatment for TB are free at public health facilities.

The team working to address this long treatment journey included SHOPS+ and KNCV, who have extensive experience working with PPMVs. Their understanding of the problem helped guide the process of designing and testing a better referral system for PPMVs and other medicine stores.

PPMVs have been engaged to refer presumptive TB cases; however, they are expected to complete a lengthy entry into a register and/or fill out a long referral form. We found that the forms may also be filed away and not within easy reach.

PPMVs are in the business of selling medicine and they do not prioritize making referrals for TB testing for presumptive cases. Most PPMVs do not have the time and are not interested in completing the paperwork; the forms and registers end up forgotten under their counters.

The proposed intervention

If most people visit a PPMV very early in their treatment journey, it should be as simple as possible for a PPMV to refer anyone with a cough for two or more weeks to get tested for TB in a location they prefer.

This intervention focuses on making the referral process simple.

Instead of filling in a form, the PPMV can simply tear off a referral slip to give to anyone they feel may be showing the warning signs of TB (e.g., coughing for more than two weeks). The referral slip has information for the patient, including a toll-free number they can call to get more information about TB and local testing facilities. It also has a unique ID that, when given to the DOTS clinic or toll-free service, can trace the origin of the referral. The referral stubs left at the PPMV show the number and IDs of referral slips that were distributed.

To increase the likelihood of the referral slips staying on the countertop, we created two referral dispenser models: a calculator and a desktop calendar, both low-cost but high-utility items for a medicine store.

How it works

A TB and Leprosy Local Government Area (LGA) Supervisor (TBLS) speaks to a PPMV (or Islamic medicine store) using an SBC tool and gives them their choice between a calculator with referral slips or a calendar with referral slips. The referral slips provide the number for the national TB hotline where people can get information about nearby TB testing facilities. A poster (also with the hotline number) is the placed in a prominent location in the store to remind PPMV staff about the referrals and prompt presumptive TB cases to ask questions. The poster and the referral dispenser are designed so that even staff who are not present during the briefing would be prompted to make a referral. Here's how it works in more detail:

Orienting TBLS on the approach

This strategy may be best rolled out by the local TBLS and their staff as there should already be one TBLS per LGA across Nigeria. Uptake of the intervention varied significantly based, in part, on the quality of the interaction between the TBLS and the PPMV. Therefore in future, each TBLS should be trained to conduct effective interpersonal communication sessions with the PPMVs supported by simple instructive materials.

A key part of the intervention is to keep the orientation short. We tested a 10-minute orientation with some success. This could be enhanced with the creation of higher-fidelity training materials. We also did not try to discourage the sale of cough syrup or introduce this measure as being in competition to sales of other medicines.

Comprehensive LGA coverage

The TBLS will visit every PPMV and any other appropriate medicine store within their catchment area. During the visit, they will use the SBC tool to explain the symptoms of TB and explain the free TB test and treatment services available at public health facilities. If someone asks for cough medicine, the PPMV (or other medicine store) will ask how long the person has been coughing. If it is more than two weeks, they should hand them a referral slip and call the hotline number to know where to get tested.

Mystery client visits

We used mystery client visits to test whether the medicine stores would issue the referrals to presumptive TB cases. The focus of this was to test the effectiveness of the intervention and understand more about its success or failure in a qualitative sense. For example, how does the PPMV introduce the ticket? What questions do they ask? Is the ticket system still on the countertop? Why did they or did they not refer? This complements the potential quantitative measurement of referrals and can be used to improve quality of the intervention design over time.

Goals

Barriers this idea seeks to address

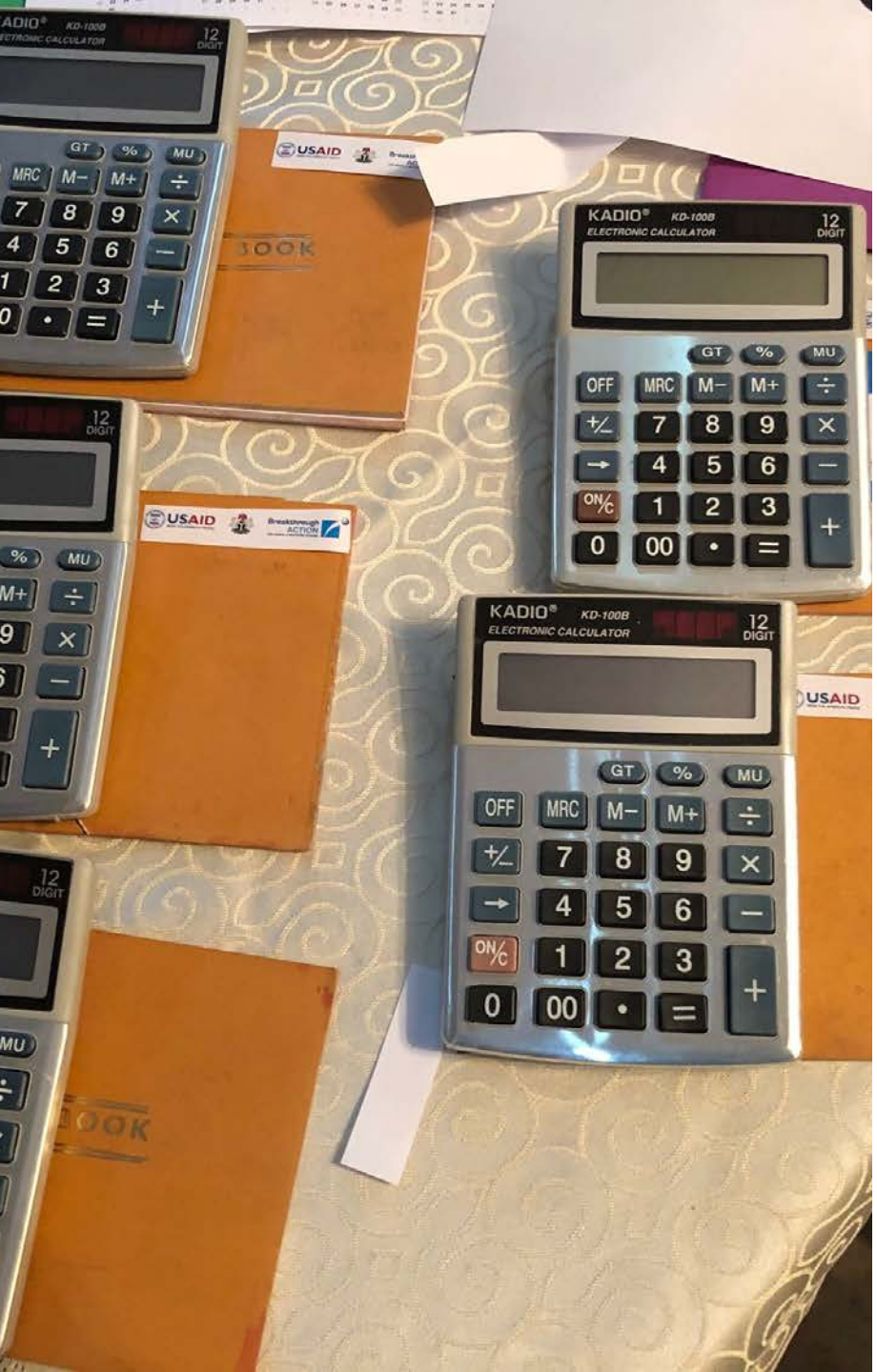
This idea seeks to address the following insights from the Discovery Stage:

Insight 1. Long treatment journeys
Insight 6. Community stigma barriers

Anticipated benefits

If successfully deployed, we anticipate this concept would result in increased referrals of presumptive cases from PPMVs, getting potential patients into the systems far earlier in their illness journey than is currently the case.

Additionally, it would elevate the importance of TB and increase awareness of one of its most prominent symptoms, prolonged coughing, by making it something that is openly discussed during PPMV transactions. This would indirectly reduce public stigma, ideally making TB something that is safe to talk about in public.



Lessons learned

We saw indicative success rates during the period that we were prototyping and testing this intervention. Our mystery client visits had a two-thirds success rate, including a referral by a PPMV staff who was not present at the initial briefing. Given that the materials and training used were prototypes and not final products, we find this very encouraging.

Core components

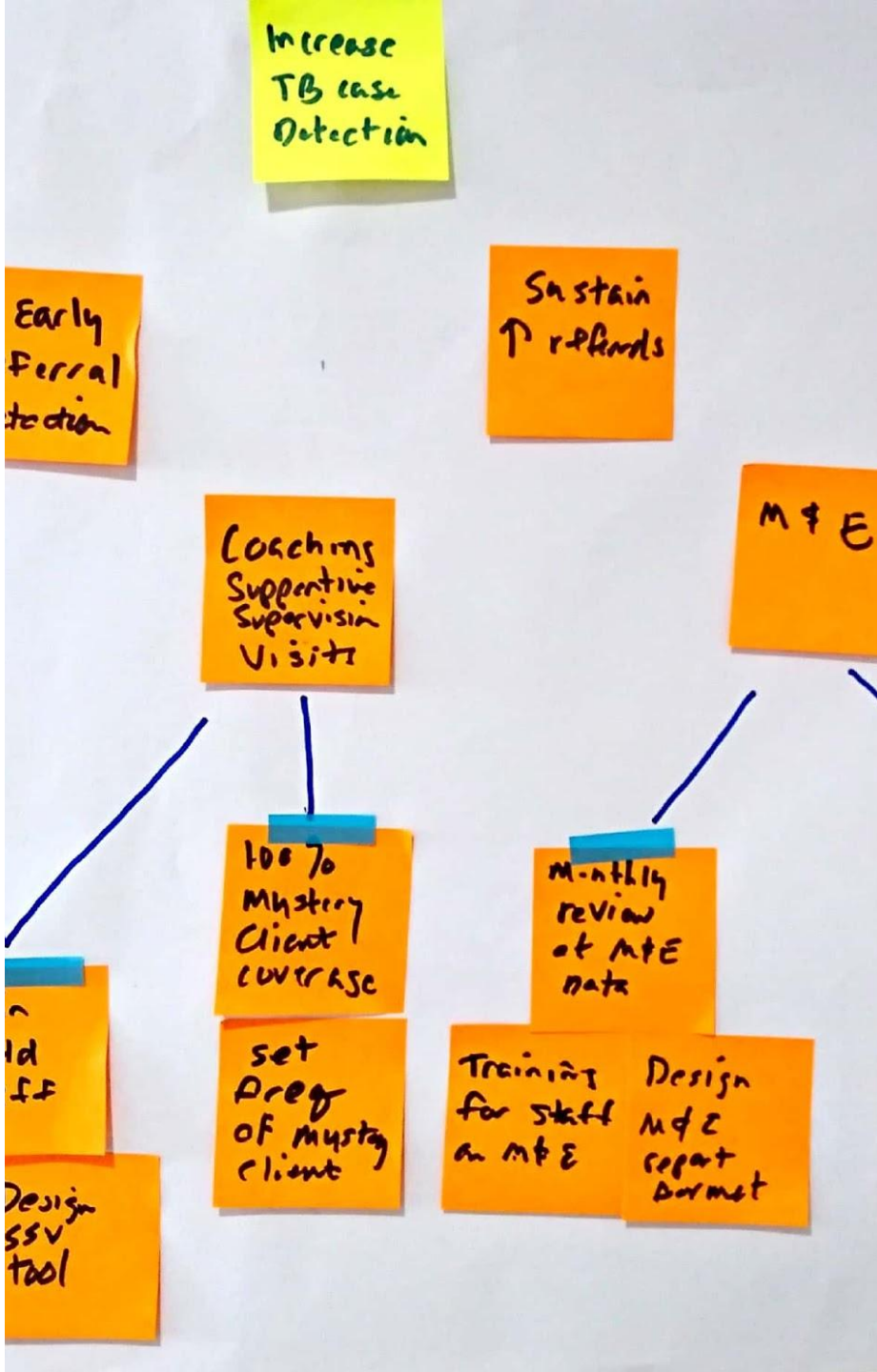
The components for the medicine store referrals intervention are as follows:

ID	Component description	Importance
01	Targeting TB high-risk areas and mapping key institutions (e.g., DOTS, hospitals, religious, medicine vendors, high-density residential)	Primary component
02	Creation of basic TB SBC materials	Primary component
03	Creation of basic TB training	Primary component
04	Enhanced tracking of phone referral sources (TB Hotline)	Secondary component
05	Enrollment and training of store workers	Primary component
06	Design of a simplified referral system	Primary component
07	Deployment and sustainability of the simple referral system into stores	Secondary component
08	Monitoring and evaluation of store referral quality	Tertiary component

Primary component: A part of the intervention that is critical to its functioning.

Secondary component: A part of the intervention that greatly enhances its effectiveness, but is not critical.

Tertiary component: A part of the intervention that is desirable to enhancing its effectiveness.



Persistent cough?
Night sweat?
Weight loss?
Call for help now!
CURE YOUR COUGH
PPMV Referral Card
USAID
KADIO
ELECTRONIC CALCULATOR
12 DIGIT
End of slips
THANK YOU FOR CARING
Please call 08038053578 for more slips
Referral Card

If honey, garlic, and ginger don’t work...

Stella at an Islamic medicine store in Fagge, Kano

Team PPMV (without team member Stella) distributed a referral prototype to an Islamic medicine store on Thursday. On Friday, Stella visited the store to test whether they would make a referral. She explained that antibiotics and cough syrup were not helping her cough so she wanted to try Islamic medicine.

They asked if she had tried taking honey, garlic, and ginger and she confirmed that she had. They responded if she had tried all these things, then she should visit the hospital and gave her a referral slip.

A presumptive TB patient will visit many different places in order to find a cure, including traditional healers like an Islamic medicine store, which primarily deals in herbs. The more outlets where these referral prototypes can be used, the more likely we can interrupt the current treatment journey and get someone tested.

The group was unsure how an Islamic medicine store would respond to making referrals for treatment with Western medicine. This one example showed that there may be promise in pursuing this idea further.

My Oga is not around

Stella at a PPMV in Fagge, Kano

Team PPMV (again without team member Stella) distributed a referral prototype to a PPMV on a Thursday. The next day, Stella visited the PPMV to test whether they would make a referral. When she entered the PPMV, there was a teenager at the counter and one of our posters on the wall. Stella explained that antibiotics and cough syrup were not helping her cough. The teenager responded, “My Oga is away, but some people came by earlier and put up this poster. If you can, you should read it and go see a doctor.”

The teen was not around when Team PPMV originally visited the PPMV and spoke to the owner. An important test for the prototype was what would happen if someone who was not initially briefed was there when a presumptive TB case visited. In this case, the teenager was able to recommend going to the hospital even if he did not provide the referral slip. He may have been illiterate, but he was able to understand from the poster that it was related to cough treatment.

Intervention B: Detection in religious settings

Overview

The current situation

Nigeria is a very religious country. Individuals and groups visit their religious leaders for prayers for many illnesses, including TB. Religious leaders have a critical sphere of influence on the beliefs and actions their members take. While those with spiritual problems have benefited from their spiritual leadership, some with an ailment such as TB have often failed to recover and many have died without seeking medical care.

Some religious leaders are knowledgeable about TB but many do not know the symptoms and how it is transmitted.

Few have actively participated in public awareness programs in the past. In instances where they have, religious leaders were typically handed messages to share with their congregation, rather than co-creating messages with health professionals.

If properly engaged and empowered, religious leaders could contribute significantly to increasing awareness of TB and influencing prompt health-seeking behaviors.

The proposed intervention

Most Nigerians belong to diverse religious communities and are greatly influenced by their religious leaders. Consequently, religious leaders have the potential to be influential TB advocates.

This intervention seeks to enlist religious leaders and TB survivors as leading advocates for TB control by using SBC to integrate TB messages into religious services, encourage appropriate health-seeking behaviors, and increase the availability and accessibility of local TB services in religious settings.

In order to enhance the sustainability of the intervention, religious leaders and TB survivors would co-design TB messages to reflect their belief systems, increasing ownership of the message. Religious leaders would be motivated by the opportunity to have a healthy congregation and seamlessly integrate TB messages into their regular activities.

Health workers would attend religious events in order to assist with difficult or technical questions about TB. In some areas, it may also be possible to take sputum samples at the church or mosque and transport them to the nearest clinic. Likewise, it may be possible to deliver test results in the religious setting, avoiding the need to travel to a clinic.

How it works

The religious approach utilizes a range of integrated activities that seeks to appeal to the religious demands of the people while providing them with TB services. The steps include:

Mapping the religious setting

This targeted approach will map religious settings based on the burden of TB in the area and the density of the population. The state TB program and the LGA TBLS will be contacted to obtain current TB data. The communities in the LGAs are then classified into high-risk and densely populated areas. Religious centers in the high risk, densely populated areas will be mapped around the available DOTS centers. The list of the religious and DOTS centers will be collated into a directory.

Engagement of religious leaders

Religious leaders in the selected areas will be be visited and the objective of the project will be explained to them. Their support will then be enlisted. Research has shown that many leaders are very amenable to being enrolled in such a program.

Co-design of TB messages

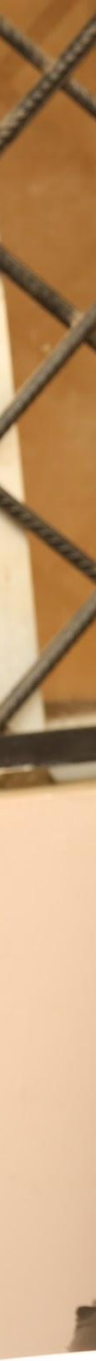
A co-design meeting will be planned with religious leaders to provide them with the basics of TB and how they can integrate messages into their activities. These messages would be tailored to fit into different religious settings.

Engaging TB survivors

TB survivors will be recruited from DOTS facilities nearest to the religious setting through the help of the TBLS and the DOTS providers. The TB survivor will be engaged using the Line of Engagement (LOE) interview questioning technique, which inquires about the survivor's story and what they wish had been done to make their journey to care faster. The LOE will help to highlight their pain points and identify how those barriers might be reduced for others. The TB survivors who are willing to be involved would select their preferred mode of sharing their story (e.g., TV, radio, anonymous recordings, or personal sharing at religious settings).

Engaging volunteers for sputum collection

After recruiting the religious leaders as advocates, we will solicit their support in identifying retired medical personnel or other volunteers in their congregation. Otherwise, we will enlist the community mobilizer to support sputum collection. These volunteers will be trained in the standard operating procedure for sputum collection and transportation. They will be linked to Riders for Health where they exist or, otherwise, directly to the DOTS providers.



Sharing experiences

TB survivors will attend religious activities such as Jumat prayer on Friday and Sunday services. The survivors will shares their stories with congregations, coupled with sermons as appropriate.

Call to action

The TB survivor will be accompanied by a designated TB expert. The TB expert will call for anyone who has been coughing for the past two weeks to get tested.

Sputum collection and management

Sputum samples will be collected at the religious center by the volunteers and transferred to DOTS testing centers by Rider for Health. Results will be sent to volunteers and the patients will be referred to the nearest DOTS facility.

Goals

Barriers this idea seeks to address

This idea seeks to address the following insights from the Discovery Stage:

Insight 1. Long treatment journeys
Insight 2. Drop-out before results delivered
Insight 5. Indirect costs to testing
Insight 6. Community stigma barriers

Anticipated benefits

If religious institutions are fully engaged and well integrated into the program, there is potential for significant increases in TB case finding.

Sustaining religious institution engagement could equally reduce our continuous efforts to re-engage them, which often requires logistics and other costs.

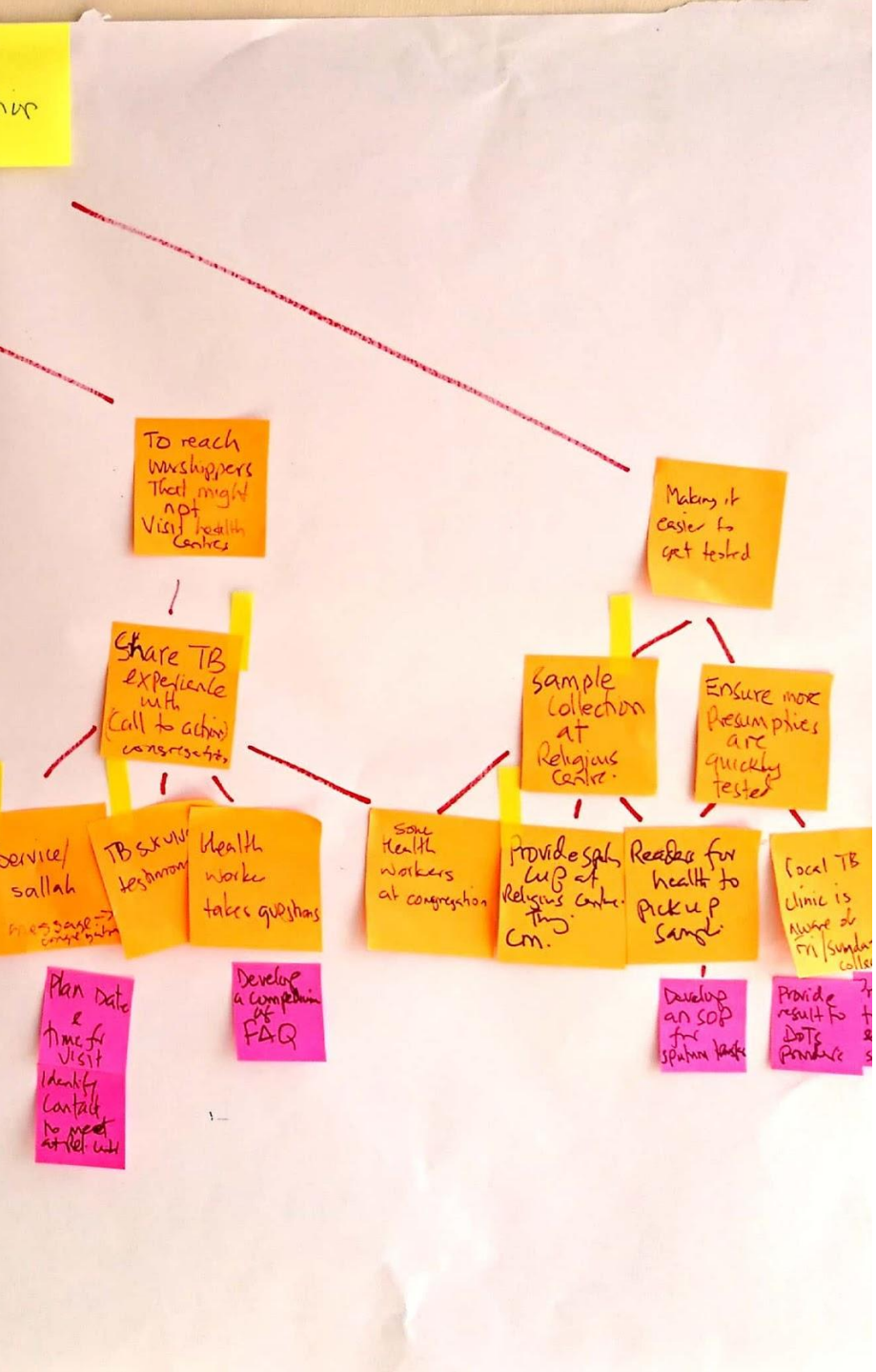
The relationship between the TB program and religious institutions can also serve as an avenue to reducing the default rate among patients.

Essentially, enlisting religious leaders would broaden our coverage and narrow the missed group.

Lessons learned

From the prototyping, we learned:

- Proper engagement of religious leaders is key to their involvement.
- Religious leaders are willing to support TB campaigns.
- Engaging religious leaders is low hanging fruit for increasing TB case finding.
- Some religious leaders have relations that had TB in the past, hence they are motivated to support the program.
- Religious leaders care for their members.
- TB survivors can be good advocates for TB in their respective communities.
- There is a strong need to utilize the State Ministry of Health while engaging religious institutions.
- Religious leaders were independently willing to link us to their networks.



Core components

The components for the detection in religious settings intervention are as follows:

ID	Component description	Importance
01	Targeting TB high-risk areas and mapping key institutions (e.g., DOTS, hospitals, religious, medicine vendors, high-density residential)	Primary component
02	Creating basic TB SBC materials	Primary component
03	Creating basic TB training	Primary component
09	Enrolling and training religious leaders	Primary component
10	Enrolling and training TB survivors	Secondary component
11	Co-designing religious messages at the local level	Primary component
12	Delivering religious ceremony with TB survivor and TB health worker support	Secondary component
13	Recording and delivering TB survivor story	Secondary component
14	Availability of portable sputum sample collection	Tertiary component
15	Transporting samples from non-clinical settings to DOTS	Tertiary component
16	Private delivery of test results to non-clinical settings	Tertiary component

Primary component: A part of the intervention that is critical to its functioning.

Secondary component: A part of the intervention that greatly enhances its effectiveness, but is not critical.

Tertiary component: A part of the intervention that is desirable to enhancing its effectiveness.

Finding the personal connection

Meeting with Pentecostal Fellowship of Nigeria (PFN) president in Ikeja province

We spoke with a official from the PFN. Much to our surprise, we discovered that he had a very personal connection to TB.

He told us, “Twelve years ago, my elder brother had TB and I was not happy how his case was managed in a tertiary hospital here in Lagos as I had to pay a lot of money.

“However, hearing now that TB testing and treatment is free, I would gladly help in informing my congregation to get tested for cough. In fact, just last week I had prayed for a member that had a cough and told her that the demon had be cast out, but that she should get tested in the hospital.”

We realized that sometimes the way to make a connection with a religious leader may be by finding out how they have been personally touched by TB and explaining how we are working to improve the situation of TB in Nigeria.

I’m who they listen to

Imam at the Oluwole central mosque

When discussing our approach with a local Imam, he was in immediate agreement. “People do come to us for prayer regarding their health, stressing that their condition is not for hospital. They take our word very serious—as such TB messages can be passed to them through the mosque.

“I understand the public health approach to health education because I had worked with the World Health Organization and the State Ministry of Health in the campaign for the use of long lasting insecticide nets and that was quite successful.

“As the secretary for all the Imams in Lagos state I could also facilitate the engagement of other Imams in the state to see how TB can be brought under control. I could provide you the platform to share TB messages and longer period to share during the Tahajjud (all-night vigils on Fridays).

“However, you would need to come with TB experts that can answer the different question that would come up.”

Not only did the Imam recognize his ability to impact the situation, he was also very willing to help extend the intervention and even refine it to ensure its effectiveness.

Intervention C: Cough Companions

Overview

The current situation

The day a patient is diagnosed with TB is a critical time for action but health providers are often unable to provide individualized attention given competing demands. This results in a number of missed opportunities across the TB spectrum—from contact tracing to infection prevention to adherence support.

DOTS providers do not have adequate time or resources to individually tailor counseling to patients or follow-up with contact tracing. Contact tracing typically occurs much later, if at all, for drug sensitive TB (DS-TB) patients. Patients are asked to bring their contacts to the health facility but they may not do that.

Additionally, active case finding is typically done using a general house-to-house visit approach. There is no mechanism in place to determine which index cases are likely to be "high yield."

Patients are also often unable or unwilling to provide complete, accurate home addresses, which leads to difficulty in tracing patients lost to follow-up.

Furthermore, many patients do not have appropriate treatment supporters and/or treatment supporters are not adequately informed of their roles and responsibilities.

The proposed intervention

Training past or present TB patients to accompany new patients to their homes at the point of diagnosis would help to alleviate several of these problems by creating a number of opportunities to increase TB case finding, prevent further TB infections, improve TB treatment adherence, reduce TB stigma, and improve the overall TB patient experience.

Accompanied home visits the day a patient is diagnosed provide the opportunity to assess the patient's home environment and demonstrate appropriate infection prevention and control measures, immediately sensitize and screen contacts for TB, collect sputum samples from presumptive cases, and identify and orient an appropriate treatment supporter.

As patients are often unable or unwilling to provide complete and accurate home addresses, accompanied home visits would also enable us to determine their exact location through GPS, allowing for future follow-up.

How it works

Patient escorts are recruited and trained

Past and present TB patients or other volunteers are identified, trained, supplied with job aids and tools, and given transportation to enable them to provide comprehensive TB services to newly diagnosed patients in their homes. Each facility will have a pool of trained patient escorts who can be called upon to provide services when high-risk patients are identified.

Presumptive cases complete a brief cough assessment

All presumptive cases are asked to complete a simple survey that assesses their risk of infecting others with TB. The survey determines:

- How long the person has been coughing.
- The number of people with whom they live.
- If any children under the age of six are staying in their household.
- If they know anyone else who is coughing.
- How many other people they come into contact with at work or through social engagements.
- If they would be willing to have someone escort them home.

Health workers assess their level of risk. High-risk patients are prioritized for home visits.

Cough companions accompany high-risk patients home

With the patient's consent, a Cough Companion is called in to go with the patient to their home the same day the patient is diagnosed. The trained escort talks to the patient about their own experience with TB and answers any questions or concerns the patient may have, which helps to reduce stigma around the disease.

Escort provides comprehensive services at the patient's home

At the patient's home, the escort records the GPS location to enable future follow-up. They provide TB education to contacts, check the airflow of the patient's home, and offer advice on infection prevention and control measures. The escort screens patient's contacts for TB, takes sputum samples from presumptive cases, and determines if there are children under six who require isoniazid for prevention. If a treatment supporter is not yet identified, the escort helps to identify one and orientate them on their role as a treatment supporter.

Sputum samples are taken to the lab for testing and results communicated

The escort, equipped with a sputum carrier, brings sputum samples to the lab for testing. Positive results are taken to the new patient's home.

The TB hotline is used to trace contacts of patients who do not accept the home visit

In the event that a patient refuses an escort, has presumptive cases in their home, and/or knows other people who are coughing, health workers collect the contacts' names and phone numbers, call the toll-free TB hotline, and provide the contact information for the hotline to conduct screening and referrals.

Goals

Barriers this idea seeks to address

This idea seeks to address the following insights raised in the Discovery Stage:

Insight 2. Drop out before results delivered
Insight 3. Incorrect data, losing patients
Insight 4. Few resources to follow-up
Insight 5. Indirect costs to testing
Insight 8. Local knowledge of TB hotspots
Insight 10. Counseling needs to be tailored

Anticipated benefits

By providing this service at the point of diagnosis, better targeting and higher yield contact screening can be provided on-the-spot. Presumptive cases will be promptly identified and linked to the facility before embarking on a fruitless search.

Patient addresses are systematically and accurately captured to enable future follow-up.

Patients are provided with individualized, tailored counseling and infection prevention and control measures are implemented effectively. Finally, treatment supporters are appropriately identified and immediately oriented.

Lessons learned

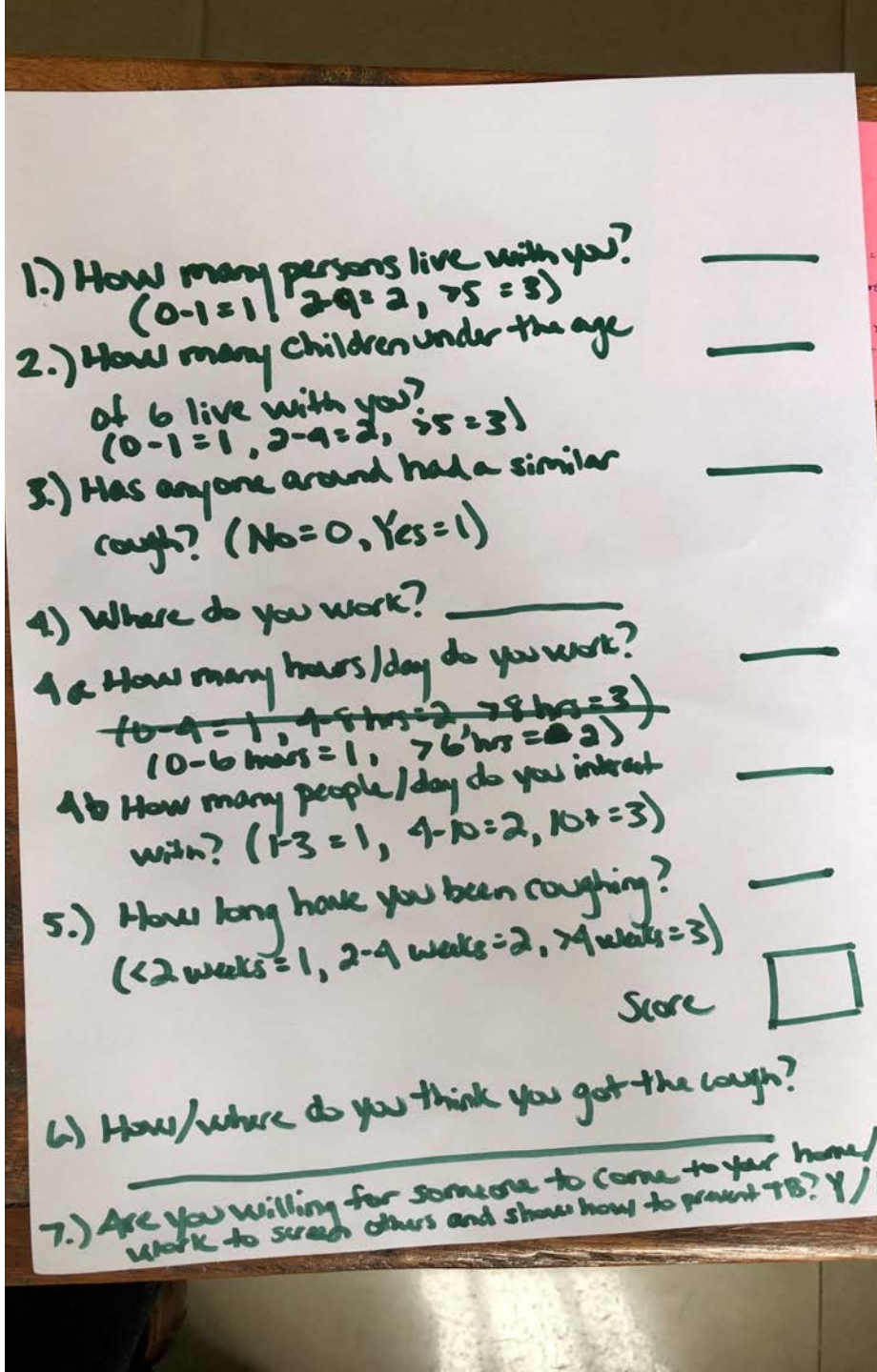
General insights

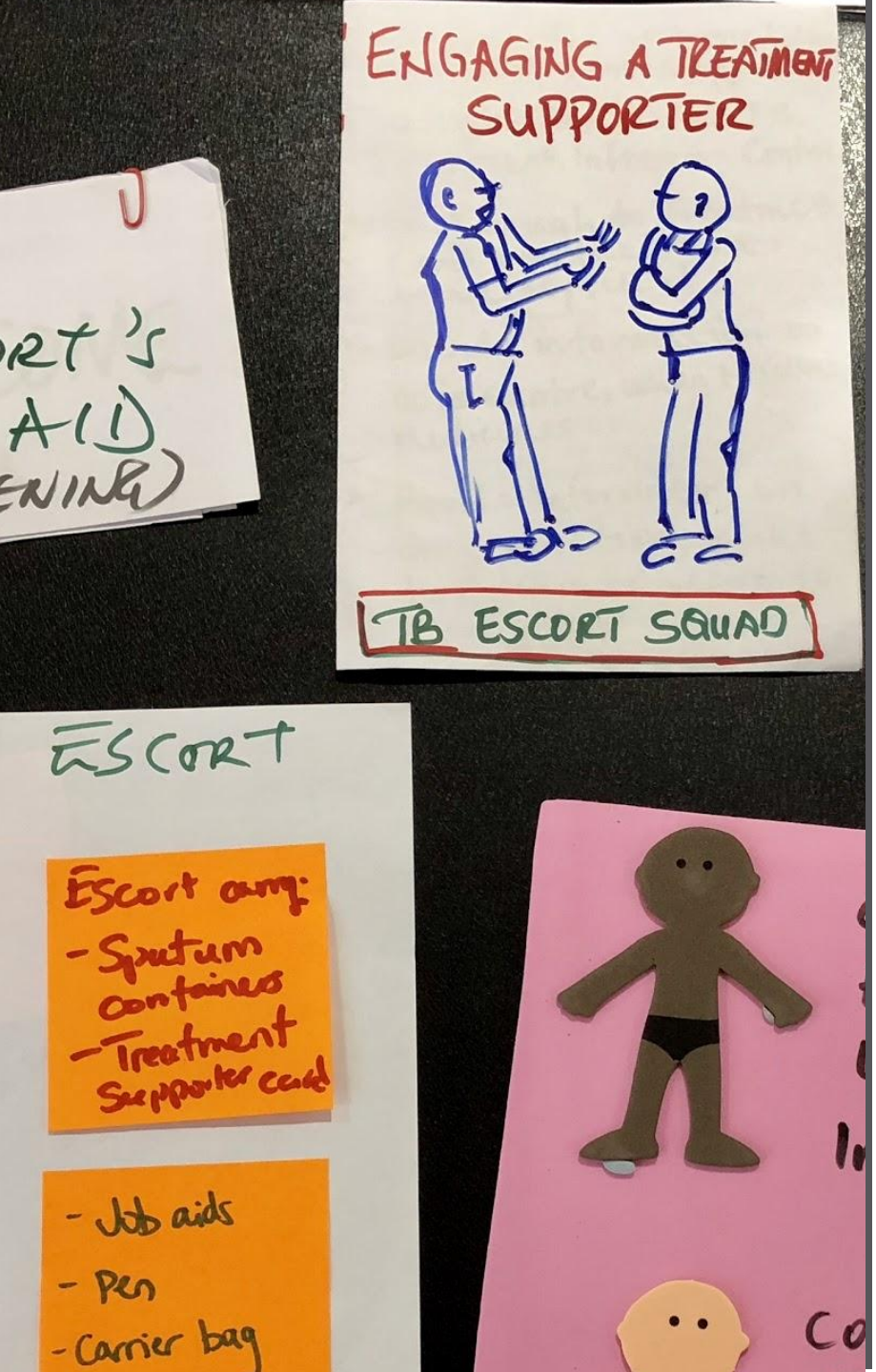
Throughout the testing, we generated the following general insights:

- Patients are receptive to the idea of a Cough Companion—particularly when they are first diagnosed and typically quite sick.
- Shame of home environment, distance, fear of stigma, and contacts not being home are all barriers to acceptance.
- Past/present TB patients, volunteers, or plain-clothed community health workers are most preferred as escorts.
- Certain patients will have a higher potential yield of additional presumptive cases. A screening tool would help identify these patients.

About the form

- Patients should not be required to score their own forms but rather use tick boxes instead of numbers.
- People are unlikely to fill open-ended questions.
- The form should start with the question on how long they have been coughing.
- The number of people patients typically interact with on any given day is more important than where or the number of hours/day they work.
- Most people do not know where they got the cough.
- All patients said yes to the escort on the form. We confirmed by asking the patient in person if we could go to their house now.





About job aids

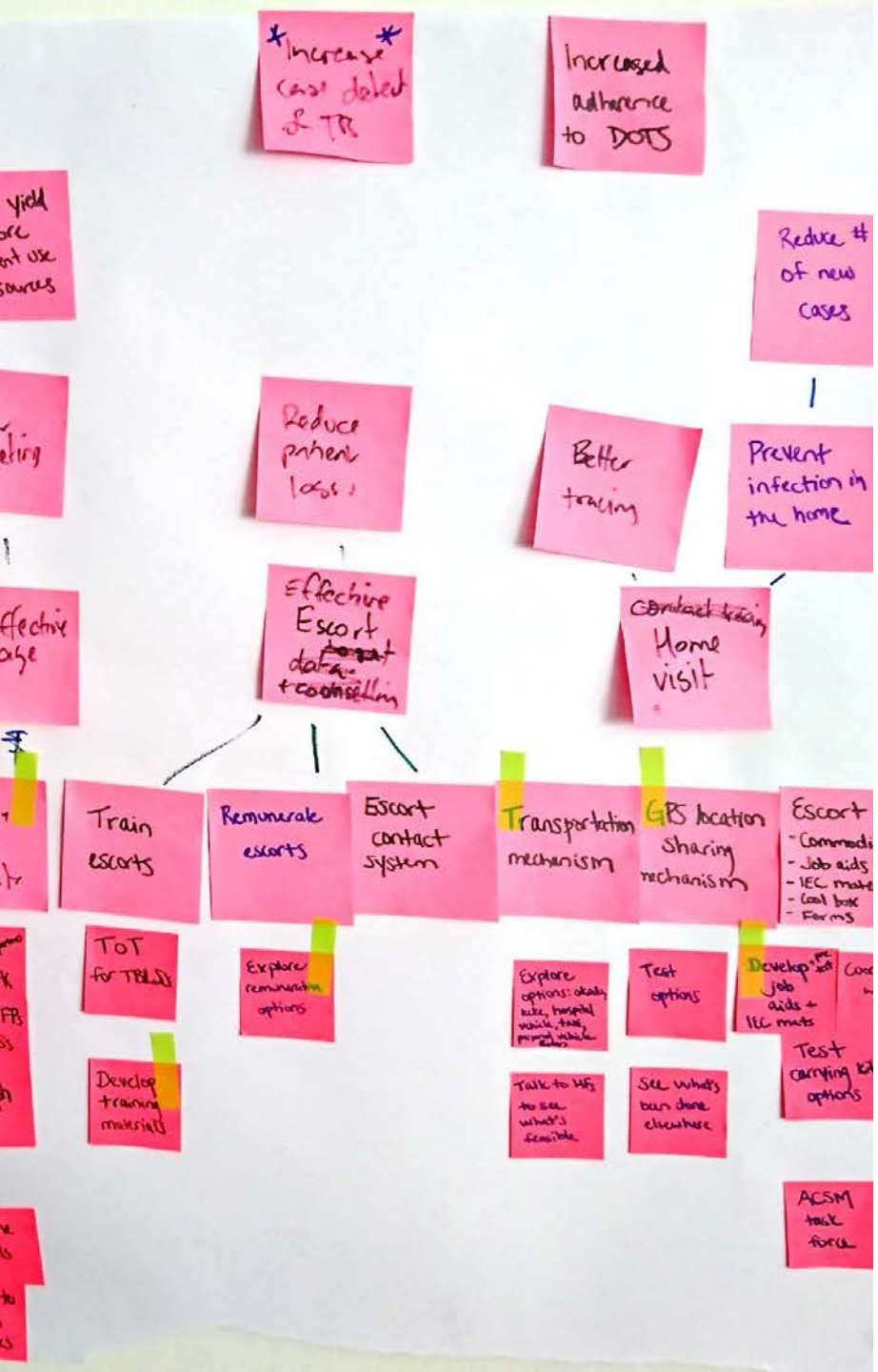
- The number of job aids we initially prototyped can be consolidated into fewer materials.
- Include information about screening for extrapulmonary TB.
- Add information about the timing of medication to the Treatment Supporter Guide.
- Escort's materials and carry-on bag should not be too obvious—make it small to fit into a lightweight, portable bag.

About GPS

- Patients are often unable or unwilling to provide their complete address.
- We tried recording home location with three different apps: what3words, Map Coordinates, and Google Maps.
- what3words was highly inconsistent, yielding different results for the same location.
- The other two apps seemed to record locations consistently. However, we did not have a chance to test their shareability and/or recordability.
- All of these apps require a smartphone and internet connection, which may be a challenge for some escorts and/or in some areas.

About contact tracing by phone

- From the cough assessment form, we learned that some patients knew others who were coughing and had their phone numbers.
- We were able to contact these individuals immediately and determine a follow-up plan.
- In instances where DOTS providers do not have the time or resources to follow-up with these contacts themselves, they could potentially call the national TB hotline free of charge and provide the hotline with the contact's name and phone number. The national TB hotline could then carry out the contact tracing.



Core components

The components for the Cough Companions intervention are as follows:

ID	Component description	Importance
01	Targeting TB high-risk areas and mapping key institutions (e.g., DOTS, hospitals, religious, medicine vendors, high-density residential)	Primary component
02	Creating basic TB SBC materials	Primary component
03	Creating basic TB training	Primary component
04	Enhanced tracking of phone referral sources (TB Hotline)	Secondary component
10	Enrolling and training of TB survivors	Secondary component
14	Availability of portable sputum sample collection	Tertiary component
15	Transporting samples from non-clinical settings to DOTS	Tertiary component
17	Developing form and process to target high risk individuals	Primary component
18	Process to make companions available/"on call" to escort patients	Secondary component
19	Process and safety protocols for escorting patients to their houses	Primary component
20	Tool to mark a patient's home location where there is no fixed address (e.g., GPS and ability to retrieve the location)	Primary component
21	Integrating location data into common clinical systems	Tertiary component
22	Providing counseling services during patient escort	Secondary component
23	Providing basic infection control at patients' homes	Tertiary component
24	Conducting contact tracing at point of diagnosis and/or escort	Primary component
25	Using the national TB hotline to conduct contact tracing	Secondary component

Primary component: A part of the intervention that is critical to its functioning.

Secondary component: A part of the intervention that greatly enhances its effectiveness, but is not critical.

Tertiary component: A part of the intervention that is desirable to enhancing its effectiveness.

Targeting high-risk TB patients

DOTS facility, Lagos

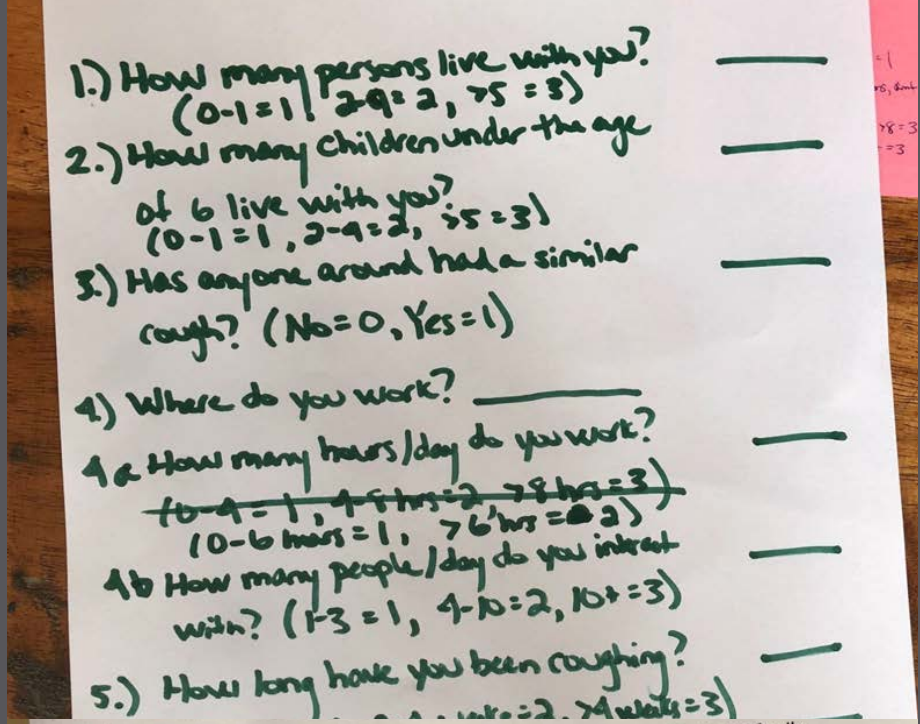
In a bid to increase case detection, the Cough Companion team tested the effectiveness of engaging volunteers to escort confirmed TB cases home so as to carry out immediate contact evaluation, infection prevention and control, and treatment supporter engagement and orientation.

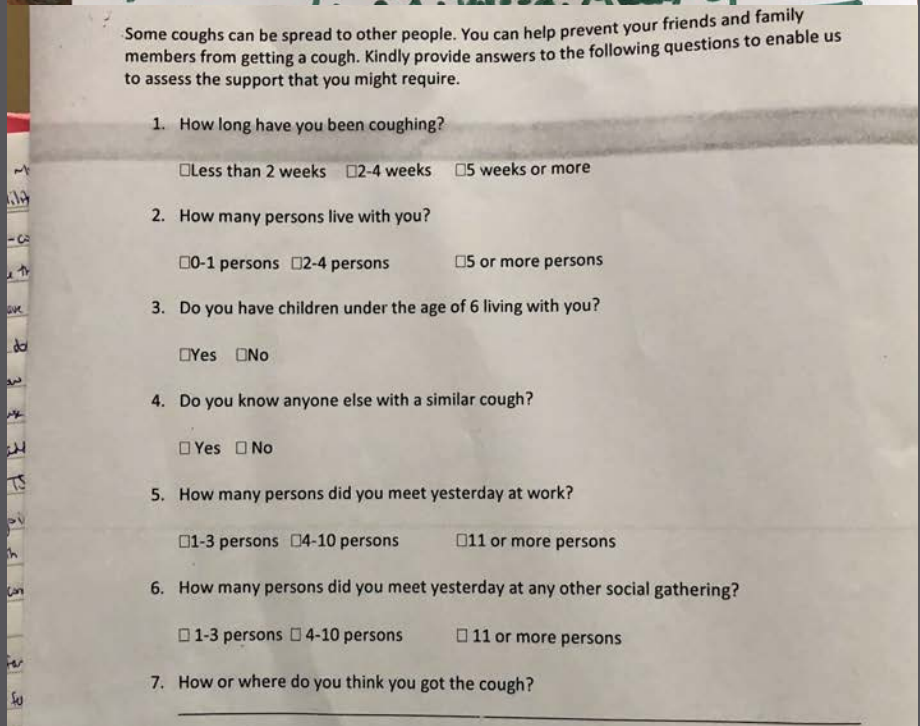
While discussing our aim with the DOTS focal person, she suggested that, instead of escorting all TB cases home, we create a list of criteria to screen patients into high-, medium-, and low-risk groups.

The team drafted a list of criteria and shared it with the DOTS focal person, who suggested that the form be simple enough for a patient to fill it themselves, rather than the provider, along with other helpful adjustments.

Based on the eligibility list, only high- and medium-risk patients are visited instead of visiting all patients.

This will result in a high yield of TB contact cases and reduced number of volunteers to be engaged, thereby enhancing cost-effectiveness.





Some coughs can be spread to other people. You can help prevent your friends and family members from getting a cough. Kindly provide answers to the following questions to enable us to assess the support that you might require.

1. How long have you been coughing?

   ☐Less than 2 weeks ☐2-4 weeks ☐5 weeks or more

2. How many persons live with you?

   ☐0-1 persons ☐2-4 persons ☐5 or more persons

3. Do you have children under the age of 6 living with you?

   ☐Yes ☐No

4. Do you know anyone else with a similar cough?

   ☐ Yes ☐ No

5. How many persons did you meet yesterday at work?

   ☐1-3 persons ☐4-10 persons ☐11 or more persons

6. How many persons did you meet yesterday at any other social gathering?

   ☐ 1-3 persons ☐ 4-10 persons ☐ 11 or more persons

7. How or where do you think you got the cough?

"Free cough test" signs generate demand

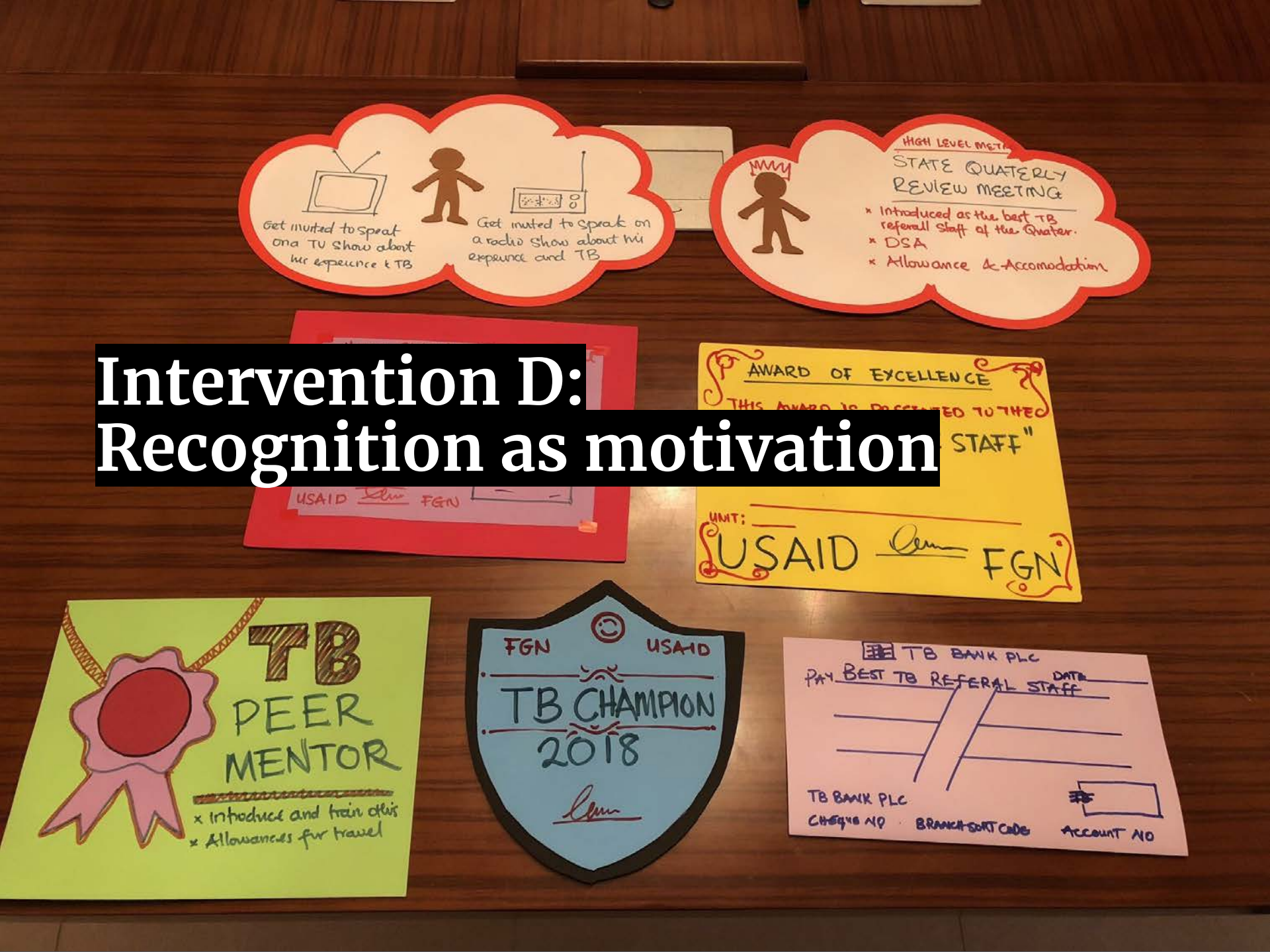
Shoreman Hospital, Lagos

The team visited a hospital in which a staff member had been trained and equipped to provide TB services in April, but no presumptive cases or TB patients had yet been seen. The team noticed a lack of information, education, and communication (IEC) materials. The nurses at the front desk had no information about TB and were not screening anyone.

The team swung into action, sensitizing the nurses and creating signs to inform the attendants and general public on the availability of free "cough tests," which we found was preferred to using "TB test." The materials were placed in the waiting room, outside the main door, and on the walls outside. While this was happening, two people walked in asking for more information. One asked if the tests were available every day, which prompted the team to include this information on the sign.

Upon our return visit, we learned the facility had seen a presumptive case. The doctor in a separate hospital upstairs, upon seeing the signage, realized that TB may have been the cause of one of his admitted patient's unexplained weight loss.

He asked the DOTS focal person to test the patient. She collected the sample and notified the TBLS, who called a Rider for Health to take the sample to a lab. The simple signage generated demand from the general public and raised the index of suspicion for providers.



Intervention D: Recognition as motivation

Overview

The current situation

TB cases are still regularly missed by health providers from other units or departments within a health facility. This is due to generally low levels of health professionals' literacy around TB symptoms and stigma against the DOTS site, providers, and patients by other departments of some hospitals. Unclear referral system and lack of motivation to identify and refer presumptive cases to the DOTS site when current workloads are already overwhelming also contribute to this situation.

Some facilities implementing the FAST (Finding TB cases Actively, Separating safely, and Treating effectively) intra-facility case finding program have had success in increasing referrals from other departments but these numbers are still small compared to the potential.

Health workers may be more proactive in detecting TB cases if they are given some form of recognition for their efforts.

Recognition is rare in hospitals

The health workers we spoke with said that they did not regularly receive recognition for their work. Very rarely would a supervisor give positive feedback or praise. We saw this as a potential opportunity for our intervention to both give recognition to TB champions within health facilities and raise the profile of DOTS in the facility.

The proposed intervention

The idea is to develop a competition and recognition program that will reward health providers across health facility departments when they consistently identify and refer presumptive TB cases for testing and treatment.

The benefits of this have direct and indirect behavioral influences, including:

- Directly incentivizing individual health professionals to think about TB and making referrals through the competition.
- Indirectly raising the potential interest in becoming familiar with TB symptoms in order to participate in the competition.
- Drawing on people's tendency to want to keep up with their peers, even if they are not actively seeking to participate.
- Raising the profile of the DOTS clinic within the hospital, "normalizing" the DOTS clinic, and reframing TB treatment as something that is worth rewarding.

These influences combine to provide positive outcomes for TB referral and detection.

How it works

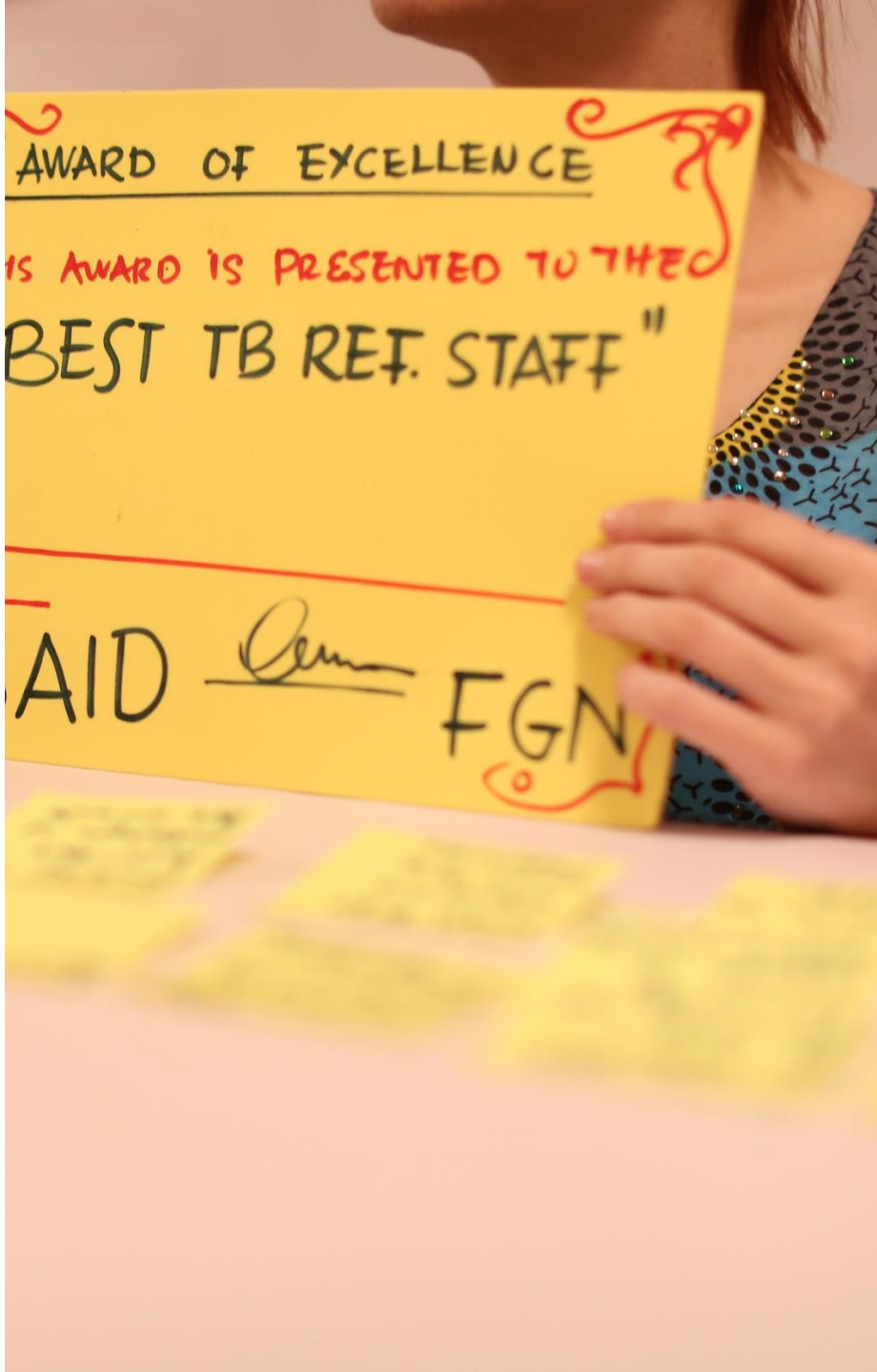
Where will it be implemented

This recognition system will be implemented across three types of health providers/facilities: facilities currently implementing the FAST strategy, facilities currently not implementing the FAST strategy, and PPMVs.

Types of acknowledgement

Methods of acknowledgement will be non-monetary and based on the reported preferences from different types of facilities and health workers. By recognizing high performers, we hope to validate the good work that is already being done and to motivate their colleagues to follow suit.

The departments and individuals that refer the highest number of presumptive TB cases and those that improve the most over the previous quarter will be recognized using the types of recognition that respondents involved in this research indicated would have the greatest impact on their feelings of being appreciated and continuing their good work, while also motivating those colleagues that witness the recognition.



Goals

Barriers this idea seeks to address

This idea seeks to address the following insights raised in the Discovery Stage:

Insight 7. Professional stigma barriers
Insight 9. Facilities not associating with TB

Anticipated benefits

This intervention hopes to instill healthy competition amongst facility service units, increasing their motivation to identify and refer presumptive cases. Additionally, it is meant to decrease stigma against the DOTS facility, staff, and TB patients.

Ideally, it will result in improved presumptive referrals from all service units in the health facilities, thereby increasing the chances of detecting more TB cases.

Lessons learned

What people preferred

The selection pattern is similar across PPMVs and public and private facilities visited in Lagos, Enugu, and Kano states. An invitation to a state-level quarterly review meeting was the first choice across all cadres.

Surprisingly, very few respondents chose money as a form of motivation (except for staff in the military facility). Many of the participants preferred very public recognition, such as on television or radio.

PPMVs already supported by KNCV/CTB were more receptive to being approached than those not currently being supported. Some PPMVs suggested providing TB social and behavior change communication materials and placing them in their shops.

We also learned that there are very few existing recognition programs; even positive oral feedback is very rare.

Overall, there was a genuine interest to start referring cases immediately, with several respondents asking for more details on where and how to refer presumptive cases.

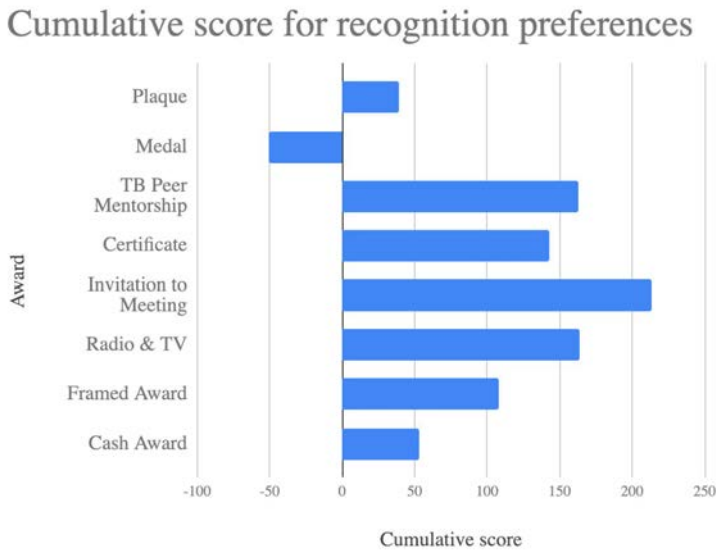
Overall preferences

We tested preferences for different types of recognition represented by low-fidelity mockups of the types of recognition under consideration. People were asked to rank these in order of most to least desirable. Each preference was attributed a score: 5 points for a top or 1st preference; and -2 points for a last or 8th preference, to account for people putting things last that they disliked. The graph shows the cumulative score across participants. The options were:

- **Cash** reward
- Photo recognition **plaque** to be displayed at the facility entrance
- **Certificate** of appreciation
- **Plaque**
- **Medal**
- Invitation to appear on a **radio or television** show to talk about their award and TB issues
- Invitation to the zonal or state quarterly r**eview meeting** (includes accommodation, per diem, and the chance to interact with the larger TB community)
- Invitation to be a **Peer Mentor** to visit lower performing or new FAST implementing facilities to encourage them to improve (includes a training, materials, and transportation allowance)

We tested these options across different departments with private hospitals, tertiary facilities, FAST implementing facilities, non-FAST implementing facilities, and PPMVs. We also further probed whether extrinsic or intrinsic rewards were more desired. The top three choices were:

1. Invitation to Review Meeting
2. Radio and TV Appearance
3. TB Peer Mentorship

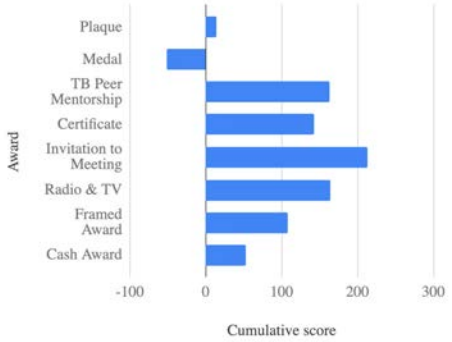


Rank given	1st	2nd	3rd	4th	5th	6th	7th	8th
Scaled score	5	4	3	2	1	0	-1	-2

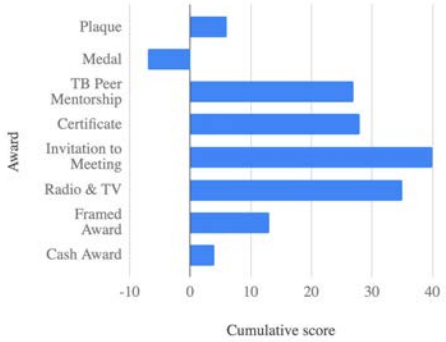
Preferences across different types of facilities

Testing showed consistent patterns across various types of facilities, with an invitation to review meetings being consistently highly rated. Most other groups rated an opportunity to be on radio or television as second highest, with the exception of PPMVs, where mentorship was rated second, and military facilities, where a cash reward was rated second.

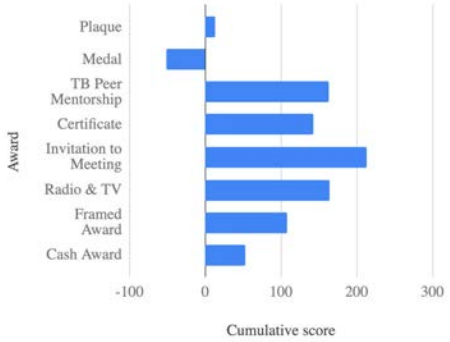
Public Facilities



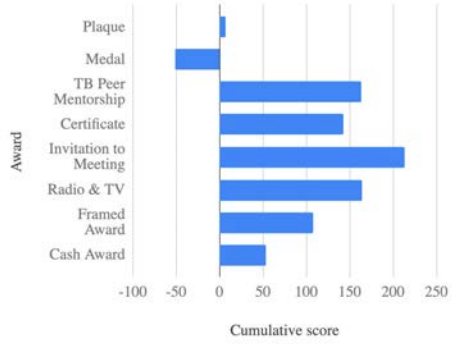
Private Facilities



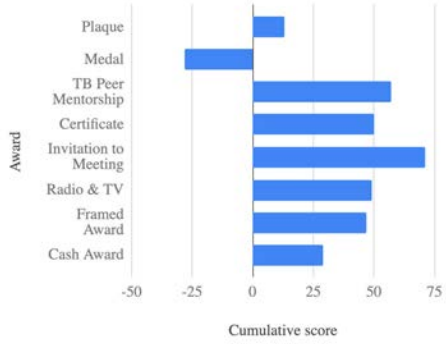
FAST Facilities



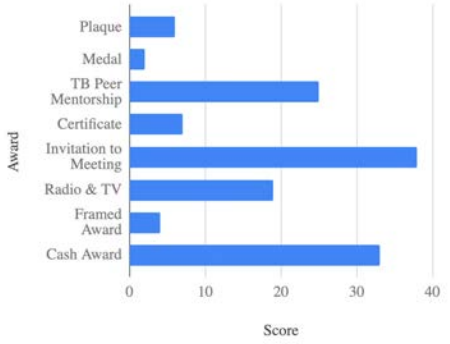
Non FAST Facilities



PPMVs



Military Facilities



Core components

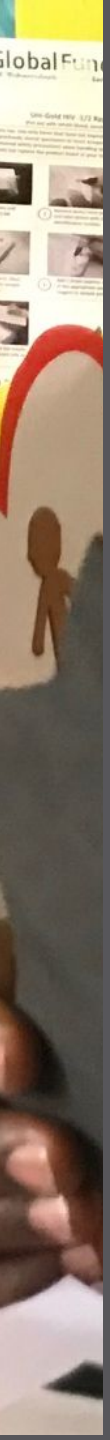
The components for the recognition as motivation intervention are as follows:

ID	Component description	Importance
01	Targeting TB high-risk areas and mapping key institutions (e.g., DOTS, hospitals, religious, medicine vendors, high-density residential)	Primary component
02	Creating basic TB SBC materials	Primary component
32	Co-creating a recognition event within a FAST hospital	Primary component
33	Co-creating a referral competition within a FAST hospital	Secondary component
34	Co-creating a recognition event within a non-FAST hospital	Secondary component
35	Co-creating a referral competition within a non-FAST hospital	Primary component
36	Co-creating a recognition event within PPMVs	Secondary component
37	Co-creating a referral competition within PPMVs	Primary component
38	Creating "local" awards (e.g., mentoring, meetings)	Tertiary component
39	Creating "certification" awards (e.g., training, certificate)	Secondary component
40	Creating "public" awards (e.g., TV, radio)	Primary component
41	Tracking non-DOTS hospital referral sources (non-FAST)	Primary component

Primary component: A part of the intervention that is critical to its functioning.

Secondary component: A part of the intervention that greatly enhances its effectiveness, but is not critical.

Tertiary component: A part of the intervention that is desirable to enhancing its effectiveness.



Certificates lead to greater things

Sir Muhammad Sunusi Specialist Hospital, Kano

Sir Muhammad Sunusi Specialist Hospital in Kano State currently implements the FAST system, a focused approach to stopping the spread of TB in health facilities that includes coordinated interdepartmental referrals. The hospital has also been the recipient of donor funds for decades through U.S. President's Emergency Plan for AIDS Relief, the Global Fund, other USAID projects, and domestic initiatives.

Immediately upon entering the hospital, it was clear that this facility was different from others. Not one respondent batted an eyelash over the photo consent form and most waived off needing an explanation of the document. Five out of six respondents selected a certificate as their first choice for a reward.

One provider explained this unusual trend clearly saying, "Certificates are the way to getting further work. I keep them with my CV. In fact, showing a certificate of excellence from another project got me in the door for an interview for a new job. Without it they wouldn't have considered me." It was noted that non-governmental organizations (NGOs), which pay more than public sector jobs, tend to return to work with people with whom they have worked successfully before and certificates are excellent ways to prove previous collaboration.

Public facility providers with a history of NGO support find certificates the most valuable reward.

Unity as motivation

Private facility in Ikeja LGA, Lagos

A nurse from the inpatient unit of the first private facility visited in Ikeja LGA, Lagos, vehemently rejected the idea of cash as a form of recognition saying, “Definitely this is last. I’m here to save lives, not for money.”

In fact, none of the respondents at the private facility, selected the cash award as their first choice for recognition. Nearly all rated it in their bottom three choices out of eight.

Several respondents mentioned how united they are as a team and how everybody works together for the greater good of the hospital. The Medical Director of the facility was nearly unanimously named as the colleague who most inspires them when respondents were asked to nominate a colleague (anonymously) citing his fatherly approach to handling the facility staff.

We were surprised to hear this because there is an assumption that money is the best way to motivate health workers in Nigeria. We realized that we might be discovering something sustainable in terms of recognizing high-performing health providers and increasing TB case detection rates in Nigeria.

Recognition may be less important in facilities which already have a common vision and work well together .

Intervention E: Brother's Keeper campaign

Overview

The current situation

Many people with persistent cough struggle to find the appropriate diagnosis and cure. Their immediate family members, friends, and co-workers are sometimes unable to help because they do not know how. Presumptive TB patients may spend months going from one medicine store, church, or mosque to another for help. The lack of awareness of TB and low knowledge of where to access TB testing and treatment, combined with the associated stigma, contribute to their already dire situation.

The proposed intervention

"Be Your Brother's Keeper" is a strategic SBC campaign with mutually reinforcing communication channels implemented in areas with high TB prevalence. The aim is to encourage people to refer those around them with a persistent cough to an appropriate health facility for a cough test. Empowering people with basic facts about TB will enable them to be their "Brother's Keeper," helping people with cough to get free testing and treatment for TB. By targeting friends, family members, and acquaintances of people with a persistent cough, the integrated campaign seeks to build upon the collective nature of Nigerian culture to increase demand for TB testing and treatment services.

The crux of the concept is to inspire Nigerians to care for one another by referring anyone they encounter with a cough that has lasted more than two weeks to an appropriate health facility—in essence, turning all Nigerians in campaign implementation areas into cough monitors.

Targeted mass media and interpersonal communication interventions such as radio jingles, posters, and outreach activities will be focused on high-risk areas for TB as determined through a combination of national data and the local knowledge of the TBLS. These may include motor parks, buses, marketplaces, densely populated areas, football viewing centers, or schools. The primary call to action will be to refer anyone coughing for more than two weeks to an appropriate health facility.

The campaign will also contain referrals to secondary information channels such as the national TB hotline and social media platforms where people can easily obtain additional information on TB, including where to access local testing and treatment services. National toll-free call centers will provide 24/7 multilingual services to respond to inquiries and provide referral services. Social media will offer further avenues for accessing information and getting answers to questions.

As a result of the campaign, people will act as cough monitors, referral sources, and treatment supporters in their spheres of influence.

How it works

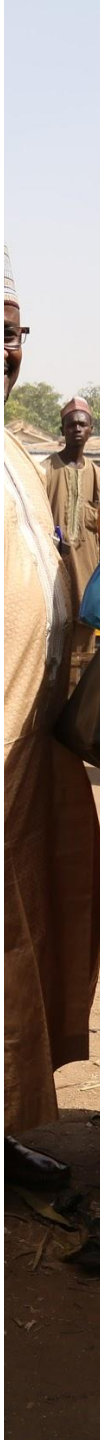
Audience segmentation

Identifying the target audience for this idea in each location is important. The proposed plan is to target areas with high TB prevalence and target the specific populations that are at higher risk within these areas. This may mean targeting “area boys,” youth in schools, road transportation workers, including okada riders, or targeting influencers such as opinion leaders in known slums in addition to the general populace. A dedicated analysis of data is recommended as a next step for this intervention as well as drawing on state and local TB professionals to give qualitative insight into effective targeting in a given area.

Encouraging communal responsibility

The "Be Your Brother's Keeper" campaign seeks to empower every Nigerian, especially those in high TB prevalence areas, to refer anyone with a persistent cough for TB testing and treatment. We want all people to feel responsible for the well-being of their friends, family, and their fellow Nigerians and encourage TB testing whenever appropriate.

By simplifying the message to focus on persistent coughs and making the toll-free number readily apparent, we hope to lower the stigma barriers and make it second nature for everyone to encourage anyone they know with a persistent cough to consider getting a TB test. The campaign will also emphasize that the testing and treatment for TB is free.



Goals

Barriers this idea seeks to address

This idea seeks to address the following insights raised in the Discovery Stage:

Insight 1. Long treatment journeys
Insight 5. Indirect costs to testing
Insight 6. Community stigma barriers
Insight 8. Local knowledge of TB hotspots

Anticipated benefits

Beyond the overarching goal of increasing the TB case detection rate, this intervention will also ensure people can promptly access information about TB.

We also hope to reduce the myths and misconceptions surrounding TB by increasing knowledge of TB in the community.

We recognize that a greater understanding of TB can help to allay fears and reduce stigmatization. Coupled with the fact that there is easy access to referral services, we hope to see an increase in detected cases.

Lessons learned

After speaking with a wide variety of people in four different parts of Nigeria (including the North and South), we learned that many people are willing to become more informed about TB and help others. Language is an important consideration. We initially developed our materials in English but quickly realized that these were also needed in local language. In the end, we developed English, Pidgin, Hausa, and Igbo versions.

We also learned that enlisting members of certain groups, such as the National Union of Road Transport Workers (NURTW), will require engagement of their authorities. Finally, we will need to consider a variety of traditional, new, and social media platforms for effective reach.

Core components

The components for the Brother's Keeper intervention are as follows:

ID	Component description	Importance
01	Targeting TB high-risk areas and mapping key institutions (e.g., DOTS, hospitals, religious, medicine vendors, high-density residential)	Primary component
02	Creating basic TB SBC materials	Primary component
04	Enhanced tracking of phone referral sources (TB Hotline)	Secondary component
13	Recording and delivery of TB survivor story	Secondary component
26	Creating an integrated campaign strategy for Brother's Keeper	Primary component
27	Enrolling health care professionals in campaign	Secondary component
28	Using national TB hotline in campaign	Primary component
29	Upgrading national TB hotline to use 3 digit code	Tertiary component
30	Activating online and media elements of campaign	Secondary component
31	Activating localized elements of campaign in target areas	Primary component

Primary component: A part of the intervention that is critical to its functioning.

Secondary component: A part of the intervention that greatly enhances its effectiveness, but is not critical.

Tertiary component: A part of the intervention that is desirable to enhancing its effectiveness.

Reaching people through multiple channels

Speaking with leaders of a Hausa community in Lagos

To test our concept, we distributed and placed Brother's Keeper posters in the community and watched for people's reactions. After observing their response, we would approach the person and ask what they thought. In some cases, we found that this simple trigger jogged people's memories, helping them to recall people they know who are coughing.

One person who received the handbill version of the Brother's Keeper poster quickly remembered someone in his compound who had been coughing for a long time. He immediately offered to take us to meet her and we went to his compound.

On meeting with the woman and explaining who we were and why we were there, we found she was happy to have us. She was especially happy to hear that testing and treatment are free. The woman agreed to provide a sputum sample for testing and arrangements were made for her to do so.

We also called the national TB hotline to find out where the closest DOTS facility was located. We received a response right away, and found out that the closest one was within walking distance.

This series of interactions through the Brother's Keeper campaign highlights the importance of multiple communication channels, such as print, outreach, and personal, one-on-one sensitization.

The Union needs to know

Dala LGA in Kano

Working with the NURTW through systematic engagement at the national and state levels will go a long way to get road transport workers who may not have access to social media involve in the campaign. This was recommended by the Kano State NURTW Chairman at Dala LGA in Kano State.

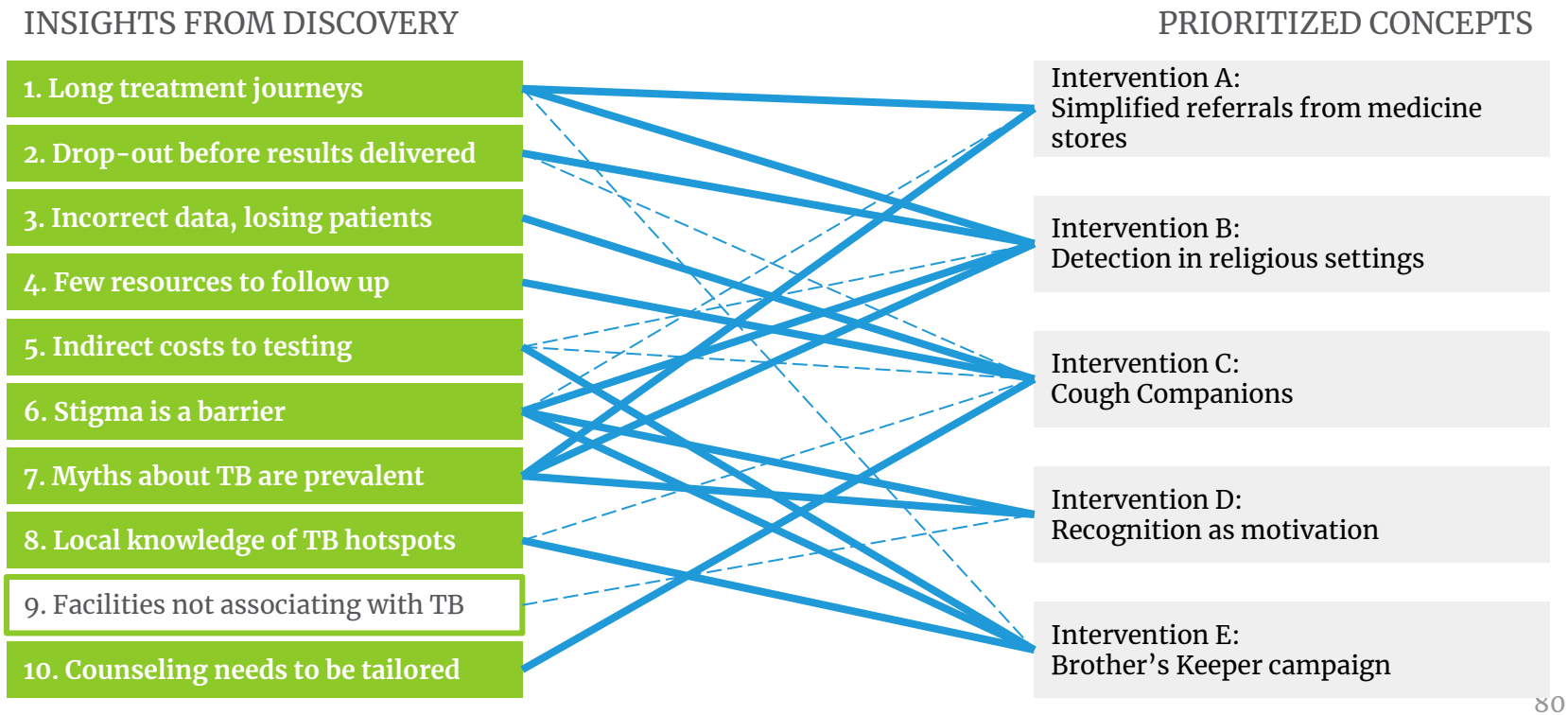
While he agreed that posters can be placed in union offices, car stickers carrying the same messages as in the posters were a welcome initiative. These can easily be put on the vehicles. He asked for training of their members who will then pass the information on to commuters while waiting for the buses to fill up. A similar perspective was reflected during the visit to the NURTW Chairman office in Jabi Park, Federal Capital Territory.

The NURTW can be enlisted in the Be Your Brother's Keeper Campaign.

4 \\ Next steps

Considering an ecosystem of interventions

Each of the concepts addresses a number of the original insights from the Discovery Phase. When considered collectively, the entire set of ideas references, if not directly addresses, each and every one of the problems identified by the insights. Together, these concepts create an ecosystem of interventions that would potentially alleviate a great deal of the key issues. When we consider each of the concepts individually, we can see how each one address the issues of TB detection in its own way. But when looked at as an ecosystem of interventions, we can begin to see the emergent value of applying them in combination.



Complementary interventions

While no single concept is completely dependent upon another to work, each one of them has the potential to be made more effective, more efficient, and potentially even more scalable and more sustainable if done in concert with the other concepts.

For example, the TB survivor who is recruited to work with religious leaders could also be encouraged to become a Cough Companion for contact tracing and record a radio jingle or appear in print materials for the Brother's Keeper campaign.

Likewise, the success of the "Simplified Referrals from Medicine Stores" concept could be reinforced by the "Recognition as Motivation" concept. The Brother's Keeper campaign could simultaneously support the success of all of the concepts by raising community awareness of TB and encouraging greater collective ownership of communal health.

If any one of these concepts, or perhaps even a number of them, could not be implemented for any reason, the remaining concepts could still succeed on their own, reinforcing and supporting the other concepts that continue to be developed.

There is no silver bullet solution or single great innovative idea that can solve the entire problem of TB in Nigeria. Solving individual problem areas will help but to achieve systemic change, we need systemic, integrated solutions at all levels: individual, community, and in service delivery.

A portfolio of interventions

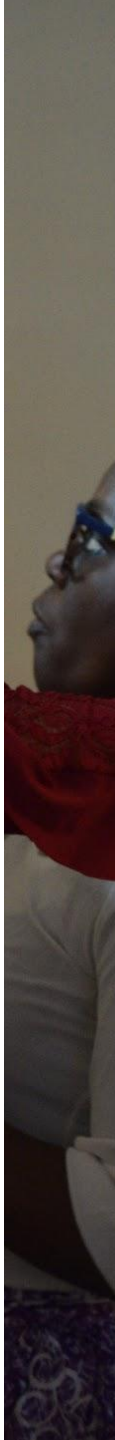
As we consider the ideas to move forward, we should be thinking of these concepts as a portfolio rather than as a menu.

We would be wise not to think about each concept in a vacuum, but rather consider them in relationship with one another, asking the question, "How would we be able to make the development of these concepts easier, cheaper, or faster if we moved them forward in tandem or as a collection?"

There are savings and synergies to be had by moving forward groups of concepts and we should be thinking along these lines.

As the concepts become more concrete, we may begin to see how small investments might get us to the next level of development, at which point we can make the call about future investments.

While all of these concepts are being considered and developed, we should also occasionally look back at the register of other ideas (see *Appendix: Other ideas*) to see if it is time to start investing in any of those. We might even find opportunities to fold a new idea into one of the concepts we are already developing.



Moving from "desirability" to "feasibility"

In this short stage of work, we have created and moved five interventions forward. Each intervention addresses different barriers or opportunities within the space of increasing TB case detection. These interventions are not yet fully formed and many questions remain as to how they would work if implemented. These questions will be answered as part of subsequent activities.

Within the Design & Test Phase, there are three key stages in developing ideas:

- *Desirability*: Includes innovation of new ideas to address the barriers and opportunities found in the Discovery Phase, plus early prototyping and testing to see whether the solutions are reaching the right audiences through the appropriate channels, appeal to the appropriate audience, and have potential to create the desired behavior change.
- *Feasibility*: Takes the most promising ideas forward and seeks to round out their weak points while gathering initial data about their potential effectiveness.
- *Scalability*: Takes feasible ideas and concentrates on of how they can scale at a national level or to the desired breadth of intervention.

The next stage for the five interventions is to move some or all of them from the Desirability Stage into the Feasibility Stage. The following pages discuss how the selection of interventions (or parts of the intervention) could move forward.

The "sweet spot": Desirable, feasible, and scalable

Ultimately, we want to iterate and improve ideas through all three lenses so they can be as strong as possible with minimum investment and risk, maximizing chances of success.

Common components between interventions

By breaking the interventions down into components, we can see that there are overlaps in the interventions. For example, all interventions are designed to be focused and applied in high-risk areas for TB and so all contain a component of mapping these areas and the institutions within those areas and communities.

Most interventions feature the use of basic SBCC materials that assist professionals as job aids or patients for basic orientation information. These interventions require an analysis and update of available SBCC materials, which we found to be variable in quality and quantity.

The current approach included are 41 components in the five interventions. Of these 41 components, eight are used in more than one intervention. This means that effort to build and design these components delivers efficiency by enabling multiple interventions.

The eight common components are:

ID	Component description	Importance	Component of
01	Targeting TB high-risk areas and mapping key institutions (e.g., DOTS, hospitals, religious, medicine vendors, high-density residential)	Primary component	A, B, C, D, E
02	Creating basic TB SBC materials	Primary component	A, B, C, D, E
03	Creating basic TB training	Primary component	A, B, C, D
04	Enhanced tracking of phone referral sources (TB Hotline)	Secondary component	A, C, D
10	Enrolling and training TB survivors	Secondary component	B, C
13	Recording and delivering TB survivor story	Secondary component	B, D
14	Availability of portable sputum sample collection	Tertiary component	B, C
15	Transporting samples from non-clinical settings to DOTS	Tertiary component	B, C

Using components as a scoping and focusing tool

We can also use the components to set a scope for testing the interventions. We could include all primary, secondary, and tertiary components to see the full designed intervention (see below left), or we could seek to test a "minimum viable" set of only primary components (see below right). Alternatively, we may choose to only test a few of the interventions, dropping many components in favor of fully enabling other parts. This is best shown in the Cough Companions idea, which has many components.

Cough Companions: full component implementation list

ID	Component description	Importance
01	Targeting TB high-risk areas and mapping of key institutions (e.g., DOTS, hospitals, religious, medicine vendors, high-density residential)	Primary component
02	Creating basic TB SBC materials	Primary component
03	Creating basic TB training	Primary component
04	Enhanced tracking of phone referral sources (TB Hotline)	Secondary component
10	Enrolling and training TB survivors	Secondary component
14	Availability of portable sputum sample collection	Tertiary component
15	Transporting samples from non-clinical settings to DOTS	Tertiary component
17	Developing a form and process to target high-risk individuals	Primary component
18	Process to make companions available/"on call" to escort patients	Secondary component
19	Process and safety protocols for escorting patients to their houses	Primary component
20	Tool to mark a patient's home location where there is no fixed address (e.g., GPS plus ability to retrieve the location)	Primary component
21	Integrating the location data into common clinical systems	Tertiary component
22	Providing counseling services during patient escort	Secondary component
23	Providing basic infection control at patients' homes	Tertiary component
24	Conducting contact tracing at point of diagnosis and/or escort	Primary component

Cough Companions: "Minimum viable" components only

ID	Component description	Importance
01	Targeting TB high-risk areas and mapping of key institutions (e.g., DOTS, hospitals, religious, medicine vendors, high-density residential)	Primary component
02	Creating basic TB SBC materials	Primary component
03	Creating basic TB training	Primary component
17	Developing a form and process to target high-risk individuals	Primary component
19	Process and safety protocols for escorting patients to their houses	Primary component
20	Tool to mark a patient's home location where there is no fixed address (e.g., GPS plus ability to retrieve the location)	Primary component
24	Conducting contact tracing at point of diagnosis and/or escort	Primary component

Continuing momentum into the Feasibility Stage

It is important to recognize the goodwill generated throughout this process from stakeholders and partners. This goodwill is key to the success of the interventions as it translates into:

- Propensity for stakeholders to be involved with subsequent stages of the design.
- Inclusion of the partners' experience in the design.
- Shared ownership of the resulting intervention should it be successful in being implemented.
- Ongoing support in the operation of the intervention.

Even a perfect intervention will not succeed without the above factors. The co-design process that has run to date to explore and create these interventions provides a unique way to involve stakeholders in designing and enable these factors. This reduces the risk of stakeholders pushing back on the intervention and increases the chances of success and sustainability of the intervention.

We recommend beginning the Feasibility Stage as soon as possible to capitalize on the goodwill generated. The next stage is to continue developing the interventions to a state where scalability is viable through a continued co-design process.

Setting the scope and size of the next stage

During the Feasibility Stage, interventions will be further developed by focusing more on the points that are unclear or weak in the design to date.

A smaller, focused team

While a lot of the skills are the same for Feasibility as they were for Desirability, it is a good point at which to refresh the design team to include the expertise needed to provide more details and solutions for the interventions. Ideally, at least half of the design team will have worked on previous stages, with up to half being new members with specific skills that are useful to the interventions chosen.

Selectively progress ideas, or advance everything?

The next phase can either be run by focusing on a handful of the outputs from this stage and further developing them or testing everything with a view to dropping less successful components as data is collected and imperfections become apparent.

Measurement

One of the objectives in the next phase is to start measuring the impact and effectiveness of the interventions and components. While it may not be viable to measure final outcomes, it should be possible to measure early indicators of success.

Feasibility Stage timeline

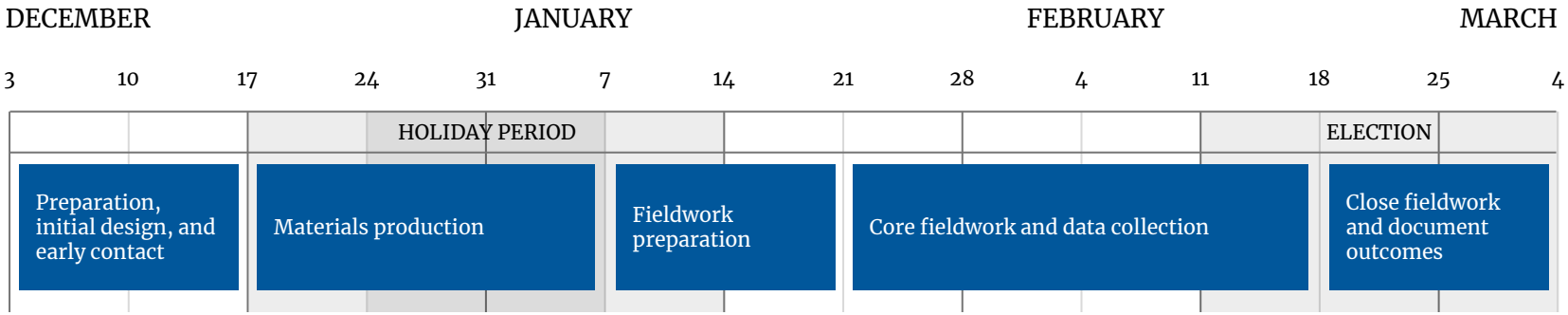
We recommend beginning the Feasibility Stage as soon as possible. The holiday period gives some time to conduct low-level preparation activities.

During early January 2019, we would prepare for fieldwork, which would be followed by four weeks of field testing the interventions. This finishes in the run-up to the elections, during which fieldwork results can be gathered and documented.

The timeline could evolve in three periods:

- **Preparation**—prior to the holiday period, to make contacts and set up for activities for the new year (two weeks)
- **Holiday period**—when some activities may be able to be conducted such as production of materials or other preparations (three weeks)
- **Fieldwork and measurement** (eight weeks)

The team involved may also vary across these three periods.



Options for moving interventions forward

We have provided three options for setting the scale and scope of the Feasibility Stage:

Option 1: Progress all components

All 41 components are moved to the Feasibility Stage. This provides a large scope and potential complexity, but also leaves the team open to dropping components that emerge to be less feasible without fear of losing something worth implementing in the next stage.

The strategy for this option is to start with many components and emerge with those that have proven successful.

Option 2: Progress primary and secondary components only (recommended)

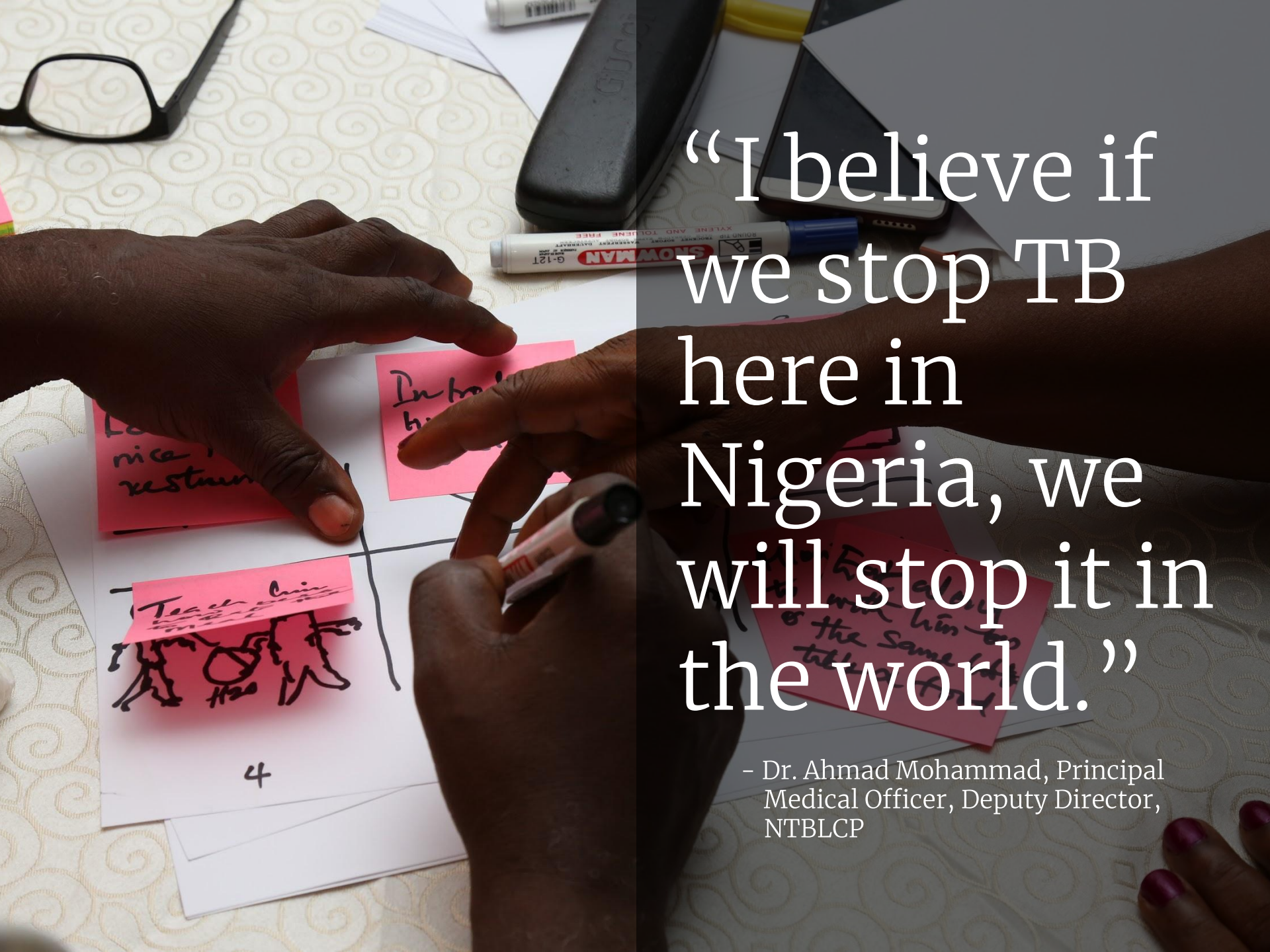
Only primary and secondary components are moved forward. This gives a slightly smaller scope of 29 components and leaves tertiary components for testing at some point in the future or only if time permits.

The strategy for this option is to develop the core components for each idea rather than to drop weak components.

Option 3: Progress primary components only

This option progresses only the core 16 components of the interventions. This option is focused on the most lightweight and "minimum viable" feasibility of each intervention. It is the least challenging in terms of logistics and cost.

The strategy for this option is to test the core concepts but with a view to how they could be grown and made sustainable.



"I believe if we stop TB here in Nigeria, we will stop it in the world."

- Dr. Ahmad Mohammad, Principal Medical Officer, Deputy Director, NTBLCP

5 \\ Appendices


closeup
Tanzol
MERAL

Appendix A: Components

Component summary

ID	Component description	Importance	A. Simplified medicine store referrals	B. Detection in religious settings	C. Cough Companions	D. Brother's Keeper campaign	E. Recognition as motivation
01	Targeting TB high-risk areas and mapping key institutions (e.g., DOTS, hospitals, religious, medicine vendors, high-density residential)	Primary component	Y	Y	Y	Y	Y
02	Creating basic TB SBC materials	Primary component	Y	Y	Y	Y	Y
03	Creating basic TB training	Primary component	Y	Y	Y		
04	Enhanced tracking of phone referral sources (TB Hotline)	Secondary component	Y		Y	Y	
05	Enrolling and training of store workers	Primary component	Y				
06	Designing a simplified referral system	Primary component	Y				
07	Deploying and sustaining the simple referral system in stores	Secondary component	Y				
08	Monitoring and evaluating store referral quality	Tertiary component	Y				
09	Enrolling and training religious leaders	Primary component		Y			
10	Enrolling and training TB survivors	Secondary component		Y	Y		
11	Co-designing religious messages at a local level	Primary component		Y			
12	Delivering religious ceremony with TB survivor and TB health worker support	Secondary component		Y			
13	Recording and delivering TB survivor story	Secondary component		Y		Y	
14	Availability of portable sputum sample collection	Tertiary component		Y	Y		

Component summary

ID	Component description	Importance	A. Simplified medicine store referrals	B. Detection in religious settings	C. Cough Companions	D. Brother's Keeper campaign	E. Recognition as motivation
15	Transporting samples from non-clinical settings to DOTS	Tertiary component		Y	Y		
16	Private delivery of test results to non-clinical settings	Tertiary component		Y			
17	Developing a form and process to target high risk individuals	Primary component			Y		
18	Process to make companions available/'on call' to escort patients	Secondary component			Y		
19	Process and safety protocols for escorting patients to their houses	Primary component			Y		
20	Tool to mark a patient's home location where there is no fixed address (e.g., GPS plus ability to retrieve the location)	Primary component			Y		
21	Integrating location data with common clinical systems	Tertiary component			Y		
22	Providing counseling services during patient escort	Secondary component			Y		
23	Providing basic infection control at patients' homes	Tertiary component			Y		
24	Conducting contact tracing at point of diagnosis and/or escort	Primary component			Y		
25	Using national TB hotline to conduct contact tracing	Secondary component			Y		
26	Creating an integrated campaign strategy for Brother's Keeper	Primary component				Y	
27	Enrolling health care professionals in campaign	Secondary component				Y	
28	Using national TB hotline in campaign	Primary component				Y	

Component summary

ID	Component description	Importance	A. Simplified medicine store referrals	B. Detection in religious settings	C. Cough Companions	D. Brother's Keeper campaign	E. Recognition as motivation
29	Upgrading National TB Hotline to use 3 digit code	Tertiary component				Y	
30	Activating online and media elements of campaign	Secondary component				Y	
31	Activating localized elements of campaign in target areas	Primary component				Y	
32	Co-creating a recognition event within a FAST hospital	Primary component					Y
33	Co-creating a referral competition within a FAST hospital	Secondary component					Y
34	Co-creating a recognition event within a non-FAST hospital	Secondary component					Y
35	Co-creating a referral competition within a non-FAST hospital	Tertiary component					Y
36	Co-creating a recognition event within PPMVs	Tertiary component					Y
37	Co-creating a referral competition within PPMVs	Tertiary component					Y
38	Creating “local” awards (e.g., mentoring, meetings)	Primary component					Y
39	Creating “certification” awards (e.g., training, certificate)	Secondary component					Y
40	Creating “public” awards (e.g., TV/radio)	Tertiary component					Y
41	Tracking hospital referral sources (non-FAST)	Tertiary component					Y

Appendix B: Insights, personas, and journey maps

Use of insights to guide innovation

The following insights and personas were created in the Discovery phase of the project, in May–June 2018.

Insights

The 10 insights here are a subset of the insights uncovered and focus on case detection. These 10 insights were chosen both to inspire the "Imagine" exercises and also to set the scope to focus on increasing detection.

These insights illustrate some of the barriers and opportunities that exist in this space. These barriers become inspiration for new ideas and approaches to improving detection rates.

Personas

The personas also give inspiration and scope to the Imagine exercises. This set of personas is not a comprehensive segmentation of the target audience but functions more like a set of case studies to spark empathy around some of the issues raised in the insights and that we found in our research.

Journey maps

Following each persona is a journey map. These were created to both illustrate some of the situations raised in the persona story and also to give each group a set of challenging questions to try to solve. These questions all begin with "How might we..." as a way to spark many possibilities while people are trying to create potential solutions.

Insight 1:

People go to multiple places to seek help, but may not be correctly diagnosed or referred.

Some presumptive clients spend a lot of time seeking care from different places, but do not go to the right places, do not receive the right diagnosis or referral, or go to an appropriate health facility only when they are critically ill. PPMVs are often the first point of contact due to proximity and low cost.

"Some go to the chemist, because the proximity is very close and because of cost. At the facility you have to buy a patient card, go for a malaria test, another test. At the chemist they just prescribe drugs."

"I was determined to seek TB treatment despite being wrongly diagnosed."

"I had a series of tests before finally being referred to DOTS center."

"I almost lost hope before being referred for TB diagnosis."

"My first care seeking was to PPMV."

"Most community members when infected with TB take herbs. If that doesn't work, then they come to hospital."

Insight 2:

An inability to immediately test sputum samples can mean presumptive cases do not receive their diagnosis.

Community-based organizations, community TB workers (CTWs), and health facilities collect many sputum samples from presumptive cases, but labs are often unable to test the number of samples they receive. Some CTWs are unaware that sputum samples can be collected on the spot for GeneXpert, which creates an additional and unnecessary burden on the person seeking diagnosis and/or the CTW if the sputum has to be produced the following day.

Insight 3:

Incomplete or incorrect data entry results in missed opportunities for diagnosis.

Providers are often busy and do not immediately enter all of their patient data. The data may or may not be entered at a later point in time. Patients may intentionally or unintentionally give providers false contact information, there may be errors in recording information, and/or there may be mismatches between lab and presumptive registers. All of these have the potential for drop-off from presumptive to diagnosis. There are also instances in which patients are diagnosed but not reported to NTBLCP, resulting in an under-reported case detection rate.

"The challenge with most DOTS offices is they do not keep accurate data on recording and reporting tools."

"I was tired of incomplete charts. I'm very strict on this."

We get fake phone numbers and addresses from patients.

There were 24 presumptive cases that never received further services.

"There is a large drop-off from the presumptive register to the lab register."

"One patient's card we reviewed was not up-to-date."

Insight 4:

Providers lack systems to follow-up presumptive cases and patients.

Some providers have a strong desire to follow-up with presumptive cases, carry out contact tracing, and reach defaulters through calls or household visits, but there are no systems or structures in place to do so. Providers indicate that there are no provisions for airtime to make phone calls. In some places, motorbikes or vehicles were provided to enable defaulter tracing, but these are often no longer functioning and/or allowed.

"If you don't see a patient, you need to call them to see why. That phone thing is very important."

"If I have no money to call them, I will not call them."

There are limited funds for defaulter tracing.

"I use my credit to call patients that default for follow-up."

There is no keke, no motorbike, no transport to go to the patient's home to see why they are defaulting.

Insight 5:

There are real and perceived costs in getting diagnosed for TB—despite free testing and treatment.

While TB testing and treatment are free, many people are unaware, do not believe it is true, or still incur costs (e.g., transport to the facility, missed work, patient folder, or other diagnostic tests prior to TB diagnosis), which impact initial health-seeking behaviors and adherence to treatment.

Insight 6:

Stigma exists across communities and professionals, which can be a barrier to health-seeking behaviors.

The stigma and fear associated with TB and/or HIV prevents some community members from seeking treatment. Stigma and misinformation also exist and are perpetuated in professional situations, including TB facilities.

"Fear prevents community members from going to the clinic."

"Some TB patients die in silence."

"They are afraid of going to the health facility because they are afraid of what they might hear."

"I have just hidden it within me."

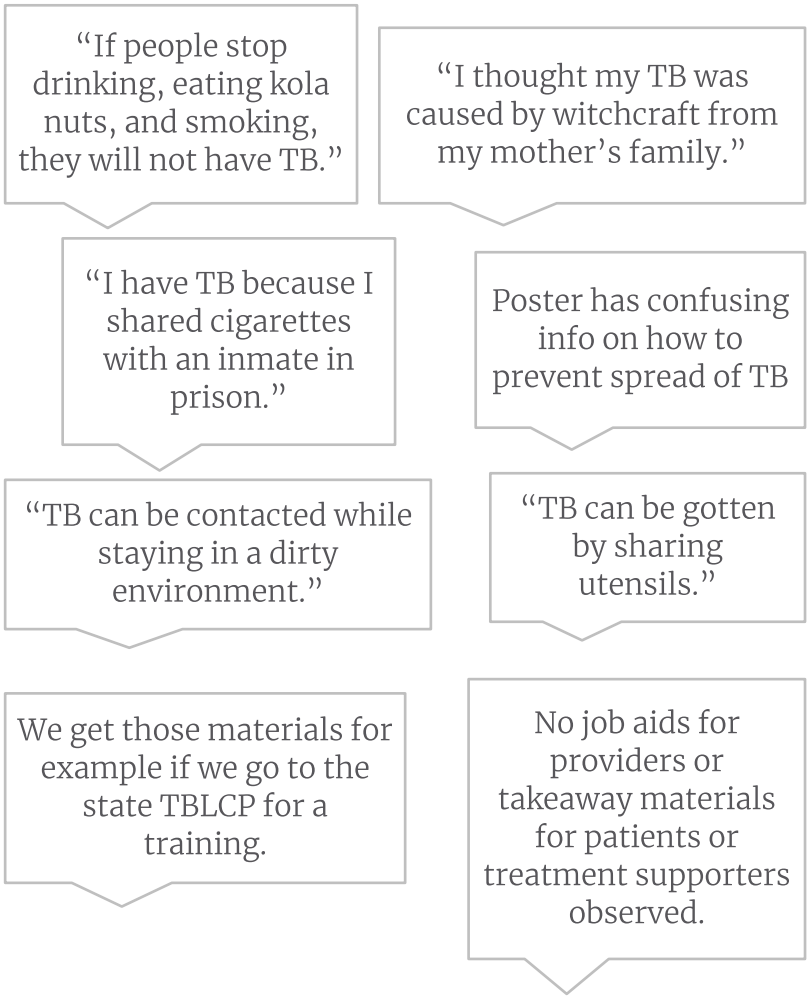
"They fear because they feel TB is like HIV. They don't want to be stigmatized."

"The community is receptive to people with TB. But they are kept separate."

Insight 7:

Myths and misconceptions about TB transmission are prevalent in the community and among health professionals.

Myths, misconceptions, and the amount of incomplete information about TB is high across the spectrum. Overall, awareness varies considerably. There is wide variability in the presence, quality, and types of TB materials at DOTS facilities and few materials in non-clinical TB and community settings. When materials are present, they are often fear-based, unclear, in English, or not well-suited for the target audience or location. Few facilities had takeaway materials to give to clients or treatment supporters, and none had job aids for providers. Though most TB providers receive on-the-job-training and mentoring, there is a strong desire for more frequent, formal training.



Insight 8:

TB providers and program managers can often identify high-risk areas for TB in their communities.

TB providers and program managers—especially those in the community (e.g., CTWs)—are often intimately familiar with high-risk areas where TB cases are likely to be found.

"Pelewava market. We see many people there because most of them sleep there. In a room we can find like 6 or 7 women in a room."

"Agrawu Street. We mostly see many men in this area that are drinkers, they smoke India hemp."

"Mboreje market. We do capture mostly men in this market, those that are Igbo men that are selling food. We advocated to them and gave them cups for testing."

Insight 9:

Some private facilities offer high-quality health services but do not want to be associated with TB.

People may seek health care from their usual source (e.g., private facility) over a dedicated TB clinic. Some clients prefer private facilities over government facilities due to shorter waiting times, higher perceived quality of care, and better confidentiality. While some private facilities are involved in TB testing and treatment, others do not want to be associated with TB. Reporting is mixed from these private facilities.

This facility is better for DOTS because there are long queues at the other places.

Our patient numbers have doubled since state insurance started.

Seven of Enugu's 13 GeneXpert sites are private high-burden facilities (mostly faith-based). The facilities report their cases to the state.

People with money don't go to infectious disease hospital.

Some private health facilities do not want to associate their clinics with TB because of fear of stigmatization and reduction in patronage.

Private facility refers to itself as "cough-friendly" rather than saying TB.

Insight 10:

Counseling is difficult because it needs to be tailored to be effective.

While many providers give group health talks, none had a standardized job aid to guide them. Few give individual one-on-one counseling tailored to the needs of the client, and counseling at the presumptive stage is infrequent and incomplete. This may contribute to drop-off from presumptive cases to testing and treatment, ineffective contact tracing, and default rates.

PATIENT

Usman, Trader

"I just want to get back to work but I am too sick and out of money."

Age 43

Works Trader, petty goods

Lives Minna

My wife and I are both traders and have four children, all in school. I work in a crowded market with many other traders nearby. I work hard for my children to go to school and want them to go to University because I didn't have that opportunity. When I started coughing, my customers stayed away so I stopped working. I tried getting medicine from the PPMV and drank a lot of cough syrup and antibiotics but didn't get better. The pastor at church prayed over me and told me that God heals. I didn't go to the hospital because those places just take your money. After three months of not working and being sick in bed. I'm coughing up blood and have lost a lot of weight. I'm not sure what to do.

He is feeling

- Sick
- Hopeless and not clear what to do

Barriers to contributing to TB detection

- Physically unable to get to the hospital
- Out of money and thinks he will need to pay the hospital

His goals and values are

- Get back to work
- Keep kids at school to give them a better chance than he had
- Education and good work

He needs

- To support his family and prevent them from getting infected
- Someone to convince him to go to the health facility
- Someone to help him get to the hospital and cover registration or testing costs

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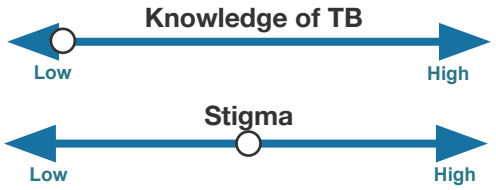

RELEVANT INSIGHTS

1. Multiple places for help
5. Real and perceived costs
8. High risk areas

PATIENT

Usman, Trader

"I just want to get back to work but I am too sick and out of money."

I am healthy and happy. I am working to support my family at a crowded local market. Everyone is in school and I am happy to give them that opportunity.	I am starting to cough a lot and I am losing weight. I go to the PPMV. They give me cough syrup and then, later, antibiotics. It doesn't help.	I am losing customers because I am coughing so much. I stop working. I go to church to ask my pastor for help. He prays for me.	I am coughing up blood. I am out of money. I can't afford to go to the hospital. They just take your money anyway.	I am so sick I can't get out of bed. My wife has stopped work to care for me. We can't afford school. I am worried about my family getting sick.
How might we better target high-risk areas so that people get tested for TB when they have coughed for two weeks and one day?	**How might we get PPMVs to refer every single person who has coughed for more than two weeks to health facilities?**	**How might we transform churches into the number one referral source?**	**How might we make getting a cough diagnosed a true zero-cost proposition?**	**How might we get communities to refer people for TB testing without stigmatizing them?**

PATIENT

Amina, Tailor

"I am scared I might be HIV+. I don't want to go to the hospital because I am afraid of what I might hear."

Age 43

Works Tailor, specializes in women's clothing

Lives Kano

I am a widow and mother of two. I have been having a bad cough for almost two months now. At first I took some honey but that didn't help. I went to the chemist just down the road and he gave me cough syrup. That didn't work either and now he has given me so many things to try: amoxicillin, zithromax, streptomycin. I am trying to keep sewing but my customers don't like my cough. A health worker came to my house, asked me about my symptoms, and told me about TB. She gave me a plastic cup and told me to cough sputum into it early the next morning before I eat and bring it to the clinic, but I didn't. I am scared I might be HIV+ and am afraid of what that will mean for me and my girls. In fact, my 4-year old daughter just started coughing, too.

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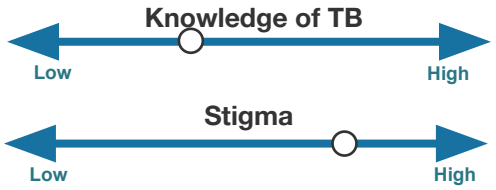

RELEVANT INSIGHTS

1. Multiple places for help
7. Myths, misconceptions, and lack of awareness
9. Private facilities

She is feeling

- Frightened and frustrated

Barriers to contributing to TB detection

- Misdiagnosis and mistreatment from PPMV
- Fear of an HIV+ diagnosis at the health facility

Her goals and values are

- Raising two healthy, happy daughters
- Helping people look their best

She needs

- Someone to encourage her to go to the health facility
- Reduced fear of an HIV+ diagnosis
- TB testing for her daughter
- Infection prevention
- Contact tracing of others she has been in close contact with

PATIENT

Amina, Tailor

"I am scared I might be HIV+. I don't want to go to the hospital because I am afraid of what I might hear."

I am a successful tailor in my community. Women love coming to my shop for new outfits. I am doing the best I can with my girls. It is difficult now without my husband.	I seem to have a cough. I am taking some honey to help soothe it.	The cough is getting worse and the honey isn't helping. I went to the PPMV and he gave me some cough syrup. My cough is making my customers uncomfortable.	I was given a sputum cup by a health worker who came to my home, but I was afraid of going to the health facility because of what I might find out.	I am losing weight. I fear I may be HIV+. My 4-year old daughter has now started coughing, too.
How might we make contact tracing something people volunteer for?	**How might we make scientific medicine coexist with traditional medicine?**	**How might we make PPMVs the top referrers of presumptive TB cases to health facilities?**	**How might we ensure that taking a sputum test is as effortless as buying phone credits?**	**How might we make TB testing as psychologically easy as getting mosquito nets?**

PATIENT

Femi, Area Boy

"I want to stop drinking and smoking so I will feel better but I can't."

Age 27
Works Area boy leader
Lives Lagos

I am loyal to my neighborhood and lead the area boys here. I drink alcohol and smoke different drugs every day, whatever I can get my hands on. I look out for the area boys here, they look up to me. I usually sleep in the church and am in the choir. It is my refuge and I never have missed a single practice and sometimes was even paid but I haven't been to sing since I started coughing. I've been coughing for some months. A community outreach nurse told me it's because I smoke and drink. I took local remedies until I started coughing up blood, then I went to the clinic and they did some tests but I don't know what for. I went once for my results but they said they weren't back yet and I never heard back from them so I must be fine.

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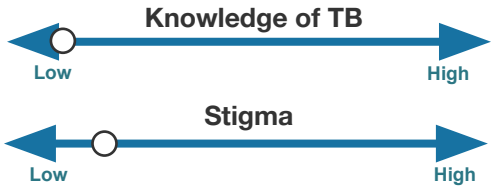

RELEVANT INSIGHTS

1. Multiple places for help

2. Sputum testing

7. Myths, misconceptions, and lack of awareness

He is feeling

- Physically ill
- At fault for feeling ill
- Proud of his role among area boys
- Badly about not being able to sing in the choir

Barriers to contributing to TB detection

- He doesn't know about or suspect TB
- Lack of availability of results
- Misinformation about potential causes from church member

His goals and values are

- Being seen as a strong and consistent leader among the area boys
- Being able to participate in the choir for personal and financial gain

He needs

- To know his TB status
- Understand the disease and treatment
- Have access to treatment

PATIENT

Femi, Area Boy

"I want to stop drinking and smoking so I will feel better but I can't."

Joined an area boys group, started using drugs and alcohol. Looked up to the leader and emulated his behavior eventually becoming a leader himself. Continued to use.	Started coughing and feeling sick. A community outreach nurse saw him coughing and admonished him for drinking and smoking.	Started coughing up blood and went to the clinic where they did a number of tests on him but didn't explain what they were testing for.	Goes back to the clinic to get results. They aren't ready and say they will contact him soon. He gave his fellow area boy's telephone number as the contact but they never call him. He doesn't go back.	He's getting sicker and sicker, exposing others, and thinking that he is bringing the illness on himself by drinking and smoking
How might we get people in community leadership roles to see themselves as responsible for the health of their followers?	**How might we ensure community outreach nurses are as well versed in spotting TB symptoms as DOTS professionals?**	**How might we make sure every patient leaves the clinic feeling like an expert on TB?**	**How might we ensure every presumptive case gets a follow-up?**	**How might we reverse self-blame into feeling like he can help his friends?**

PROFESSIONAL

Dennison, PPMV Apprentice

"When people come in coughing, I give them what I think they can afford."

Age 21

Works Apprentice in a PPMV shop

Lives Akwa Ibom

I work at a PPMV shop as an apprentice. The owner comes in now and then to train me on things. I finished primary school but then my father couldn't afford school anymore. My customers count on me to make them well and they respect me. Some call me doctor.

I've heard of TB, it's coughing. People don't want to go to the health center because then they have to pay too much money.

When people come in coughing I give them what they can afford. Cough syrup is 300 Naira or doxycycline, which is only 100 Naira. If they keep coming back I give them bigger antibiotics.

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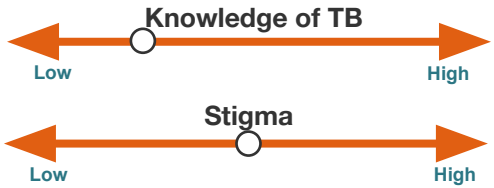

RELEVANT INSIGHTS

1. Multiple places for help

5. Real and perceived costs

7. Myths, misconceptions, and lack of awareness

He is feeling

- Highly motivated to learn
- Anxious to start his own business

Barriers to contributing to TB detection

- Motivation to refer patients for treatment and testing
- Understanding of the disease and his role in helping curb the spread
- Mandate from the owner to refer patients
- Lack of pressure from the community to refer patients

His goals and values are

- Being seen as an expert in the community
- Making sales and impressing the owner
- Making money to get his own shop

He needs

- To be trusted by the community
- Money
- Knowledge of health, disease, and medication

PROFESSIONAL

Dennison, PPMV Apprentice

"When people come in coughing, I give them what I think they can afford."

Was a high achiever in school but then his parents couldn't afford it anymore.

Took an interest in a neighbor's PPMV shop, hanging around to learn more. He liked how people listened to the PPMV. His neighbor saw the interest and took him under his wing.

The neighbor saw he was doing a good job and decided to put him in charge. He does the best he can and tries to help all patients feel better based on what they can afford. Likes the recognition from his community. Doesn't refer people to hospital because he know they don't have money.

Owner checks in monthly, corrects him when he catches him doing things incorrectly, and tells him about new things when he has time. Dennison is saving to open his own shop.

How might we make learning about TB free and fun for all young people?

How might we get PPMV and other health professional employees asking about TB education from their first day on the job?

How might we make sure that money is never an issue where referrals from other healthcare professional are involved?

How might we make sure that any time someone starts working at a PPMV, they get trained in making TB referrals in their first week?

PROFESSIONAL

Patrick, DOTS Provider

"I am proud of my work. I wish the lab would keep up and give me good records so we wouldn't keep losing people before they can be diagnosed and treated."

Age 39

Works DOTS provider

Lives Cross Rivers

I've been a DOTS provider for four years. I haven't been sent to any training since I started, only on the job training from the LGA supervisor. Going for training would give me the latest information on TB and also motivate me. It brings me joy to see how quickly patients recover once they start treatment. I felt good when a cured patient brought in her brother when he was diagnosed with TB because she trusted me to take care of him. I am close with my patients but sometime they annoy me when they call me on the weekend or they don't come get their drugs and I have to try to chase them down. It's also annoying when the lab gives me positive results for a new patient but when I try to call them to come in the number is wrong. Sometimes it takes many days to get results back when the lab is down to two modules down in the GeneXpert machine and sometimes we lose those patients if they have to keep coming back to get their results.

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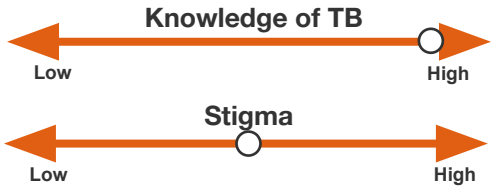

RELEVANT INSIGHTS

3. Data entry

4. Duty calls

10. Counseling is difficult

He is feeling

- Underappreciated and ostracized by the rest of the hospital
- Technically ill equipped to do his job
- Frustrated by patients and the lab

Barriers to contributing to TB detection and adherence

- Lab doesn't always give correct contact information
- Lab doesn't have a fully functional GeneXpert machine
- Patients don't always pick up their drugs
- Patients don't always respect his time

His goals and values are

- For DOTS center to be seen as being equal to other departments
- For patients to get better

He needs

- Complete information from lab on positive patients
- Respect from peers
- Better/more resources (facility, financial)
- Recognition that on-the-job training is effective and thorough and provides him with needed technical information

PROFESSIONAL

Patrick, DOTS Provider

"I am proud of my work. I wish the lab would keep up and give me good records so we wouldn't keep losing people before they can be diagnosed and treated."

Started in the DOTS clinic. The rest of the hospital does not interact with the clinic and misses referral opportunities.	A man I helped get through TB years ago came in again today. He brought his cousin who is sick because he trusts me.	Spent time today trying to call people to get them back for a test. Half the phone numbers were wrong due to data entry errors or fake numbers.	Patrick has some successes today, which gives him great satisfaction and drive to keep going.	Patrick gives a health talk to some of his patients. He uses the information TBLS told him but he wishes he had more materials. He wishes he had time to give individual advice.
How might we remove stigma and make hospitals love giving TB referrals to DOTS clinic?	**How might we turn recovered patients into heroes to help get presumptive cases to want to get tested?**	**How might we make data entry accurate, efficient, and resilient to distractions and people giving false information?**	**How might we assist motivated TB workers in ways that allow them to reach and manage ten times more people than they currently do?**	**How might we make consistent and accurate information available to those who need it in appropriate formats?**

Penelope, Nurse

"When I see the DOTS provider, I keep my distance. I don't know how she does that job, working with all those TB patients."

Age 42

Works Nurse in the maternity ward, Annunciation Hospital

Lives Anambra

I'm a nurse in the maternity ward at Annunciation Hospital and have worked here for 18 years. We need more staff here. I am seriously overworked.

When my patients cough I tell them to get cough syrup from the PPMV. I can't be referring patients elsewhere unless it's an emergency. I have too many patients to tend to. I'm not interested in working with TB clinics because that is the government's job, not the job of private facilities.

I stay away from the DOTS clinic because I don't want to get TB. Even when I see the Matron who works in the DOTS clinic, I keep my distance just in case she caught it from a patient.

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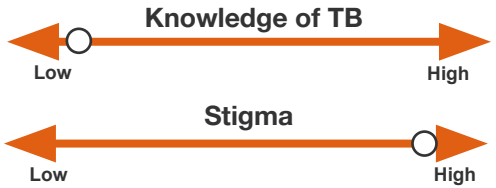

RELEVANT INSIGHTS

6. Stigma

7. Myths, misconceptions, and lack of awareness

9. Private facilities

She is feeling

- Exhausted and overworked

Barriers to contributing to TB detection

- Her stigma prevents her from interacting with the DOTS clinic
- Her work load is high and TB referrals would be extra
- Her mandate is to focus on healthy babies and mothers

Her goals and values are

- Healthy moms and babies in my hospital
- Do my job so I can support my family and church—earn more money if possible
- Status and recognition in the workplace and community (e.g., church)

She needs

- Recognition for the work she is doing
- Help and a more efficient system
- Better or easier ways to refer
- Better familiarity and ability to spot TB
- Motivation and time to refer

Penelope, Nurse

"When I see the DOTS provider, I keep my distance. I don't know how she does that job, working with all those TB patients."

When I was training, I asked about TB and babies. I learned that my focus was on keeping babies and mothers healthy, not referring TB cases.	I appreciate how people look up to me at church. Working with new mothers and babies is incredibly important work.	I've been working in maternity for 18 years and I am always overworked. I can't afford to tend to patients that aren't maternity patients.	I am not interesting in working with TB facilities because it's the government's job and it is a disease of the poor.	I always avoid the DOTS clinic and the Matron there. You never know if they might be contagious.
How might we make TB diagnosis part of every healthcare workers' training?	**How might we make working with TB as recognizably important as working in maternity?**	**How might we create a referral systems that takes zero-effort?**	**How might we make the private sector excited to work *as* TB facilities and report?**	**How might we make every health care worker an expert in high-level facts about TB?**

PROFESSIONAL

Agnes, Lab Technician

"Our GeneXpert has been down to two modules for the past six months."

Age 39

Works Lab Technician

Lives Bauchi

I've run the TB lab for the past 10 years. Our GeneXpert machine has been down to two modules for the past six months. We've reported it but are still waiting for it to get fixed. I've given up. We have to run the samples from 8:00 a.m. to sometimes 11:00 p.m. I have a technician that stays late but we still are very behind. Our cabinet is broken so many samples have spoiled while waiting to be tested. We do AB testing when the situation calls for it. We are doing the best we can but we simply can't process all the samples. Sometimes I don't even have enough time to fill in all of the information. Now we call Riders for Health and they take the samples we don't have time to process to the GeneXpert at Ignala DOTS Center. This is very good except sometimes they are unavailable. It can take Ignala some days to process so it's hard to know when to tell the patient to return for their results and the patients often give us wrong phone numbers.

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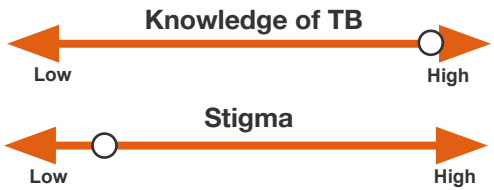

RELEVANT INSIGHTS

2. Sputum testing

3. Data entry

7. Myths, misconceptions, and lack of awareness

She is feeling

- Overwhelmed with the backlog
- Frustrated with bad equipment (e.g., machine is subpar, cabinet, etc)

Barriers to contributing to TB detection

- Physical slowdown due to lack of equipment
- Lack of resources to get equipment fixed
- Patients giving incorrect information
- Lack of power

Her goals and values are

- Be able to test every patient and run the test quickly and efficiently with a fully functioning machine

She needs

- Patients to provide their correct contact information
- Time and the habit to fill in all information on each patient immediately
- Access to routine maintenance to prevent module malfunction and prompt response upon module malfunction

PROFESSIONAL

Agnes, Lab Technician

"Our GeneXpert has been down to two modules for the past six months."

My most critical pieces of equipment are my GeneXpert machine and my samples cabinet, but both are often broken and I am still waiting to get them fixed.	I have so many samples that my team is often running samples from 8:00 a.m. to 11:00 p.m. We are always behind.	Sometimes I am so short on time that I can't even fill in all of the required information.	We use Riders for Health, but they don't always come on time and we don't know how long it will take to test at Ignala so I can't reliably tell patients when their results will arrive.	Even when I do get results for patients, they often leave incorrect phone numbers so I cannot get in touch with them.
How might we ensure that all critical equipment is up and running 99 percent of the time?	**How might we ensure that every single sample gets processed?**	**How might we make data input as easy as dialing a phone number?**	**How might we ensure that results are delivered like clockwork?**	**How might we encourage patients to proactively pursue their results with zero drop offs between presumptive cases to getting results?**

Oluseyi, Pastor

"I am well-respected by my community and know almost everyone."

Age 63

Works Head Pastor of the Living Word of God Church

Lives Rivers

I am the head pastor of the Living Word of God Church. I am well-respected by my community and know almost everyone. I like to help people with their troubles. I am also a member of network of other pastors in our LGA. TB? No I don't really know anything about TB.

When parishioners come to me sick, the first thing we do is pray. Usually the person has sinned and needs to pay penance to God. The more sick they are, the larger the prayer circle. If praying isn't working after some days, then their problem is probably physical not spiritual and I advise them to go to the hospital for treatment. When they are released, I make sure to visit them and pray over them every week until they are better.

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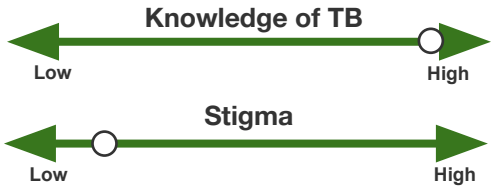


RELEVANT INSIGHTS

4. Duty calls

7. Myths, misconceptions, and lack of awareness

He is feeling

- Responsible for his parishioners
- Respected by his community
- Very sure about his approach to helping sick people who come to him

Barriers to contributing to TB detection

- Doesn't know he can't treat serious illnesses with prayer
- Doesn't know anything about TB
- Empathizes with parishioners who don't have a lot of money

His goals and values are

- To grow his congregation
- To be held in high regard by his community and church members

He needs

- Information about TB and his role as community and religious leader in the case of TB
- Motivation to to refer coughing parishioners to testing and treatment
- Recognition for his contribution

Oluseyi, Pastor

"I am well-respected by my community and know almost everyone."

Father is a pastor and saw his father heal several people who were on their deathbeds through prayer.	A person comes to me for help. He has been having night sweats and fever. I will help him through prayer.	He is not getting better. I reach out to my network of other pastors for advice in how to help this man.	A health worker visited me today and told me that he may have TB. The man is poor but we help him get to the hospital and the treatment is free. I will tell my fellow pastors.	I am happy that the man is being cared for. I am worried about the man's family—they have not been at church.
How might we make houses of worship places where TB is an openly discussed topic?	**How might we make religious leaders the number one referrers of TB cases?**	**How might we leverage religious networks to spread positive advice and action about TB?**	**How might we equip community leaders to make their networks excited about helping people through TB?**	**How might we have people in the community refer others without shame and stigma, to improve contact tracing?**

Appendix C: Team journey and participants


Chev Pharmacy +
Dettol
Panadol
Chev Pharmacy
13, Adeyemi Str. Oshodi
FEEL GOOD...LOOK GOOD
herbex
AVAILABLE AT THIS STORE !!!
Boost your
Sperm quality
Libido
with HC SOERMBOOM
STRESS LIFESTYLE & INFECTION
Sexual
elationship
ssues?
pepsi
EVERYDAY
ENERGY
FAST!

What was our experience of the design and test process?

At the end of the process, we asked the co-design participants to reflect on their experiences. Their responses included:

We **appreciated the process** being thorough, practicable, and simple.

We were frustrated about not being able to **get the right permissions** in the timeframes.

We didn't like that we didn't know each day's **travel plans** until the last minute.

We see promise in the connections we made and how **people are ready to help.**

We loved how we were able to **co-design** the ideas with people and the opportunity to understand things from their perspective.

We were **worried about our safety** if we were to be going into the homes of patients and interacting with them.

There was great **joy in making and remaking** our prototypes, in the process of making and iteration.

We **wish we had more time** to continue working on our ideas and more time to develop the connections and relationships we have made in this process.

Participants

No.	Name	Organization	Position
1.	Anna McCartney-Melstad	Breakthrough ACTION - Nigeria	Nigeria Team Lead
2.	Bolatito Aiyenigba	Breakthrough ACTION - Nigeria	Deputy Director, Malaria and TB
3.	Edor Joseph Paul	Breakthrough ACTION - Nigeria	Senior Program Officer II, TB
4.	Justin DeNormandie	Breakthrough ACTION - Nigeria	SBC and Innovations Advisor
5.	Jennifer Orkis	Breakthrough ACTION	SBC Advisor
6.	Charlie Mere	ThinkAction	Senior Executive Designer
7.	Tim Fife	ThinkAction	Senior Advisor
8.	Itohowo Uko	NTBLCP	Deputy Director, Head of Advocacy, Communication, and Social Mobilization (ACSM)
9.	Ekeh Stella	NTBLCP	Community TB Desk Officer
10.	Janeth Doji	NTBLCP	Senior Community Health Officer, ACSM Unit
11.	Cecilia Abimaje-Kafran	TB Network	Acting Program Manager
12.	Grace Oguntade	Association of Reproductive and Family Health	Communication Officer
13.	Omolola Shofowora	NTBLCP	Assistant Director, ACSM Unit

Participants (continued)

No.	Name	Organization	Position
14.	Jumoke Adebari	NTBLCP	Chief Program Officer
15.	Adamu Yusuf Tsangaya	Kano STBLCP	Deputy Control Officer
16.	Aminu Farouk Kabara	Kano STBLCP	M&E Coordinator
17.	Tamuno-Adoki Tonye	Rivers STBLCP	M&E Coordinator
18.	Leishim Singerr	Rivers STBLCP	Community TB Care Desk Officer
19.	Wali Solomon Y	Enugu STBLCP	M&E Officer
20.	Uju Perpetual A.	Enugu STBLCP	TB/HIV Focal Person
21.	Idi Nasir	Breakthrough ACTION - Nigeria	Media Program Officer
22.	Steve Batur	KNCV	M&E Officer
23.	Gideon Zephaniah	KNCV	M&E Officer
24.	Ifiok Ekanim	KNCV	M&E Officer
25.	Aluko Dorcas I	Lagos STBLCP	Community TB Focal Person
26.	Pitan Olubokola	Lagos STBLCP	TBLS, Lagos Island LGA
27.	Ayodele Iroko	SHOPS+	Senior Private Sector Advisor
28.	Adekoya Victoria	Lagos STBLCP	TBLS, Ajeromi LGA

Participants (continued)

No.	Name	Organization	Position
29.	Sebitiomo Adebimpe	Lagos STBLCP	TBLS, Mainland LGA
30.	Ikechukwu	KNCV	Regional Laboratory Advisor
31.	Taofek Ali	IHVN	Program Manager
32.	David Rotimi	Graphic Designer	Consultant
33.	Okey Ogamanya	Graphic Designer	Consultant
34.	Seyi Ajayi	Breakthrough ACTION - Nigeria	Administrative Assistant II
35.	Vivian Ihechu	HEWAN	Journalist
36.	Ugwu Bucknor	Enugu STBLCP	TBLS
37.	Ibrahim Abdullahi	Kano STBLCP	TBLS
38.	Yusuf Lawan	Kano STBLCP	TBLS
39.	Sani Danladi	Kano STBLCP	TBLS
40.	Mustapha Ahmed Gambo	Kano STBLCP	TBLS
41.	Umar Abdul Baki	Kano	Patient
42.	Faiza Usamatu	Kano	Patient
43.	Fasakin Solomon	Lagos	Patient

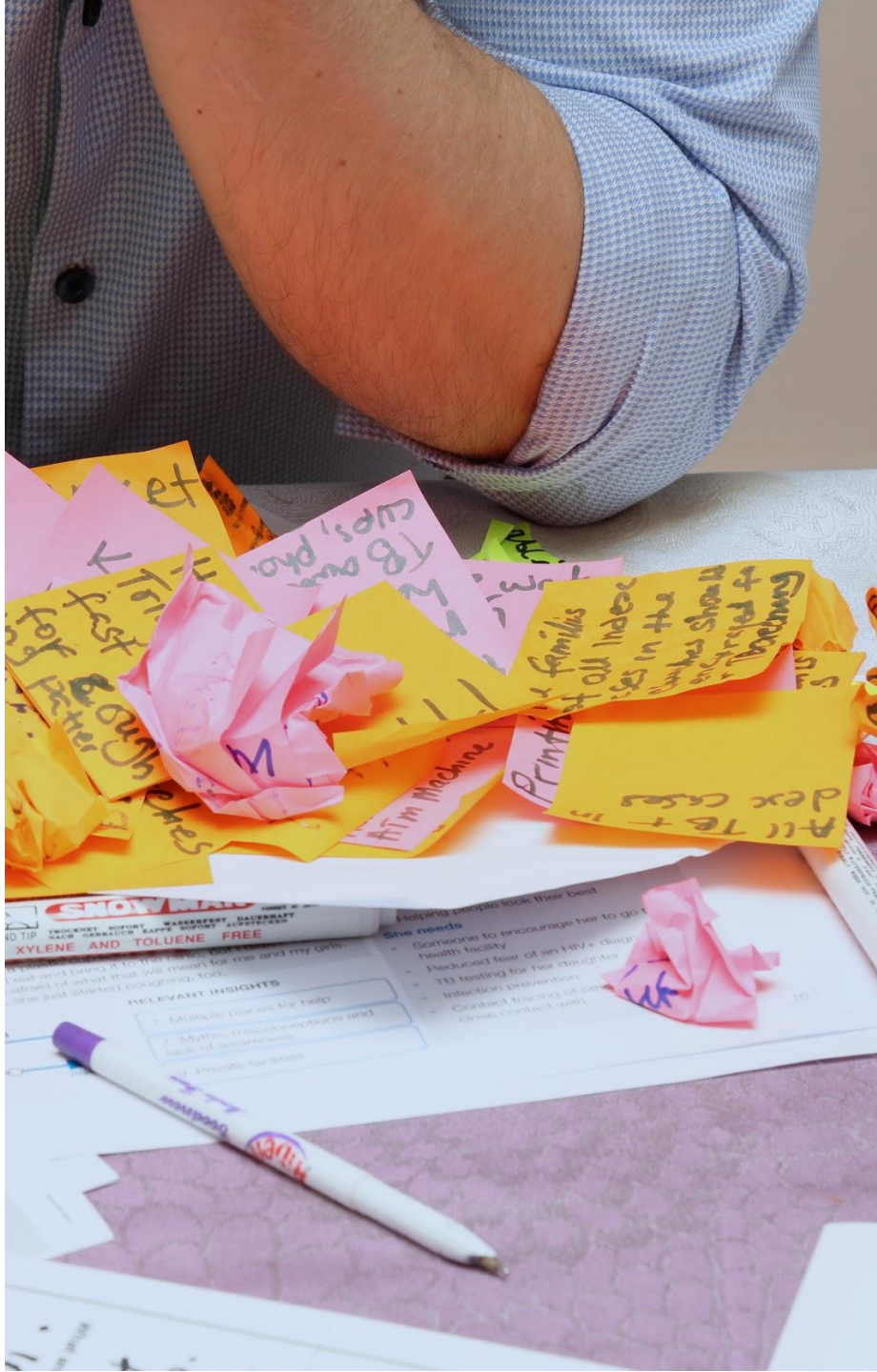
Appendix D: Other ideas

The other ideas

The SBC process—and the Imagine Stage in particular—is often a process of divergent ideation following by convergent selection. This means that lots of ideas are conceived and a series of prioritization frameworks are then applied to filter out those ideas that are either not going to have a big enough impact or would be too difficult to implement. This allows the ideas with the greatest potential to be both effective and feasible to emerge.

Over the course of this phase, we developed in excess of 760 ideas, which were whittled down to our top five concepts. While we needed to nominate a select few to be advanced to the prototyping phase, we recognized that some of the other ideas still held a certain appeal.

This section contains a small selection of these "other ideas," described in brief, that had appeal, but did not make it to the final stages of prioritization. Following these ideas is an Ideas Register that contains all of the ideas that made it through the first round of prioritization, but did not make it into the final concepts.



Technology ideas

These ideas all had technological requirements that, while intriguing, brought their feasibility into question.

Geo-fencing hotspots

Use geo-fencing (GPS enabled technology to isolate certain geographic areas) to push SMS/notifications to anyone who enters or leaves a known TB hotspot with the message "Have you been, or do you know anyone who has been, coughing for more than two weeks?" If the respondent replies with a "Yes," the respondent is sent the national hotline number along with the address of the closest testing facility.

SMS TB test results immediately

Enable GeneXpert machines to automatically SMS results directly to presumptive case's phone when the test is completed.

Easy home-testing kits

Develop a new type of TB testing that relies on a saliva/urine test for TB that can be self-administered at home. Testing materials can include national hotline number and list of local treatment centers.

Smart mattress pad

Develop a smart (internet-enabled) mattress pad that measures both weight and body temperature. When a user's weight rapidly declines accompanied by a fever, it sends a notification, either to the user or a local clinic.

TB SBCC ideas

These were all ideas for possible SBCC interventions to raise awareness and engagement with TB detection.

Don’t let a cough get in the way of things you love

Produce a series of materials (print, radio, TV) where a person is enjoying something that involves their mouth (e.g., eating, singing, kissing) and has their experience interrupted by a fit of coughing. Conclude each material with the slogan, “Don’t let a cough get in the way of things you love,” followed by a referral to the National Cough Hotline if the person has been coughing for more than two weeks.

Create linkages to other things that are done every two weeks

Develop a campaign that focuses on the parts of our lives that happen/repeat every two weeks and then associate that with having a prolonged cough. “If you’ve been coughing as long as x has been happening, you may want to call the National Cough Hotline.”

Free handkerchiefs

Give out free tissues or handkerchiefs in crowded TB hotspots with information about where to go for a free TB test. The handkerchief itself could be designed with a pattern that has the information printed directly on it.

Corporate partnerships

These ideas all required corporate partners to collaborate in order for the ideas to be a success.

Warnings on cough syrup labels

Partner with medicine companies and persuade them to add a warning label to their cough syrups that says that if a cough persists for more than 14 days and is accompanied by any of the other TB symptoms, they should contact the national TB hotline. These warnings could also be applied to other popular products associated with the mouth / oral care (e.g., Coke, lipstick, toothpaste).

TB test required for bank accounts

Partner with banks to establish new policies that require customers to provide proof that they have been tested for TB before they can open any new accounts.

pARTnerships

Work with artists to commission a photography or portrait art show focused on TB patients. Before and after images would be displayed and celebrate the success of TB survivors.

Mobile phone carriers

Partner with mobile phone carriers to offer discounts on phone credits if customers can provide proof of having had a TB test. Additionally, we could partner with carriers to deliver TB testing information via SMS whenever the company sends their customers notifications that their credits are low.

Embedded in the community

These ideas relied heavily on community participation and the enrollment of those not traditionally part of the healthcare system.

Cough monitors EVERYWHERE

Train people who work in jobs that see lots of individuals everyday to be cough monitors. This includes barbers, keke drivers, Uber drivers, bank tellers, petrol station workers, bus drivers, bus ticket salespeople, security guards, airport personnel, and school teachers. Expanded Program on Immunization (EPI) health workers can also be trained to be cough monitors during outreaches.

Referral slips in buses and kekes

Place simplified referral slips on buses and kekes for people to take discreetly if they are looking for information on getting their cough tested. Can be used in conjunction with making keke drivers and bus drivers cough monitors.

Public buses help deliver samples

Delivery of samples collected from non-testing facilities can be coordinated to be delivered by public bus if the destination testing facility is along the bus route.

Riders for Health help transport presumptive cases to get tested

Riders for Health can transport presumptive cases from their home neighborhoods to testing facilities.

Policy changes

These ideas all required government intervention and a change to existing policy structures.

Tax incentives

Create tax incentives for private health facilities for treating TB patients.

Government fully refunds all incidental costs

When pursuing a TB diagnosis, if a patient keeps all their receipts related to getting to and from the testing center, as well as any incidental health facility costs such as paying for a file, that person can get all costs reimbursed by the government to ensure TB testing is truly zero-cost.

TB reporting compulsory per hospital

Develop a policy statement to make TB reporting compulsory per hospital, ensuring that we have complete and accurate records of where TB cases are being tested for and being found.

PPMV licence regulations

Create a new policy framework that modifies the licensing regulations for PPMVs such that they need to go through mandatory TB cough monitor/TB patient referral training.

Ideas register

Below is a list of the ideas that the team though were valuable, but did not make it through the final prioritization exercises. There are approximately 130 ideas in this collection.

IDEA	DATE OF INCEPTION	CREATED BY	PRIORITY/ SUBGROUP	INCORPORATED IN CONCEPT
*TOP 5 PRIORITIZED IDEAS FROM **CORE GROUP** PRACTICE IDEATION ROUND*				
Church "cough-monitor" role in/after services/part of prayer circles	31 Oct	Core Group	Priority band 1	Intervention B: Religious settings
Fleet of mobile TB buses conducting health visits or at an event	31 Oct	Core Group	Priority band 2	
Put TB warning on cough syrup ("If you or anyone you know has been coughing for more than two weeks, go to a health facility")	31 Oct	Core Group	Priority band 2	
Celebrate World TB day in churches and mosques where the Pastor or Imam gives a sputum sample during the sermon	31 Oct	Core Group	Priority band 2	Intervention B: Religious settings
Make employees show that they have taken a TB test before getting paid	31 Oct	Core Group	Priority band 3	

Ideas register (continued)

IDEA	DATE OF INCEPTION	CREATED BY	PRIORITY/ SUBGROUP	INCORPORATED IN CONCEPT
*TOP 9 PRIORITIZED IDEAS FROM **USMAN** PERSONA GROUP*				
Mass media about free testing	1 Nov	Usman group	Priority band 1	Intervention E: Brother's Keeper
Advocacy to policymakers, religious leaders, and traditional healers	1 Nov	Usman group	Priority band 2	
IEC/SBCC materials in PPMVs, including training	1 Nov	Usman group	Priority band 2	Intervention A: Simplified referrals
More GeneXpert machines	1 Nov	Usman group	Priority band 2	
Government to refund all costs of getting tested	1 Nov	Usman group	Priority band 2	
Mobile van testing	1 Nov	Usman group	Priority band 2	
All community health workers trained to refer	1 Nov	Usman group	Priority band 2	Intervention A: Simplified referrals
Make TB testing part of standard health check	1 Nov	Usman group	Priority band 2	
Engage healthcare workers in church/mosque	1 Nov	Usman group	Priority band 2	Intervention B: Religious settings

Ideas register (continued)

IDEA	DATE OF INCEPTION	CREATED BY	PRIORITY/ SUBGROUP	INCORPORATED IN CONCEPT
*TOP 10 PRIORITIZED IDEAS FROM **PATRICK** PERSONA GROUP*				
Reward system for referrals (patient, provider, volunteers)	1 Nov	Patrick group	Priority band 1	Intervention D: Recognition
Provide escort to visit patient home first visit with contact tracing	1 Nov	Patrick group	Priority band 1	Intervention C: Cough Companions
Make all GeneXpert machines functional	1 Nov	Patrick group	Priority band 2	
Jingles on TB in different languages	1 Nov	Patrick group	Priority band 2	
Appreciate and reward hard work of DOTS providers	1 Nov	Patrick group	Priority band 2	Intervention D: Recognition
Use former patients as community volunteers	1 Nov	Patrick group	Priority band 2	Intervention B: Religious settings
Policy statement to make TB reporting compulsory per hospital	1 Nov	Patrick group	Priority band 2	
Create a good rapport to get the right details	1 Nov	Patrick group	Priority band 2	
Ensure confidentiality during data collection process	1 Nov	Patrick group	Priority band 2	
Electronic medical record that sends information everywhere (e.g., DOTS, lab, record office, etc.)	1 Nov	Patrick group	Priority band 3	

Ideas register (continued)

IDEA	DATE OF INCEPTION	CREATED BY	PRIORITY/ SUBGROUP	INCORPORATED IN CONCEPT
*TOP 7 PRIORITIZED IDEAS FROM **DENNISON** PERSONA GROUP*				
Mass media campaigns	1 Nov	Dennison group	Priority band 1	Intervention E: Brother's Keeper
PPMV capacity building	1 Nov	Dennison group	Priority band 1	Intervention A: Simplified referrals
IEC at the PPMV	1 Nov	Dennison group	Priority band 1	Intervention A: Simplified referrals
Religious leaders promote TB testing	1 Nov	Dennison group	Priority band 2	Intervention B: Religious settings
PPMV referral system to healthcare facility	1 Nov	Dennison group	Priority band 2	Intervention A: Simplified referrals
Recognition and incentives for PPMV for TB referral	1 Nov	Dennison group	Priority band 3	Intervention D: Recognition
PPMV license regulation	1 Nov	Dennison group	Priority band 3	

Ideas register (continued)

IDEA	DATE OF INCEPTION	CREATED BY	PRIORITY/ SUBGROUP	INCORPORATED IN CONCEPT
*TOP 9 PRIORITIZED IDEAS FROM **AGNES** PERSONA GROUP*				
Proper education on the need to know your TB status	1 Nov	Agnes group	Priority band 1	Intervention E: Brother's Keeper
Incentivize testing and data entry process	1 Nov	Agnes group	Priority band 2	Intervention D: Recognition
Improved logistics for collection and delivery of results	1 Nov	Agnes group	Priority band 2	
Purchase more mobile diagnostic methods (e.g., more Wellness on Wheels (WOW) vans)	1 Nov	Agnes group	Priority band 2	
GeneXpert machines to be given to private labs	1 Nov	Agnes group	Priority band 2	
Weekly supervision of data entry	1 Nov	Agnes group	Priority band 2	
Volunteers to be engaged in sample transport to labs	1 Nov	Agnes group	Priority band 2	
Patients should be contacted as soon as results are out	1 Nov	Agnes group	Priority band 2	
Provision of light source (e.g., solar lights)	1 Nov	Agnes group	Priority band 3	

Ideas register (continued)

IDEA	DATE OF INCEPTION	CREATED BY	PRIORITY/ SUBGROUP	INCORPORATED IN CONCEPT
*TOP 9 PRIORITIZED IDEAS FROM **AMINA** PERSONA GROUP*				
“Be Your Brother's Keeper” campaign (with focus on how to seek possible help)	1 Nov	Amina group	Priority band 1	Intervention E: Brother’s Keeper
Stipend for identifying a presumptive patient	1 Nov	Amina group	Priority band 1	Intervention D: Recognition
TB certificate for those that finish education	1 Nov	Amina group	Priority band 1	
Invent a tool for rapid testing of TB in any location	1 Nov	Amina group	Priority band 2	
GeneXpert machines to send out results directly to patients	1 Nov	Amina group	Priority band 2	
Give patients a timer to calculate when to collect their results	1 Nov	Amina group	Priority band 2	
Create a safe space treatment support center for TB patients and their supporters	1 Nov	Amina group	Priority band 2	
Have a client relationship desk or unit at DOTS center for following-up with patients	1 Nov	Amina group	Priority band 2	Intervention C: Cough Companions
DOTs officer gets a bonus for every TB positive test completed	1 Nov	Amina group	Priority band 2	Intervention D: Recognition

Ideas register (continued)

IDEA	DATE OF INCEPTION	CREATED BY	PRIORITY/ SUBGROUP	INCORPORATED IN CONCEPT
*TOP 5 PRIORITIZED IDEAS FROM **FEMI** PERSONA GROUP*				
Healthcare workers go to church or mosque to raise awareness with focus on need for infection control with TB survivor telling his or her story that TB can be cured	1 Nov	Femi group	Priority band 1	Intervention B: Religious settings
Provide sputum cups for collection at churches and mosques with volunteers to transport samples to labs	1 Nov	Femi group	Priority band 2	Intervention B: Religious settings
Volunteers at churches and mosques to identify coughs during services	1 Nov	Femi group	Priority band 2	Intervention B: Religious settings
TB information on posters in mosques, churches, and traditional houses of worship	1 Nov	Femi group	Priority band 2	Intervention B: Religious settings
All banks should be encouraged to place TB advertisements in their ATMs	1 Nov	Femi group	Priority band 3	Intervention E: Brother's Keeper

Ideas register (continued)

IDEA	DATE OF INCEPTION	CREATED BY	PRIORITY/ SUBGROUP	INCORPORATED IN CONCEPT
*TOP 9 PRIORITIZED IDEAS FROM **PENELOPE** PERSONA GROUP*				
Include TB training in the curriculum of general health care workers	1 Nov	Penelope's group	Priority band 1	
Give information to all health providers on TB during faculty meetings	1 Nov	Penelope's group	Priority band 1	
To enlighten other non-health workers in the maternity clinics on TB symptoms	1 Nov	Penelope's group	Priority band 1	Intervention D: Recognition
Make the TB toll-free number widely available, including at health facilities	1 Nov	Penelope's group	Priority band 1	Intervention E: Brother's Keeper
Strengthen engagement of private facilities on TB through regular supervision	1 Nov	Penelope's group	Priority band 2	
Automate referral system	1 Nov	Penelope's group	Priority band 2	
Engagement of health training institutions in celebrating World TB Day	1 Nov	Penelope's group	Priority band 2	
Use champions or celebrities to talk about TB	1 Nov	Penelope's group	Priority band 2	
Create a tax incentive for treating TB patients	1 Nov	Penelope's group	Priority band 2	

Ideas register (continued)

IDEA	DATE OF INCEPTION	CREATED BY	PRIORITY/ SUBGROUP	INCORPORATED IN CONCEPT
*71 NON-PRIORITIZED IDEAS FROM **CORE GROUP** IDEATION ROUND 2 (AFTER THE 5 CORE CONCEPTS HAD BEEN IDENTIFIED)*				
Cough monitors at banks	5 Nov	Core Group	Ubiquitous cough monitors	
At petrol stations	5 Nov	Core Group	Ubiquitous cough monitors	
At places to buy phone credits	5 Nov	Core Group	Ubiquitous cough monitors	
Train dentists to be cough monitors	5 Nov	Core Group	Ubiquitous cough monitors	
Mothers-in-law as cough monitors	5 Nov	Core Group	Ubiquitous cough monitors	
Train barbers to be cough monitors	5 Nov	Core Group	Ubiquitous cough monitors	
Train keke drivers to be cough monitors	5 Nov	Core Group	Ubiquitous cough monitors	
Train Uber drivers to be cough monitors	5 Nov	Core Group	Ubiquitous cough monitors	
Train immunization workers to be cough monitors during outreach	5 Nov	Core Group	Ubiquitous cough monitors	
Train bus drivers to be cough monitors	5 Nov	Core Group	Ubiquitous cough monitors	

Ideas register (continued)

IDEA	DATE OF INCEPTION	CREATED BY	PRIORITY/ SUBGROUP	INCORPORATED IN CONCEPT
*71 NON-PRIORITIZED IDEAS FROM **CORE GROUP** IDEATION ROUND 2 (CONTINUED)*				
Bus ticket salespeople as cough monitors	5 Nov	Core Group	Ubiquitous cough monitors	
Security guards as cough monitors	5 Nov	Core Group	Ubiquitous cough monitors	
Airport cough screening	5 Nov	Core Group	Ubiquitous cough monitors	
Immigration passport office cough screening	5 Nov	Core Group	Ubiquitous cough monitors	
Cough screening at amusement parks	5 Nov	Core Group	Ubiquitous cough monitors	
Children as cough monitors in schools	5 Nov	Core Group	Screenings in schools	
Cough tests in school then refer mom and dad	5 Nov	Core Group	Screenings in schools	
Cough screening at schools	5 Nov	Core Group	Screenings in schools	
Put cough test information in kekes	5 Nov	Core Group	Public transport as part of TB referrals	
Referral slips on buses	5 Nov	Core Group	Public transport as part of TB referrals	
Advertisements in public transportation	5 Nov	Core Group	Public transport as part of TB referrals	

Ideas register (continued)

IDEA	DATE OF INCEPTION	CREATED BY	PRIORITY/ SUBGROUP	INCORPORATED IN CONCEPT
*71 NON-PRIORITIZED IDEAS FROM **CORE GROUP** IDEATION ROUND 2 (CONTINUED)*				
Expand Riders to include people with bicycles	5 Nov	Core Group	Expanded rider-referral-delivery networks	
Improve referral network among Okada riders	5 Nov	Core Group	Expanded rider-referral-delivery networks	
Buses as delivery service of samples (provided clinic is on their route)	5 Nov	Core Group	Expanded rider-referral-delivery networks	
Self administered sputum cups to be collected from public pick-up points	5 Nov	Core Group	Ubiquitous sputum testing	
Sputum testing in smoking/toilet areas	5 Nov	Core Group	Ubiquitous sputum testing	
Clinic-in-a-box: Kits for hospitals and clinics with everything they need to start collecting samples	5 Nov	Core Group	Clinic improvements	
When patients arrive, they must submit their personal details by text message rather than on a paper form directly to the registrar so the actual phone number is captured	5 Nov	Core Group	Clinic improvements	

Ideas register (continued)

IDEA	DATE OF INCEPTION	CREATED BY	PRIORITY/ SUBGROUP	INCORPORATED IN CONCEPT
*71 NON-PRIORITIZED IDEAS FROM **CORE GROUP** IDEATION ROUND 2 (CONTINUED)*				
Private sector involvement—all new employees must be screened for TB	5 Nov	Core Group	Required screening for Daily Activities	
All bank accounts require proof of screening	5 Nov	Core Group	Required screening for Daily Activities	
All new SIM cards require proof of screening	5 Nov	Core Group	Required screening for Daily Activities	
You can't buy cough medicine without a TB test	5 Nov	Core Group	Required screening for Daily Activities	
Cell phone credit discount with proof of screening	5 Nov	Core Group	Partnership with mobile carriers	
Partner with carrier to deliver TB testing information when sending customers notifications about low credits	5 Nov	Core Group	Partnership with mobile carriers	
Partner with dentists to make TB screening part of normal dental checkup (if coughing)	5 Nov	Core Group	Dental Partnerships	
TB messaging on toothpaste to make it part of everyday oral health	5 Nov	Core Group	Dental Partnerships	
pARTnerships: TB patient photography art show—before and after images celebrating success	5 Nov	Core Group	Art Partnerships	
Referral network among artisans	5 Nov	Core Group	Art Partnerships	

Ideas register (continued)

IDEA	DATE OF INCEPTION	CREATED BY	PRIORITY/ SUBGROUP	INCORPORATED IN CONCEPT
*71 NON-PRIORITIZED IDEAS FROM **CORE GROUP** IDEATION ROUND 2 (CONTINUED)*				
Put TB warning on lipstick (as part of oral care messaging)	5 Nov	Core Group	Labelling partnerships / warnings	
Warning about pervasive cough being sign of TB on all cough syrup labels	5 Nov	Core Group	Labelling partnerships / warnings	
Cough warnings on Coke labels	5 Nov	Core Group	Labelling partnerships / warnings	
Create an audio/sound link/reminder with coughing to get people to start associating TB with coughing (in a non-stigmatizing way)	5 Nov	Core Group	Establish coughing as a mnemonic for TB	
Use cough sounds as a ringtone	5 Nov	Core Group	Establish coughing as a mnemonic for TB	
Songs using coughing noises	5 Nov	Core Group	Establish coughing as a mnemonic for TB	
Cold Stone Creamery signs for TB	5 Nov	Core Group	Establish coughing as a mnemonic for TB	
Free tissues or handkerchiefs with information about where to go to get free TB test	5 Nov	Core Group	Establish coughing as a mnemonic for TB	

Ideas register (continued)

IDEA	DATE OF INCEPTION	CREATED BY	PRIORITY/ SUBGROUP	INCORPORATED IN CONCEPT
*71 NON-PRIORITIZED IDEAS FROM **CORE GROUP** IDEATION ROUND 2 (CONTINUED)*				
Mr./Ms. TB: A dating show where contestants compete for a date with an eligible TB survivor	5 Nov	Core Group	TB Campaign Concepts / Features	
Celebrity singing about TB testing being free	5 Nov	Core Group	TB Campaign Concepts / Features	
Thinks you like doing with our mouth interrupted by a cough (e.g., singing, eating, laughing, etc)	5 Nov	Core Group	TB Campaign Concepts / Features	
Association with coffee: Having a coffee or having a cough-ee?	5 Nov	Core Group	TB Campaign Concepts / Features	
Create a linkage to other things we do every 2 weeks	5 Nov	Core Group	TB Campaign Concepts / Features	
TB monitors/referrers on local popular TV shows	5 Nov	Core Group	TB Campaign Concepts / Features	
Involving philanthropists to champion TB awareness campaign	5 Nov	Core Group	TB Campaign Concepts / Features	
Target football viewing centers	5 Nov	Core Group	Campaign target locations	
Targeted multi-prong interventions in rural areas/slums	5 Nov	Core Group	Campaign target locations	
TB campaigns in motor parks	5 Nov	Core Group	Campaign target locations	
Signs over urinals with referrer information	5 Nov	Core Group	Campaign target locations	

Ideas register (continued)

IDEA	DATE OF INCEPTION	CREATED BY	PRIORITY/ SUBGROUP	INCORPORATED IN CONCEPT
*71 NON-PRIORITIZED IDEAS FROM **CORE GROUP** IDEATION ROUND 2 (CONTINUED)*				
ATMs detect coughs using noise sensors (could be extended to crowded/highly frequented areas)	5 Nov	Core Group	New Tech needed	
Google Home Health listens for cough and gives advice about local TB testing locations	5 Nov	Core Group	New Tech needed	
Interactive voice response (or when on caller is put on hold) listens for coughs and provides information about local TB testing locations	5 Nov	Core Group	New Tech needed	
Blockchain used for national sputum cup tracking	5 Nov	Core Group	New Tech needed	
Geo-fencing used to push text/notifications to anyone who enters or leaves a know TB hotspot with the message "Have you been coughing for more than 2 weeks?"	5 Nov	Core Group	New Tech needed	
Geolocation used to push text/notifications to anyone who walks past a clinic in known hotspots (perhaps only active for 18 hours a day once every 14 days)	5 Nov	Core Group	New Tech needed	
Internet of Things: Smart mattress pad that measures both weight and temperature and when user's weight rapidly declines accompanied by a fever, it sends a notification, either to user or local clinic	5 Nov	Core Group	New Tech needed	
Drone sputum cup dropoff and delivery (requested by SMS)	5 Nov	Core Group	New Tech needed	
Saliva/urine test for TB that can be self-administered at home	5 Nov	Core Group	New medical tech needed	
Enable GeneXpert machines to automatically SMS results directly to presumptive case's phone when the test is completed	5 Nov	Core Group	New medical tech needed	

Ideas register (continued)

IDEA	DATE OF INCEPTION	CREATED BY	PRIORITY/ SUBGROUP	INCORPORATED IN CONCEPT
*71 NON-PRIORITIZED IDEAS FROM **CORE GROUP** IDEATION ROUND 2 (CONTINUED)*				
TB survivor network initiative	5 Nov	Core Group	National networks for survivors and referrers	
National conference that brings together top referrers from different areas and locations (e.g., clinics, PPMVs, hospitals, schools, cough monitors, etc.)	5 Nov	Core Group	National networks for survivors and referrers	
National crack team of testers deployed by local TB providers and program managers (call it: TRACE FORCE)	5 Nov	Core Group	Other ideas	
Make WOW vans but without branding and GeneXpert machines to collect samples	5 Nov	Core Group	Other ideas	
Confidential SOS hotline/SMS system that allows for confidential TB testing	5 Nov	Core Group	Other ideas	