Global and Regional Situation of TB

And

The END TB Strategy

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Global TB Situation

In the context of:

- Global TB strategies and broader development goals, and associated targets

Based on:

- Annual rounds of global TB data collection (since 1997) implemented by WHO
- Other databases: WHO, World Bank, UNAIDS
Tuberculosis is the leading infectious killer

Source: Global TB Report 2017

1.7 MILLION TB DEATHS
INCLUDING 0.4 MILLION TB DEATHS AMONG PEOPLE WITH HIV*

TB is the top infectious killer worldwide

TB is also the leading cause of deaths due to antimicrobial resistance and among people with HIV

MDR-TB crisis with gaps in detection and treatment

Only 1 in 5 needing MDR-TB treatment were enrolled on it

Funding shortfall for TB implementation

Gap of over US$1.2 billion per year for TB research

Current actions and investments are falling far short

TB incidence

- Total: 10.4
- HIV-positive (10% in 2016): 1.0

TB deaths

- HIV-negative: 1.7
- HIV-positive: 0.5

Incidence rate falling at about 2% per year
Mortality rate falling at about 3% per year
TB is one of the top 10 causes of death worldwide, ranking 9th, as the top infectious disease killer.

- Ischaemic heart disease: 9.4 million
- Stroke: 6.7 million
- Lower resp. infections: 5.2 million
- COPD: 4.8 million
- Cancer: tracheal, bronchus, lung: 3.6 million
- Diabetes: 2.1 million
- Alzheimers, other dementias: 1.4 million
- Diarrheal diseases: 1.3 million
- TB: 1.0 million
- Road injuries: 0.9 million

TB deaths among HIV-positive people:

Millions in 2015
TB has caused more deaths than HIV since 2012

40% of HIV deaths might be due to TB!!
TB is in every country

Highest incidence rates in Africa and parts of Asia

45% South-East Asia, 25% Africa, 17% Western Pacific, 7% Eastern Mediterranean, 3% Americas, 3% Europe
5 countries = 56% of cases in 2016

7 countries account for 64%

circles shown for countries with at least 100,000 incident cases in 2016
Drug-resistant TB in every country (n=160) where it has been measured

Globally: 600,000 new cases of TB resistant to rifampicin
490,000 of which had MDR-TB

% new TB cases with MDR/RR-TB

- 0-2.9
- 3-5.9
- 6-11.9
- 12-17.9
- >18
MDR/RR-TB: 3 countries, 47% cases

Number of incident cases

1000
10 000
100 000
150 000

circles shown for countries with at least 1000 incident cases in 2016
GAPS NEED TO TACKLE
Case notifications increasing but large incidence: notification gap

Number of cases globally (millions)

2000 2008 2016

4.1 million cases
Underreporting, under-diagnosis

4.1 million cases

Treatment success 83% globally in 2015, as in 2014

Incidence

Case notifications (61% of incidence in 2016)

6.3

10.4

Case notifications increasing but large incidence: notification gap

Incidence

Case notifications (61% of incidence in 2016)

6.3

10.4

4.1 million cases
Underreporting, under-diagnosis

Treatment success 83% globally in 2015, as in 2014

Number of cases globally (millions)

2000 2008 2016
Drug-resistant TB: treatment enrolments and gaps

Treatment success 54% in 2014, up from 52% in 2013

MDR/RR-TB cases among notified TB patients (350,000)

Detected

Enrolled on treatment
130,000 in 2016, 126,000 in 2015

Incidence

TB detection

DST

Number of cases globally


0 200,000 400,000 600,000
Global gaps in coverage of ART for HIV-positive TB patients

TB incidence among people living with HIV (74% in Africa)

Notified TB patients known to be HIV-positive (46% of incidence in 2016)

On ART (85% of notified in 2016)

Number of cases globally (millions)


TB detection, HIV testing

ART coverage

Treatment success: 78% in 2015, up from 75% in 2014
TB prevention services
Preventive treatment for latent TB infection (LTBI), BCG vaccination, infection control

1.7 billion people globally have LTBI, 23% world’s population

Preventive treatment for LTBI, people living with HIV

Children <5, household contacts
162,000 started on treatment for LTBI in 2016, 13% of the estimated 1.3 million eligible (up from 7% in 2015)

18 (down from 21) of 30 high TB/HIV burden countries did not report data
Two overarching messages

1. Burden of TB disease still high, affecting all countries, all ages, men, women and children

2. There is progress, but it is slow - not fast enough to reach targets or make major headway in closing persistent gaps
The opportunity of the SDG era to reach the end TB targets

SDG TARGET 3.3 – BY 2030
END THE TB EPIDEMIC
The End TB Strategy:
Vision, Targets and Pillars

Vision:
A world free of TB
Zero TB deaths, Zero TB disease, and Zero TB suffering

Goal:
End the Global TB epidemic

<table>
<thead>
<tr>
<th>TARGETS</th>
<th>MILESTONES</th>
<th>SDG*</th>
<th>END TB</th>
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<tbody>
<tr>
<td></td>
<td>2020</td>
<td>2025</td>
<td>2030</td>
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<tr>
<td>Reduction in number of TB deaths compared with 2015 (%)</td>
<td>35%</td>
<td>75%</td>
<td>90%</td>
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<tr>
<td>Reduction in TB incidence rate compared with 2015 (%)</td>
<td>20%</td>
<td>50%</td>
<td>80%</td>
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<td>TB-affected families facing catastrophic costs due to TB (%)</td>
<td>0%</td>
<td>0%</td>
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DOTS → STOP TB Strategy → End TB Strategy

PILLAR 1
Integrated, patient-centered TB care and prevention

PILLAR 2
Bold policies and supportive systems

PILLAR 3
Intensified research and innovation

Government stewardship and accountability, with monitoring and evaluation

Building a strong coalition with civil society and communities

Protecting and promoting human rights, ethics and equity

Adaptation of the strategy and targets at country level, with global collaboration
Using a multisectoral approach to end TB

**Goal 1:** Social protection when ill

**Goal 2:** UHC: HIV, NCD, Risk factors

**Goal 3:** UHC TB services

**Exposure**

**Late infection**

**Active disease**

**Suffering and deaths**

**Environment**

- Poor living and working conditions
- Food insecurity
- Unhealthy behaviour
- Other diseases and risk behaviours

**Factors:**

- HIV/AIDS
- NCDs (Lung diseases, diabetes, alcohol, smoking)
- Impaired host defence/susceptibility

**Conducive environment for transmission**

Factors:

- Crowding, poor ventilation
- Silica, indoor air pollution
- Poor living and working conditions
- Impaired host defence/susceptibility

**End TB**
Accelerating to reach the WHO & SDG End TB targets

Accelerate scaled up use of current and new tools, pursue universal health coverage and social protection.

Current global trend: -1.5%/year

-10%/year by 2025

-5%/year

-17%/year

Introduce new tools: a vaccine, new drugs & treatment regimens for treatment of active TB disease and latent TB infection, and a point-of-care test.
First, accelerate uptake of existing tools for diagnosis, care and prevention to scale up the TB response now.
New guidelines for treatment of DS-TB and ethics guidance

- Provision of a package of interventions – on patient care and support for all patients.
- Use of digital health technologies
- Effective treatment administration options such as community or home-based treatment, over facility-based treatment.
- Decentralized model of care over a centralized model for patients on MDR-TB treatment.
Compendium of WHO guidelines

With 33 associated standards

Precision in TB diagnosis and treatment possible in 2017

TREATMENT FOR DRUG SUSCEPTIBLE TB:
6HRZE or NEW Rx (?BNiMZ)

FIRST-LINE RAPID DIAGNOSTIC
XPERT MTB/RIF

SECOND-LINE LINE PROBE ASSAY

SECOND-LINE RAPID DIAGNOSTIC
SECOND-LINE LINE PROBE ASSAY

STANDARDIZED SHORTER
MDR-TB REGIMEN
4-6 Km-M-Pto-Cfz-Z-Hhd-E / 5 M-Cfz-Z-E
or NEW Rx (?BNiMZ)

RESISTANCE TO FLUOROQUINOLONES
A/O INJECTABLES

NEGATIVE
RD-RESISTANT TB

POSITIVE

TAILORED MDR-TB REGIMENS
OR NEW REGIMENS (?BPaL)
Second, **look ahead to harness innovations**
Transformational innovations to End TB

- **Precision medicine**
- **Genomics**
- **Big data**
- **Digital technologies**
- **Internet of things**
- **Research**
High-level spotlight on ending TB
• Move rapidly to achieve universal health coverage by strengthening health systems and improving access to people-centered TB prevention and care, ensuring no one is left behind.
• Mobilize sufficient and sustainable financing through increased domestic and international investments to close gaps in implementation and research.
• Advance research and development of new tools to diagnose, treat, and prevent TB.
• Build accountability through a framework to track and review progress on ending TB, including multisectoral approaches.

• Ministers also promised to minimize the risk and spread of drug resistance and do more to engage people and communities affected by, and at risk of, TB.
LEARNING FROM COMMUNITY IN REGIONAL NEIGHBORS
Lives saved by TB treatment

cumulative total 53 million 2000–2016

We have been saving lives. It is a great achievement. However.........
Case Notification Rate – after the completion of DOTS Expansion, 2005, in Asia: No Decline of TB
Where economy has been growing significantly.
Historical Estimate of TB incidence (WHO Global TB reports)


10.4 M
National TB Prevalence Surveys
Data sources, TB burden estimates

**TB incidence**
- Case notifications, standard adjustment (n=134, 15% burden)
- Prevalence survey (n=24, 68% burden)
- Case notifications, expert opinion (n=54, 17% burden)
- Capture-recapture study (n=5, 0.5% burden)

**TB mortality**
- VR, WHO (n=111)
- VR, IHME (n=18)
- Indirect (n=88)

**Drug-resistant TB**
- Surveillance (n=90)
- Surveys (n=60)
National TB prevalence survey results completed between 2010 and 2015

*WHO’s analysis with Xpert MTB/RIF results on S+ slides at SRL Antwerp ** Provisional Results

Prevalence per 100,000 in 15+ years

**WHO**’s analysis with Xpert MTB/RIF results on S+ slides at SRL Antwerp ** Provisional Results
Prevalence to notification ratio:
smear positive cases (National prevalence surveys)

Prevalent TB cases not being detected or
With very long delay of diagnosis

*provisional results
Don’t forget about the men!
Male Female Ratio of TB prevalence
Ageing epidemic in Asia, mixed picture in Africa

Prevalence rate (per 100,000 population)

Age group (years)
Many cases don’t report symptoms meeting criteria for presumptive TB

Typically 30–50% for both S+ and bact-confirmed; up to 70–80%
Many symptomatic TB cases had sought care prior to detection by survey.

Symptomatic bact-confirmed prevalence (per 100,000 population)
High proportion of TB patients being treated in private/NGO sector (Non-NTP) in several countries*

*Those currently on TB treatment at the time of the survey (excluding unknown location)

** Thailand – Survey excluding Bangkok
TB prevalence surveys: What is it measuring?

- TB Cases in the Community
- Incident Cases
- Self Cure
- Cure by Treatment
- Death
20% of population occupies 50% of community TB burden

- Hot spot villages with poor access
- the Elderly (≥ 55y): Care givers to grand children; NCD’s comorbidity
- Men (≥35y)
- Urban < Rural → Urban > Rural < Remote
  - Congestion
- Urban Poor/ Migrants >> Middle class / Original Population
- Workers in informal sector (non regular employees)
- MDR-TB in Yangon
The End TB Strategy

Accelerate scaled up use of current and new tools, pursue universal health coverage and social protection.
Yes, WE CAN!! - Japan 1960-79: Just the contributions of economic development and UHC?
Thank you very much