Change the Game
An agenda for action on childhood tuberculosis
1 IN 10 TB CASES GLOBALLY IS A CHILD (0–14)¹

Every day, nearly 700 CHILDREN die from tuberculosis (TB), 80% of those before reaching their fifth birthday.¹,² Treatment exists that could prevent nearly all of these deaths, but less than 5% of the children who need it receive access.²

Of the 10.4 MILLION new cases of TB in 2016, 1 MILLION were among children under 14 years of age; 540,000 were among children under age 5.¹ In every region, children under 5 account for MORE THAN HALF of all TB cases among children under 15, and they are more likely to die from the disease.¹

As part of the Sustainable Development Goal agenda, the world has committed to ending preventable child deaths by 2030. Addressing childhood TB will be a critical ingredient for success in this undertaking. In September 2018, world leaders will renew this commitment to ending TB during the UN High Level Political Meeting on Tuberculosis.
TUBERCULOSIS IN THE HOME

HAS LONG-TERM DIRECT AND INDIRECT EFFECTS ON CHILDREN.

The impact of TB is greatest on HOUSEHOLDS ALREADY VULNERABLE due to poverty, marginalization and limited access to services. TB rarely affects just one member of a household: It is often introduced into a household by an adolescent or adult, but quickly spreads to children, putting them at risk of disease.

ILLNESS, DEATH AND DISABILITY
Severe forms of TB have a high risk of death or can cause lifelong developmental challenges and disabilities.

HUNGER AND POVERTY
TB exacerbates poverty. Lost income and health-related expenses can lead to or worsen food insecurity, malnutrition, and additional barriers to accessing health and other services.

DEVELOPMENTAL DEPRIVATION
Maternal TB disease or death has a pronounced impact on child survival and the child’s ability to thrive due to isolation and lack of stimulation.

INTERRUPTED EDUCATION
Older children and adolescents may miss school due to their own illness or because they have to take on crucial roles in the home.

STIGMA
Stigma affects care seeking and adherence. It also provokes social exclusion, isolation and discrimination in health, education, and employment, affecting quality of life.

Every child deserves a safe and healthy childhood. If we are to succeed in honouring our commitment to children, we must intensify our focus on TB, finding, diagnosing, and treating those at greatest risk and eliminating preventable deaths.
Children are most commonly infected with the TB bacterium through contact with an adult or adolescent, usually within their own home or community. Each year, around 7.6 million children aged 0–14 are infected with the TB bacterium. In 2014 alone, 2.4 million children under the age of 5 lived in households with a known adult or adolescent with TB disease. These children and other vulnerable household members, including people living with HIV, can easily be identified through systematic screening of all members of a TB affected household; and they should receive preventative therapy. Pregnant women, especially those with HIV, should receive TB screening and preventative therapy as part of antenatal care or prevention of mother-to-child transmission to ensure their health and reduce transmission to newborns.

Vaccination remains a critical component of efforts to prevent TB disease, but the tools at hand are limited. The bacille Calmette-Guerin (BCG) vaccine is the only vaccine currently available to protect young children from TB. The vaccine provides protection for a limited period of time, but does not provide long-term protection from TB infection and disease. Addressing this issue and developing a vaccine that can provide longer-term protection must remain a high priority.

When children are exposed to a person with TB, the use of child-friendly fixed dose combinations, which are highly effective and available at low cost, can prevent development of TB disease. Despite the existence of these fixed-dose combinations, less than 15 per cent of children exposed to TB receive preventative therapy to prevent development of TB disease.

FROM INFECTION TO EMERGENCE OF DISEASE
Children infected with TB bacteria generally remain symptom-free and healthy, but they are at great risk of falling ill with TB disease during the year following exposure. Very young children and children with immune systems compromised by HIV or malnutrition are particularly vulnerable to developing disease, including severe and often fatal presentations such as TB meningitis. TB contributes to increased morbidity and mortality among children living with HIV, and 17 per cent of child TB deaths occur among children living with HIV. Even when children survive severe TB, they often go on to experience lifelong developmental and physical challenges.

Low-cost, high-impact tools are available to prevent TB disease, but in many cases, these are not being utilized effectively. As a consequence, more children fall sick and die from TB disease and countries are faced with the substantial economic burden of TB treatment and mitigation.

THE PREVENTION GAP

- The prevention gap: the failure to prevent TB disease through preventive therapy for at-risk children.
- The detection gap: the failure to diagnose TB disease in children.
- The treatment gap: the failure to ensure timely access to effective treatment.
- The research and investment gap: the failure to prioritize research and investment focused on the needs of children.

**Estimated number of new TB cases among children (aged <15 years), global, 2016.**


Note: The boundaries and the names shown and the designations used on these maps do not imply official endorsement or acceptance by the United Nations.
We are failing to diagnose TB disease in young children.

For children under 5 years of age, only 26 per cent of the estimated 540,000 annual TB cases are accurately diagnosed and reported. This stands in stark contrast to the 60 per cent of cases which are accurately diagnosed among older children and adults aged 5 and above.\(^1\)

Low rates of TB case detection are linked to a lack of awareness among primary health care workers around the risks of TB to children. Capacity for diagnosis often exists only at the hospital level. TB programming is often highly verticalized and not integrated with other health programmes and services. As a result, opportunities to find children who may have TB are missed.

Diagnosis of TB in children is also complicated by the fact that current sputum-based TB diagnostic tools are not sufficiently accurate and difficult to use with children.

TB contributes significantly to common causes of child morbidity and mortality.

Another challenge is the fact that health-care workers do not reliably assess all sick children to evaluate their risk of TB. In high-TB-burden settings, up to 20 per cent of children diagnosed with pneumonia may have underlying TB\(^8\), but this is often missed due to lack of systematic evaluation. Malnourished children are also at increased risk of TB, and studies of children in high-TB-burden settings have found prevalence of up to 20 per cent among children with severe malnutrition.\(^9\)

INTEGRATION: MAXIMIZING OPPORTUNITIES FOR CHILD SURVIVAL

There is growing evidence that children suffering from undernutrition and/or pneumonia are at increased risk of death from infectious diseases, including TB, and that TB can increase a child’s vulnerability to these diseases.\(^8,9\) Integration of TB screening into all maternal and child health (MNCH) guidelines and screening protocols in high TB incidence settings is a critical first step toward intensified TB case detection and increased coverage of preventive therapy and treatment.

In Uganda, the experience of integration of childhood TB interventions into the national health system suggests “the way forward lies with strengthening the referral system, building capacity of healthcare workers (HCWs) at all levels, contact tracing, and further integration with MNCH, including HIV and nutrition.”\(^10\)
About 250,000 children died from TB in 2016. 60 per cent of such deaths occurred in Asia and 35 per cent in sub-Saharan Africa. When they receive appropriate treatment, less than 1 per cent of children with TB die, compared to around 24 per cent of children who do not receive treatment. Over 96 per cent of TB deaths among children under the age of 15 are among children who have not received treatment.

Two years ago, appropriately dosed, child-friendly formulations for the prevention and treatment of drug-sensitive TB became available. Since then, 79 countries have rapidly transitioned to these formulations and have ordered treatment for 590,000 children. However, the treatment gap is closely linked to the case detection gap. When children with TB are not found and diagnosed, they cannot be treated. Over 60 per cent of new TB cases in children are never detected. As a consequence, these children remain untreated and at serious risk of death. If all children with TB were detected, 1 million treatment courses would be needed per year, and over two million courses for preventive therapy.

Children tolerate TB treatment for drug-sensitive TB very well. But treatment can be challenging. Current TB drugs require adherence for three to six months for prevention, six or more months for treatment, and at least nine months for treatment of multi-drug-resistant (MDR)-TB.

The Treatment Gap

The Research and Investment Gap
AN AGENDA FOR ACTION:
COMMIT, INVEST AND COORDINATE TO SAVE THE LIVES OF CHILDREN

GLOBAL AND NATIONAL DECISION MAKERS
COMMIT to targeted actions for children at the TB High level meeting in September 2018.
• Align policies and strategies to serve the needs of children.
• Increase coordination and collaboration across health programs – at both global and national levels.
• Set specific targets, define indicators and improve data collection
• Focus on implementation and scale-up of evidence-based, effective interventions to bridge the policy-practice gap.
• Promote equitable access to services for children and their families and recognize the importance of a strong frontline health system.

MINISTRIES OF HEALTH AND IMPLEMENTING PARTNERS
FIND children with TB.
• Empower communities to understand the risk TB represents, particularly to their most vulnerable members
• Equip frontline health workers to deliver TB diagnosis, prevention, and care where children and their families live, including systematic assessment of all sick children for TB risk.
• Operationalize and intensify contact screening in households of newly diagnosed TB patients as a key priority for prevention and case finding.
• Operationalize and intensify systematic screening of sick children and pregnant women attending maternal and child health and nutrition services.
• Decentralize diagnostic capacity by building clinical capacity, strengthening mentoring and providing support to health workers, as well as improving specimen collection for diagnostic testing.

GOVERNMENTS, DONORS, RESEARCHERS
INVEST in innovation for children.
• Prioritize research and development of an accurate, non-sputum-based diagnostic test for use at the point of care.
• Develop vaccines to prevent all forms of TB, including drug-resistant and reactivated TB, for all age groups.
• Develop shorter regimens and more child-friendly formulations for TB treatment to improve adherence, reduce treatment failure, and save children’s lives.
• Prioritize childhood TB in the research agenda. Innovations can tilt the scale for millions of children’s lives, yet TB focused research funding is stagnant, with only 3 per cent focused on pediatric TB research.15

TB response efforts must be fully integrated in maternal and child health and nutrition policies and strategies and WE MUST DO MORE to scale up the use of existing effective tools. In parallel, there is an urgent need for expanded investment in childhood TB, and in the development of new technologies that meet the specific needs of children affected by TB.

A number of key actions will be critical in ENDING PREVENTABLE DEATHS FROM TB
"It is a sad statement that childhood tuberculosis still kills as many children as it does. But this is an eminently solvable problem. All the world needs is a more aggressive commitment to end the disease. That would make this tuberculosis survivor, and millions of others like me, very happy.”

Archbishop Desmond Tutu, 2013

"There will be no end to the TB epidemic without an end to TB among the groups most threatened by the disease.”

Treatment Action Group, 2017