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Social Protection for People with Tuberculosis:

A Desk Review Report on the Utilization of Social Protection Interventions in 10 waves of TB REACH Projects

Applied Research Project

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Content

Abstract

This report entitled: "Social Protection of People with Tuberculosis: A Desk Review Report on the Utilization of Social Protection Interventions in 10 waves of TB REACH Projects", realized the analysis of 325 projects of Stop TB aiming to identify the types of social protection interventions utilized by each project, and the target population of the interventions. Moreover, the overall objective of the desk review was to understand the types of social protection interventions utilized by the projects analyzed and their target populations.

In addition, the purpose of this study is to create a guideline for Stop TB and stakeholders about the use of social protection interventions, the different types of population that are benefited and the types of interventions utilized. Hence, the study presents the impact of Tuberculosis on one's life, the community and how it leads to the impoverishment of people with TB and their families, in order to better understand the applicability of the social protection interventions at projects that aim to combat Tuberculosis.

Furthermore, the methodology adopted in this paper aims to develop an overview of the social protection interventions through the methods adopted at the desk review analysis, mapping the interventions by project and country, and the people who benefited from it. Also, the study presents the typology adopted to separate the types of social protection interventions and the target population in order to clarify the different types of interventions and justify the sub-categories adopted in this study.

A noteworthy feature is the findings of the desk review. We developed graphics in order to illustrate the results of our desk review analysis of the social protection interventions that were implemented among the 325 projects. The study presents some graphic illustrations about the key social protection interventions, how many of them were implemented. For instance, the overall geographic view of the projects shows the quantity of projects with social protection interventions per country, and the charts that illustrate the main target population covered by the social protection interventions in order to help to guide future studies and projects that aim to combat Tuberculosis. Finally, the study also analyses the results of the desk review findings in order to understand their impacts on the people with TB, their families and the local community.

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Introduction

Poverty is a major determinant of tuberculosis (TB), and the socioeconomic consequences of tuberculosis can be devastating. In the light of these concerns, the recognition of the significance of social protection interventions (SPIs) has increased in recent years. The World Health Organization (WHO, 2015) end tuberculosis-strategy emphasizes the importance of socioeconomic support through SPIs, and points out the potential of SPIs to enable people with TB and their household to break the cycle of tuberculosis and poverty. This will improve both the treatment and the socioeconomic outcomes (Hudson et al., 2023, p. 3). One of the proposed targets is that "no TB affected families experience catastrophic costs due to TB" (World Health Organization, 2015, pg. 8.), another is focusing on detecting the disease early, getting access to treatment and prevention for all TB patients (ibid.).

The Stop TB Partnership has a goal to transform the fight against TB, and to achieve TB eradication by 2030. They advocate, promote collaboration, and ensure access to TB diagnostics and treatment (Stop TB Partnership, n.d.). To assist Stop TB Partnership in their work to achieve TB eradication, this research will identify and look into the utilization of the SPIs that are a part of the projects funded by TB REACH.

The objective of this research is to identify the types of SPIs utilized in the TB REACH projects, then to further connect this to existing literature on the subject in order to analyze the patterns. Lastly, we intend to provide recommendations for future projects to enhance the impact of SPIs on TB eradication efforts, and to obtain better data collection and knowledge on the use of SPIs. We aim to answer the following questions:

1. Which social protection interventions used to support people affected by TB can be found in the former TB REACH projects?
2. How is the pattern of utilization of these, compared to the general patterns found in the literature?

In order to do this, we will first introduce the methodology and the limitations of this report. Second, the literature review will introduce a background about Tuberculosis, the causes of the disease, the treatment utilized, socio-economic impacts on people with Tuberculosis and the importance of SPIs to combat the disease. After, the different types of SPIs utilized in Stop TB projects and the key populations affected by TB will be presented.

Subsequently, we will present a case study about the impact of TB in one's life, the socio-economic impact of the disease, the impact of SPIs on people affected by TB, and the challenges. After, we present the desk review of the 325 projects analyzed, the typology and classification utilized in the analysis, as well as the finding and the analysis of the findings. Finally, we will provide recommendations for future projects with SPI.

1.0 Methodology

To systematically explore the utilization of social protection interventions (SPIs) in TB REACH projects we conducted a (1) systematic document review and (2) analysis of desk review. The overarching goal and objective of the desk review is to create a comprehensive overview of the SPIs used in the projects funded by TB REACH, in order to gain insights into the utilization, like which populations it is aimed at, which types of SPIs, where, and so on. The importance of understanding the patterns of utilization for SPIs in addressing TB is due to the major risk factor of poverty for acquiring a TB infection, and the proven potential SPIs have to limit these risks. Data on utilization will help Stop TB to identify gaps, optimize resource allocation, and enhance the effectiveness of interventions, ultimately contributing to better TB prevention and treatment outcomes. Stop TB has a goal of integrating social protection in their interventions due to this risk, in order to shield families against catastrophic costs and promote universal access to TB health services particularly in low-and-middle-income countries (LMICs).

Figure 1 below shows the process of screening the projects available in the database of TB REACH. The database has an overview of the 355 projects throughout 10 waves (10 years). We identified 112 projects with SPIs, the other 244 projects were filtered out due to being active projects (we were therefore not able to conclude on them), or being projects with no documents available, or due to there being no SPIs identified in the reports.
In the database, ideally, the folders per project intends to include a baseline validation (BV), stating the starting point in which establishes and measures the project's performance metrics. It should also include a Grantee Annual Narrative Report (GANR), a Final Report (FR), or a Project Annual Review (PAR), which tells more about the results and outcomes. Most of the

projects also included Quarterly Reports (QR), providing a detailed account of the work completed each quarter throughout the year.

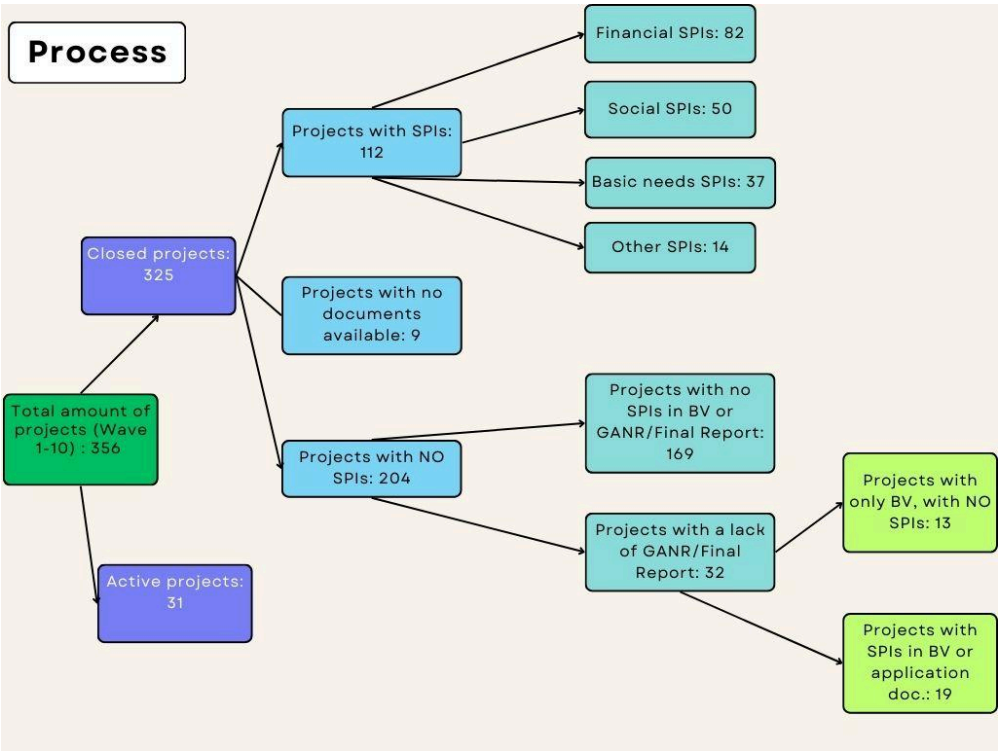

Figure 1: The desk-review process of screening.

Before conducting the desk-review we prepared by creating a google sheets spreadsheet, to organize the findings and search words and categories. Figure 2 shows the search words we decided on ahead of the desk review. Based on the findings of our literature review, we decided that these particular words would be most beneficial for identifying SPIs in the extensive amount of reports we were to scan. The definition of SPIs by WHO, in which we are using in this report, brings up improving inequalities, reducing intergenerational poverty (especially the poor and vulnerable), coping with crises and shocks, finding jobs, improving productivity, investing in health and education for children, and protecting the aging population (Todd et al., 2023). This definition, combined with the division into three sub-categories: financial, social, and basic needs, and their characteristics (see section 3.0) was what we used as a base for the search words.

SEARCHWORDS			
FINANCIAL	SOCIAL	BASIC NEEDS	GENERAL
Cash transfer / monetary	Work / Business / Job / Employ(ment)(ed)	Nutrition (suplementation/package)	Social protection
Voucher	Stigma reduction	Food (baskets/package)	SPS (social protection strategies)
Financial / Economic	Legal help	Meal	Support
Transport / travel	Counsel(ing) / Counselling / Psychotherapy / Mental (health)	Housing / Shelter	Intervention
Insur(e)(ance)	Home/household visits	Child / Family support	
Income	Social support/worker	Family planning	
Incentive	Support groups		
Enabler	Community participation programs		
Subsidies	Educat(ion) (e) / School (fees)		
Microfinance	Career (counseling)		
Livelihood	Therapy/ psychological support		
Coupons			
Delivery			
Direct Benefit Transfer (DBT)			

Figure 2: Search words for desk-review

To be able to have a concise sorting of data, we created one sheet per wave with tables to fill in the information conducted from the reports. Figure 3 shows the various information we conducted on each project.

In this desk review, the BV was first screened to uncover project objectives and planned interventions. However, if we encountered any SPIs during this process, it's important to note that their presence doesn't necessarily confirm implementation. Instead, it signifies the intended actions outlined in the project plan. We therefore went on to the concluding report(s), where we used the same search words, and looked for SPIs. If there was a SPI in the BV that was not found in the concluding report(s), we went to the QR to see why they were not carried out.

The process of screening was done by first getting an overview of the project: what is it about, what are the main objectives, and for which target population? Then we moved onto the search words, in every document screened we used all the search words, and when the searchword appeared we read these passages more carefully for more information on the potential SPIs to be found. When we found SPIs, in which we could conclude on, we added these to the “SPIs” section of the excel sheet. Once this overview was completed, we unified the SPIs into categories and identified their target populations, a process we will elaborate further in part 4 concerning typology and classification.

Name of project	What is the project called?
Type of project	What are the objectives of the project?
Actor	Which actor is receiving the grant and going through with the project?
Country	In which country is the project situated?
Target audience	What is the target audience of the project?
SPIs	Which SPIs are mentioned as carried out in these reports?
Type of SPIs	Based on the unified typology created by ourselves, it will be explained in part 4 on typology and classification**.**
SPI Target Population	Based on the unified typology created by ourselves, it will be explained in part 4 on typology and classification.
GANR available	Is the GANR available in the portal?
BV available	Is the BV available in the portal?
Funded by others	Some of the projects were funded by other actors, as well as TB REACH, often the Global Fund for example.
Documents screened	Which documents were screened for this overview?
Other info?	Other information from the reports, in which we see as relevant to the overview.
Lack of info	Is there a lack of info? What is missing?

Figure 3: Data Organization Summary

Our analysis followed the principles of Exploratory Data Analysis (EDA), focusing on examining the data through descriptive statistics and graphical representations (Komorowski et al., 2016). We began by systematically categorizing and quantifying data extracted from grant reports into an excel sheet, which facilitated the identification of distributions, outliers, and anomalies. By summarizing these numbers into graphs, we visualized the data to uncover natural patterns and gain deeper insights, consistent with EDA's emphasis on graphical exploration. This process allowed us to assess the data and generate connections to the literature on the topic, ultimately aiding in the natural pattern recognition essential for thorough data analysis. Our use of descriptive statistics provided a foundation for understanding the data's central tendencies, variations, and relationships, all critical aspects of the EDA approach (Ibid).

Additionally, this report has been conducted through a mixed methods approach, defined as an approach to research where researchers combine quantitative and qualitative research techniques, methods, concepts, and languages into a single study or a series of studies (Venkatesh et al., 2023, p.3). It is qualitative in the sense that we first did a literature review, but also in the reviewing of grant reports, involving qualitative analysis to understand the narrative descriptions, contexts, and nuances of each SPI. It also involves quantitative analysis in the creation of the excel sheet to systematically summarize the types of SPIs, target populations, etc. Furthermore we have categorized and quantified the data extracted from the reports, and summarized these numbers into graphs. By combining these two methods, we intended for a more comprehensive understanding of the SPIs within the projects.

We also acknowledge potential methodological biases by exclusively examining internal documents. To address this, we will integrate insights from scholars and organizations mentioned in our literature review and other resources. Throughout the project our possible working languages will be English, Portuguese, Chinese and Norwegian. This will inevitably influence the access to information.

1.1 Limitations

We acknowledge that there are several limitations to this study, especially in assessing the information beyond the scope of the reports. We intended to conduct interviews with key informants to explore their perception in order to get input on the design-process, decision-making, challenges and obstacles, sustainability, and opportunities connected to the SPIs in the projects. However, given the time constraints and the comprehensive nature of the desk review process, we were unable to allocate time for conducting interviews. Consequently, our primary emphasis was placed on examining the utilization of SPIs across different projects, supplementing our analysis by correlating our findings with relevant literature concerning the application of SPIs within tuberculosis-affected populations and local communities. However, we do acknowledge that the lack of key informant interviews can lead to a lack of the comprehensive picture of the interventions, potentially leaving out crucial details or contexts.

Another limitation is the lack of documents in the portal from TB REACH. Stop TB Partnership is a service oriented organization, focusing on the implementation of projects to combat tuberculosis, and therefore the capacity for data collection has been limited. As illustrated prior in figure 2, there were 9 projects with no documents available, 32 projects lacking a GANR or a Final Report, and out of these 32 there were 19 projects where we found SPIs in the BV or application documents, but could not conclude on this due to the lack of a GANR or Final Report. We did not have enough information on these 41 to conclude on anything, which is a limitation of the desk review's conclusion. Also, within the documents there are limitations due to lack of information. For example within the target population for SPIs, there are 32 of the SPIs in which the target population is not specified in the reports screened.

Lastly we see a limitation in the various wording used by the different actors. For example, some projects are vague in their wording. An example of this is the project "Strengthening Paediatric, Neonatal and Perinatal Cycle for TB and HIV Care and Improve Post-Exposure Management" by Interactive Research and Development Free Zone Company (IRD FZC / IRD South Africa) from wave 5, stating "(...) engagement with social support as well as health care systems.". Here we first noted this as a SPI, but in the end we concluded that this is too vague and does not give us the ground to conclude it being an SPI which shields

families against catastrophic costs and promotes universal access to TB health services (Grant Management System (GMS). [confidential document]).

2.0 Literature review

To gain background to support the research conducted through the desk review, we have conducted a literature review, which will mainly focus on the connection between TB and the need for SPI. It will provide an overview of the various SPIs found in the literature, what are the characteristics, and how is the feasibility viewed. There are many case-studies on SPIs for TB, and this literature review will examine and introduce some of them in order to identify the best solution for the struggles faced by the population affected by TB.

2.1. Background on Tuberculosis

Tuberculosis (TB) is a neglected, infectious and contagious disease predominant in the Global South specially in marginalized populations such as homeless, indigenous people, ethnic minorities, people deprived of liberty, and people living with HIV/AIDS (Maciel; Sales; Araujo, 2021). Although tuberculosis can be prevented and cured, it still prevails in conditions of poverty and contributes to the perpetuation of social inequality.

As stated by the WHO, poverty is a major determinant of tuberculosis. For instance, crowded and poorly ventilated living and working environments, deprivation of liberty in the prison system, homelessness, and abuse of alcohol and other drugs, which are often associated with poverty and constitute direct risk factors for TB transmission (WHO, 2015; Brasil, 2022). The link to poverty increases the risk of illness among socially underserved populations.

Tuberculosis persists as an important and challenging issue in public health, contributing to the perpetuation of inequalities and social exclusion in several countries. It is one of the most prevalent diseases among people living in poverty worldwide, carrying a high burden in terms of mortality, alongside HIV/AIDS and malaria (WHO, 2014b). Simultaneously, it perpetuates poverty, since illness tends to reduce the workforce (Brasil, 2022) and also compromises the health of individuals and their families, causing economic and social impacts (Brazil, 2014b; Hargreaves et al., 2011; WHO, 2014b).

Moreover, the many people affected by TB face stigma and prejudice because of the connection between the disease and poverty. Therefore, with poverty and social exclusion in common, situations of social vulnerability are superimposed. This might increase the stigma of the disease and aggravate situations of discrimination, negative self-esteem and blaming for the illness. Due to this, there is an unfavorable cycle of access to health and social assistance services, as well as potentiating mental suffering (Fernandes et al., 2020).

In order to combat the stigma faced by people with TB, the paragraph 10 of the UN Political declaration of the high-level meeting on the fight against TB of 2023 recognized that structural inequity, stigma, racism and discrimination (including against women), inadequate investment in (and inequitable access to) TB prevention, diagnosis, treatment, remain key roadblocks to ending the TB epidemic. It needs to be addressed through comprehensive political, legal, and programmatic actions that people with tuberculosis may suffer from stigma, and all forms of discrimination, and that there are barriers to enjoyment of human rights (Citro et al., 2016).

The recognition of this issue by the UN is crucial to guide the countries to take the necessary steps in order to revert this scenario and guarantee that people affected by TB have full access to the treatment without facing stigma, or any type of financial struggle. Furthermore, the Stop TB Partnership Declaration of the Rights of People Affected by TB (2019), reinforces the importance of guaranteeing that people affected by TB are treated without facing any stigma or discrimination and have their rights assured. For instance, the Declaration states that people affected by TB have the right to dignity, to life, to health and to equality and not to be exposed to discrimination.

The TB treatment is based on antibiotics and normally lasts from six months to one year. The treatment involves a combination of four antibiotics (rifampicin, isoniazid, pyrazinamide, and ethambutol) and it is one hundred percent effective, although it depends on the consistency and completion of the treatment (WHO, 2023). Therefore, skipping treatment sessions can complicate the disease and can lead to the development of multidrug-resistant TB, making it more challenging to treat. Thus, it is important to understand the lack of adherence to the treatment in order to prevent the development of multidrug-resistant TB, the rates of deaths per TB, and the spread of the disease. Although in most countries the treatment for TB is

offered free of charge, the existence of non medical costs is crucial to understand why people abandon the treatment (WHO, 2017).

Additionally, it is important to recognize that many people do not complete the treatment, because of those economic barriers they face, making it difficult to access the healthcare services they need. It is important to highlight that at the UN General Assembly High-level Meeting on the fight against tuberculosis of 2023, the Heads of States and Government and representatives of States and Governments reaffirmed their commitment to end the tuberculosis epidemic by 2030 (UN, 2023).

Therefore, they prioritized raising money for social protection, committing themselves to mobilize sufficient, adequate, predictable and sustainable financing for universal access to quality tuberculosis prevention, diagnosis, treatment and care within and beyond the health sector to address determinants and drivers of the TB epidemic, from all sources, with the aim of reaching overall global investments of at least 22 billion of dollars a year by 2027 (WHO, 2023).

Without any social protection (SP), the population affected by TB has to face non-medical costs, such as transportation from home to the hospital. Also, the possibility of losing their jobs because they have to be away from work during a period of time to complete the treatment, and hinder access to essential goods and services (such as housing and food security) has a negative impact on their quality of life and their families as well (Brasil, 2022).

Moreover, the WHO Ending TB Strategy by 2035, highlighted the importance of social protection to combat the TB epidemic. The third high-level indicator, the percentage of TB patients and their households experiencing catastrophic costs as a result of TB, was chosen because of its direct link to progress towards Universal Health Coverage (UHC) and Universal SP. Major global progress towards UHC and SP by 2025 are fundamental requirements for achievement of the global targets for reductions in TB cases and deaths (WHO, 2015). Therefore, it is important to understand how the SP policies are crucial to guarantee that people affected by tuberculosis complete the treatment without facing financial struggles.

2.2 Defining Social Protection Interventions

World Health Organization defines social protection like this:

> Systems which seek to improve inequalities and reduce intergenerational poverty by seeking to help individuals and families, especially the poor and vulnerable, cope with crises and shocks, find jobs, improve productivity, invest in the health and education of their children and protect the aging population (Todd et al., 2023, p. 651).

Under this definition falls enablers, which includes items or services that remove barriers to accessing health care (Wells & Severn, 2021). However, important SPIs could also include incentives, which may be defined as "any financial or material reward that patients and/or providers receive, conditional on their explicitly measured performance or behavior" (Lutge et al., 2015, p. 6). SPIs for TB is often divided into three categories: TB-specific, TB-sensitive, and TB-inclusive. The TB-specific schemes has the aim of improving a number of TB indicators, TB-sensitive schemes can potentially affect the epidemiology of TB and control by targeting people at high risk of TB, and TB-inclusive schemes are interventions where one of the inclusion criterias is having TB or being a member of a TB-affected household, but not the only criteria (Ukwaja, 2019). In our systematic review we will use these definitions of SPI, which will be important to identify the different SPI in the TB-REACH projects.

2.3 Characteristics of SPIs for Individuals Affected by Tuberculosis

To get a systematic overview of the various existing SPIs for TB, we have grouped them into three main categories. It is important to note that some of the categories overlap at certain SPIs. We will now present what are the characteristics and functions of the various SPIs for TB.

2.3.1 Financial SPIs

Financial SPIs has been a major focus while designing SPIs for TB, as already mentioned: the patients adherence to medications is frequently less than ideal, especially for conditions which require prolonged treatment outcomes. A common trend for SPIs is cash transfers, which provides cash to reduce the vulnerability and impoverishment of TB patients (Lutge et

al., 2015). Material incentives to reward adherence to treatment also fall under the financial SPIs, as well as vouchers, or transport which is often used in different ways to prevent out-of-pocket costs and loss of income, which is often associated with TB illness and care.

The type, value, duration, and mechanism of financial SPIs vary a lot. The financial SPIs might be given directly, as cash or vouchers for groceries, or indirectly, by providing a service, in which the patient might otherwise would have to pay, like transport to the health facility or health insurance (Lutge et al., 2015; Todd et al., 2023). Alleviation of transport costs is important for both improving treatment adherence and success rates (Smith et al., 2023). There is also a distinction between financial SPIs coming with conditionalities, and not. When given with conditionalities, there are requirements for the recipients to take specific behavioral, educational or health actions before the cash is being transferred (Boccia et al., 2016).

The results of financial SPIs can be many, both in enabling fair access to TB services, mitigating TB related-costs and reducing TB susceptibility among people at risk through the impact it might have on living conditions, nutrition, HIV, diabetes and other risk factors for TB (ibid).

2.3.2 Social support SPIs

TB-affected people may experience stigma, loss of job and income, isolation and legal issues. Mental health issues could affect TB-patients' adherence to the treatment of TB, but also lead to prolonged hospitalization resulting in loss of job. Agarwal et al. (2020) emphasizes the importance of person-centered SPIs. Counseling, home visits, psychotherapy, and legal support are all social support SPIs (Smith et al., 2023; Van De Berg et al., 2018). Community participation programs (also called community-based support groups) is an SPI creating a supportive network and environment, and providing educational activities in group settings. Supporting individuals with the payment of their school fees and offering career counseling are also strategies to offer social protection (Todd et al., 2023). Also, lending money to invest in career, and promotive interventions that support TB affected people in establishing a sustainable livelihood can be critical in preventing, or getting them out of poverty (Smith et al., 2023). The significance of attending school and pursuing a career plays both a crucial role in promoting mental well-being, and has socio-economic importance.

The social support SPIs often come in combination with other SPIs, making it hard to measure the effectiveness of them alone (Maynard et al., 2023). A study by Smith et al. (2023) emphasizes the importance of patient-centered approaches where the patient's needs for information, emotional needs, and life issues are explored, and the specific SPIs are decided based on the individual's characteristics. These kinds of SPIs might contribute in enabling the adherence to treatment and to preventive therapy, it might also increase the completion of treatment, avoid deepening impoverishment, and reduce the stigma associated with TB (Todd et al., 2023).

2.3.3 Basic Needs Assistance SPIs

When affected by diseases like TB, the basic needs are threatened for various reasons. SPIs providing nutritional support, housing support, and child and family support can be important interventions to fill the fundamental needs of TB affected people.

One of the major drivers of TB is undernutrition, it serves as both a biological risk factor and a social determinant. SPIs like food baskets and nutritional supplementation seek to alleviate the broader impacts of poverty, such as food insecurity and malnutrition. Studies have suggested that nutritional interventions under different scenarios and over a long-term period, could reduce tuberculosis incidence by 33-71% (Bhargava et al., 2023; Todd et al., 2023).

Housing needs, living situation, and lack of someone to look after children can be a reason why a person affected by TB might not attend for diagnostic testing or follow a treatment plan. The National Institute for Health and Care Excellence (NICE), emphasizes the need for programmes focused on underserved children, homelessness and housing (Tuberculosis - NICE Guideline, 2016). Family support for people with TB has also been proven to be important, SPIs where hospitals and health workers educate the patients and their families can reduce patients who are drug-resistant (Mahanggoro et al., 2020).

2.4 Feasibility, Accessibility, Effectiveness

How is the feasibility, appropriateness, and effectiveness of the various SPIs for TB, seen in the literature? A review regarding the clinical effectiveness of adherence incentives done by

Wells & Severn in 2021(Wells & Severn, 2021) concludes that there were neutral to positive results for financial incentives and support, educational incentives and support, non-cash incentives and support, and mixed supports. The overview in which this review examined concluded that sustained material incentives had little to no impact on cure rates or treatment completion for active TB, and food incentives did not clearly affect cure rates, mortality, or sputum conversion.

Financial incentives were reported, by some systematic reviews, having benefits on mortality, cure rates, and treatment success. However, the review was not able to conclude on anything, due to the variation of results in the various systematic reviews gone through. Lutge et.al (2015) looked into the result of different groups of patients with different characteristics, and found that a large effect was seen with the cash incentives when given to drug users, where there was extremely low treatment completion in the control group. When looking into a patient group of prisoners they found no effect with a cash incentive at the start of the treatment. This underlines the importance of taking the specific populations into consideration.

In a study by Mahanggoro et al. (2020) there is a comparison between TB affected people with poor early family support, and those with good early family support. The people with good early family support in the first month of therapy had a 69 times higher chance of succeeding the therapy. Further looking into support, in an extensive review of the effects of psychological interventions on adherence to treatment, suggests that TB community support was helpful in reducing stigma, programmatic psychological interventions improved the treatment compliance and outcomes (Agarwal & Sarthi, 2020, p. 4175).

Unintentional, negative results of SPIs is also a potential situation. Lutge et al. (2015) explains that it might lead to reluctance to adhere to other health behaviors unless they are accompanied by incentives, resentment among non-incentivized patients, fraud and corruption (manipulation of the incentive system to gain more benefits than legitimately earned), creation of “ghost” patients (allowing health staff to exploit the incentive system for personal gain), “perverse incentive effect” (where incentives induces unintended behavior, such as avoiding medication to maintain eligibility for incentives). This information will be interesting to follow up in the interviews with our key informants.

2.5 Key populations

WHO's Guidance on Social Protection for People Affected by Tuberculosis published recently on 20 May 2024 provides a general guideline on the definition and scope of TB SPI target groups (World Health Organization, 2024). The End TB strategy is founded on promoting, protecting, and fulfilling all human rights and the dignity of all people affected by TB. A person affected by TB is defined as "any person with TB infection or disease or who previously had TB disease, as well as their caregivers and immediate family members, and members of TB key and vulnerable populations, such as children, healthcare workers, indigenous peoples, people living with HIV, people who use drugs, prisoners, miners, mobile and migrant populations, women, and the urban and rural poor" (World Health Organization, 2022).

In addition to the WHO definition of people affected by TB, the Stop TB report "Key and Vulnerable Populations Size Estimation Tool" provides further insights. They define the Key and Vulnerable Populations (KVP) using a human rights-based and evidence-based approach. The defined KVPs include people living with HIV, prisoners and detainees, miners and people with silicosis, migrants and refugees, internally displaced people, nomadic populations, people who use drugs or tobacco, people living in poverty, people with disabilities, people with alcohol dependency, sex workers, LGBTQIA+ individuals, indigenous peoples, children, homeless people, the elderly, urban poor, hospital workers, community health workers, outreach workers, rural poor, and prison workers (Stop TB Partnership, 2023, p.38).

Additionally, several scholars define vulnerable populations as those who simultaneously occupy disadvantaged or marginalized socioeconomic positions or contexts, have higher risks of tuberculosis, and face barriers to accessing quality and appropriate tuberculosis care. These barriers may include being unaware, unable, or unwilling to seek tuberculosis care and complete treatment (Wu et al., 2023). They propose three criteria for identifying vulnerable populations: the socioeconomic positions of individuals, the risk of tuberculosis infection and disease, and access to health systems (*see Figure 4*).

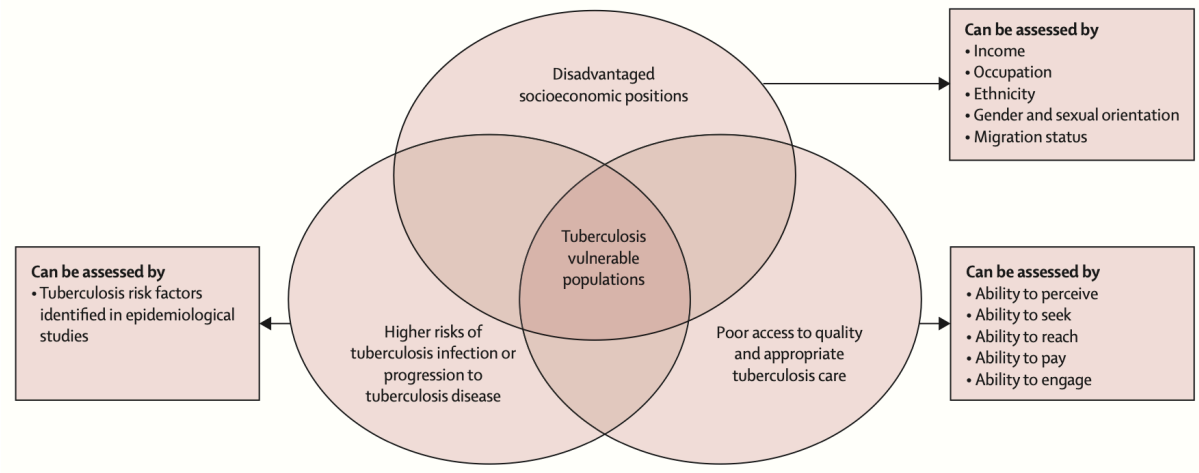

Figure 4: Conceptual model of populations vulnerable to tuberculosis

2.6 Case-studies

To further explore the impact of SPIs, we will now review various case-studies and provide an overview of the effects and outcomes of SPI of a selection of cases in the literature.

2.6.1 Impact of SPIs on Individuals Affected by TB

A study which might help understand the possible outcomes of SPI is a study on the effects of social protection programs on adults diagnosed with TB. This is a systematic review which was conducted to assess the relationship between the receipt of social assistance and the improvement of TB patients. The findings of this review suggest a positive correlation, indicating that social protection interventions contribute to enhancements in various aspects of TB management.

Specifically, these interventions have been associated with improved treatment outcomes, cure rates, treatment adherence, service provision, poverty alleviation, and overall TB control. Notably, the framework of performance-based financing (PBF) comprises three key pillars: income transfer, which serves to alleviate poverty immediately; conditionalities, reinforcing individuals' rights to health and education; and complementary programs, aiming to enhance the overall living conditions for affected families (Aragão et al., 2021).

2.6.2 Impact on TB Prevalence, Incidence, and Mortality

A modeling analysis has revealed that the global incidence of tuberculosis could witness a reduction exceeding three-quarters if poverty were eradicated and comprehensive social protection programs, along with universal coverage, were implemented. Notably, implementing the social protection component alone significantly reduced tuberculosis incidence (Carter et al., 2018).

In another study, which utilized publicly available data from the WHO's Global Tuberculosis Programme and social protection data from the International Labour Organization (ILO) spanning 146 countries from 2000 to 2012, social protection spending levels were inversely associated with tuberculosis prevalence, incidence, and mortality. Specifically, in countries transitioning from 0% to 1% of GDP spending on social protection, there were corresponding changes of -18.33 per 100,000 people in prevalence, -8.16 per 100,000 people in incidence, and -5.48 per 100,000 people in mortality (Siroka et al., 2016).

Examining specific regions, a study focused on 21 European countries from 1995 to 2012 found that, after accounting for economic output, public health spending, and country-fixed effects, each US$100 increase in social protection spending was associated with a decrease per 100,000 population in tuberculosis case notifications (-1.53%), estimated incidence rates (-1.70%), non-HIV-related tuberculosis mortality rate (-2.74%), and all-cause tuberculosis mortality rate (-3.08%) (Reeves et al., 2014).

Employing a new mathematical modeling approach known as S-PROTECT, researchers evaluated the impact of the Bolsa Familia Programme (BFP), a Brazilian conditional cash transfer scheme, on tuberculosis prevalence. The findings indicated that the BFP could reduce TB prevalence by 4%, primarily through improved household income and nutritional status. Furthermore, when examining the program's direct impact on malnutrition (not mediated by income), the observed impact increased substantially to 33% (Boccia et al., 2018).

2.6.3 Impact on TB Treatment Success and Treatment Adherence

A systematic review of studies conducted in low- and middle-income countries with high tuberculosis (TB) incidence revealed a positive association between the Social Protection Strategy (SPS) and TB treatment success. This review included nineteen studies from middle-income countries, four from low-income countries, specifically Ethiopia, Malawi, and

Nepal, and two from Russia, categorized as a high TB burden country. The SPS was found to reduce the risks of treatment default and therapeutic failure, emphasizing the capacity of social protection to enhance healthcare access. The mechanisms provided by social protection, such as coping with financial hardships due to TB, alleviating poverty, and reducing social vulnerability, were identified as contributors to improved treatment adherence (Andrade et al., 2018).

In specific regional contexts, a prospective, non-randomized intervention study in rural Nigeria demonstrated the effectiveness of financial incentives in improving treatment success and reducing loss to follow-up among economically disadvantaged TB patients (Ukwaja et al., 2017). Similarly, a controlled trial in Jharkhand, India, focusing on a cohort with a high prevalence of severe undernutrition, highlighted the association between weight gain, particularly in the first two months, and a substantial decrease in the hazard of tuberculosis mortality. This underscores the importance of nutritional support as an integral component of patient-centered care to enhance treatment outcomes in such settings (Bhargava et al., 2023).

Studies examining Brazil's Bolsa Família Programme (BFP) found that a significant percentage (10.58%) of TB patients receiving BFP who achieved a cure would not have been cured without the program's support (Carter et al., 2018). In Buenos Aires, a study involving 962 patients with a first diagnosis of TB observed higher success rates (82% versus 69%) and lower treatment abandonment (11% versus 20%) among those registered for the Conditional Cash Transfer (CCT) program. This indicates that the CCT program is a valuable health policy intervention for improving TB treatment outcomes, even considering various individual and health system factors (Klein et al., 2019).

Evidence from randomized controlled trials (RCTs) conducted in the United States reinforces the positive impact of incentives on patient attendance in TB healthcare facilities, thereby improving treatment adherence (Lutge et al., 2015).

2.6.4 Impact on Catastrophic Expenditures

Social protection initiatives targeting individuals affected by tuberculosis (TB) play a crucial role in mitigating the burden of catastrophic expenditures. TB patients, along with their families, often grapple with both direct and indirect costs associated with the disease, and

these costs can be alleviated through the implementation of Social Protection Strategies (SPS). Direct costs encompass expenses related to transportation to and from health facilities and the costs of medication, exams, or consultations incurred by individuals. Indirect costs, which can contribute to almost 50% of total family expenses, are linked to income losses attributable to TB (Andrade et al., 2018).

An extensive study conducted in Indonesia explored various financial support scenarios and their impact on mitigating catastrophic costs for TB-affected households. The study assessed eight scenarios, finding that financial support for income loss, transportation costs, and food-supplement expenses substantially reduced catastrophic costs. However, it also noted that more than relying on financial support might be needed to achieve the target of ensuring 0% of TB-affected households face catastrophic costs (Fuady et al., 2019).

2.6.5 Challenges

A comparative analysis of two cash transfer strategies utilizing model inputs for seven low- and middle-income countries identified specific challenges. The study found that employing a tuberculosis (TB)-sensitive cash transfer approach to increase the income of all poor households could have broad benefits in reducing poverty. However, it may be less effective or financially viable for preventing catastrophic TB costs than a TB-specific cash transfer approach. The latter involves providing financial support only to poor households with a confirmed TB diagnosis. Regardless of the chosen approach, preventing catastrophic costs related to drug-resistant TB will necessitate significant additional investment (Rudgard et al., 2017).

Understanding the experiences of recipients in SPIs and the unintended consequences of such interventions is crucial. An analytical study encompassing sampled research from 24 different countries shed light on the impact of sociocultural contexts on the functioning and interaction between individuals, families, and cash transfer programs. Recipients reported varied effects, including empowerment, autonomy, and agency. However, in some cases, recipients faced pressure from family or program staff regarding cash usage. At the same time, the cash transfer was found to improve social cohesion and reduce intra household tension and unequal cash distribution in settings where some received it and others did not, leading to tension, suspicion, and conflict.

Recipients also reported experiencing stigma during cash transfer program assessments and eligibility processes. Across different settings, barriers to accessing the cash transfer program were noted, and some individuals refused or hesitated to receive the cash. Acceptance of cash transfer programs was often influenced by recipients' alignment with the program's goals and processes (Atkins et al., 2020).

3.0 Desk Review

In this section, we will present our desk review findings and analyze them in connection with the literature review above. By comparing our findings with the established body of knowledge, we aim to identify patterns and contribute with information on the utilization of SPIs.

3.1 Typology and Classification

In order to better understand and classify the different types of social protection interventions utilized in the 325 projects throughout 10 years, it was adopted four major groups: 1) Financial; 2) Social; 3) Basic needs; 4) Others. Those groups were selected based on our analysis of the literature review about the different types of social protection interventions.

As it is illustrated in the table below, each group contains several social protection interventions that were aggregated into the major groups aiming to facilitate the comprehension and classification of different interventions.

Financial	Social	Basic needs	Others
Cash transfer	Job support	Food basket	Non-TB related support interventions
Income generation	Mental health support	Food incentive	Incentive
Medical service	Psychosocial	Nutrition support	

coverage	support		
Transport	Stigma reduction		

Figure 5: Types of Social Protection Intervention

The financial category group involves any social protection intervention that has an impact on the financial resource of the individual benefited with the intervention. The financial factor is one of the key factors that can lead to the increase of the treatment adherence as it helps to reduce the vulnerability and impoverishment of people with TB (Lutge et al., 2015). Under this comes cash transfer, which refers to any form of reimbursement (reimbursement of drugs). Provision of money to start a business, or funding for livelihood, falls under income generation.Some SPIs also cover medical expenses, like free x-rays, free medications, and so on - this is categorized as medical service coverage. Transport is related to the cover of transportation costs, when the intervention provides free transportation for the people's locomotion to do the treatment.

The social interventions are important to help to decrease any social social barrier that people with TB may face, such as loss of jobs or being stigmatized. Under it falls the subgroup job support categorizes the SPIs in which helps people with TB to maintain their current professional positions or find a new job. The mental health support category is an SPI which aggregates any intervention related to help people that are facing any level of depression, anxiety or any other clinical mental health issue. Psychosocial support differs from mental health support as it is not related strictly to the management of clinical mental health conditions. It includes home visits and counseling. Stigma reduction falls under social SPIs as well, and encompasses various efforts aimed at removing the stigmatization faced by people with TB. These initiatives include for example group discussions about the disease and community-based projects.

The basic needs groups aggregate any SPI that is related to essential needs in order to ensure that the target populations have at least the minimum life conditions to survive. The subcategory food basket contains any social protection intervention that provides incentives in the form of food. It can for example be a hot meal for those that come to get the treatment, or a monthly food basket. Another subcategory is food incentives, being the incentives in

form of vouchers, coupons, cash intended specifically for purchasing food. This type of intervention does not provide the food per se, but provides ways that allow the beneficiary to buy its own food. The category nutrition support includes interventions that focus on nutritional counseling (e.g instructing the audience about nutritional food, how to prepare nutritional meals), and other forms of nutritional support that is not listed as basket or incentive e.g supplementary food, or vitamins.

In the category of Other types of SPIs, the subcategory Non-TB related support interventions is interventions that are not directly TB-related, in the case of the desk review these were interventions concerning family planning and legal support. The other subcategory, Incentive, aggregates any intervention that provides incentives, in which examples are materialistic, hygiene and lottery incentives.

In relation to the division of the population that is attended by the different types of SPIs described above, we created a classification in order to identify the target audience of each social protection intervention. We followed the Stop TB Population Definition document, in order to categorize the different populations of the interventions analyzed in the 10 waves. Also, it is important to highlight that we decided to use the term "people with TB" instead of patient in order to avoid any kind of stigmatization. We followed the Stop TB's "WORDS MATTER Language Guide" and we call attention to the importance of use of the words as it can have a tremendous impact to shape TB care and the way people think and talk about TB.

Moreover, some populations are more vulnerable to being contaminated with tuberculosis due to their social or health conditions. According to Chimoyi et al. (2020), children, people living with HIV, people who are malnourished, migrant and refugee populations, people living and working in poorly ventilated environments, among others, are more vulnerable to be exposed to or transmitting tuberculosis. Meanwhile, miners, household contacts of people with TB, among others, face more risk of TB infection and reinfection.

Children	TB in adults	Women	Other key vulnerable populations	Unspecified
Children at risk of TB	People with TB	Women with TB	Miners	Unspecified
Children diagnosed with TB	People with MDR TB	Women presumed to have TB	Sex workers	
Children presumed to have TB	People presumed to have TB	Pregnant women	Prisoners	
Children(unspecified)	Household Contacts of people with TB	Women (unspecified)	Migrants	
	People and households affected by TB		Indigenous people	
			Elderly people	
			People in financial need	
			People in under-served areas	
			People with mental health issues	
			People living with HIV	
			People with diabetes	
			Trans Women, LGBTQ	

Figure 6: Types of population

We divided the population into five groups (Children, TB in adults, Women, Other key vulnerable population and unspecified) with their respective sub-categories. The category of children aggregates children diagnosed with TB, at risk of TB, presumed to have TB, and

unspecified. The difference between children at risk of TB and children presumed to have TB is that the first one includes children that have contact with people with TB, and malnourished children, while the second one is related to the children that have presented symptoms but not confirmed if has or not Tuberculosis. The children unspecified category includes any other intervention that focus on children but is not included in any subcategories described above.

The TB in adults category involves people with TB, that is already fully diagnosed with the disease. People with MDR TB refers to the social protection intervention that is directed to those that have multidrug-resistant TB People presumed to have TB refers to one that is a non-diagnosed person, but shows symptoms. Household contacts of people with TB aggregates those that have any type of contact to people that have TB. People and households affected by TB include households with TB, people who survived TB and communities affected by TB.

The women category includes women with TB, presumed to have TB, pregnant women, and women unspecified (when the SPI does not detail the target audience and focus on women in general). The other key vulnerable population includes any other target population that is in a vulnerable situation due to one's profession, economic situation, health history, age, sexual option, habitats conditions and social category, e.g indigenous people, migrants. The unspecified group aggregates the interventions that does not describe the target audience of the project.

3.2 Desk Review Findings

Based on our statistical analysis of the desk review results, we have identified the following findings regarding the application of SPIs across the 10 waves of TB Reach. Upon conducting a desk review of 325 projects across 10 waves, we found that 112 of these projects included SPIs, accounting for approximately 34.5%. The remaining 213 projects did not contain SPIs. Overall, examining the 10 waves, we can see that projects in Waves 6-10 had a higher proportion of SPIs compared to the first 5 waves (*see Figure 7*). Additionally, all projects in Wave 9, both active and closed, implemented SPIs.

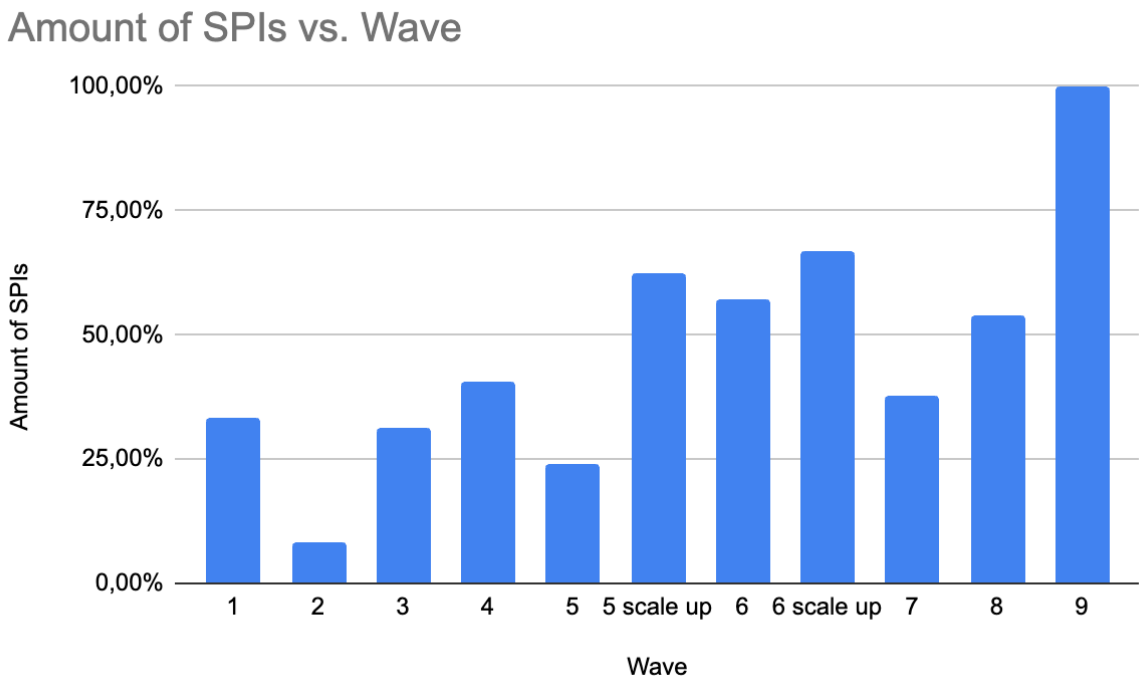

Figure 7 Amount of SPIs per Wave

Among the 112 projects incorporating SPIs, financial SPIs were the most prevalent, occurring 82 times and constituting 44.8% of the total (*see Figure 8*). Within the financial SPIs category, transport-related SPIs were dominant, accounting for nearly 70% of the financial SPIs. In contrast, there were only 13 SPIs related to medical service coverage and 10 SPIs for cash transfers. Additionally, both health insurance and income generation SPIs were implemented only once each. (Figure 9)

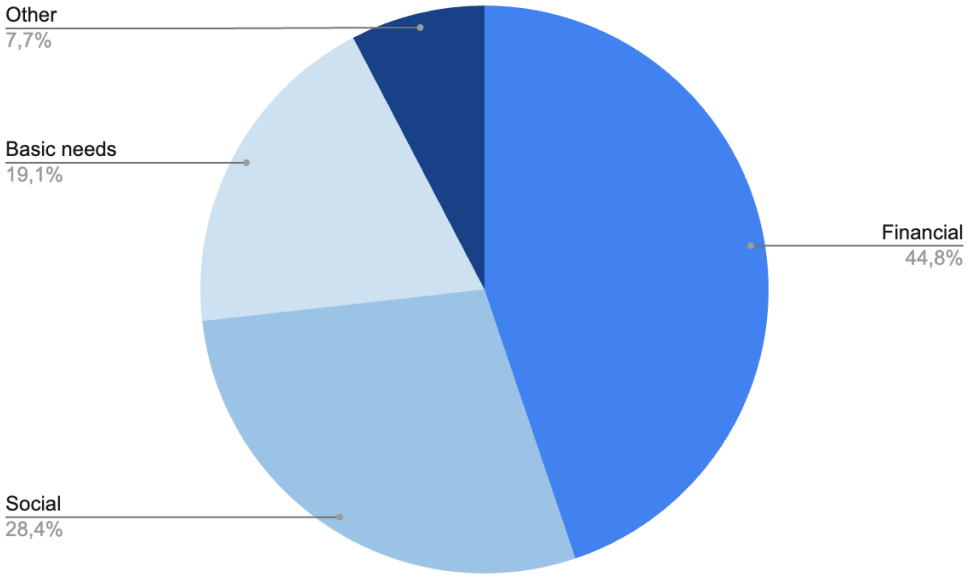

Figure 8 Distribution of Major SPI Categories

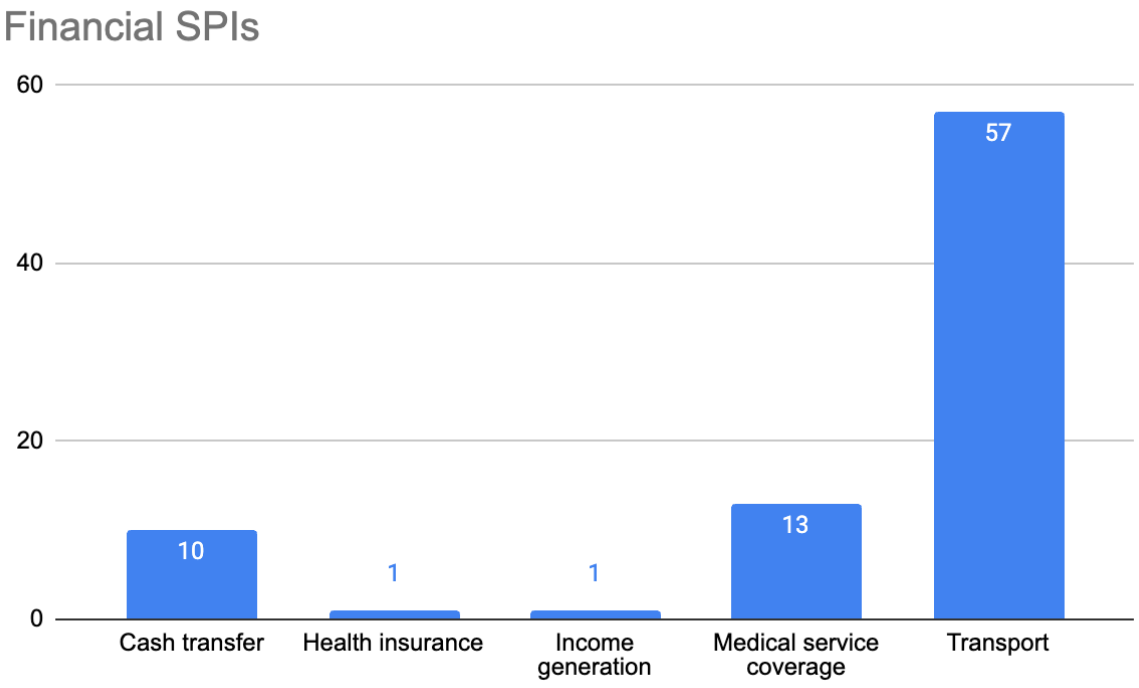

Figure 9 Distribution of Financial SPI Categories

Following financial SPIs, social SPIs and basic needs SPIs were also significant, with 52 and 35 instances respectively, accounting for 28.4% and 19.1% of the total (*see Figure 8*). In the social SPIs category, psychosocial support with 24 SPIs, and stigma reduction with 23 SPIs,

were the most prevalent, each comprising almost half. However, only 2 SPIs provided mental health support for people with TB or high-risk groups, and there were only 3 job support SPIs (Figure 10). For basic needs SPIs, the food basket category was the most common, accounting for 54% of these SPIs, while 12 SPIs provided nutritional support (*see Figure 11)*. Additionally, there were 14 SPIs in the Other category, which included 8 incentive-based SPIs and 5 non-TB-related support interventions.

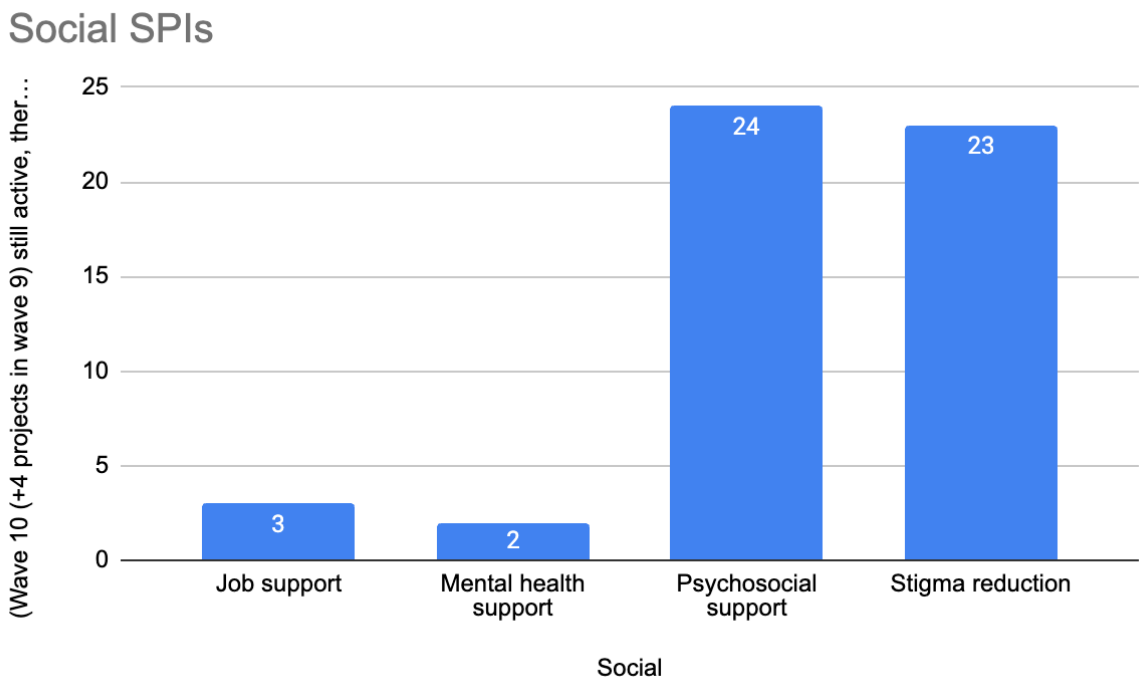

Figure 10 Distribution of Social SPI Categories

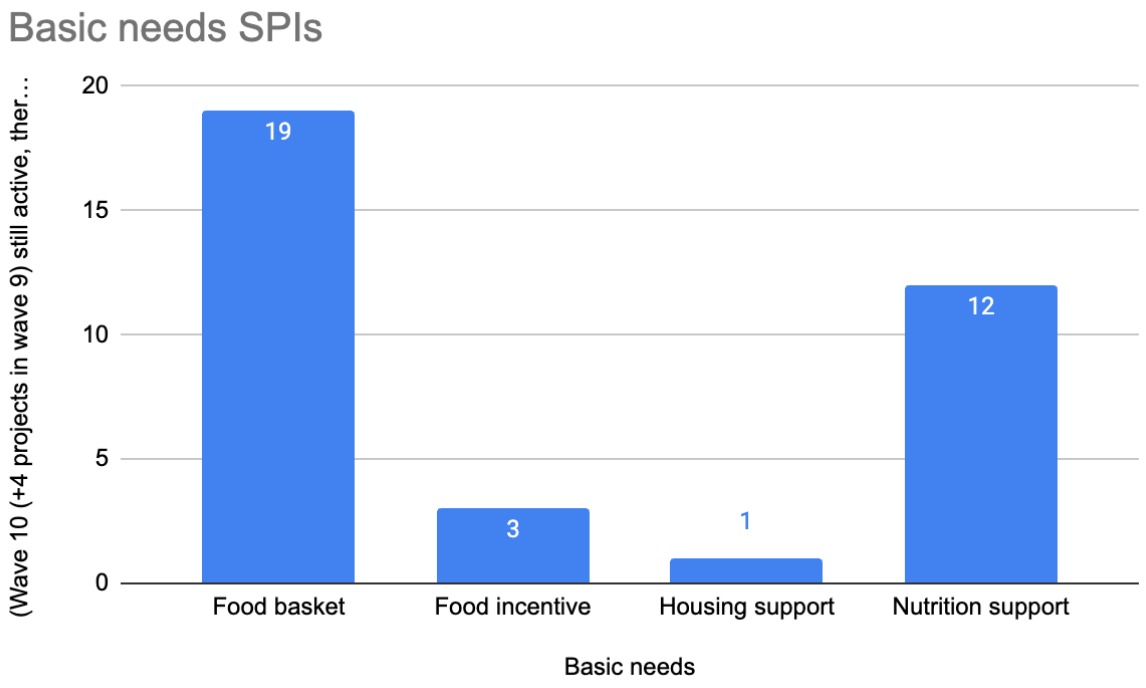

Figure 11 Distribution of Basic needs SPI Categories

Regarding trends over time, we can see some general changes in focus throughout the projects. For example regarding psychosocial support, there was a low focus on this (0-3 interventions) from wave 1 to 8, with an exception of wave 6, having 8 psychosocial support interventions, the same amount as wave 9. Mental health support has throughout been low priority, with only wave 7 (2 interventions) including it. However, we see a potential increase in focus for wave 10. We have not included wave 10 in this analysis, since many of the projects are still open and do not have a GANR/Final Report, therefore we cannot conclude. However, from the reports we have collected information on from wave 10, we can see that there are potentially 4 psychosocial support SPIs, and 3 mental health support SPIs.

Geographically, we found that the implementation of SPIs in projects is predominantly in Southern Africa, South Asia, and Southeast Asia. On a continental scale, projects incorporating SPIs are predominantly distributed across Africa, which accounts for 50% of all such projects. Asia follows with approximately 30% of the projects, while 10% are located in the Americas. Europe hosts 6% of the projects, and Oceania has the smallest share, comprising 4% of the total (Figure 12). At the national level, we found that many low- or middle-income countries lack the implementation of SPIs in their projects, including some

North African countries such as Lesotho, Malawi, and Liberia. Additionally, India has the highest number of projects incorporating SPIs, with a total of 14 (*see Figure 13*).

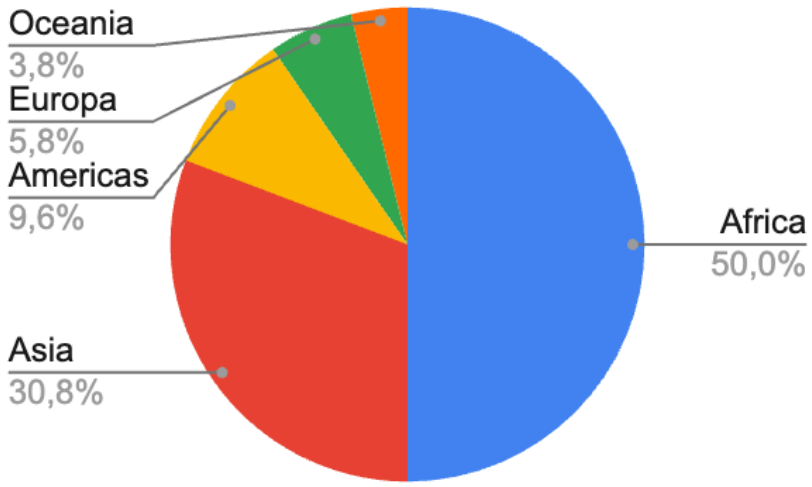

Figure 12 Distribution of Projects with SPIs by Continent

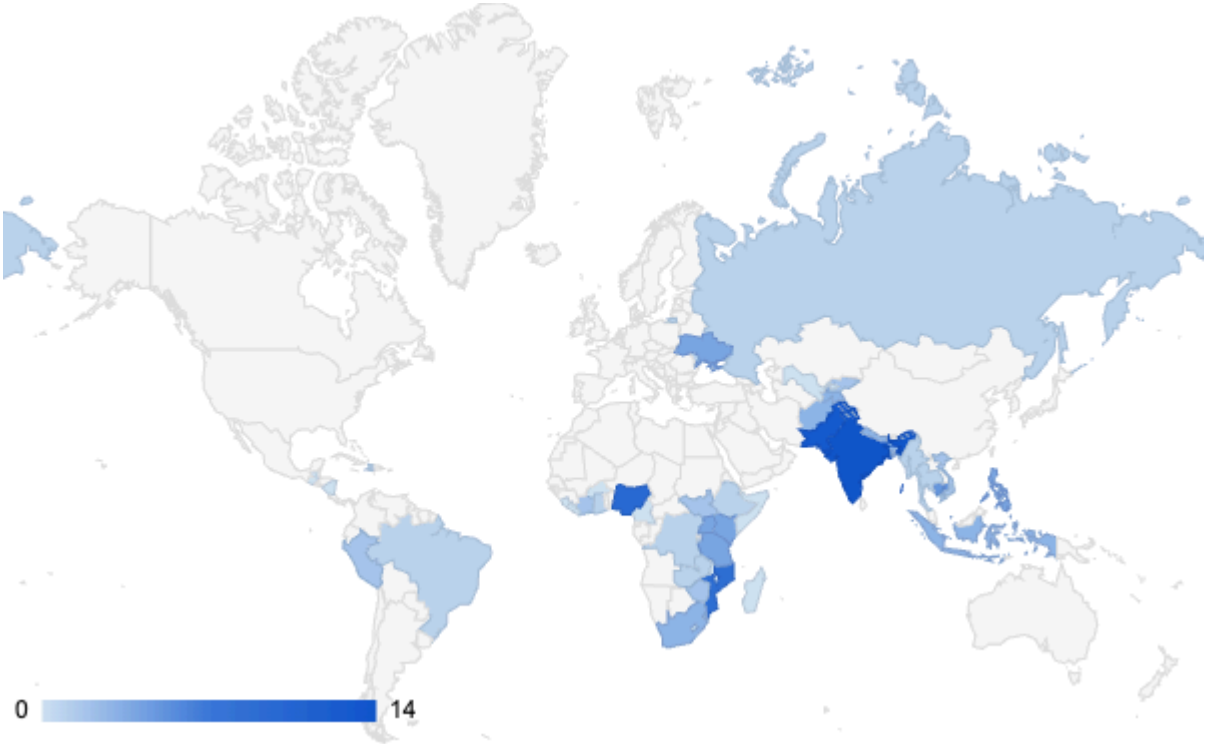

Figure 13 Quantity of projects with SPIs per country

Regarding the demographic characteristics of SPI beneficiaries across all projects, our analysis of the customized categories showed that adults with TB were the most frequently

addressed group (Figure 14). Within this category, people with TB received the most support, benefiting from 104 SPIs. In addition, people presumed to have TB also received considerable attention and support through 20 SPIs (Figure 15). Children were the second largest group receiving SPI support, with 23 SPIs targeting them. More than half of the SPIs focused on children presumed to have TB, who benefited from 13 SPIs, followed by children with confirmed TB, who benefited from 7 SPIs (Figure 16). Women were also an important group, receiving 19 SPIs. 7 SPIs supported unspecified women, while women with presumed TB were mainly supported by 6 SPIs. In addition, women with TB and pregnant women were assisted with 3 SPIs each (Figure 17).

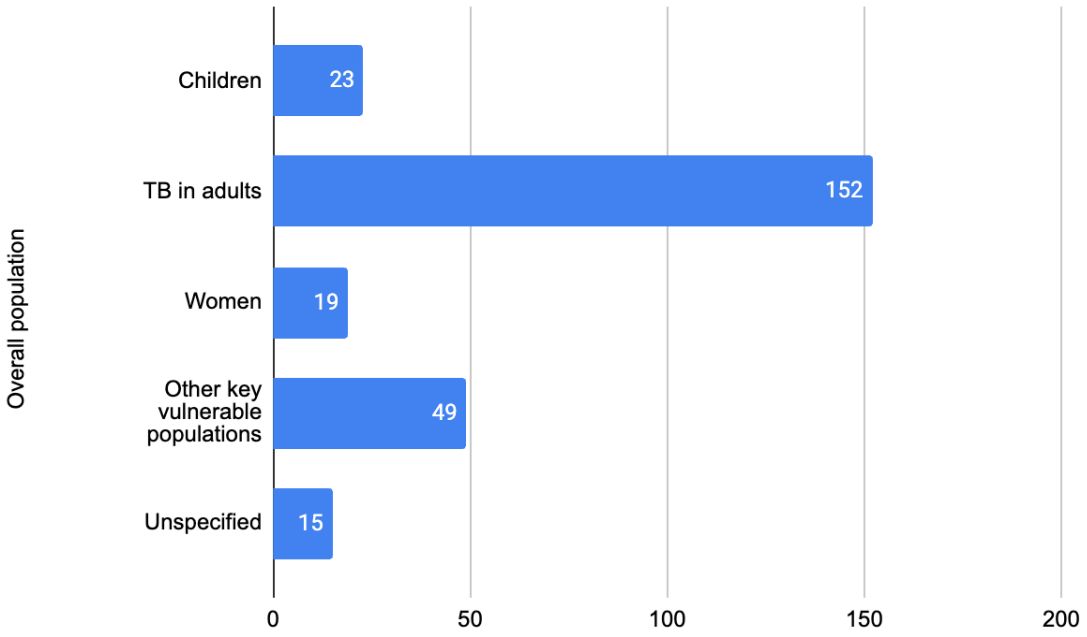

Figure 14 Overview of SPIs targeting population

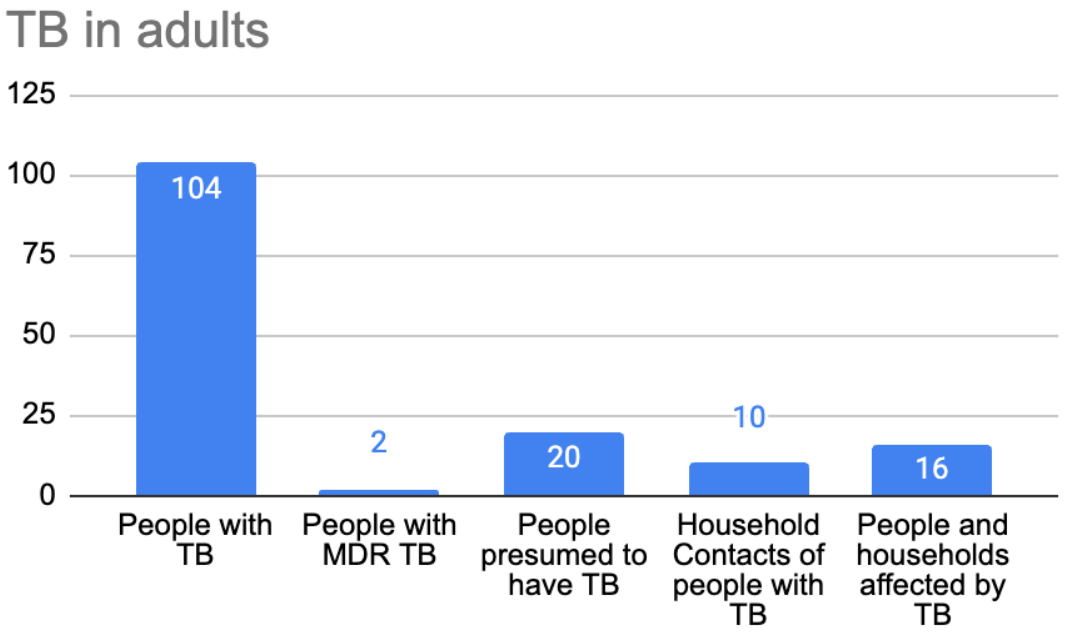

Figure 15 Distribution of SPIs targeting population among adults

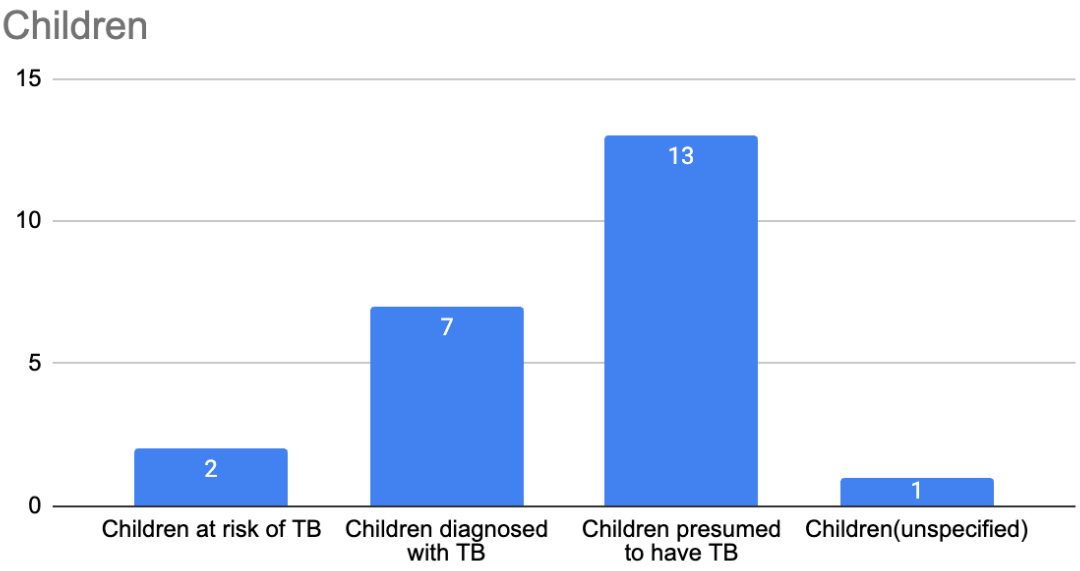

Figure 16 Distribution of SPIs targeting population among children

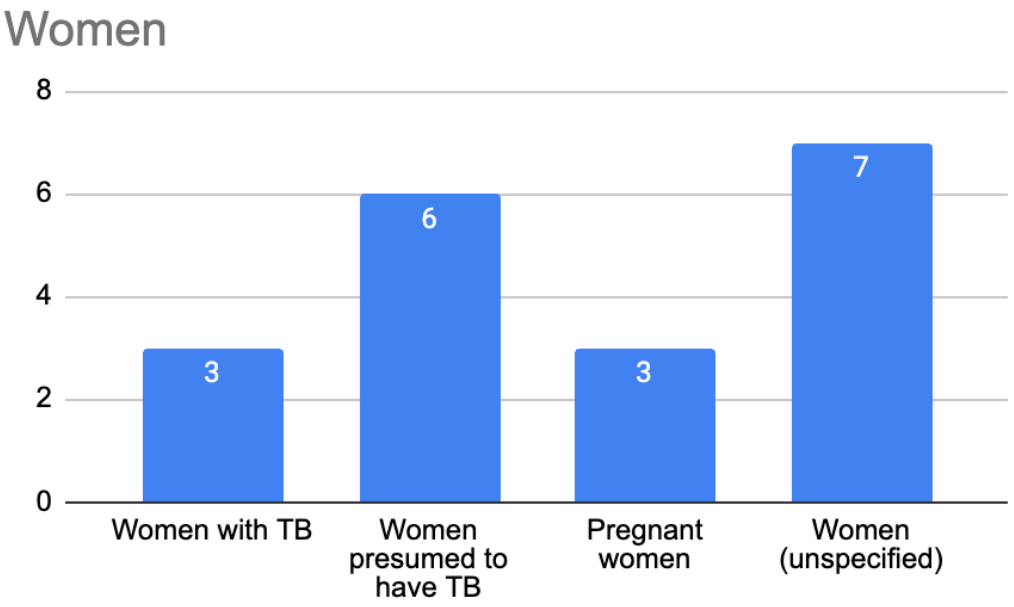

Figure 17 Distribution of SPIs targeting population among women

In the category of Other key vulnerable populations, a combined total of 49 SPIs benefit various subgroups within these populations (Figure 18). People in financial need receive significant support, with 16 SPIs targeting them. Additionally, prisons (6 SPIs), people in underserved areas (5 SPIs), and people with mental health issues (5 SPIs) are also given attention. Other groups, such as indigenous people, people living with HIV, and people with diabetes, receive comparatively less support, with only one SPI each. There are also 15 SPIs with no specified target group, making it difficult to analyze their impact.

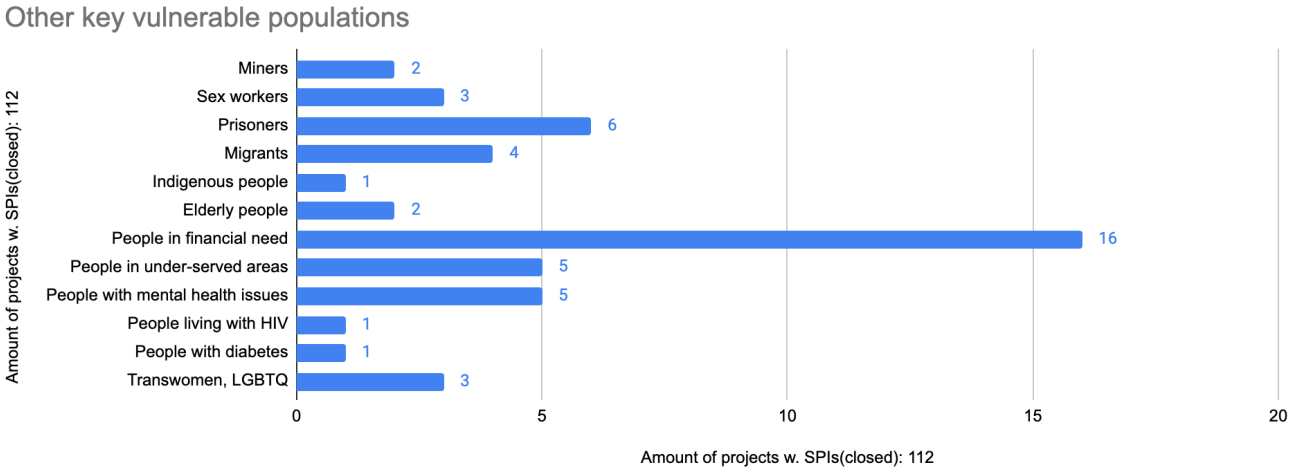

Figure 18 Distribution of SPIs targeting population among other key vulnerable populations

3.3 Analysis of findings

The purpose of this analysis is to correlate the overview of SPI usage in Stop TBs TB REACH projects with the findings from the literature review on SPIs for TB.Tuberculosis is still considered a major global health problem, especially among the vulnerable population living in low and middle income countries. It is widely recognized that poverty is one of the most important determinants of TB and that TB also can worsen this social condition (Andrade et al., 2018). Therefore, social protection interventions play a key role helping to improve one's life, increase treatment adherence and decrease socio economic burdens caused by the disease.

As mentioned in the previous findings, the latter five rounds of Wave's projects clearly utilized more SPIs than the first five rounds. This trend underscores the growing focus on SPIs, as seen in initiatives such as the WHO End TB Strategy of 2015 and the Sustainable Development Goals (SDG) Agenda, reflecting a renewed policy interest in integrating social, economic, and health goals, targets, and indicators (Shete et al., 2018). SPIs can help improve, directly and indirectly, clinical outcomes for people with TB, especially among the poorest. Despite TB services being available free of charge in several countries, the process required for people with TB to reach facilities that provide those services is often time-consuming, cumbersome, and costly (Lönnroth et al., 2014).

A noteworthy feature is that according to Das (2012), there is good evidence that projects that contain social protection interventions measures have a wide range of positive outcomes, including improved food security and income generation. Also, Boccia et al. (2018), argued that in Brazil the use of the Bolsa Familia Programme (BFP), the Brazilian conditional cash transfer scheme, can reduce TB prevalence by 4% by improving households income and thus their nutritional status.

Our desk review reveals a high proportion of financial SPIs, aligning with the WHO's view that poverty is a key determinant of tuberculosis (WHO, 2015). Financial barriers prevent many from accessing necessary healthcare services, making financial SPIs crucial. These SPIs aim to reduce poverty through financial assistance, thereby decreasing TB incidence and improving treatment rates.

Within financial SPIs, transport-related SPIs are notably prevalent; this supports our findings in the literature review, where the scholars' emphasizes the importance of reducing transport costs to enhance treatment adherence and success rates (Smith et al., 2023). Cash transfers, which provide financial relief to people with TB, are also common (Lutge et al., 2015). However, the TB Reach projects show insufficient cash transfers, indicating a need for more funding in this area.

Indirect financial SPIs, like medical service coverage, prevent fee payments and income loss (Lutge et al., 2015; Todd et al., 2023). Ensuring medical service coverage is crucial, as significant expenses like X-rays and medication delivery costs can pose substantial barriers to receiving treatment. Yet, income generation programs have minimal investment, with only one SPI in this field. Increased investment is needed to help vulnerable groups raise their income, reducing people with TB' impoverishment and vulnerability and aiding their treatment (Lutge et al., 2015).

Our findings on social SPIs shows a heavy focus on psychosocial support and stigma reduction, which highlights the need to address the stigma faced by people with TB. The overlap of poverty and social exclusion exacerbates social vulnerabilities, heightening the stigma and discrimination associated with TB, which impedes access to health and social support services and worsens mental distress (Fernandes et al., 2020). We are pleased to find that 23 SPIs are aimed at stigma reduction, but more effort is needed to invest in changing societal norms, which requires comprehensive political, legal, and policy actions to eliminate stigma and discrimination and ensure the human rights of people with TB (Citro et al., 2016).

We found that there is a low incidence of employment guidance and job support for people with TB, with only three SPIs addressing this issue. The risk of losing work due to treatment needs negatively impacts the quality of life of people with TB, as well as their families (Brasil, 2022). Additionally, mental health support, focused on the clinical mental health issues, is inadequate. Despite its crucial role in treatment adherence and preventing prolonged hospitalization and unemployment (Agarwal et al., 2020).

Basic needs SPIs shows a significant investment in food and nutritional support, which is logical given that malnutrition is a major driver of TB. Studies indicate that various nutritional interventions can reduce TB incidence by 33-71% (Bhargava et al., 2023; Todd et

al., 2023). For instance, the Wave 2 project "Enhanced case finding and case holding in 11.1 million urban population of twelve non-metropolitan districts in Pakistan" provided as SPI food basket on a monthly basis in order to facilitate the person with TB to complete the treatment and avoid default (Grant Management System (GMS). [confidential document]).

The category of Other SPIs highlights housing needs, living conditions, and the lack of childcare as barriers to diagnostic tests and treatment adherence for people with TB. Family support through SPIs, which educates people with TB and their families, can also reduce drug-resistant TB incidence (Mahanggoro et al., 2020). These interventions align with the WHO's 2015 End TB Strategy goal: "No TB-affected families face catastrophic costs due to TB" (World Health Organization, 2015, p. 8). Such support is essential for building sustainable livelihoods for TB-affected individuals, helping them avoid or escape poverty (Smith et al., 2023).

Our findings on the demographic characteristics of SPI beneficiaries largely align with the WHO 2022 definition of all people affected by TB and include most of the key vulnerable populations defined by Stop TB. However, we observed that the majority of SPIs focused on the general community of people with TB, with few programs specifically targeting key vulnerable populations. This has led to insufficient attention to certain groups, including people who use drugs or tobacco, people with silicosis, people with disabilities, people with alcohol dependency, LGBTQIA+ individuals, and homeless people.

4.0 Recommendations

Based on our desk review and analysis, we have several targeted recommendations for grantees regarding the future design and implementation of SPIs. Firstly, funding remains a fundamental issue. We noted that in many project narrative reports, grantees identified several SPI-related issues within their communities, such as poor transportation, poverty, low income, and widespread stigma among people with TB. However, due to limited funding and other constraints, the projects were unable to effectively implement targeted SPIs.

An example of this is a project from wave 5 called “Kahama Community TB Outreach Program” by Service Health And Development For People Living Positively With HIV/AIDS

(Grant Management System (GMS). [confidential document]). In the PAR it is mentioned that in the case of testing positive for TB, community members are invited to return to the treatment center for treatment initiation, however there are seen difficulties due to the distance and transport potentially taking a half or full day for some remote communities. Even though the issue of transportation is mentioned, there is no provision of a solution through SPIs for this (p.21).

At the 2023 UN High-Level Meeting on the Fight Against Tuberculosis, national leaders and representatives reiterated their commitment to ending the TB epidemic by 2030. They prioritized fundraising for SP programs, committing to raising adequate, predictable, and sustainable funding for universal access to high-quality TB prevention, diagnosis, treatment, and care within and beyond the health sector (UN, 2023). For example, since 2018, India has implemented the Ni-kshay Poshan Yojana (NPY) nationwide. This Direct Benefit Transfer (DBT) scheme, part of the National Tuberculosis Elimination Programme (NTEP), provides INR 500 per month to all registered people with TB for nutritional support during their anti-TB treatment (Jayashree et al., 2024).

In Wave 5 Scale Up, two projects in India received government funding support. Besides national strategic investments, grantees can also seek broad support from international financing and partnership organizations such as the Global Fund and government agencies like USAID. We are pleased to see that many project grantees have already secured funding from these institutions and are focusing on SPIs in their efforts to end TB.

Our statistical analysis clearly indicates that investments need to be increased in certain areas. In the realm of financial SPIs, only 10 SPIs focus on cash transfers across all projects, highlighting a need for greater attention and investment. Research has shown that TB-sensitive cash transfer methods that increase income for all poor households can broadly reduce poverty. Targeted cash transfers to poor households diagnosed with TB are more effective or economically feasible in preventing catastrophic TB costs (Rudgard et al., 2017). While this approach has positive intervention effects on reducing catastrophic costs for people with TB families, significant investment is still required, making fundraising a top priority. Additionally, poverty alleviation support for high-risk TB groups, including employment guidance and income-generating projects, needs to be significantly increased to address poverty from an endogenous perspective.

In terms of social SPIs, efforts to compensate for the unemployment risk faced by people with TB also need to be enhanced. This requires collaborative efforts from employers, health service agencies, and local communities to ensure that employees can seek treatment without psychological stress and without facing unemployment post-treatment, while receiving financial support during their treatment period to maintain their livelihood. Progress has been made in mental health and stigma reduction efforts, but further support is needed. In addition to regular psychological counseling for diagnosed people with TB, support from families and communities is crucial. Creating supportive networks and environments through community engagement programs and educational activities in group settings is vital. Studies have shown that early family support during the first month of treatment significantly increases the chances of successful treatment by 69 times (Mahanggoro et al., 2020). Further research supports that TB community support helps reduce stigma, and structured psychological interventions improve treatment adherence and outcomes (Agarwal & Sarthi, 2020, p. 4175).

For Basic Needs SPIs, we observed a lack of housing support, which needs to consider the housing needs, livelihood maintenance, and children's education of people with TB families. Although this involves a wide scope, collaboration with local governments and community partners is essential to expand the range of social protection. Additionally, we hope grantees can enhance the regulatory impact of SPIs within the local community, promoting comprehensive political, legal, and policy improvements to create a TB-friendly treatment environment at the legislative level.

As noted in our analysis, we have observed an insufficient focus on key vulnerable populations within SPIs. We thus recommend extending TB SPIs to more KVP and providing opportunities to implement SPIs in these groups. Specifically, SPI should focus on removing barriers to healthcare access and improving the health status of KVP. This could include strengthening community-based health care services to ensure that KVP, such as migrants, refugees, and internally displaced persons, who often face significant barriers to accessing health care, are able to access these services (Stop TB Partnership, 2023, p.13). In addition, targeted outreach and education programs can increase KVP's awareness and understanding of TB and ensure that they are aware of the availability and importance of TB services (Stop TB Partnership, 2023, p.14). Integrating TB services with other health services, such as HIV care, can also improve the availability and accessibility of services for KVP (Stop TB

Partnership, 2023, p.16). These measures can help to close healthcare gaps and provide comprehensive support to KVP, ultimately contributing to more effective TB prevention and treatment efforts.

For future work on SPIs within TB-related projects, we recommend requiring grantees to include information in their reports about the use of SPIs in their projects. Grant providers could supply a set of keywords and key categories for grantees to elaborate on. This would enhance the accessibility of information for further research on the use and benefits of SPIs for TB. Additionally, providing standardized categories could unify the reports, leading to a better overall understanding. This is based on our discovery during the desk review of missing documents and inconsistencies in the expression of SPI and target groups encountered. Our SPI and target population categories can serve as an initial reference, providing possibilities and guidelines for classification and integration. This standardized approach can help grantees unify their documentation, facilitating subsequent statistical and research efforts. The desk review overview is standardized, and the possibility to build on it with the coming waves is promising, allowing for continuous improvement and refinement of data collection and analysis methods.

Additionally, we recommend that grantees include a detailed cascade of the SPIs in their project reports. This should indicate whether the SPIs are being implemented in the pre-project phase, during the project, or post-project. This approach will enable a better understanding of the implementation process, assess the effectiveness of the SPIs, and clarify their objectives.

Furthermore, as mentioned in the limitations, we lack detailed descriptions of the contexts of the SPIs, also very few GANRs/FRs/PARs mentioned anything about the results of the utilization of SPIs. Including more information on this in the reports would create a better understanding of the benefits of SPIs for TB. This would also help identify best practices and areas needing improvement, enhancing the effectiveness of TB interventions. Moreover, this will contribute to the development of the Stop TB SPIs database, creating a clear and user-friendly query network, which will facilitate information sharing and collaboration among stakeholders. As Theron et al. discussed in their article, “Successful disease elimination campaigns are characterized by locally tailored responses that are informed by appropriate data. Without adoption of an elimination strategy that uses local data to target

hotspots of transmission, ambitious targets to end tuberculosis will almost certainly remain unmet" (Theron et al., 2015). This underscores the critical importance of collecting data on local project implementation to inform and promote effective policy-making.

Conclusion

Project managers play a crucial role in the expansion of Social Protection Interventions (SPIs) as a key asset to stop tuberculosis (TB). Social protection is increasingly recognized as vital in TB control efforts, highlighted by both the WHO End TB Strategy of 2015 and the Sustainable Development Goals (SDG) Agenda.

Through our research we have seen the presence of a growing focus as well, both through literature, but especially through the desk review. In order to see an effect of SPIs it is important to get an overview of which SPIs are the most prominent in the projects in the area, and for which key populations. Our study provides a potential framework for standardizing SPI categories and identifying target populations, offering valuable guidance for project managers seeking to maintain a comprehensive overview of SPI utilization.

This standardized overview will not only facilitate better data collection, but can also help identify best practices and enhance the overall effectiveness of TB interventions. Moreover, it will support the development of a comprehensive Stop TB SPIs database, enabling stakeholders to pinpoint areas for improvement, allocate resources more efficiently, and ultimately improve outcomes in TB prevention and treatment. From the findings in our data collection, we identified the need for improvement on funding and focus on SPIs in general. Especially focus on cash transfer programs, poverty alleviation initiatives, job support, mental health support is emphasized for further work with SPIs within TB REACH projects.

Bibliography:

Agarwal, N., & Sarthi, P. (2020). The necessity of psychological interventions to improve compliance with tuberculosis treatment and reduce psychological distress. Journal of Family Medicine and Primary Care, 9(8), 4174. https://doi.org/10.4103/jfmpc.jfmpc_1404_20

Andrade, K. V. F., Nery, J. S., Souza, R. A., & Pereira, S. M. (2018). Effects of social protection on tuberculosis treatment outcomes in low or middle-income and in high-burden countries: Systematic review and meta-analysis. Cadernos de Saúde Pública, 34(1), e00153116. https://doi.org/10.1590/0102-311X00153116

Aragão, F. B., Arcêncio, R. A., Fuentealba-Torres, M., Carneiro, T. S., Souza, L. L., Alves, Y. M., & Fiorati, R. C. (2021). Impact of social protection programs on adults diagnosed with tuberculosis: Systematic review. Revista Brasileira de Enfermagem, 74(3). https://doi.org/10.1590/0034-7167-2019-0906

Atkins, S., Sidney-Annerstedt, K., Viney, K., Wingfield, T., Boccia, D., & Lönnroth, K. (2020). Experiences of conditional and unconditional cash transfers intended for improving health outcomes and health service use: A qualitative evidence synthesis. Cochrane Database of Systematic Reviews.

Barter, D. M., Agboola, S. O., Murray, M. B., & Bärnighausen, T. (2012). Tuberculosis and poverty: The contribution of patient costs in sub-Saharan Africa – A systematic review. BMC Public Health, 12, 980. https://doi.org/10.1186/1471-2458-12-980

Bhargava, A., Bhargava, M., Meher, A., Benedetti, A., Velayutham, B., Sai Teja, G., Watson, B., Barik, G., Pathak, R. R., Prasad, R., Dayal, R., Madhukeshwar, A. K., Chadha, V., Pai, M., Joshi, R., Menzies, D., & Swaminathan, S. (2023). Nutritional supplementation to prevent tuberculosis incidence in household contacts of patients with pulmonary tuberculosis in India (RATIONS): A field-based, open-label, cluster-randomised, controlled trial. The Lancet, 402(10402), 627–640. https://doi.org/10.1016/S0140-6736(23)01231-X

Boccia, D., Pedrazzoli, D., Wingfield, T., Jaramillo, E., Lönnroth, K., Lewis, J., Hargreaves, J., & Evans, C. A. (2016). Towards cash transfer interventions for tuberculosis prevention,

care and control: Key operational challenges and research priorities. BMC Infectious Diseases, 16(1), 307. https://doi.org/10.1186/s12879-016-1529-8

Brasil. Brazilian Ministry of Health. (2020). Tuberculose. https://bvsms.saude.gov.br/tuberculose-21/

Brasil. Ministério da Saúde. Secretaria de Vigilância em Saúde. Departamento de Doenças de Condições Crônicas e Infecções Sexualmente Transmissíveis. Coordenação-Geral de Vigilância das Doenças de Transmissão Respiratória de Condições Crônicas. (2022). Guia orientador: promoção da proteção social para as pessoas acometidas pela tuberculose. Ministério da Saúde.

Brasil. Ministério da Saúde. Secretaria de Vigilância em Saúde. Departamento de Vigilância das Doenças Transmissíveis. (2019). Manual de Recomendações para o controle da tuberculose no Brasil.

Carter, D. J., Daniel, R., Torrens, A. W., Sanchez, M. N., Maciel, E. L., Bartholomay, P., … Boccia, D. (2018). The impact of a governmental cash transfer program on tuberculosis cure rate in Brazil: A quasi-experimental approach. https://doi.org/10.1101/311589

Chimoyi, L. A., Lienhardt, C., Moodley, N., & others. (2020). Estimating the yield of tuberculosis from key populations to inform targeted interventions in South Africa: A scoping review. BMJ Global Health, 5, e002355.

Citro, B., Lyon, E., Mankad, M., Pandey, K. R., & Gianella, C. (2016). Developing a human rights-based approach to tuberculosis. Health and Human Rights, 18(1), 1–8.

Das, P. (2012). Can social protection improve tuberculosis control? Lancet (London, England), 379(9821), 1089. https://doi.org/10.1016/s0140-6736(12)60447-4

Fernandes et al. (2020). Estigma e preconceito na atualidade: vivência dos portadores de tuberculose em oficinas de terapia ocupacional. Physis: Revista de Saúde Coletiva, 30(1), e300103.

Fiocruz. (n.d.). Tuberculose. Retrieved December 1, 2023, from https://portal.fiocruz.br/doenca/tuberculose

Fuady, A., Houweling, T. A. J., Mansyur, M., Burhan, E., & Richardus, J. H. (2019). Effect of financial support on reducing the incidence of catastrophic costs among tuberculosis-affected households in Indonesia: Eight simulated scenarios. Infectious Diseases of Poverty, 8(1), 10. https://doi.org/10.1186/s40249-019-0519-7

Hammer, D., & Wildavsky, A. (1989). The open-ended, semi-structured interview: An (almost) operational guide. In A. Wildavsky (Ed.), Craftways: On the organization of scholarly work (pp. 57-101). New Brunswick, NJ: Transaction Publishers.

Hudson, M., Todd, H., Nalugwa, T., Boccia, D., Wingfield, T., & Shete, P. B. (2023). The impact of social protection interventions on treatment and socioeconomic outcomes of people with tuberculosis and their households: Protocol for a systematic review and meta-analysis [version 1; peer review: 2 approved, 1 approved with reservations]. Wellcome Open Research. https://doi.org/10.12688/wellcomeopenres.18807.1

Jeyashree, K., Shanmugasundaram, P., Shanmugasundaram, D., Sri Lakshmi Priya, G., Thangaraj, J. W. V., Sumitha, T. S., Pandey, S., Ramasamy, S., Sharma, R., Arunachalam, S., Shah, V., Janagaraj, V., Sundari, S. S., Chadwick, J., Shewade, H. D., Chowdhury, A., Iyer, S., Rao, R., Mattoo, S. K., & Murhekar, M. V. (2024). Direct benefit transfer for nutritional support of patients with TB in India—analysis of national TB program data of 3.7 million patients, 2018–2022. BMC Public Health, 24, 299. https://doi.org/10.1186/s12889-024-17777-7

Klein, K., Bernachea, M. P., Iribarren, S., Gibbons, L., Chirico, C., & Rubinstein, F. (2019). Correction: Evaluation of a Social Protection Policy on tuberculosis treatment outcomes: A prospective cohort study. PLOS Medicine, 16(5). doi:10.1371/journal.pmed.1002826

Komorowski, M., Marshall, D. C., Salciccioli, J. D., & Crutain, Y. (2016). Exploratory data analysis. In Secondary analysis of electronic health records (pp. 185-203). Springer, Cham. https://doi.org/10.1007/978-3-319-43742-2_15

Litvinjenko, S., Magwood, O., Wu, S., & Wei, X. (2023). Burden of tuberculosis among vulnerable populations worldwide: An overview of systematic reviews. The Lancet Infectious Diseases, 23(12), 1395–1407. https://doi.org/10.1016/S1473-3099(23)00372-9

Lönnroth, K., Glaziou, P., Weil, D., Floyd, K., Uplekar, M., & Raviglione, M. (2014). Beyond UHC: Monitoring health and social protection coverage in the context of tuberculosis care and prevention. PLoS Medicine, 11(9), e1001693. https://doi.org/10.1371/journal.pmed.1001693

Lutge, E. E., Wiysonge, C. S., Knight, S. E., Sinclair, D., & Volmink, J. (2015). Incentives and enablers to improve adherence in tuberculosis. Cochrane Database of Systematic Reviews, 2015(9). https://doi.org/10.1002/14651858.CD007952.pub3

Maciel, E., Sales, C., Araujo, V. (2021). Tuberculose e Migrantes nos países do BRICS: o caso do Brasil. Relatório Final. Vitória: Labepi- Ufes. Disponível em: https://redetb.org.br/revista- tuberculose-e-migrantes-nos-paises-do-brics-o-caso-do- brasil/. Accessed: 20 jul. 2021.

Mahanggoro, T. P., Fajriyati, N. A., & Permatasari, I. K. (2020). The factor of family support towards the success of tuberculosis therapy: A cohort study. In Proceedings of the 1st International Conference on Science, Health, Economics, Education and Technology (ICoSHEET 2019). Semarang, Central Java, Indonesia. https://doi.org/10.2991/ahsr.k.200723.049

Maynard, C., Tariq, S., Sotgiu, G., Migliori, G. B., van den Boom, M., & Field, N. (2023). Psychosocial support interventions to improve treatment outcomes for people living with tuberculosis: A mixed methods systematic review and meta-analysis. EClinicalMedicine, 61, 102057. https://doi.org/10.1016/j.eclinm.2023.102057

Medecins Sans Frontieres (MSF). (2020). An evaluation of the MSF DR-TB Programme in Karakalpakstan, Uzbekistan, 1998-2015.

Mitano, F., Girma, S., Leveque, A., & Ousmane, M. (2020). Tuberculosis and COVID-19: Which one is more lethal in patients co-infected with both diseases in sub-Saharan Africa? The Pan African Medical Journal, 37(2). https://doi.org/10.11604/pamj.supp.2020.37.2.25205

Nati, H., Sidi, Y., Herman, T., Grinstein-Weiss, M., & Roll, S. (2023). Using Data for Social Good: The Role of Machine Learning in Public Policy Development. Journal of Policy Analysis and Management, 42(2), 345-363.

Nhassengo, P., Yoshino, C., Zandamela, A., De Carmo, V., Burström, B., Khosa, C., Wingfield, T., Lönnroth, K., & Atkins, S. (2023). Perspectives of healthcare and social support sector policymakers on potential solutions to mitigate financial impact among people with TB in Mozambique: A qualitative study. BMJ Open, 13(8), e073234. https://doi.org/10.1136/bmjopen-2023-073234

Programa das Nações Unidas para o Desenvolvimento (PNUD). (2021). Impactos Sociais e Econômicos da Covid-19 no Brasil. Brasília: PNUD Brasil.

Queiroz, A. A. F. L. N., Figueiredo, T. M. M., Gomes, L. B., & Pinto, E. S. G. (2022). Repercussões sociais e econômicas da tuberculose: impactos no estado de saúde e no cotidiano de pessoas acometidas. Enfermería Global, 21(1), 1–12. https://doi.org/10.6018/eglobal.429181

Rocha, et al. (2021). Food security and tuberculosis treatment outcomes in a cohort of adults receiving direct observed therapy in Brazil. American Journal of Tropical Medicine and Hygiene, 104(1), 146-155.

Rood, et al. (2017). Using social protection to prevent tuberculosis. BMJ Global Health, 2(2), e000444.

Reeves, A., Basu, S., McKee, M., Stuckler, D., Sandgren, A., & Semenza, J. (2014). Social protection and tuberculosis control in 21 European countries, 1995-2012: A cross-national statistical modelling analysis. The Lancet. Infectious Diseases, 14(11), 1105–1112. https://doi.org/10.1016/S1473-3099(14)70927-2

Rudgard, W. E., Evans, C. A., Sweeney, S., Wingfield, T., Lönnroth, K., Barreira, D., & Boccia, D. (2017). Comparison of two cash transfer strategies to prevent catastrophic costs for poor tuberculosis-affected households in low- and middle-income countries: An economic modelling study. PLoS Medicine, 14(11), e1002418. https://doi.org/10.1371/journal.pmed.1002418

Sachyani, N., et al. (2021). Results from Indonesia's Village Fund and Cash-for-Work Programs on tuberculosis treatment adherence and health-related quality of life. BMC Public Health, 21(1), 2332.

Santos, M. L. B., Brito, A. M. D., Silva, M. D. A. G., Lima, S. D. V., Miranda, S. S. D., Ferreira, A. A. G., & Ximenes, R. A. D. A. (2020). Efeito de intervenções sociais e econômicas sobre a adesão ao tratamento de tuberculose: uma revisão sistemática. Revista Brasileira de Epidemiologia, 23, e200043.

Sen, A. (1999). Development as freedom. New York: Knopf.

Sekhon, M., Cartwright, M., & Francis, J. J. (2017). Acceptability of healthcare interventions: an overview of reviews and development of a theoretical framework. BMC Health Services Research, 17, 1-13.

Shete, P. B., Reid, M., & Goosby, E. (2018). Message to world leaders: We cannot end tuberculosis without addressing the social and economic burden of the disease. The Lancet Global Health, 6(12), e1272-e1273. https://doi.org/10.1016/S2214-109X(18)30378-4

Singer, H. M., & McNeill, J. R. (2020). Consequences of urban inequality in tuberculosis: the impact of differential health service access on case detection, treatment and incidence. Journal of Urban Health, 97(1), 85-97.

Subbaraman, R., et al. (2021). Tuberculosis patients' income and wellbeing before and after treatment initiation: A longitudinal economic study in India. Lancet Global Health, 9(4), e460-e469.

Suryanto, A. A. D., Ghozali, M., & Basri, C. (2018). The role of socioeconomic status in tuberculosis treatment outcomes in adults in Indonesia: A cross-sectional study. Journal of Preventive Medicine and Hygiene, 59(1), E63.

Siroka, A., Ponce, N. A., & Lönnroth, K. (2016). Association between spending on social protection and tuberculosis burden: A global analysis. The Lancet. Infectious Diseases, 16(4), 473–479. https://doi.org/10.1016/S1473-3099(15)00401-6

Smith, I., Forse, R., Sidney Annerstedt, K., Thanh, N. T., Nguyen, L., Phan, T. H. Y., Nguyen, H., Codlin, A., Vo, L. N. Q., Nguyen, N. T. T., Khan, A., Creswell, J., Pham Huy, M., Basu, L., Lönnroth, K., Nguyen, B. H., Nguyen, V. N., & Atkins, S. (2023). What matters most? A qualitative study exploring priorities for supportive interventions for people with tuberculosis in urban Viet Nam. BMJ Open, 13(8), e076076. https://doi.org/10.1136/bmjopen-2023-076076

Stop TB Partnership. Declaração dos direitos das pessoas afetadas pela tuberculose. 2019. Available in: http://www. stoptb.org/assets/documents/communities/Declaracao%20 Dos%20Direitos%20Das%20Pessoas%20Afetadas%20Pela%20 Tuberculose%20(Portuguese%20Version).pdf.

Stop TB. (n.d) PROJECT. TB REACH's Grant Management System (GMS). [confidential document].

Stop TB Partnership. (n.d.). How the partnership works. Retrieved November 4, 2023, from https://www.stoptb.org/who-we-are/how-partnership-works

Stop TB Partnership. (2023). *TB key and vulnerable populations size estimation tool*. Stop TB Partnership. https://www.stoptb.org/key-and-vulnerable-populations-size-estimation-tool

Stop TB Partnership. (2022). *Words matter: Suggested language and usage for tuberculosis communications* (2nd ed.). Stop TB Partnership. *https://www.stoptb.org/words-matter-language-guide*

Tanimura, T., Jaramillo, E., Weil, D., Raviglione, M., & Lönnroth, K. (2014). Financial burden for tuberculosis patients in low- and middle-income countries: A systematic review. European Respiratory Journal, 43(6), 1763-1775.

Tollefson, D., et al. (2013). Poverty, vulnerability, and tuberculosis in urban Zambia: A cohort study. BMC Public Health, 13, 116.

Todd, H., Hudson, M., Grolmusova, N., Kazibwe, J., Pearman, J., Skender, K., Tran, P. B., Boccia, D., Shete, P. B., & Wingfield, T. (2023). Social Protection Interventions for TB-Affected Households: A Scoping Review. The American Journal of Tropical Medicine and Hygiene, 108(4), 650–659. https://doi.org/10.4269/ajtmh.22-0470

Theron, G., Jenkins, H. E., Cobelens, F., Abubakar, I., Khan, A. J., Cohen, T., & Dowdy, D. W. (2015). Data for action: collection and use of local data to end tuberculosis. *The Lancet*, 386(10010), 2324-2333. https://doi.org/10.1016/S0140-6736(15)00321-9

Tuberculosis—NICE guideline. (2016). National Institute for Health and Care Excellence. https://www.niceorguk/guidance/ng33

Ukwaja, K. N. (2019). Social protection interventions could improve tuberculosis treatment outcomes. The Lancet Global Health, 7(2), e167–e168. https://doi.org/10.1016/S2214-109X(18)30523-0

United Nations (2023). Political declaration of the high-level meeting on the fight against tuberculosis. https://www.who.int/activities/preparing-for-the-un-high-level-meeting-on-the-fight-against-tuberculosis--2023

USAID. (2023). The Global Tuberculosis Program. https://www.usaid.gov/global-health/health-areas/tuberculosis

Van De Berg, S., Jansen-Aaldring, N., De Vries, G., & Van Den Hof, S. (2018). Patient support for tuberculosis patients in low-incidence countries: A systematic review. PLOS ONE, 13(10), e0205433. https://doi.org/10.1371/journal.pone.0205433

Venkatesh, V., Brown, S. (Sue), & Sullivan, Y. (2023). Conducting Mixed-Methods Research. Virginia Tech Libraries.

Wells, C., & Severn, M. (2021). Incentives and Support Programs to Improve Adherence to Tuberculosis Treatment. Canadian Journal of Health Technologies, 1(2). https://doi.org/10.51731/cjht.2021.35

World Health Organization. (2022). *Implementing the end TB strategy: The essentials, 2022 update*. Geneva: World Health Organization. Retrieved from https://apps.who.int/iris/rest/bitstreams/1486092/retrieve

World Health Organization. (2024). *Guidance on social protection for people affected by tuberculosis*. World Health Organization. https://www.who.int/publications/i/item/9789240089327

World Health Organization (n.d.). Implementing the End TB Strategy. Retrieved December 2023, from https://www.who.int/westernpacific/activities/implementing-the-end-tb-strategy#:~:text=WHO%20developed%20the%20End%20TB,global%20TB%20epidemic"%20by%202035.

World Health Organization (2015). The end TB strategy. World Health Organization. Available at: <https://www.who.int/teams/global-tuberculosis-programme/the-end-tb-strategy>. Accessed at May 13, 2024.

World Health Organization (WHO). Strengthening social protection for TB patients: Lessons from COVID-19. (2022, 24). https://www.who.int/southeastasia/news/opinion-editorials/detail/strengthening-social-protection-for-tb-patients--lessons-from-covid-19

World Health Organization. (2023). Tuberculosis. Retrieved December 2023, from https://www.who.int/health-topics/tuberculosis#tab=tab_1

World Health Organization. (2017). Tuberculosis patient cost surveys: a handbook.

Wu, S., Litvinjenko, S., Magwood, O., & Wei, X. (2023). Defining tuberculosis vulnerability based on an adapted social determinants of health framework: A narrative review. *Global Public Health, 18*, 2221729.