MOZAMBIQUE – A comprehensive community-based service delivery intervention for TB

CASE STUDY

Implementation dates

October 2015–March 2019

Coverage

68 districts in 4 provinces out of 10

Total number of people screened for TB

259 839

Contribution to TB notification

27% contribution to all TB notifications in the 4 provinces

Implementers

- Family Health International 360 (FHI 360)
- Organização para Desenvolvimento Sustentável (OLIPA ODES)
- Associação Moçambicana para o Desenvolvimento da Família (AMODEFA)
- Ajuda de Desenvolvimento de Povo para Povo (ADPP)
- Comunidades Saudáveis e Desenvolvidas (ComuSanas)
- Damien Foundation Belgium (DFB)
- Direcção Provincial de Saúde (DPS)

1. Introduction

Tuberculosis (TB) remains a major public health issue and a leading cause of death in Mozambique. TB incidence rates have not improved in recent years and the TB epidemic is compounded by the generalized HIV epidemic, with an adult HIV prevalence of 12.6% in 2018 (about 2.2 million people) (1). In 2018, an estimated 162 000 people (551 cases per 100 000 people) fell ill with TB in Mozambique, 58 000 (36%) of whom were coinfected with TB and HIV (2). Yet, according to the latest WHO global TB report, only 93 546 were reported, leaving an alarming 68 454 cases (42%) unreached by the health system. Approximately 43 000 people (145 per 100 000) died from the disease, with people living with HIV accounting for half of those deaths. In this context, improving case detection, treatment coverage and adherence, particularly amongst people living with HIV, and integrating TB and HIV services were clear public health priorities. Between October 2015 and March 2019, the Challenge Tuberculosis (CTB) project, funded by the United States Agency for International Development, led by KNCV Tuberculosis Foundation and implemented by FHI 360 in Mozambique, supported the Mozambique National Tuberculosis Programme (NTP) in implementing its 2015–2018 National Strategic Plan, to actively find people with TB and treat them in line with the WHO End TB Strategy.

2. Description of the problem

In Mozambique, addressing the TB and HIV epidemics is constrained by poor access to services, with 66% of the country's population living in rural areas (3) and only 36% of the people having access to a health facility within 30

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minutes of their home (4). While community-based TB and HIV services do exist, they are often patchy and do not cover all rural areas. In areas where community-based services are limited or not available, people living with HIV and those falling ill with TB must find their own way to health facilities for screening, diagnosis and treatment, at significant financial cost. This means that a high proportion of people living with HIV are unaware of their status[1] and that people with TB remain undiagnosed (or diagnosed after long delays) and untreated, which sustains TB transmission in their communities. Lack of access also means that people with TB and/or HIV are less likely to adhere to their daily treatment. When services are available, they are often not integrated, making it more costly and complicated for people to be screened for both TB and HIV. To address these issues, the CTB intervention sought to increase the reach of community-based TB interventions and to bring services closer to affected persons and communities. The 68 districts where CTB was implemented were selected with NTP guidance; they are located in four provinces (out of 10) – Nampula, Sofala, Tete and Zambezia – which have the highest TB burden, i.e. 51% of the total burden in the country. This case study highlights specific community-based activities that had a significant impact on access to health services, although it does not cover the full extent of CTB activities.

3. Proposed solutions

CTB focused on implementing a comprehensive set of community-based TB activities and on supporting the NTP in updating and implementing its community strategy. FHI 360 identified four local nongovernmental organizations, one international foundation and one provincial health directorate[2] in the four provinces and funded them to implement community-based TB prevention, screening and treatment adherence support activities. CTB partners recruited and trained 1133 community health workers, called TB activists, who received a small stipend to carry out active case-finding and treatment support activities. TB activists worked in collaboration with the above-mentioned implementing partners, existing community health workers employed by the NTP and traditional healers, to identify people with presumptive TB, refer them to health facilities for testing, investigate household contacts and support treatment adherence.

Integrated community cough days

In addition to daily house-to-house outreach activities and contact investigations, TB activists and community health workers organized monthly "cough days" in close coordination with health facilities and local leaders. Community members were invited to take part in monthly TB education sessions, where TB screening was available at the end of the event. As part of the screening, sputum was collected and sent to the nearest TB diagnostic site for analysis. Other primary health care services were also provided during monthly cough days (e.g. screening for HIV, diabetes or hypertension) thereby creating synergies and allowing community members to access integrated services directly in their community. This approach also made it possible to identify people coinfected with TB and HIV.

Sputum transportation system

Sputum specimens collected by TB activists during cough days or house-to-house outreach activities were carried through an innovative sputum transportation system using trained motorcyclists to deliver the samples to TB diagnostics sites. This guaranteed that the results became available quickly and linked people with confirmed TB with health facilities, enabling prompt initiation of treatment. The approach was endorsed by the NTP, which encouraged other partners to adopt the same system.

Community Cough Day in one of the CTB-supported provinces (Photo: FHI 360)

Self-help groups

In addition to providing community-based treatment adherence support, TB activists were mentored to support the creation of community TB support groups, called "grupos de apoio comunitario para TB". Over the course of the implementation and in close coordination with TB health facility staff, 137 support groups were established with membership totalling 1060 former and current TB patients. Group members pooled efforts and resources and took turns visiting health centres every week to collect TB drugs for their fellow members, thereby reducing transport costs for individual members; this translated into better treatment adherence.

Collaboration between implementers and the NTP

During implementation, close collaboration between NTP and implementing partners was a key factor. Activities were planned and conducted jointly, leveraging each other's strengths. NTP provided both technical guidance and supplies, such as face masks and sputum collection bottles, and CTB partners supported all other aspects of implementation.

Bringing services close to the patients

The range of community-based activities for TB prevention, diagnosis, treatment and contact investigation is well illustrated by GP's story. GP is from Nampula province: *"One day I was invited to attend an educational session given by a Challenge TB activist as part of his daily work in the community. I became interested […] as he was talking about things that I was experiencing in those days. […] I asked him what I could do about my health situation. […] He handed me two sputum containers and explained how to produce*

1 In Mozambique, only 59% of all people living with HIV know their status. Source: Knowledge is power: know your status, know your viral load. Geneva: UNAIDS; 2018:8.

2 Associação Moçambicana para Desenvolvimento da Família), Agencia para Desenvolvimento de Povo para Povo, ComuSanas, OLIPA ODES, Damien Foundation Belgium and Provincial Directorate of Health.

two sputum samples. Very early the next day, the activist came to take the samples to the laboratory. After two days, he returned to my home with positive test results. […] I went with him to the hospital and received counselling before starting the TB treatment. On the same day, I was tested for HIV and the result was negative. The nurse asked me about my family and promised to visit my household. A few days later, the activist and the nurse came to my house and asked my whole family about any TB symptoms they had. They gave treatment to my grandchildren, aged 2 and 5 years, and said that it was to prevent the children from catching the same illness that I was suffering from."

Strengthening the community monitoring and evaluation system

High-quality, timely programme data are essential for effective programme monitoring and decision-making. To effectively monitor community-based TB services delivered by TB activists as part of the project, CTB built a Power BI dashboard to collect and visualize community activity data. Such data were previously collected on paper and subsequently entered on Excel. CTB supported the rollout of this electronic tool, which enabled the linking of community activity data, including monthly cough-day data, into the national DHIS2 health information system (called SISMA in Mozambique); this had not previously been possible. CTB provided 75 digital tablets to support data collection for community activities and trained 80 CTB district supervisors and provincial and central technical officers on using DHIS2 and Power BI. The project district supervisor entered monthly community-based activity data after validation by the NTP district supervisor. This enabled easier and more frequent follow-up by supervisors based on indicator performance. CTB also supported NTP efforts to improve district-level data quality through quarterly data validation meetings, data quality assessments, data verification and transitioning databases from Excel to the electronic health information system SISMA/DHIS2.

Sputum transportation system
(Photo: FHI 360)

4. Outcomes

The intervention demonstrated that community-based active case-finding, namely house-to-house outreach, contact investigation and monthly cough days, are effective in finding people with TB who would likely not otherwise have been diagnosed or treated. These approaches led to the detection of 46 675 people with TB over five years, all of whom initiated treatment (see Table 1 below). This represents a 27% contribution to the total number (172 545) of TB notifications detected in the four provinces over the five-year period. CTB-supported provinces demonstrated a consistent increase in their contribution to national TB notifications, which collectively accounted for up to 53% of the total drug-sensitive TB burden at national level and 33% of the drug-resistant TB burden (5). As a result, the NTP adopted this approach as the model to be used in community-based interventions across the country.

Table 1. Key results

Approaches	Reached via community-based approaches	Screened for TB	Presumptive TB	Visited health facility	Diagnosed with TB, all forms	% of total TB cases, all forms
House-to-house outreach	306 637	187 049	136 836	123 152	36 098	20.9
Contact investigation	59 428	42 782	29 077	26 431	2 818	1.6
Monthly cough days	64 139	30 008	21 079	17 917	7 759	4.5
Total	**430 204**	**259 839**	**186 992**	**167 500**	**46 675**	**27.0**

Overall, of the 259 839 people screened for TB directly in their communities by TB activists, 46 675 (nearly 18% or almost 1 in 6) were diagnosed with a form of TB. This high proportion suggests that CTB approaches effectively targeted most-at-risk communities.

Monthly cough days and house-to-house outreach were the most effective approaches, with one in four and one in five people, respectively, who were screened being diagnosed with TB. In contrast, 1 in 15 people reached through contact investigation were diagnosed with the disease.

Of the 446 957 people receiving TB educational sessions through CTB, 430 204 (96%) were reached through community-based approaches (as opposed to prison-based or facility-based approaches).

The team distributed over 20 000 TB information flyers and other educational materials to communities and health facilities.

In Nampula, between the second quarter of 2017 and the second quarter of 2018, the proportion of people with TB diagnosed from specimens collected by TB activists and transported by motorcyclists from the sputum transportation system increased from 7% (26/375) to 18% (99/556). During the same period, the proportion also increased in Zambezia, from 23% (61/270) to 26% (86/337).

TB support groups were found to improve treatment success: during the intervention, out of 1060 members, only 16 were lost to follow-up and seven people died. Given the success of the support groups, this approach was subsequently adopted and replicated by other NTP partners.

The community data tool enabled managers and technical staff to track and analyse progress against key indicators and informed decision-making, improving achievement of targets. From mid-2018, all CTB-reported data were reported through DHIS2.

The CTB data verification processes led to significant improvements in district-level data quality (5). For example, in Sofala province, at the end of 2017, data verification visits revealed that six districts had high-quality data, with 0% variance between reported data and data verification, five districts had acceptable variance of about 5% and only two districts had a variance above 5%.

5. Lessons learned and challenges

Involvement of community leaders

Trust and acceptance on the part of community members are a prerequisite for successful community-based interventions. Significant involvement by community leaders facilitated communication and encouraged communities to accept TB activists' services. For example, the success of monthly cough days relied on pre-event community mobilization led by religious or traditional leaders, who encouraged large-scale community participation.

Collaboration with the NTP

Community-based approaches were implemented in close coordination with NTP at different levels. Health workers' participation in community-based activities was crucial to ensuring ownership by local health teams and commitment to continuing the community-based approaches.

Screening for comorbidities

Integrating community-based TB screening with screening for other conditions, such as HIV, hypertension and diabetes further enhanced community trust and acceptance of the initiative and contributed to improvements in individual and community health outcomes.

TB/HIV screening integration

Integration of TB and HIV screening activities was made possible through collaboration between NTP, CTB and other implementing agencies focusing on HIV/AIDS. Partners identified synergies and formed integrated health teams to carry out joint activities, using a standardized approach and harmonized strategies and tools. In remote areas with high TB/HIV prevalence, cough days created opportunities to provide holistic, integrated health services for community members, leading to better health outcomes.

Importance of monitoring and evaluation

Buy-in from key national, provincial, district, community and even facility-level stakeholders was a critical challenge; convincing them of the effectiveness of community-based approaches was a further challenge. Presenting data showing improvements in TB case-finding using these approaches was a useful advocacy tool. Sharing positive results with other districts or health facilities also helped to gain critical buy-in from key stakeholders.

Incentives

Working with community health workers who were participating on an entirely voluntary basis was challenging and led to very high turnover. Providing a small stipend for CTB TB activists noticeably improved retention rates and motivation levels.

Sustainability

Relying purely on international donor funds for community-based approaches means a lack of sustainability, despite the impressive improvements in TB detection rates.

6. Conclusions

Implementing community-based, integrated activities for TB signalled a clear shift away from passive, clinic-based case detection. Bringing services directly to communities, and as close as possible to where people with TB and their families live, proved highly effective in finding the missing persons with TB and raising awareness of the disease in affected communities. TB activists were the cornerstone of CTB community-based activities and investing in a strong, adequately trained community-based workforce is crucial. However, Government ownership and strong political leadership and commitment are necessary to ensure strategic and sustainable investment in long-lasting community-based interventions. Political support from the Mozambique Government and decision-makers is essential to sustained progress in TB control efforts; effective advocacy for community-based TB services should continue to secure political will and adequate funding for the systematic integration of these activities into the national TB response.

1 Mozambique. In: UNAIDS [website]. Geneva: UNAIDS; 2020 (https://www.unaids.org/en/regionscountries/countries/mozambique, 28 June 2020).
2 Global tuberculosis report 2019. Geneva: World Health Organization; 2019 (https://www.who.int/tb/publications/global_report/en/, accessed 22 June 2020).
3 The World Bank in Mozambique. In: World Bank [website]. Washington (DC): World Bank; 2020 (https://www.worldbank.org/en/country/mozambique/overview, accessed 28 June 2020).
4 Latest WHO information on Mozambique's health system. In: World Health Organization [website]. Geneva: World Health Organization; 2020 (https://www.who.int/countries/moz/areas/health_system/en/indexl.html, accessed 28 June 2020).
5 Challenge TB Mozambique final report October 2014–June 2019. Washington (DC): United States Agency for International Development and Challenge TB; 2019.

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