

*National Roadmap  
towards ending  
Childhood and  
Adolescent TB in Ethiopia*



Second Edition  
January 2019

**Federal Ministry of Health**

**Roadmap towards ending  
Childhood and Adolescent TB in Ethiopia  
2<sup>nd</sup> edition**

**Addis Ababa, Ethiopia**

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## Foreword

Recognizing vulnerability of women and children to the consequences of TB due to gender and age related social and health inequalities, global commitments were made to prioritize these high-risk groups at the Moscow declaration to End TB in November 2017. Thus preventing, finding and treating TB cases among children and adolescents taken as an urgent operational priority, especially in TB high burdened countries that includes Ethiopia.

The UN General Assembly high level meeting adopted the WHO general program of Work, 2018 to 2022 and commits to diagnose and treat 3.5 million children with TB and 1.5 million children with drug resistant TB and prevent TB through availing TB preventive therapy for 4 million children under five years of age. Intensified investment, strong collaboration and coordination among all stakeholders, efficient health systems, genuine political will are indispensable to derive and prioritize the most impactful and evidence-based approaches.

The national Childhood TB roadmap (2015), has helped to draw the attention of all stakeholders and programs such as the HIV, maternal and child Health, and others to take concrete steps to improve the implementation of childhood TB prevention and care prioritizing integrated TB service into the IMNCI/ICCM platforms at facility and community levels. The 2015 national roadmap helped and guided the following achievements in Ethiopia: TB screening tool incorporated into IMNCI training material, IMNCI chart booklet and IMNCI registers were made to accommodate practice of screening children for TB. National childhood TB training material developed, and health care workers were trained and sensitized, etc. The 2018 UNHLM on TB commitment and the revised global strategic roadmap of 2018 towards ending TB in children, presents an important opportunity for our country to consolidate lessons learnt, best practice, key actions and targets needed to end TB in children and adolescents in Ethiopia.

Finally, the Ministry of Health calls for all stakeholders working at various levels and areas of child health and tuberculosis to bolster the commitment and to use this revised national roadmap as a common guiding document over the coming years of journey to end TB in children and adolescent.

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## Abbreviations

<b>AFB</b>	Acid Fast Bacilli
<b>ANC</b>	Ante Natal Care
<b>BCG</b>	Bacillus Calmette-Guerin
<b>CBTC</b>	Community Based TB Care
<b>CSO</b>	Civil service organization
<b>DST</b>	Drug susceptibility test
<b>DS-TB</b>	Drug susceptible TB
<b>DR-TB</b>	Drug resistant TB
<b>EPS</b>	Ethiopian Pediatric Society
<b>EPI</b>	Expanded program Immunization
<b>EPTB</b>	Extra-Pulmonary TB
<b>FBO</b>	Faith Based Organization
<b>FMOH</b>	Federal Ministry of Health
<b>HCW</b>	Health care worker
<b>HEWs</b>	Health extension workers
<b>HIV/AIDS</b>	Human immuno- deficiency virus/ Acquired immune-deficiency disease syndrome
<b>HMIS</b>	Health management information system
<b>iCCM</b>	Integrated community case management
<b>IMNCI</b>	Integrated management of Neonatal & childhood illnesses
<b>IPT</b>	Isoniazid preventive therapy
<b>PT</b>	Preventive therapy
<b>MCH</b>	Maternal and child Health
<b>NGO</b>	Non-governmental organization
<b>NTP</b>	National Tuberculosis program
<b>OVC</b>	Orphan and vulnerable children
<b>PTB</b>	Pulmonary Tuberculosis
<b>RHB</b>	Regional Health bureau
<b>TB</b>	Tuberculosis
<b>WHO</b>	World Health Organization

## 1. Background

### 1.1 National childhood TB roadmap

The 2nd global childhood TB roadmap envisions the goal of “Ending TB in Children and Adolescents.” by 2030. It emphasizes the renewed commitments made at The UN High Level Meeting on the fight against Tuberculosis in Sept 2018. The high-level meeting restressed to maximize well integrated, family-based approaches, Universal health coverage, and multisectoral approach to minimize the universal impact of TB. The 2018 Roadmap incorporates an additional critical population: adolescents. Despite making up 1 in 6 of the world's people, adolescents have been largely overlooked.

The Ethiopian TB program (NTP) adopted the 1<sup>st</sup> 2013 global roadmap and developed its roadmap in 2015, with the aim to address gaps in childhood TB prevention and care and guide implementation of prioritized interventions at all levels of the health system including community level actors in the country. After the adoption and the launching of the 1<sup>st</sup> roadmap:

- efforts were made to review policy, guidelines and materials on childhood TB prevention and care;
- mobilized resource and engage all stakeholders involved in child's health care;
- facility and community level integration of TB care at IMNCI and ICCM services.
- many program officers and health care providers working at IMNCI and TB DOT were trained to facilitate the integration of childhood TB service at IMNCI, ART, nutrition and other sick child health service outlets.
- revised IMNCI booklet and register where TB screening and diagnosis included.
- TB service integration at IMNCI piloted in selected facilities of Addis Ababa, as a result, TB screening, sample collection using Nasogastric aspiration and Xpert utilization for diagnosis improved
- At the TB DOT clinics, household contact screening of children under 5 years and provision of preventive therapy improved.

Though since the launching of the 1st national roadmap, several improvements in childhood TB prevention and care have been documented. There are still significant gaps between policy and practice.

Key actions listed in the roadmap were not implemented in full scale. There are gaps in program management capacity and local expertise, engagement of key stakeholders and promoting partnership is still weak and fragile, children and adolescents with special need and vulnerable for TB disease are yet to be addressed.

For reasons mentioned above and the need to adopt the revised 2018 global roadmap, this 2<sup>nd</sup> national roadmap is developed and is intended to highlight implementation gap and outline key actions to further strengthen the efforts towards ending TB burden in children and adolescents by 2030 in Ethiopia.

## 1.2 Childhood and adolescent TB in Ethiopia

Ethiopia is among the 30 countries with high TB, TB/HIV and Multi-Drug resistant TB (MDR-TB) burden with annual estimated TB incidence of 164 per 100,000 populations. In the 2017 NTP report a total of 117,705 all forms of TB were notified and among this, 12,380 (10.5%) were children 0-14 yrs. Among children 0-14 years notified, young children age 0-4 years were 3,124 (25%) which is low from the estimated case burden for 0-4 years.

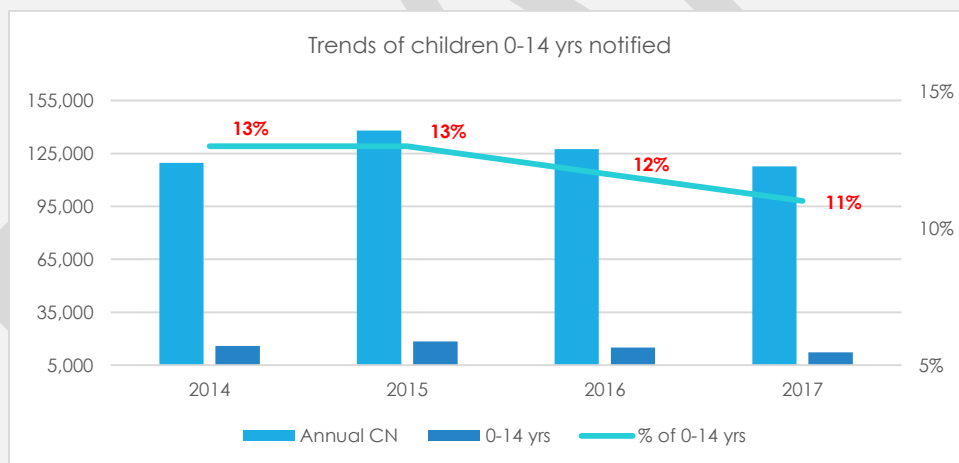


Fig 1: Four years trend of national all forms of notification & proportion of children (0-14yr) with TB.

The national TB control program has undertaken various encouraging efforts to address childhood TB prevention and control in the country. Although the national policy on childhood TB prevention and care address most issues related to childhood TB, implementation has been faced with several challenges. Commonly identified problems are difficulties in diagnosis and management of TB in young children, irregular and sometimes interruption of



supply, low contact screening and preventive therapy and lack of monitoring and evaluation tools. The presence of other socio-demographic determinants of TB like poverty, overcrowding, malnutrition and HIV infection also complicate control of childhood.

The UN high level meeting (2018) has set epidemiological target for all high burden countries, for Ethiopia relevant to childhood TB is shown below:

Table 1: Target for 2018-22 on childhood TB diagnosis and treatment and provision of preventive therapy for children <5yrs.

Key targets	2018	2019	2020	2021	2022	Cumulative 2018-22
<b>Childhood TB diagnosis &amp; Rx</b>	13,100	15,700	15,600	14,800	14,000	73,200
<b>Preventive therapy (PT)</b>	49,000	76,000	103,600	127,800	132,900	490,000

## 2. The 2015 National Childhood TB Roadmap – Ongoing business

Childhood TB prevention and care has got the special attention and commitment it deserves after the development and endorsement of the National childhood TB roadmap (2015) by the Ministry of Health of Ethiopia. In the past four years, progress has been made but specific age and disease related challenges have also persisted. Now, we know globally 10% of all TB affects and manifests in children and over half of that is among children under 5 years of age.

### What progress has been made and what gaps remain

1. Include the needs of children and adolescents in research, policy development and clinical practice. Progress made:
  - National strategic framework and the comprehensive TB/HIV guideline address the needs of children in terms of TB prevention and care.
  - The Integrated management of childhood illness at facility and community level (IMNCI and ICCM) incorporated childhood TB
  - Demonstration work on the integration of Childhood TB to IMNCI conducted, lessons learned shared. Study on Child friendly methods to collect sample is initiated.

Gaps:

- Child survival strategy needs to give due emphasis on childhood TB;
- The needs of adolescents is not well addressed;
- Significant policy practice gap at the implementation level;

2. Collect and report better data, including on preventive measures.
  - National TB case finding disaggregated by age 0-4 and 5-14.
  - CI and preventive therapy incorporated in national TB M&E framework.

Gaps:

- Treatment out come not disaggregated by age,
- Documenting contact screening and preventive therapy is suboptimal
- The transitioning to DHIS2 has made data quality poor and reporting coverage incomplete, affecting the overall childhood TB notification
- The adolescent age group in the TB reporting overlaps with the age group of 5-14yr and 15-24yr.

3. Revise training and reference materials on childhood TB for health care workers, so that trainings improve competency of health workers in diagnosing TB in children.
  - Training and job aid materials developed for HCWs and community health workers to improve their skills on the diagnosis and prevention of TB in children.

Gaps:

- Training has not been rolled out to adequate number of frontline health workers,
- Site level supportive supervision and mentorship is suboptimal,
- Training course need to incorporate competency on practical sessions,

4. Strengthen local expertise and leadership among child health workers at all levels of the health care system.
  - Childhood TB focal point assigned and established task force which has been instrumental in the guidance and monitoring of national level implementation,

Gaps:

- Childhood TB focal point or working group not available at regional and sub regional level for a strong leadership and ownership.

5. Don't miss critical opportunities for intervention:

- GeneXpert test has been made as a primary test for children
- Contact screening and preventive therapy implemented, and child-friendly formulation rolled out
- Shortened duration of preventive therapy has been adopted and planned to rollout

Gaps:

- Access to GeneXpert test not optimal,
- Difficulty of getting the needed quality sample in children,
- Low coverage of contact investigation and IPT,
- Child health services in non IMNCI service sites missing children with TB, for instance, public and private hospitals
- Though there are improvements in the initiation of TB preventive therapy, information on completion rate is lacking.

6. Engage key stakeholders and establish effective communication and collaboration among the health care sector and other sectors that address the social determinants of health and access to care.

- Child and maternal health, HIV programs have been engaged from inception to the implementation of childhood TB care
- Universities and Ethiopian Pediatric Society engaged,

Gaps:

- Inadequate involvement of private sector (PPM),
- Non-health sector engagement lacking.

7. Intensify implementing integrated family and community-centered strategies to provide comprehensive and effective services at the community level.

- TB screening algorithm is integrated within IMNCI and ICCM framework including updating of registers/records
- Community health workers practice children TB screening assisted with ICCM tool

Gaps:

- Child health services by design are to provide acute care and integrating TB service at IMNCI has some limitation,

- Not all health facilities are engaged, formats and registers are not available to all facilities,
  - Community level engagement is weak e.g. adequate number of health extension workers and ICCM level staff are not yet well sensitized and engaged
  - Service level integration primarily focused at IMNCI primary health care level, however, there is a need to give due attention at nutrition therapy unit, inpatient care, private and big referral hospitals.
  - There is limited referral linkage between community and facility and from lower to higher level of care in the health system.
8. Identify best experience, lessons learnt in implementing childhood TB program and fine tune interventions to maximize the results of finding more cases and provide the best quality care possible.
- Best practice and lessons learned documented on integrating TB services to IMNCI platform and shared with national and global child health communities;
    - Gaps:
      - There is gap in aspects of quality for childhood TB care demanding more evidence and best practice.
9. Address research gaps in the following areas: epidemiology, fundamental research, the development of new tools (such as diagnostics, medicines and vaccines); and address gaps in operational research, and research looking at health systems and services.
- Important operation research to evaluate yield of stool sample test using Xpert as alternative means to nasogastric aspiration (NGA) sample, is in progress (started in Jan 2019)
    - Gaps:
      - Currently there is Limited, or no local evidence generated to influence policy and practice.
10. Close all funding gaps for childhood TB at the national and global levels.
- Direct Funds made available to carry out specific childhood TB activities through GF, USAID and others.
    - Gaps:
      - Childhood TB is largely dependent on external fund

## 2.1 Address persistent challenges

The widespread TB prevention, case detection and treatment gaps seen among children and adolescents are not primarily the result of technological or policy constraints: They persist due to a lack of leadership, awareness and advocacy; as a result of gaps and poor innovation in service delivery and scale up of evidence-based interventions; because of verticalization of the TB response and the resulting lack of joint accountability; as well as gaps in data recording and reporting.

There are multiple steps along a child's pathway from exposure, TB infection and progression to active TB disease. At each stage (from susceptibility to cure) lies the possibility of intervening and reducing morbidity and mortality due to TB disease (table 2). However, intervening in most of the steps remain a challenge for the program.

Table 2: Persistent gaps along child's pathway from exposure to disease and cure.

Stage	Revised actions needed (on persistent gaps)
<b>Susceptible, exposed</b>	<b>Prevent infection</b> <ul style="list-style-type: none"> <li>- Engage community actors (e.g. CSOs) to address childhood TB related issues (e.g. community awareness, etc.)</li> <li>- Improve infection control at household and community level</li> </ul>
<b>Infected</b>	<b>Prevent disease</b> <ul style="list-style-type: none"> <li>- Scale up contact screening and preventive therapy to all eligible children under 15 years (rollout shortened duration)</li> <li>- Monitor progress on contact screening/preventive therapy</li> </ul>
<b>Sick, accessed care, recognized</b>	<b>Diagnose disease</b> <ul style="list-style-type: none"> <li>- Suspect TB in children who are at risk, at all levels &amp; entry point of care (create capacity to diagnose or smooth referral)</li> <li>- Improve access for sensitive diagnostic tools (e.g. Xpert) and capacity to collect specimen from young children</li> <li>- Recognize danger signs, such as respiratory distress or severe malnutrition, and refer to the appropriate level of care</li> </ul>
<b>Treatment completed, cured, outcome</b>	<b>Support children and their families</b> <ul style="list-style-type: none"> <li>- Ensure uninterrupted supply of child-friendly formulations and adherence support including for drug resistant TB treatment.</li> <li>- Monitor treatment outcome</li> </ul>
<b>Register, record, report</b>	<b>Report accurate data, use data for action and operational research</b> <ul style="list-style-type: none"> <li>- Routinely record on contact screening, children with TB and on preventive therapy, outcome. Ensure data quality</li> </ul>

If gaps addressed (table 2) consistently and systematically, transmission of TB can be reduced, prevention of TB infection can be expanded, and children with TB can be diagnosed earlier with better treatment outcomes. Achieving this continuum of care requires collaboration across service areas, community engagement, as well as decentralization and integration of service delivery at the primary health care level.

**Policy-practice gaps:**

- Contact screening is not routinely and at scale implemented, and it is often done passively than active tracing, and limited or no community actors engagement
- Education of people with TB on how to protect their family members through simple household TB infection control measures is inadequate
- Finding the missing cases: Because many non-specific symptoms overlap with other common childhood diseases, TB is often not considered in children and frequently missed as a result. TB diagnosis can be challenging due to the lack of a sensitive point-of-care diagnostic test, low access to and use of available tests, difficulties of obtaining sputum specimens from children, as well as frequent negative bacteriological test results in young children with TB. Health workers, especially those working at the primary care level, often have little capacity and confidence in preventing, diagnosing and managing childhood TB. The private health facilities play an important role in TB diagnosis and treatment, especially as the first entry point for care of children. They have to be engaged and adhere to the country national guidelines.
- Implementation of integrated family and community centered care is weak and not at scale covering all regions in the country.

### **3. The roadmap towards ending TB in children and adolescents**

#### **3.1 Strengthen advocacy at all level**

Advocacy at all level has always been weak and often overlooked. To sustain advocacy, the NTP in collaboration with child health program and all other stakeholders need to ensure that child and adolescent TB remain firmly located in the national, regional and sub-regional health agenda, based on latest data and evidence on burden, description of existing challenges,

opportunities and the need for urgent investment, and through all relevant forums and communications platforms. Policy-makers including ministers of health, finance, and members of parliament need to be engaged to develop sustainable approaches to prevent and tackle child and adolescent TB. Moreover, using the already existing platforms such as TRAC (TB research advisory committee) to advocate for more researches and innovations to end TB in children and adolescents.

### **3.2 Foster national leadership and capacity on program management**

Leadership should recognize the importance of practical steps to: allocate/mobilize adequate national resources, strengthen capacity of programs and health workers, ensure linkages with and accountabilities for critical services (e.g. MNCH, HIV, nutrition etc.), and position institutions and actors within the health sector and beyond to effectively target resources and sustain efforts to end TB. Build institutional capacity to plan, manage and lead child and adolescent TB programs using assessment and benchmark tools (including operational guidance) at national and sub-national levels.

Strengthen focal points and expand working groups at regional and/or sub-regional levels for child and adolescent TB in Ethiopia. The national or sub-national task force/working group need to include vital stakeholders (pediatric society, MNCAH, and immunization program, institutions working on Child and adolescent health programs, etc....).

In addition, establish social support for vulnerable families, and enhance civil society engagement for accountability to commitments and targets.

### **3.3 promote functional partnerships for change**

Effective collaboration and communication between health sector programs, e.g. NTP and other programs (e.g. MNCH, HIV, Nutrition, etc.) and other sectors outside of the health sectors (e.g. education, social and developmental, etc.) to increase awareness and mobilize support is a key component for successful implementation of child and adolescent TB intervention.

Foster partnerships between the public and private sectors, involve adolescent and families affected by TB in awareness programs and outreach campaigns at community levels, and collaborate with non-governmental organizations and professional associations.

### **3.4 Increase funding for child and adolescent TB programs**

Important actions needed to enhance resource mobilization in the country: Coordinate and harmonize donor and country interests and investments with increased flexibility and the opportunity to move from disease-specific to an integrated, system-focused approach towards achieving universal health coverage. Ensure health financing becomes progressively less donor dependent and more equitable, by moving from successful pilot projects to more integrated and sustainable programmatic scale up at all levels, including continuous quality improvement efforts and use of pediatric TB-specific indicators. Invest in capacity and skills building among programme managers and health workers helping to ensure strong leadership in distribution and efficiency in utilization of resources and aligning of TB services.

### **3.5 Bridge the policy-practice gap**

Bridging the gap between policy and practice will require national programs to maximally utilize available and new tools (e.g. GeneXpert). There is a need to widely disseminate and enhance use of capacity-building tools on child and adolescent TB to train adequate number of health workers (public and private) to diagnose, manage children and adolescents with TB infection and/or disease with emphasis on TB prevention and skills on specimen collection. Ensure community health programs integrate child and adolescent TB education, screening, prevention and case finding into training (e.g. IRT) and service delivery activities. Need to ensure availability of child-friendly formulations for all children with TB disease and preventive therapy.

Increase awareness of and demand for child and adolescent TB services in communities and among front line health workers, empower communities to be engaged actively in the TB response and strengthen social accountability mechanisms. And, ensure focused actions at community level for prevention of stigma and discrimination with appropriate communication strategy.

### **3.6 Implement and expand interventions for prevention**

The recent WHO recommendations on TB infection management, and the increasing evidence to support implementation of shorter and safer treatment regimens, provide an unprecedented opportunity to narrow the policy–practice gap in contact screening and management. National and sub-national target should be developed based on adult notification data.



Expand contact screening, use of the shorter treatment regimen to treat TB infection in children and adolescent who are contacts of drug-susceptible TB cases, and routinely evaluate contacts of patients with drug-resistant TB. Implement infection control measures in high-risk settings for TB transmission, especially in health facilities, and also in households, to reduce risk of transmission.

### **3.7 Strengthen child and adolescent TB case finding and treatment**

Ethiopia needs a clear national child and adolescent TB target based on the latest WHO estimates. A systematic implementation of TB screening for children and adolescents should be strengthened at public and private in- and out-patient services including HIV, Nutrition, adolescent health, etc. Health care workers in both private and public facilities need to be trained and regularly supported, child-friendly formulations of treatment and preventive therapy available.

### **3.8 Implement integrated family and community centered strategies**

The national child survival strategy needs to acknowledge the contribution of TB to child morbidity and mortality, particularly among young children and children living with HIV, and the linkage between TB and common childhood conditions. Strengthening of collaboration of health programs engaged in child, adolescent and women health, especially MNCH, Nutrition, HIV, primary and community health should be prioritized.

Children and adolescent with co-morbidities (e.g. malnutrition, pneumonia, chronic lung diseases, etc.) are routinely evaluated for TB. And, ensure that community health strategies integrate child and adolescent TB education, screening, prevention and case finding into the training and service delivery activities. Increase awareness of and demand for child and adolescent TB services in communities and among front line health workers.

### **3.9 Improve data collection, reporting and use**

Data on TB in the specific age group of adolescents (10–19 years) is not collected separately, making understanding the extent of the problem impossible. Fatal cases of TB that present as severe pneumonia, HIV, malnutrition or meningitis are attributed to these conditions. As a consequence, vital registration data often under-report TB as a cause of death

Given that the majority of children present to non-NTP health services, reporting from both public and private health facilities is vital to estimating the true burden of TB. Ensure the system to quantify the number of child TB contacts, contact screened, provision and outcome of TB treatment and/or preventive therapy are complete and quality. And, the national standardized case definition and reporting forms should be available in all health care facilities (private, public). Build the capacity of staff for quality data collection, reporting and analysis, as well as use of data for planning, procurement and supply management. Conduct a national or sub-national inventory studies to assess the extent of under-reporting.

### **3.10 Encourage child and adolescent TB research**

It is vital to invest on research in order to end TB in children and adolescents. Conduct various types of research including operational / implementation research on a range of potential child and adolescent TB-related service models for prevention, contact investigation, diagnosis and treatment. Understanding determinants of TB and key barriers faced by adolescents to access TB diagnostic and treatment services is important.

## **4. Monitor and evaluate the progress towards ending childhood and adolescent TB in Ethiopia**

This roadmap outlines national milestone in the implementation of childhood and adolescent TB prevention and care in order to guide the vision and steps needed to be undertaken, and this could be adapted at regional or sub-regional levels.

- Progress on advocacy: documented advocacy sessions and their outcome, e.g. resource allocated specific to children/adolescent, etc.
- Scale of integrated family and community centered care: regional and sub-regional report on IMNCI and ICCM in childhood TB case finding. In addition, important to note on updates of algorithms, registers and forms at IMNCI and ICCM services.
- # and proportion of childhood and adolescent TB disaggregated by age, type of TB, setting, drug-sensitive and drug-resistant TB, etc.
- Treatment success rate by age and type of TB including DR-TB.
- # and proportion of children and adolescent accessed GeneXpert test, samples collected, contacts registered, screened and diagnosed TB and those without TB put on preventive therapy.
- Completion rate of those on preventive therapy.

- Reports of stock out (stock out rate) of child-friendly formulations for treatment and preventive therapy.
- Researches and best practices shared, resulted in practice and policy change.

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**National milestones in implementation of the key actions in the revised Roadmap**

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**Short term [by 2020]**

Improved guidance through functioning task force/working group and partnership of key stakeholders at all levels

Active contact screening scaled up and access for preventive therapy improved

Scaled up of integrated, decentralized & family-centred approaches to prevent, diagnose and treat childhood TB

Utilization of sensitive diagnostic tools (e.g. Xpert) & skills on specimen collection improved.

Shorter duration preventive therapy implemented and scaled up

Health care workers capacity at all levels & important entry point of care improved through trainings, mentorship and CME

Skill building training materials revised to focus on competency & practical sessions

Provider support tool kit includes childhood TB related tools

Referral linkage ensured between lower & higher level facilities as well as between public & private hospitals

Childhood TB and adolescent activities recorded & reported. Operational researches conducted to support delivery of quality childhood TB services

**Medium term [by 2023]**

Five year implementation reviewed, lessons learned and scaled up effective interventions and approaches.

Sufficient funding mobilized to sustain integrated family-centered TB care.

At least 73,000 children and adolescents with TB disease treated and children below 5yr contacts on preventive therapy is 490,000 by 2023

Ensured quality for childhood & adolescent TB service at all levels

Child-friendly sample collection techniques and tests with good accuracy and yield implemented & scaled up

Access to confirmatory tests & new technologies improved

Scaled up integrated care for childhood TB in PHC at all level

Stronger stakeholder and private contribution

**Long term [by 2030]**

Childhood TB burden reduced in Ethiopia in line with SDGs target

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