CDC’s Integral Role in Ending the Global TB Epidemic

| Speaker |

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| Moderator |

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CDC’s Integral Role in Ending the Global TB Epidemic

Hank Tomlinson, Ph.D.
Director, Division of Global HIV & TB
Center for Global Health
U.S. Centers for Disease Control and Prevention
GOAL 3, Target 3.3:

By 2030, end the epidemics of AIDS, tuberculosis, malaria, and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases.

Vision:
A world free of TB
- Zero TB deaths
- Zero TB disease
- Zero TB suffering

Goal:
End the global TB epidemic
Tuberculosis is the world's top infectious disease killer, **CLAIMING 1.5 MILLION LIVES EACH YEAR**

1.7 BILLION people are infected with latent TB (23% of the world's population)

10 MILLION people become ill with the disease each year

1,100,000 million are children

251,000 deaths from TB among HIV-positive people; leading cause of death for PLHIV

484,000 new cases of MDR/RR-TB in 2018; accounts for nearly 30% of projected AMR disease and death

**WHAT IS DRIVING THE CONTINUED SPREAD OF TB?**

- More than 30% of all TB cases go undetected, unreported, or not linked to care
- Weak Health Care Systems
- Patients are not being diagnosed and treated effectively, leading to continued transmission and growing threat of drug resistance
- TB/HIV Co-Infection
- TB is a top killer of people living with HIV, whose weakened immune systems make them more susceptible to becoming ill with TB
- TB has grown resistant to available drugs. DR-TB is deadlier, costlier, and harder to treat. It's now found in every country.
Investment in TB is a “No Brainer”

Expert panel including Nobel Laureates identified 19 Sustainable Development Goal (SDG) targets with the best value for money for 2016-2030

- Focus on these would quadruple impact of aid budget without extra spending

- Reducing TB deaths by 95% would result in a $43 gain in environmental, economic & social benefits per $1 spent

- 84% of TB funding already comes from governments of affected countries, but there remains a $2B shortfall to reach global targets

No-brainers
Benefit per dollar spent for various development targets, $

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<tr>
<th>No-brainer</th>
<th>Benefit per dollar spent, $</th>
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<td>Trade liberalisation</td>
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<td>Access to contraception</td>
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<td>Reducing tax evasion</td>
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<td>Increasing migration</td>
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<td>Reducing stunting</td>
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<td>Reducing tuberculosis</td>
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<td>Reducing malaria</td>
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<td>Greater pre-school access in sub-Saharan Africa</td>
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<td>Increasing circumcision for those at risk from HIV</td>
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<td>Reducing coral loss</td>
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Source: Copenhagen Consensus Centre
WHO End TB Strategy
Accelerate Impact to EndTB & MDR TB by 2035
Scale-up What Works & Invest in Innovations

- Current global trend: -1.5%/Year
- Projected Year to End TB: 2170 (>1 billion deaths from TB)

Optimize use of current & new tools, expand access to health services, and pursue social protection

-10%/year by 2025

Political will and supportive policies

-5%/year

-17%/year

Rate per 100,000/Year

2015 2020 2025 2030 2035

EndTB Strategy Target: 2035
Reason to Hope:
Progress & Momentum

- 60 M+ lives saved
  Through TB and TB/HIV treatment, since 2000

- 6.5M PLHIV screened for TB
  CDC-supported, as of September 2018

- Doubling MDR-TB Case Notifications since 2010

- Xpert Rollout:
  >10 million cartridges delivered

- 2% TB incidence decrease per year

- 2018 First ever UN HLM on TB

- WHO endorses shortened 9-12 mo. And all oral MDR regimen

- 5M PLHIV will be reached with TPT

- 3 new anti-TB drugs
  Approved by FDA for treatment of MDR-TB
  Bedaquiline, Linezolid and Pretomanid

- Promising new vaccine candidates
Political leadership, collaboration and multi-sectoral accountability key requirements

Reaffirmed the 2030 agenda for Sustainable Development
• Goal 3: Ensure healthy lives & promote well being

People on treatment (2018-2022)
• TB: 40 million
• Children with TB: 3.5 million
• MDR-TB: 1.5 million
• Children with MDR-TB: 115,000
• TB Preventive treatment: > 30 M: 6 million PLHIV, 4 million children, 20 million household contacts

Resources (2018-2022)
• 13 billion USD avg. per year for implementation
• 2 billion USD per year for research

2018 UNGA TB UNHLM
Bold Targets for 2022
CDC PROVIDES

- Unmatched scientific and technical knowledge
- Technical know-how to build large sustainable public health programs, such as PEPFAR, polio and smallpox
- Strong peer to peer relationships with Ministries of Health
- Strategic use of data to increase impact and cost effectiveness
- Global and domestic expertise to inform dual efforts
Provide scientific leadership and expertise for developing, evaluating, and implementing evidence-based and innovative approaches to find, cure, and prevent TB.
Tackling TB on Every Front
Implementing a Comprehensive Epidemic Response

**Prevent Infection:**
- Breaking the cycle of transmission is essential to protect our health workforce and reduce new infections and cases

**Find and Cure Active TB:**
- 40% of adult and 60% of childhood TB cases are missed each year

**Prevent Disease:**
- Prevention must be linked to treatment efforts. PLHIV and children are 30x and 10x more likely to develop disease and die from TB than others, and benefit most from TB Preventive Treatment (TPT), which can reduce risk of death by up to 80%

As part of the Gates-funded PERCH study, we demonstrated TB is one of top 10 causes of pneumonia in children.

Our work in South Africa has also led to WHO guideline changes for treatment of drug-resistant TB among children.

In Kenya, we are identifying the fastest, most effective way to diagnose TB in children: assessing innovative specimens & tests.

In Mozambique and Uganda, we’re implementing and evaluating approaches to household-based contact investigations to identify and treat children at risk for TB.
TB/HIV Care Integration

Proportion of TB Patients with Known HIV Status*, 2017

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Proportion of HIV-Positive TB Patients on ART*, 2017

*In selected PEPFAR countries

Photography by Thom Pierce

WHO Global TB Report 2018
TB Preventive Treatment (TPT)
TB BASICS
Building and Strengthening Infection Control Strategies

- Innovative mentorship and training program to strengthen TB infection control
- Designs tailored interventions to address gaps
- Implements M&E and ongoing program improvement
- Emphasizes sustainable, local capacity development
- Scaling-up in > 15 countries in Africa and Asia
Laboratory and Surveillance System Strengthening

Data Use to Improve Program

Engaging Local Experts to Validate and Analyze TB data to END TB

Xpert MTB/RIF Optimization

TB SLMTA & SLIPTA

Build and Sustain
What’s Next
Investing in Game-Changers to End TB

- Rapid, mobile, point-of-care diagnostics
  - Urine, blood, breath, sweat

- New treatments
  - New therapies and drugs for all forms of TB
  - Shorter, less toxic treatment regimens for adults and children
  - Alternative treatment delivery (e.g. depo, inhaled, transdermal)

- Effective vaccine to prevent TB infection and disease

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
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Questions?