The Global TB Epidemic
The Paradigm Shift

E. Jane Carter, M.D.
President
International Union Against TB and Lung Disease
Associate Professor
Division of Pulmonary, Critical Care and Sleep
Warren Alpert School of Medicine at Brown University

Talk Outline

• Global Epidemiology
• End TB Strategy- WHO
• Paradigm Shift – Global Plan – Stop TB Partnership
• The Union’s Work- shifting the Paradigm
• What can you and I do to shift the Paradigm?

Millennium Development Goals 2015

Goal 6 – Combat HIV/AIDS, malaria and other diseases:
Achievements in TB

TARGET 6.C.
Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases

➢ 37M lives saved between 2000 and 2013

Disclosures

• Grant Funding
  – USAID AMPATH, CFAR
• Boards
  – President, The Union (Paris, France)
  – Vital Strategies (NYC, NY)
• Committees
  – Advisory Panel -TB Modeling and Analysis Consortium
  – Global Fund- Committee on Tuberculosis
• Consulting
  – Consultant, Global TB Institute, New Jersey, USA
  – Consultant, JSI: Project – Linking Primary Care Sites to TB Control in Massachusetts (Completed May 2015)
• No financial relationship with a commercial entity producing health-care related products and/or services as well as no tobacco related associations.

Goal 6 – Combat HIV/AIDS, malaria and other diseases:
Achievements in TB

TARGET 6.C.
Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases

➢ 61M people cured since 1995
Global Epidemiology 2014

- 9.6 million estimated to have fallen ill to TB
  - 5.4 million Male; 3.2 million Female; 1 million Children
- 6 million cases were reported to WHO
  - 63% reported; the outcomes for 3.6 million are therefore unknown
- 480,000 cases of MDR estimated
  - 123,000 identified and reported
  - 110,000 reported to start treatment
  - 50% treatment success rate globally
- 1.2 million persons living with AIDS fell ill to TB
  - 400,000 died

TB Incidence rates 2014

SDG health goal 3 and its 13 targets by 2030

4 Major barriers to the fight against TB

- Weak Health Care Systems
  - Including those of large, unregulated non-state sectors
- Underlying determinants
  - Poverty, under nutrition, migration, aging populations in addition to risk factors such as DM, silicosis, and exposure to tobacco/biomass smoke
- Lack of Effective Tools
- Continuous unmet funding needs
**Evolution of global TB strategies**

- **1994-2005**
  - The DOTS Strategy
    1. Government commitment
    2. Case detection through passive case finding
    3. Standardized chemotherapy to all sputum smear positive TB cases at a fixed proportion cost
    4. Establishment of a system of regular supply of anti-TB drugs
    5. Establishment of a monitoring system for program reporting and evaluation

- **2006-2015**
  - The Stop TB Strategy
    1. Integrated, patient-centred TB care and prevention
    2. Bold policies and supportive systems
    3. Intensified research and innovation

- **2016-2035**
  - The End TB Strategy
    1. Pursue high-quality DOTS expansion and enhancement
    2. Address TB/HIV, MDR-TB and other challenges
    3. Contribute to health system strengthening
    4. Engage all care providers
    5. Empower people with TB and communities
    6. Enable and promote research

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**Changing paradigm and accelerating decline, 1990-2035**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>DOTS Strategy</th>
<th>Stop TB Strategy</th>
<th>End TB Strategy</th>
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<tbody>
<tr>
<td>Incidence per 100,000/year</td>
<td>130</td>
<td>&lt;50</td>
<td>&lt;20</td>
</tr>
<tr>
<td>Mortality rate %</td>
<td>10</td>
<td>&lt;5</td>
<td>&lt;1</td>
</tr>
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**Vision, goal, targets, milestones**

**Vision:** A world free of TB

*Zero TB deaths, Zero TB disease, and Zero TB suffering*

**Goal:** End the Global TB Epidemic (<10 cases per 100,000 population)

<table>
<thead>
<tr>
<th>INDICATORS</th>
<th>MILESTONES</th>
<th>TARGETS</th>
<th>MILESTONES</th>
<th>TARGETS</th>
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<tbody>
<tr>
<td>Reduction in number of TB deaths compared with 2015 (%)</td>
<td>2020</td>
<td>2025</td>
<td>SDG 2030</td>
<td>End TB 2035</td>
</tr>
<tr>
<td>Reduction in TB incidence rate compared with 2015 (%)</td>
<td>35%</td>
<td>75%</td>
<td>90%</td>
<td>95%</td>
</tr>
<tr>
<td>TB affected families facing catastrophic expenditure due to TB (%)</td>
<td>Zero</td>
<td>Zero</td>
<td>Zero</td>
<td>Zero</td>
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</tbody>
</table>

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**The End TB Strategy: 3 pillars and 4 Principles**

**PILLAR 1:** Integrated, patient-centred TB care and prevention

**PILLAR 2:** Bold policies and supportive systems

**PILLAR 3:** Intensified research and innovation

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**Projected acceleration of TB incidence decline to target levels (World Health Assembly 2014)**

- **Current global trend:** -1.5% per year
  - **-10% per year by 2023**
  - **-1.7% per year**

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**The End TB Strategy - Components**

1. **INTEGRATED, PATIENT-CENTRED CARE AND PREVENTION**
   - Early diagnosis of tuberculosis including universal drug-susceptibility testing, and systematic screening of contacts and high-risk groups
   - Treatment of all people with tuberculosis including drug-resistant tuberculosis, and patient support
   - Collaborative tuberculosis/HIV activities, and management of co-morbidities
   - Preventive treatment of persons at high risk, and vaccination against tuberculosis

2. **BOLD POLICIES AND SUPPORTIVE SYSTEMS**
   - Political commitment with adequate resources for tuberculosis care and prevention
   - Engagement of communities, civil society organizations, and public and private care providers
   - Universal health coverage policy, and regulatory frameworks for case notification, vital registration, quality and rational use of medicines, and infection control
   - Social protection, poverty alleviation and actions on other determinants of tuberculosis

3. **INTENSIFIED RESEARCH AND INNOVATION**
   - Discovery, development and rapid uptake of new tools, interventions and strategies
   - Research to optimize implementation and impact, and promote innovations
**TB low-incidence countries**

Countries with <10/100,000 TB cases/year, notified all forms cases & >300k population

Green countries progressing rapidly or with potential to consider elimination in the future

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**What is the Global Plan?**

- Costed investment plan for first 5 yrs of End TB Strategy
  - A roadmap to accelerating impact on the TB epidemic and moving towards the targets of the WHO End TB Strategy and the SDGs

- Developed by Stop TB Partnership
  - Led by a Task Force appointed by the Stop TB Board
  - Four consultations: Addis, Bangkok, Buenos Aires, Istanbul
  - Web consultation – 170 comments
  - Feedback letters by organizations
  - Stop TB Board discussion in April 2015 and approval in November 2015

- Requested by the WHA 2014

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**The 8 areas of paradigm shift**

- Mindset
- Human rights and gender-based approach
- Changed and more inclusive leadership
- Community- and patient-driven approach

- Innovative TB programmes equipped to end TB
- Integrated health systems fit for purpose
- New, innovative and optimized approach to funding
- Investment in socio-economic actions

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**Projected acceleration of TB incidence decline to target levels (World Health Assembly 2014)**

Optimize use of current & new tools emerging from pipeline, partner universal health coverage and social protection

Introduce new tools: a vaccine, new drugs and shorter regimens for treatment of active TB and latent infection, a point-of-care test

Current global trend: -1.5%/year

-3%/year by 2025

-5%/year

-1%/year
### Mindset

- **DOTS Strategy #1= Political Commitment**

  Dramatic progress can only be achieved ... "once a country’s leadership announces to its people – and its health services that TB will be fought on a long term campaign, similar to HIV and Polio and that it will devote the resources needed ..."

### Human Rights and Gender Based Approach

- Prohibit discrimination against people with TB
- Empower people to know their status
- Ensure the participation of people with TB in Health Policy Decision Making
- Establish Mechanisms to Address Rights of People with TB
- Protect the Privacy of People with TB

### Changed and More Inclusive membership

- Mobilize all
  - From high (government leaders) to low (individual leaders)
  - From all sectors
- Make partnerships
  - PPM
  - Across ministries- health and finance
  - Private sector
  - South south and regional

### Community and Patient Driven

- Patients with TB and the communities they represent are at the heart of the paradigm shift
- Partners in the design and M&E of programs, particularly at POC
- New tools – particularly social media – are key

### Innovative TB Programs Equipped to End TB

- TB programs must concentrate not just on saving lives but stopping transmission through early case detection, stronger prevention programs and knowledge of at risk populations

### Integrated Health Care

- Fragmentation and isolation of TB programs within country programs must end
- The separation of programs aimed at tackling specific types of TB and co-infections with specific co-morbidities must end
- TB must become part of an effort to supply primary health care
- TB programs must embrace One Health programs, the concept that human health is tied to the health of animals and environment
New, Innovative and Optimized Approach to Funding TB Care

- Programs must
  - Present a business model for increased and front loaded funding
  - Capitalize on the cost savings of TB investments
- Use resources efficiently and wisely
- Financial incentives for improved outcomes
- Innovative finance particularly as social insurance innovations move to scale

Investment in Socioeconomic Actions

- Nonmedical interventions and investments needed—housing, sanitation, poverty reduction, and strengthening of social safety nets.

90-(90)-90 targets

- Achieve as early as possible but no later than 2025
  - Reach at least 90% of all people with TB and place all of them on appropriate therapy—first line, second line, as well as preventive therapy as required
  - As a part of this approach, reach at least 90% of the key populations—the most vulnerable, underserved, at-risk populations
  - Achieve at least 90% treatment success for all people diagnosed with TB, through affordable treatment services, adherence to complete and correct treatment, and social support.

Areas of focus

- Important role for both Communities and Private sector – private health care, businesses
- Key populations
- Differentiated approach
- Social protection
  - Actions required beyond the health sector
- Universal Health Coverage
- New tools
Resource needs-investment scenarios
Over the next 5 years, a total of 65 billion investment required:
USD 56 billion needed to implement TB programmes
USD 9 billion to fund R&D for new tools.

Baseline scenario is not an option – it misses the 2020 milestones and costs continue to escalate
Accelerated scenario is preferred – upfront investment but costs come down and returns are better

Projected acceleration of TB incidence decline to target levels (World Health Assembly 2014)

Optimize use of current & new tools emerging from pipeline, focus on reduced health coverage and social protection

The Union: KNOW SHARE ACT

Non Use of stigmatizing language
Language in tuberculosis services: can we change to patient-centred terminology and stop the paradigm of blaming the patients?

Inclusion of Civil Society
• 100 free registrations at the World Conference for members of civil society
  – Application online with transparent policy for scoring
• Board has instructed all regions to include in their leadership and in their charter inclusion of civil society
• UCAP
• Imbizo space at the World Conference 2015
Union MDRTB Short-Course Tx Studies

**STREAM Stage 2 Additional Study Arms**
- Fully oral 9 regimen
  - kanamycin replaced by bedaquiline
  - moxifloxacin replaced by levofloxacin
- 6 month regimen (includes kanamycin)
  - prothionamide replaced by bedaquiline
  - moxifloxacin replaced by levofloxacin
  - ethambutol removed
  - INH dose increased

**SORT IT Operational Research Courses (2009 – 2015)**
TOTAL: 32 courses with 367 participants from 79 countries

**RESEARCH TO GLOBAL POLICY**

- 1 Expert Meeting 2009
- 2 papers in IJTLĐ
- 2 papers in TMIH
- 1 paper in TRSTMH
- 1 paper in BMC Medicine

**INDIA: Global Policy to National Policy**

World Diabetes Foundation
The Union
WHO

NTP (RNTCP) / MOH
National program
Cancer, Diabetes, CVD & Stroke
National experts

Screening of TB patients for diabetes & 60 peripheral centres

Oct 2011
Stakeholders

Jan 2012
Results presented back to stakeholders

Sept 2012
RNTCP and NCD Policy Decision: Routine Screening of All TB patients for DM in India
Development of an MDR unit

- To Address the need for HR capacity scale up
- Hiring of 6 Technical Consultants
  - 2 presently on board
- Education and Curriculum Unit is standardizing all training modules
- Expanded TA for MDR

What can I do?

- Mark on your calendar to call the congressman’s office once per quarter
- Ask to speak to his lead on health matters
- Tell him a story you know of how TB impacts his community

Make the commitment

#ChangeTB
Look Under a rock

What I found under my “rock” in RI?

- Key populations
  - Pregnant FB women (not prisons or homeless)
- New partners
  - OB Gyn, IVF Clinic, Rheum/Derm/GI
- Bring unusual partners together
  - NM Echo introductions to Kenya NTP and to The Union Scientific Director
- Share your expertise
  - GR Brown University – TB Screening 2016: Is a blood test better?
  - Call my congressman

How are the estimates determined?

Observational Cohort Treatment outcome

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
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<tbody>
<tr>
<td>Cured</td>
<td>328</td>
<td>80.4%</td>
</tr>
<tr>
<td>Treatment completed</td>
<td>7</td>
<td>1.7%</td>
</tr>
<tr>
<td>Failure</td>
<td>12</td>
<td>2.9%</td>
</tr>
<tr>
<td>Died</td>
<td>32</td>
<td>7.8%</td>
</tr>
<tr>
<td>Lost to follow-up</td>
<td>27</td>
<td>6.6%</td>
</tr>
<tr>
<td>Not evaluated</td>
<td>2</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

Among patients who survived, treatment success did not differ significantly by HIV status: 89.0% in HIV-positive and 89.3% in HIV-negative patients
The Union
TA, Education, Training and Research in >70 countries
TB, HIV, Lung Health, NCDs, Tobacco Control and Policy