It is Time to Ensure No Child is Left Behind: 
Budgeting Tools for Pediatric and Adolescent TB Interventions

Introduction

Given the lack of specific budgeting tools to ensure that pediatric tuberculosis (TB) interventions are included in National TB Program budgets, Global Fund concept notes, PEPFAR country operational plans, and other key financing documents, several partners (CDC, EGPAF, Global Fund, IMPAACT4TB, Stop TB Partnership, TB Speed, UNICEF, Unitaid, USAID, WHO) collaborated to develop a budgeting tool to assist countries in costing out high priority interventions important to childhood TB programming.1

All interested stakeholders, such as civil society, technical partners, implementing partners, the National TB Programs, should use available budgeting tools—including the one described in this brief—to inform the development of budgets for national TB strategic plans as well as bilateral and multilateral funding proposals, including the Global Fund, to adequately reflect the funding resources needed to address pediatric TB in the country.

The Tuberculosis Burden in Children

TB remains one of the world’s deadliest infectious diseases and one of the top 10 causes of death in children. Globally, an estimated ten million2 people fell ill with TB in 2018, a number that has been relatively stable in recent years. Each day, over 4,000 people lose their lives to TB and close to 30,000 people fall ill with this preventable and curable disease.

As one of the leading infectious diseases causing childhood morbidity and mortality globally,3 every year, over 1.1 million children under the age of 15 years are estimated to fall ill with TB worldwide (52% of them are under the age of five years). In 2018, 14% of all TB-related deaths (205,000/1,491,000) were children.4

Further, children accounted for 11% of all TB cases in 2018, although the actual burden of TB in children is likely higher given the challenge in diagnosing childhood TB. National TB programs notify only 46% of pediatric TB cases, leaving a large proportion undiagnosed or unreported. The biggest reporting gap in pediatric TB affects the youngest children: 63% of cases are missed among children below five years old while only 46% of cases are missed among children 5-14 years old. The delivery of TB preventive treatment (TPT) to children is also facing a significant gap with only 27% of eligible children below five years old (350,000/1,300,000) having received TPT in 2018.5

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1 EGPAF, through the Unitaid-funded Catalyzing Pediatric TB Innovations (CaP TB) project, led the establishment of an informal platform for information sharing and coordination. Members include key stakeholders and implementers (CDC, EGPAF, Global Fund, IMPAACT4TB, Stop TB Partnership, TB Speed, UNICEF, Unitaid, USAID, WHO). This is known as POSEE Group (Paediatric Operational Sustainability Expertise Exchange).
3 https://data.unicef.org/topic/child-health/tuberculosis/
4 Global Tuberculosis Report, WHO, 2019
A Global Commitment to End Tuberculosis

TB has garnered increasing international attention with a new focus on ambitious targets to address the TB burden across the globe. In 2015, United Nations (UN) member states committed to ending the TB epidemic by 2030 as part of the Sustainable Development Goals (SDGs). Target 3.3 of the SDGs states: by 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases.\(^6\)

In 2018, the UN held its first-ever high-level meeting on TB. The outcome was a political declaration agreed by all UN member states, in which existing commitments to the SDGs and the World Health Organization’s (WHO) End TB Strategy were reaffirmed, with new ones also added.\(^7\) The political declaration included four new targets:

- Treat 40 million people with TB from 2018 to 2022, including 3.5 million children and 1.5 million people with drug-resistant TB (including 115,000 children). This means treating an average of 700,000 children for TB each year and 23,000 children with drug-resistant TB
- Reach at least 30 million people with TPT by 2022, including 6 million people (adults and children) living with HIV (PLHIV) and 4 million children under five years of age exposed to TB
- Mobilize at least US$ 13 billion annually for universal access to TB diagnosis, treatment, and care by 2022
- Mobilize at least US$ 2 billion annually for TB research

Addressing the global TB epidemic is also in line with the goals of universal health coverage (UHC), and in 2019, member states re-committed to strengthening efforts to address TB and other communicable diseases as part of UHC.\(^8\)

Key Challenges to End Childhood Tuberculosis

While children are recognized as a vulnerable population at higher risk of falling ill or dying from TB, pediatric TB has, until recently, been neglected by public health interventions. Historically, these interventions have focused on the adult population, which is more infectious and at higher risk of disseminating the disease.

Considerable gaps remain in pediatric TB diagnosis and prevention. The need for child-adapted TB diagnostic tools, coupled with child-friendly sample collection methods and the availability of pediatric formulation for new drugs and shorter TPT regimens, remain issues to be addressed. Due to the low bacterial load that characterizes pediatric TB disease, difficulty to collect sputum in children, and the lack of child-adapted diagnostic tests, pediatric TB diagnosis is challenging and largely relies on the capacity of frontline health care worker (HCWs) to make a diagnosis based on clinical signs and symptoms. Therefore, deployment of specific training on childhood TB is required to build the capacity of the frontline HCWs to manage pediatric TB and enable them to clinically diagnose TB in children.

Given the remaining challenges in diagnosing childhood TB, it is critical to implement targeted interventions that can prevent TB in children. This includes TPT for pediatric populations at higher risk of developing active TB disease if infected, namely the children living with HIV and those who are contacts of an adult person affected by TB.

So far, progress has mainly been hindered by a lack of political will and awareness, as well as poor innovation in service delivery and scale-up of evidence-based interventions, among others.\(^9\) Important and significant progress can be obtained by ensuring optimal implementation of existing tools and interventions, and for that, costing TB interventions is a critical step. Pediatric TB has been historically affected by poor planning in the context of national strategic plan revisions and grants from large bilateral donors. Critical pediatric TB interventions for childhood TB programming have been neglected in the TB programming and budgeting processes in many TB endemic countries. The lack of dedicated funding for pediatric TB interventions has been recurrently highlighted as a key barrier to strengthening childhood TB programming.\(^10\)

Scaling Up Childhood TB Interventions

The WHO has monitored TB financing and published results in the annual WHO Global Tuberculosis Report since 2002; however, monitoring of childhood TB interventions is not specifically singled out. Funding for the provision of TB prevention, diagnostic, and treatment services has doubled since 2006 but still falls far short of what is needed. TB funding reached US$ 6.8 billion in 2019, however, the amount in 2019 is US$ 3.3 billion less than the US$ 10.1 billion required in the Stop TB Partnership’s Global Plan to End TB 2018–2022, and only just over half of the global target of at least US$ 13 billion per year by 2022 that was agreed at the UN high-level meeting on TB.

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\(^7\) Political declaration of the high-level meeting of the General Assembly on the fight against tuberculosis. A/73/L.4. 2018

\(^8\) Political Declaration of the High-level Meeting on Universal Health Coverage “Universal health coverage: moving together to build a healthier world”. Para 32. 2019


Of the US$ 6.9 billion available in 2019 for TB, international donor funding accounted for $US 0.9 billion, with 73% of that amount coming from the Global Fund to Fight AIDS, Tuberculosis, and Malaria (the Global Fund). This total is far below the annual requirement of US$ 2.7 billion estimated in the Global Plan. The largest bilateral donor is the US government, which provides almost 50% of the total international donor funding for TB when combined with funds channeled through and allocated by the Global Fund.

Tracking pediatric TB interventions is not done globally and is also probably lagging at the country level. Lack of funding for pediatric TB has been highlighted by key stakeholders as a key barrier to strengthening childhood TB programming. Rather than creating separate pediatric TB plans, pediatric TB activities have often been embedded into general TB program activities, which address the whole population.

Estimating the cost of TB interventions is essential for planning, prioritizing, and managing the funding of TB services. The best way to estimate the unit costs of TB interventions in different countries is costing studies based on recommended methods, including primary data collection at national and local levels. However, such studies are lacking in the context of pediatric TB, contributing to weak estimation of costing for pediatric TB interventions.

National TB Programmes (NTPs) are primarily responsible for developing budgets to implement their TB National Strategic Plans. These National Strategic Plans are the starting point to accessing international funding, including multilateral (e.g. the Global Fund) and bilateral funders (e.g. PEPFAR).

About the Pediatric TB Budgeting Tool

Until recently, existing tools available to support budget development (i.e OneHealth tool v. 4.761) did not adequately account for specific needs of pediatric TB. To address this gap, several partners collaborated to develop a budgeting tool that incorporates high priority pediatric TB interventions and assists countries in budgeting important activities for childhood TB programming.

Efforts have focused on integrating key budgeting elements for childhood TB programming in the WHO OneHealth TB module companion book and methodology is that it supports the development of comprehensive and integrated budgets that include all the key TB interventions. It not only allows alignment with country epidemiological data, but it also allows for all TB intervention areas, and in turn TB budgeting, to be integrated into health planning by using standardized budgeting methodology.

The four critical interventions that have been considered for incorporation in the budgeting tool were selected based on the following key criteria:

- The intervention has a critical role in ensuring and improving TB services for the pediatric population
- To be effective, the intervention needs to include and take into account needs that are very specific to the pediatric population (and those needs are not shared with the adult population)
- The intervention has been recommended by the WHO and there is evidence that supports it

As a result of this collaboration and concerted effort, four intervention and program areas now have detailed budgeting templates (and were incorporated into WHO OneHealth companion book v. Feb 20):

a. Development of training materials and implementation of a nationwide training program for pediatric TB. Building the capacity of front-line HCWs to diagnose and manage pediatric TB is essential to improve TB services for children and close the diagnostic gap. Since diagnosing pediatric TB remains very challenging and largely based on clinical grounds, this can only be achieved through the implementation of a strong program for training HCWs with site support and supervision.

b. Household contact investigation. Children who live in the same household, or are close contacts of adults affected by TB, are at high risk of being infected and developing active TB disease. The implementation of household contact investigation is a key intervention that provides access to this high-risk population, assists with early detection of children with active TB disease, identifies the children who are eligible for TPT, and links them to treatment to considerably decrease their risk of developing active TB disease.

c. TB preventive treatment (TPT). Delivery of TPT is one of the key pillars for TB disease control. TPT can reduce the development of TB among PLHIV by nearly 40%, independent of antiretroviral therapy (ART), and

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can reduce incidence among children exposed to TB by 60%. There are multiple regimens recommended by the WHO, which recently updated their guidance on the use of shorter treatment regimens for TPT. This includes shorter regimens for the pediatric population such as daily rifampicin plus isoniazid for three months (3RH regimen), weekly rifapentine plus isoniazid for three months (3HP regimen) for children above 2 years of age, daily rifapentine plus isoniazid for one month (1HP regimen) for adolescents above 13 years of age, and daily rifampicin monotherapy for four months (4R). It is important to note that child-friendly, fixed-dose combinations are currently available only for the 3RH regimen.

d. Sample collection for children (induced sputum, nasopharyngeal aspiration, gastric aspiration, fine needle aspiration, stool sample collection). While clinical diagnosis remains the mainstay for diagnosing TB in children, it is critical to always attempt to perform laboratory-based diagnoses to achieve bacteriological confirmation. This is of particular relevance in high MDR-TB settings, as laboratory tests will provide information on drug resistance and therefore allow children to be promptly initiated on the most effective treatment option. Moreover, in some circumstances, the availability of bacteriological confirmation can make the diagnostic journey less cumbersome and lengthy while avoiding multiple visits and/or investigations. However, most children under the age of 7-8 years old are not able to spontaneously expectorate sputum, the sample that is required for the laboratory diagnosis of TB. Therefore, to improve access to laboratory-based diagnostics for children, procedures for the collection of alternative sample types such as induced sputum, nasopharyngeal aspiration, gastric aspiration, fine needle aspiration, and stool must be implemented.

Resources

• Introduction to Budgeting Tools for Paediatric and Adolescent TB Interventions – PowerPoint Presentation: [https://www.dropbox.com/sh/3bwjpmole50v5po/AAAfgyakkrpWtGl7RonCcBka?dl=0](https://www.dropbox.com/sh/3bwjpmole50v5po/AAAfgyakkrpWtGl7RonCcBka?dl=0)

• RECOMMENDED OPTION: WHO One Health TB Module Companion Book (including pediatric TB interventions): [http://tiny.cc/budgeting_tool_kit_1](http://tiny.cc/budgeting_tool_kit_1)

• ALTERNATIVE OPTION for countries which have already adopted different budgeting tools and do not plan to use the WHO TB Module Companion Book: Paediatric Operational Sustainability Expertise Exchange group (POSEE group) budgeting tools [http://tiny.cc/budgeting_tool_kit_2](http://tiny.cc/budgeting_tool_kit_2)

(Budget figures obtained when using the POSEE tools will have to be integrated into consolidated budgets that take into consideration the complete cascade of care as well as other areas of TB programming).

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This project is made possible thanks to Unitaid funding and support. Unitaid finds new ways to prevent, treat and diagnose HIV/AIDS, tuberculosis and malaria more quickly, more cheaply and more effectively. It identifies innovative health solutions that show promise and invests in them to establish their viability so that partner organisations can then make them widely available. Unitaid addresses innovation barriers by supporting an integrated approach to health, accelerating the development and market introduction of better health products and by influencing the dynamics of the innovation landscape to benefit people in low-resource settings.

About EGPAF

The Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) has prioritized the health of children in 5,000 sites, across 19 countries. We’ve worked to scale-up childhood TB identification, prevention, diagnosis, and treatment by integrating TB into our existing supported child wellness and HIV services. We have enhanced TB case identification through recruitment of clinicians and training of health care workers on how to identify and prevent TB infection in suspected cases, linking suspected cases to diagnosis and treatment. Through the Unitaid-funded Catalyzing Pediatric TB Innovations (CaP TB) project, EGPAF is also integrating TB services across health care services that children access, bringing care closer to where children need it. CaP TB supports access to more sensitive diagnostic technology and newer, child-friendly TB treatment formulations (for both latent and active TB) in nine sub-Saharan African countries and India.

To read more about our work in this area click [HERE](https://www.who.int/publications-detail/who-consolidated-guidelines-on-tuberculosis-module-1-prevention-tuberculosis-preventive-treatment)