

NIGERIA - Improving TB detection among nomadic communities through innovative community-based interventions

CASE STUDY

Implementation dates

October 2018–December 2019

Coverage

Three out of 36 States: Adamawa, Taraba and Gombe

Total number of people screened for TB

427 526

Contribution to TB notification

30.7% (2866/9321) of all TB notifications across the three States

Implementers

- ◆ Janna Health Foundation (JHF)
- ◆ SUFABEL Community Development Initiative (SCDI)

1. Introduction

Nigeria is among the eight countries that account for two thirds of the global tuberculosis (TB) burden. According to the World Health Organization (WHO) Global tuberculosis report 2019, an estimated 429 000 people (219 per 100 000 population) fell ill with TB in 2018 but only 106 533 were notified, leaving a staggering 322 000 people with TB unreached by the national health system. TB mortality is also high in Nigeria, where 157 000 people (80 per 100 000 population) died of TB in 2018 (1). Case detection and treatment outcomes are particularly poor in nomadic populations, where access to health services is extremely limited. To respond to these challenges, in 2012–2013 the KNCV Tuberculosis Foundation (Netherlands) and the Janna Health Foundation (JHF) implemented a series of interventions to increase TB detection among nomadic communities in north-eastern Nigeria. Findings from the interventions suggested that targeted community-based activities can identify large numbers of people with presumptive TB and can contribute to closing the detection gap (2).

2. Description of the problem

Nomads are “communities of people who constantly migrate in search of pasture for their livestock, subsisting on hunting and gathering or often driven by climatic conditions” (2). These communities often travel hundreds of kilometres along designated cattle routes in search of pastures and water for their herds. They pass through grazing reserves, settlements and resting points, where they erect temporary tents; here they seek out medical care, both for themselves and for their animals. Despite the lack of published literature on the TB burden among nomadic communities in Nigeria, a number of studies have documented high rates of TB in these populations throughout Africa (3, 4, 5). Risk factors include: malnutrition, living in overcrowded tents with poor ventilation, consumption of unpasteurized milk, high prevalence of bovine TB and poor immunization coverage (2). The main challenges for TB detection and treatment among nomads are: the lack of access to health services because of the long distances between their settlements and health facilities; the low level of knowledge and awareness of TB;



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and inadequate health-seeking behaviours, with traditional healers often being consulted initially. Additional barriers to accessing TB services include discrimination and stigmatization of nomadic communities by health workers and financial exploitation of nomads, who are often asked to pay a higher price for medical consultations. While most nomadic people do not access TB health services, those who do are usually diagnosed late and often present with health complications. Given the lack of TB health facilities and community-based treatment support services in areas where nomadic people settle, the rates of loss to follow-up, relapse and death are high among nomadic people with TB.

3. Proposed solutions

Between October 2018 and December 2019, JHF scaled up community-based TB services among nomadic populations, using funding from the TB REACH Wave 6 grant received through the KNCV TB Foundation. The intervention focused on three states (Adamawa, Taraba and Gombe) which are home to an estimated 850 000 nomads. JHF, in collaboration with the SUFABEL Community Development Initiative (SCDI), a Nigerian nongovernmental organization involved in community development and health education, mobilized nomadic communities and worked with them to design TB screening activities and improve access to TB and HIV services. The activities were implemented in 17 of the 21 local government areas (LGAs) of Adamawa State, in all 16 LGAs of Taraba State and in nine of the 11 LGAs of Gombe State.

Collaboration with key authorities

National TB and Leprosy Control Programme

The National TB and Leprosy Control Programme (NTBLCP) provided a letter of support to guarantee its commitment by ensuring the supply of Global-Fund-funded drugs, reagents and consumables throughout the intervention. During implementation, JHF and SCDI participated in several NTBLCP meetings to share experiences and ensure that the NTBLCP and its representatives at state level were well informed about the progress and results achieved through the intervention.

Local government areas

Local government areas (LGAs) form the lowest operational level for TB control in Nigeria. Each LGA has a catchment population of between 150 000 and 250 000 people. They oversee TB control activities, manage the TB central register and periodically conduct data validation visits at health facilities. Each quarter, all LGA TB supervisors are invited to participate in a review meeting, funded by the Global Fund, where TB data for each state are collated. JHF secured the engagement of LGA supervisors throughout implementation to ensure good coordination with TB health facilities and to provide guidance to community volunteers.

Engagement of the nomadic community

Health-seeking behaviour and access to health services are major challenges for nomadic populations, so JHF placed a strong focus on community engagement and mobilization when planning the intervention.

Selection of nomadic liaison officers

The appointment of a liaison officer in each state was an innovative approach that was developed by JHF during the demonstration phase in 2012–2013. The liaison officers were selected from the nomadic communities and served as key intermediaries between their communities and other stakeholders (JHF, SCDI, NTBLCP, LGA TB supervisors). Their knowledge of nomadic communities' culture and hierarchy helped in the design of activities tailored to the needs of these populations.

Selection of LGA focal points

Liaison officers worked with the JHF team to identify one focal point from the nomadic community in each of the 43 LGAs where the activities were implemented. The role of the focal points was to facilitate implementation by working closely with community volunteers and TB supervisors to carry out active TB case-finding activities in grazing reserves, settlements and resting points along cattle routes.

Engaging with nomadic community leaders

In collaboration with liaison officers, implementing teams conducted advocacy visits to nomadic leaders to raise awareness about TB, share information and secure their buy-in and collaboration during implementation.

Mapping routes and health facilities

JHF and SCDI worked in close collaboration with the Ministry of Livestock and nomadic liaison officers to map existing cattle routes and identify nomadic communities and health facilities along these routes. Although most facilities did not provide TB services at the time, JHF and SCDI identified health workers in each facility and trained them to provide TB screening, diagnosis and treatment. Where health facilities could not be identified, JHF identified veterinary clinics and trained their health workers in basic TB services. Over 20 health facilities were identified and included in the intervention, including three veterinary clinics.

Community volunteers

To ensure local ownership, about 80% of all community volunteers were selected among members of the nomadic communities, on the proposal of the community leaders and in collaboration with JHF and SCDI teams. The remaining 20% were non-nomadic community volunteers selected by JHF and SCDI in collaboration with the LGA TB supervisors. About 300 community volunteers were engaged across the three states. JHF ensured that a mix of nomadic and non-nomadic community volunteers worked together in teams, so that volunteers from the nomadic communities could facilitate the relationship between community members and the non-nomadic volunteers. Community volunteers were mostly aged between 20 and 40 years old and had little education, but were able to read and write in Arabic. With

support from the National TB and Leprosy Training Centre, a training manual was developed, reflecting the tasks that they were expected to carry out. Community volunteers received one day of training on TB, focusing on the identification and management of people with presumptive TB, infection control, health education, and sputum collection, handling and transportation. Most community volunteers worked at least two days a week; they received monthly stipends of approximately US\$ 42 and were closely supervised by the LGA TB supervisors, the liaison officers and the LGA focal points.



A nomadic volunteer working with his fellow community members (Photo: JHF)

Advocacy, Communication and Social Mobilization Committee

To further strengthen ownership and sustainability, an Advocacy, Communication and Social Mobilization Committee was formed, made up of the liaison officers, nomadic community leaders and representatives of the Ministry of Health, the Ministry of Finance and the local government. The Committee met with JHF quarterly to review performance and conduct targeted advocacy at state level, where updates on the progress of the intervention were regularly shared to help secure government commitment.



TB health education session led by SCDI (Photo: JHF)

Community-based TB activities

Targeted TB activities were planned by LGA TB supervisors and JHF staff in collaboration with nomadic leaders, covering the areas described below.

Health education and TB screening events

LGA TB supervisors provided TB health education using existing information, education and communication materials translated into local languages by the liaison officers. Community volunteers provided screening services, identified individuals with presumptive TB, collected sputum samples, transported the samples to the nearest GeneXpert® diagnostic site and returned the results once available.

TB screening at markets

This activity was conducted monthly on market days. A group of 5–6 community volunteers, sometimes in collaboration with health workers, delivered the services described above, while LGA TB supervisors provided guidance and oversight for community volunteers.

Tent-to-tent screening

Once community leaders had granted authorization, community volunteers worked in groups of two or three and visited the tents consecutively, providing screening services for household members. Each tent can house between four and six people. Each group of community volunteers could screen up to 25 tents per day, depending on household size.



A community volunteer from JHF conducting tent-to-tent screening (Photo: JHF)

Screening of children

LGA TB supervisors and health facility workers were responsible for screening children under 5 years old, using a symptom scorecard. When children with presumptive TB were identified, JHF and SCDI hired commercial buses to transport them, with a parent, to the nearest TB health facility, where they were screened for TB by a medical officer.

Contact investigation

A list of contacts was established whenever a person was diagnosed with TB, to identify relatives and community members who might have been infected. LGA supervisors led contact investigation activities, when possible together with health facility staff. They visited and screened TB contacts, collected sputum samples and accompanied children under 5 years and their parents to health facilities.

HIV testing and counselling services

People with presumptive TB were prioritized for HIV testing and counselling services. However, where possible, HIV testing and counselling services were also offered to the general nomadic population.

Radio jingles

Radio jingles in Fulfulde, Hausa and English were regularly broadcast by radio stations in the three states. A total of 252 radio slots were used and 500 transistor radios were distributed to nomadic community leaders. Feedback from advocacy visits conducted by liaison officers confirmed that the jingles were well received by nomadic communities.

Monitoring and evaluation

TB notification data from the intervention were disaggregated and integrated into the existing NTBLCP monitoring and data management system, allowing tracking of the number of TB notifications from nomadic populations. Supervision, data validation and quarterly meetings were coordinated by the NTBLCP at LGA, state, zonal and national level. To monitor the number of people with TB originating from nomadic communities, health workers were asked to note down the word “nomad” in the remarks column on all TB registers and in other recording and reporting tools, including the patient record card kept at health facilities. This strategy, first implemented during the demonstration phase in 2012–2013, enabled JHF and SCDI to filter data about people with TB from nomadic communities during quarterly meetings. Community-based and facility-based activities, including laboratory activities, were monitored through joint supervision visits by both JHF/SCDI staff and NTBLCP TB teams. JHF created a WhatsApp group for LGA TB supervisors, liaison officers, health facility workers and community volunteers to monitor the intervention

remotely by posting daily pictures and videos of activities carried out in nomadic communities. The WhatsApp group was also used to share challenges experienced in the field and to brainstorm solutions to address them swiftly.

4. Outcomes

A nomadic community member who was diagnosed with TB in Gombe State commented on the work of community volunteers: *“Their work is very effective, they help to discover people who are sick right in their homes. Personally, I was screened in my house, after which I got tested and put on treatment. They should be encouraged to do more.”*

Between October 2018 and December 2019, 2866 people with TB were identified in nomadic communities, representing 30.7% of the total number of TB notifications in the three states over the 15-month implementation period. A total of 427 526 people from 2204 nomadic communities were screened for TB through community-based activities, 53 331 people with presumptive TB were detected and 41 806 people were tested. Overall, 5.4% of people with presumptive TB (2866/53 331) were diagnosed with TB (all forms). The implementing team reported that, thanks to the engagement of nomadic leaders and their communities, TB activities were well received and this contributed significantly to the success of the intervention. See Table I below.

Active case-finding

Tent-to-tent screening accounted for 57% (244 619/427 526) of all people screened during the intervention; 0.6% (1484/244 619) of people screened through this approach were diagnosed with TB. In comparison, market screening accounted for 42% (180 503/427 526) of all people screened and 0.7% (1329/180 503) were diagnosed with TB. Contact investigation accounted for only 0.6% (2404/427 526) of all people screened, but this approach provided the highest yield in terms of people confirmed with TB, when compared with market screening and tent-to-tent screening, with a total of 2.2% (53/2404) of people diagnosed with TB among contacts.

Table I. Key results

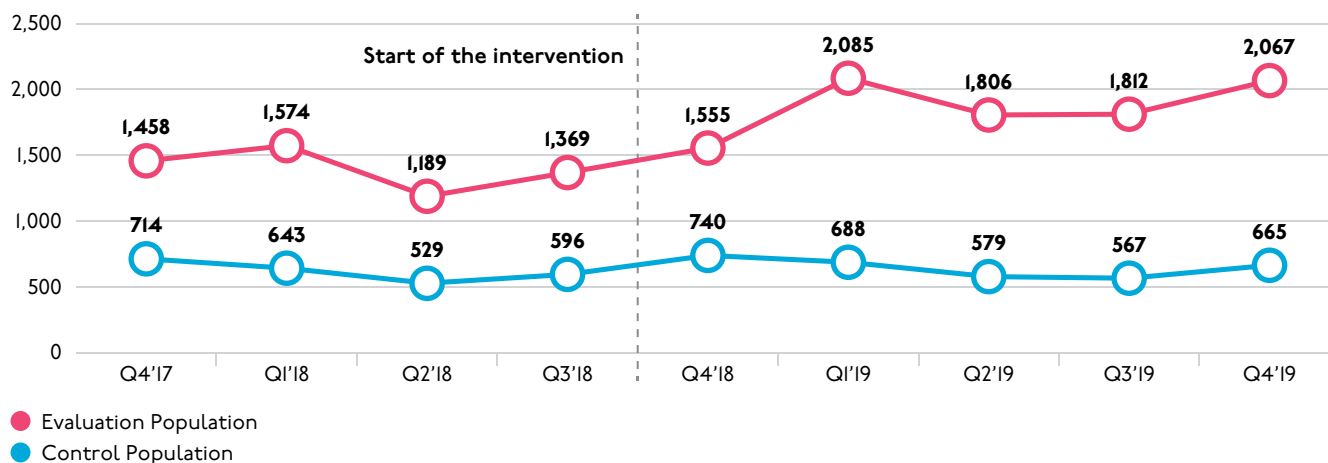
Approaches	People screened for TB	People with presumptive TB referred to health facility	People who visited health facilities	People tested for TB	People diagnosed with TB, all forms	% of total TB cases, all forms, referred through the intervention
Tent-to-tent screening	244 619	30 062 (12.3%)	23 546 (78.3%)	23 546 (100%)	1484 (6.3%)	15.9%
Market screening	180 503	22 474 (12.4%)	17 540 (78%)	17 540 (100%)	1329 (7.5%)	14.3%
Contact investigation	2404	795 (33%)	720 (90.5%)	720 (100%)	53 (7.4%)	0.5%
Total	427 526	53 331 (12.5%)	41 806 (78.4%)	41 806 (100%)	2866 (6.9%)	30.7%

Impact on TB notifications

Another state in northern Nigeria, Jigawa State, was selected as the control state, while retrospective TB notification data were collected from the NTBLCP from April 2015 to September 2018 as a baseline for both control and intervention states. A trend analysis (see Fig. 1 below) shows that TB notifications noticeably increased in the three intervention states (*evaluation population*), while it remained the same in the control state (*control population*). While these data are not specific to nomadic populations, it is highly likely that the increase in TB notifications among nomads contributed to the increase in overall TB notifications.

The JHF team reported several positive changes among nomadic communities, including improved TB knowledge, active participation of young people in delivering TB health education to their communities, and improved health-seeking behaviours resulting in faster access to care for people with presumptive TB. Treatment adherence and outcomes also improved as a result of the intervention, with community volunteers and nomadic community leaders involved in providing support for community members who were ill with TB. While these observations provide anecdotal evidence, they also align with findings from operational research conducted during the demonstration phase (2).

Fig. 1. Trends in TB notifications in intervention states and control state



5. Challenges and lessons learned

Working with a mobile population

The team analysed past projects targeting nomadic populations to anticipate challenges and identify solutions. Mobility was one of the main challenges that emerged. The key strategies developed to address this problem included: working in collaboration with the Ministry of Livestock to access cattle route maps, engaging nomadic liaison officers to secure buy-in from community leaders, identifying health facilities along nomad routes and using a WhatsApp group for remote monitoring in addition to the routine supervision visits. Investing in understanding nomadic populations and their lifestyle helped greatly to mitigate the challenges posed by their mobility.

Fostering nomadic communities' leadership and ownership

According to the implementation team, one of the most important success factors was the leadership provided by nomadic community leaders. Although building trust and acceptance among nomadic leaders proved initially challenging, the involvement of nomadic liaison officers was instrumental in securing their collaboration. Meaningfully involving nomadic representatives in planning, implementation and monitoring promoted ownership and

increased acceptance among the community. Community leaders played an important role in identifying suitable solutions to increase access to health services for their fellow community members. For example, to ensure that herders could access TB diagnosis and treatment services without impacting their livelihood, community leaders facilitated the identification of a "replacement worker" to look after the herd while the herder was travelling to the health facility for TB treatment.

Geographical barriers

Nomadic communities live in remote and hard-to-reach areas, especially during the rainy season. Climatic conditions were therefore taken into consideration during planning, and TB activities were mostly scheduled during the dry season.

Cultural and linguistic barriers

Nomadic communities in the intervention states speak mainly Fulfulde and/or Hausa. To overcome cultural and linguistic barriers during implementation, translation and interpretation services were prioritized during community events and for information, education and communication materials. Nomadic liaison officers were hired in each state, and most community volunteers were selected from nomadic communities. These proved to be effective solutions to ensure smooth communication with nomadic communities.

Security

In north-eastern Nigeria, clashes between farmers and nomadic herders are frequent; this leads to variations in cattle routes, which the JHF team was able to address with support from the liaison officers. The security situation also affected community volunteers' ability to conduct screening activities in affected areas and decreased the number of people screened in these areas.

Transportation for children with presumptive TB

Because of the shortage of medical officers with formal training in TB medicine, diagnosis of TB in children was often challenging and required repeated visits to health facilities. This led to an increase in the anticipated costs of transportation, which was fully covered by the implementers, particularly during rainy season.

Economic barriers

While GeneXpert® and smear microscopy services are provided free of charge in Nigeria, chest X-rays are subject to a fee. People from nomadic communities who were referred by community volunteers could access chest X-rays at a reduced rate; but the price was still not affordable for most people. This created an important economic barrier and led to delays in starting TB treatment, particularly in young children.

Rapid turnover of community volunteers

Community volunteers were engaged during a set period of time to undertake screening activities in their community or settlement, until all members of that community had been screened. New communities or settlements were then targeted, and new community volunteers had to be recruited. Consequently, there was a continuous need for training for community volunteers ahead of implementation; to minimize delays, the training was mainly done on-the-job and led by the LGA TB supervisors.

Collaboration with NTBLCP and partners

JHF worked closely with the NTBLCP throughout implementation and shared regular updates during quarterly zonal meetings and the annual NTBLCP review meeting. This close collaboration allowed a prompt response to needs for drugs, Xpert® MTB/RIF cartridges and other supplies and helped to avoid stock-outs. Information was also regularly disseminated to donors, such as the Global Fund, the United States Agency for International Development and the WHO Country Office in Nigeria. These collaborations created greater awareness among partners of the way TB affects nomadic communities and contributed to the inclusion of community interventions targeting nomadic populations in the Global Fund TB 2019–2020 grant.

6. Conclusions

The demonstration phase implemented in 2012–2013 by JHF provided initial evidence that nomadic populations, which had traditionally been neglected in the TB response, were affected by a large TB burden; this guided the design of innovative community-based solutions to overcome barriers to accessing TB services for these populations and led to their inclusion in the 2015–2020 National Strategic Plan and in the 2019–2020 Global Fund TB grant. The experience gained from the intervention described in this case study shows that strong community engagement stands out as a prerequisite for successful community-based TB interventions; the results contribute to the existing evidence that, to improve TB outcomes, affected communities need to be meaningfully and proactively involved, as they can work synergistically with national TB programmes to provide creative and effective solutions to tackle the TB epidemic.

1 Global tuberculosis report 2019. Geneva: World Health Organization; 2019 (https://www.who.int/tb/publications/global_report/en/, accessed 18 June 2020).

2 John S, Gidado M, Dahiru T, Fanning A, Codlin A, Creswell J. Tuberculosis among nomads in Adamawa, Nigeria: outcomes from two years of active case finding. *Int J Tuberc Lung Dis.* 2015;19(4). doi:10.5588/ijtld.14.0679.19.

3 Tollefson D, Bloss E, Fanning A, Redd JT, Barker K, McCray E. Burden of tuberculosis in indigenous peoples globally: a systematic review. *Int J Tuberc Lung Dis.* 2013;17:1139–50.

4 Sekandi JN, Neuhauser D, Smyth K, Whalen CC. Active case finding of undetected tuberculosis among chronic coughers in a slum setting in Kampala, Uganda. *Int J Tuberc Lung Dis.* 2009;13:508–13.

5 Kranzer K, Lawn SD, Meyer-Rath G, et al. Feasibility, yield, and cost of active tuberculosis case finding linked to a mobile HIV service in Cape Town, South Africa: a cross-sectional study. *PLoS MED.* 2012;9:e1001281.



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