INDLELA

BEHAVIOURAL INSIGHTS FOR BETTER HEALTH

Health Economics and Epidemiology Research Office

HE²RO

Wits Health Consortium
University of the Witwatersrand

Boosting TB Testing Among ART Clients: A Nudgeathon Approach

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Johannesburg, South Africa

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Penn
University of Pennsylvania

BOSTON UNIVERSITY

University of Cape Town · iYunivesithi yaseKapa · Universiteit van Kaapstad

INTRODUCTION

Indlela@HE2RO and the Anova Health Institute collaborated in hosting a two-day Nudgeathon focused on how to improve TB investigations for people living with HIV (PLHIV) during their routine annual viral load clinic visits. TB investigations encompass the processes used to identify and diagnose TB, including symptom screening, diagnostic testing such as sputum microscopy, GeneXpert MTB/RIF, chest X-rays, and contact tracing for individuals exposed to TB. The event brought representatives from Gauteng's provincial and district health departments, alongside colleagues from Anova and other implementing partners, to co-develop behavioural strategies that support healthcare providers (HCPs) in prioritising TB investigations during these clinical visits. This report outlines the Nudgeathon process and highlights key insights that emerged to enhance TB detection, improve care recipient outcomes and strengthen healthcare delivery for PLHIV.

What is a Nudgeathon?

A Nudgeathon is an interactive process for crowdsourcing novel, person-centred, behaviourally informed solutions to a particular problem. It is a creative way of bringing together individuals with diverse skill sets, expertise and a wide range of experience and knowledge to brainstorm ideas and co-create potential solutions in a time-limited environment.

What was the problem we were trying to address at this Nudgeathon?

During the annual viral load (VL) testing clinic visits, HCPs are required to conduct TB investigations for all PLHIV presenting at the clinic (including asymptomatic TB). PLHIV are highly susceptible to TB due to their compromised immune system, making early TB identification and treatment essential for improving care recipient outcomes and preventing the spread of TB. However, despite the importance of integrating TB investigation into these clinic visits, TB sputum tests are not consistently done, which can lead to missed diagnoses and delayed care.

What are the drivers of the problem?

Potential difficulties faced at an operational level include staff time constraints, lack of information and training, and system and infrastructure challenges. Cost-effective and scalable solutions are needed to motivate and support healthcare providers to investigate TB among all PLHIV during their annual VL testing clinic visits.

What was the objective?

Engage partners and stakeholders in an interactive process to crowd-source behaviourally informed solutions to increase TB investigations among PLHIV at their annual viral load testing clinic visits, and obtain insights on intervention design that can be used to further develop solutions to the problem.

Target statement

As the first step in designing behavioural solutions, we identified the problem we aimed to address in the Nudgeathon and framed it as a 'target statement', which defines the Who? What? and When? of what we aim to improve. The target statement for this Nudgeathon was:

'Healthcare providers investigate TB among all PLHIV at their annual VL testing clinic visit.'

Participating organisations

health
Department:
Health
REPUBLIC OF SOUTH AFRICA

Institute of Health Programs and Systems

Ezintsha
INVESTIGATE INNOVATE ADVANCE

GAUTENG PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

THE AURUM INSTITUTE

G:ENESIS
UNLOCKING VALUE

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ANOVA
HEALTH INSTITUTE

Our approach

We applied a human-centred design approach and engaged in activities to understand the context in which TB investigations happen, and discover insights into behavioural barriers that may prevent HCPs from conducting TB investigations among PLHIV. Based on these insights, we then brainstormed potential solutions and developed initial prototypes from the most promising ideas.

Build up to the Nudgeathon

In preparation for the Nudgeathon, we conducted a review of the 2023 ART Clinical Guidelines, which incorporate the targeted universal testing for TB guidelines, reviewed current literature, and engaged in interviews with HCPs to better understand the challenges and opportunities they face in implementing the guidelines. Additionally, we compiled user journey maps and developed healthcare worker personas to explore TB investigations during routine VL testing.

A user journey map is a step-by-step visualisation of a care recipient's experience as they navigate through healthcare services. We use journey maps to outline the interactions, decision points, and potential barriers HCPs face when conducting TB investigations during routine VL testing. By identifying these key moments, we aimed to uncover areas where behavioural solutions could be introduced to improve adherence to TB investigation guidelines and recipients of care outcomes.

A healthcare worker persona is a semi-fictional representation of a healthcare worker developed from the information collected during the interviews during preparation. Personas help us understand different types of HCPs, their motivations, challenges, and decision-making processes. By creating different personas, we ensured that behavioural interventions are tailored to real-world scenarios and effectively address the specific needs of HCPs involved in TB investigations.

These preparatory activities provided critical insights that informed our approach for the Nudgeathon, ensuring that proposed interventions were rooted in real-world challenges and opportunities.

AGENDA

DAY 1

Dr Kate Rees, Public Health Specialist at the Anova Health Institute delivered an inspiring call to action, highlighting the significant potential of tuberculosis (TB) investigations to improve outcomes for people living with HIV (PLHIV). She further highlighted the critical role of collaboration in effectively addressing this complex public health issue.

Meeting the Persona

Participants were divided into six multidisciplinary teams. Each team engaged with a specific HCP persona through the Nudgeathon activities. Personas included Sister Cindy, Nurse Musa, and Sister Busi. Engaging with the personas and user journey map activities helped participants to empathise with HCPs and the challenges they face.

Persona 1

Name:
Sister Cindy Mbata

"I like to meet patients halfway knowing that somebody cannot miss work because now they have to come to the clinic".

Persona 2

Name:
Nurse Musa Hlongwane

"I have already mentioned that I am not very familiar with the TB guidelines, the new guideliness".

Persona 3

Name:
Sister Busi Borole

"... while we are clinicians and we are there to implement and initiate and make sure that people get treatment, it's also important to listen to people's emotions and needs".

Barriers

Participants reviewed the barriers to TB investigation that we elicited from literature and interviews with HCPs. Intensive brainstorming was conducted to generate a more comprehensive list of barriers.

These barriers were then prioritised and rephrased as "I-statements" (e.g."I don't do X because of Y") to express the specific challenges providers face with conducting TB investigations.

Ideation

Using the "I-statements", participants then applied their creative energy to brainstorm ideas for solutions to the most prominent 5–7 key behavioural barriers. We structured the ideation sessions using the following frameworks:

Open road Follow the link

Subtract Follow the link

What would X do? Follow the link

EAST Follow the link

Synthesis and prioritising ideas

Participants engaged in activities to cluster and combine the ideas for interventions that address behavioural barriers to TB investigations.

Clustering refers to grouping similar ideas based on shared themes or objectives, while combining involves merging related ideas to create more comprehensive intervention strategies.

Participants then dot voted to select their preferred clusters of ideas based on the criteria of innovation, effectiveness, and feasibility, which resulted in a set of top-prioritised clusters per table.

These ideas formed the foundation for further refinement and prototyping.

END OF DAY 1

AGENDA

DAY 2

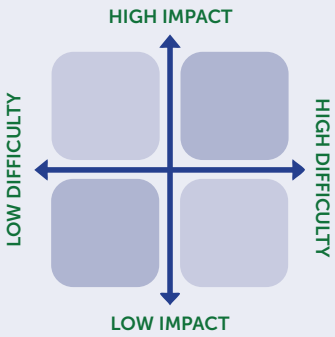
Introduction to prototyping

We kicked off Day 2 by introducing prototyping, a step in the design process that translates ideas into testable and tangible solutions, and allows for rapid feedback from users in a real environment (or proxy users in a simulated environment) that can help validate early concepts. Iterative prototyping allows for ongoing adjustment and refinement in response to user testing.

From idea to solution

Participants prioritised ideas and developed actionable solutions to address behavioural barriers to TB investigations. Using idea clusters from Day 1, they selected and sketched concepts for solutions. Each team then used dot voting and the impact-effort matrix to identify the top two solutions for prototyping.

Figure 1 Impact effort matrix



Prototyping

Armed with drawing and crafting materials and creatively using what could be found in the room, participants brought these ideas to reality by creating prototypes of interventions for the top two solutions to address the barriers that were identified as priorities on Day 1.

Pitch video links

- It's deeper than spit
- DigEd.Reward
- Know your TUTT
- Prompt Measure Compare Feedback (PMCF)
- Open Hour
- TB Hero Campaign

Prototypes were 'user-tested' among the Nudgeathon participants and refined based on user feedback. Refined prototypes were pitched to the Nudgeathon group for further feedback before wrapping up the workshop.

Final prototypes

The six innovative prototypes created are briefly described below:

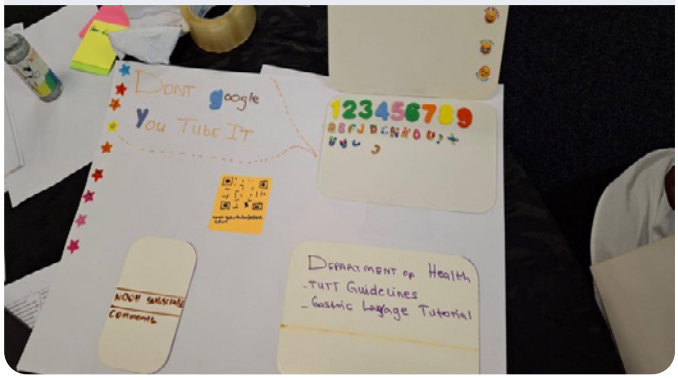
It's deeper than spit

It's deeper than spit: This video prototype provides step-by-step guidance for care recipients on producing a sputum sample effectively. The video begins with a quick overview of key TB facts, educating care recipients on its significance. The main portion of the video demonstrates proper breathing techniques and the correct method for coughing up sputum to ensure accurate sample collection. It concludes by encouraging care recipients to ask their HCP if they need to provide a sample. Designed to be brief, about three minutes, the video would loop continuously on TVs in clinic waiting areas, helping care recipients understand the sputum collection process without requiring extra time from HCPs.

DigEd.Reward

The **DigEd.Reward** is a mobile-friendly learning platform designed to boost healthcare providers' confidence and knowledge about TB procedures and guidelines. The platform can be accessed anonymously, allowing users to learn at their own pace through either a comprehensive course or shorter YouTube-style tutorials.

To encourage participation, DigEd.Reward includes a competitive element: nurses who complete the most refresher courses on TB guidelines earn rewards. This flexible, accessible approach helps nurses build expertise and feel more comfortable asking for assistance when needed.



Know your TUTT

The **'Know your TUTT' (Targeted Universal Testing for TB)** consists of a series of three short (60–120 second) instructional videos designed to guide HCPs through essential TB testing procedures.These videos, available on a data-free platform or for offline download via the Knowledge Hub, cover key points of TB screening guidelines and the specific steps required for recipients of care.

Prompt Measure Compare Feedback (PMCF)

The **Prompt Measure Compare Feedback (PMCF)** is a facility-level initiative to ensure consistent TB screening by HCPs. A simplified poster prominently displayed in the facility clearly outlines which care recipients should be screened or tested for TB.

Weekly in-service meetings include reminders for HCPs to conduct TB screenings and tests. The program also tracks weekly numbers of viral load tests (using TIER.Net data) and TB tests (NHLS data) to monitor performance.

Additionally, results are reviewed during sub-district and district-level visits, where data is compared across facilities, encouraging accountability and reinforcing the importance of consistent TB testing among staff.

Open Hour

The **Open Hour** introduces a mentorship program within healthcare facilities, where an experienced TB champion mentors nurses seeking support with TB testing.

During dedicated sessions, the mentor reviews guidelines, addresses concerns, and provides hands-on guidance for testing procedures.

Each mentee follows a checklist to track their progress and works toward a set target, with weekly check-ins for feedback and support.

Upon reaching their target, mentees earn recognition, such as an "Employee of the Month" award, and gain the opportunity to become mentors themselves.

Facility-wide TB screening rates are reviewed quarterly, with the highest-performing facility awarded a prize, fostering both individual growth and facility-wide engagement in TB testing.

TB Hero Campaign

The **TB Hero Campaign** aims to simplify and organise TB screening processes, making it easier for healthcare workers to screen and test for TB efficiently alongside viral load (VL) testing.

Each month, Sister Busi and the Data Capturer use TIER. Net to generate a list of clients due for VL testing, with recipients of care files pre-retrieved the day before appointments to ensure smooth operations.

This list is cross-checked with physical files for accuracy. On clinic days, healthcare workers collect blood for VL testing, screen each recipient of care for TB according to the guidelines, and record screening and sputum collection data in the TB identification register. If she screens at least 90% of clients on the monthly list for TB, she earns a "TB HERO" certificate recognising her commitment to TB care.

To support effective communication, healthcare staff wear T-shirts with multilingual messages encouraging care recipients to ask about TB testing, helping to overcome language barriers and promoting awareness.

This campaign not only motivates staff through recognition but also fosters a structured and supportive environment for TB screening.

FUTURE OPPORTUNITIES

The two-day workshop culminated in a range of creative solutions proposed by the cross-disciplinary teams. The prototypes showcased behavioural interventions with potential for further refinement and evaluation in field testing. We hope that some of these ideas can be developed further, implemented and evaluated. The Indlela team would welcome the opportunity to support further prototyping and evaluation of these interventions. Please reach out to us via email below if you would be interested in developing any of these ideas further, implementing them or rigorously testing them for rapid learning.

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For more information about Nudgeathons and research collaboration opportunities contact us at indlela@heroza.org
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