The Global TB Epidemic
The Paradigm Shift

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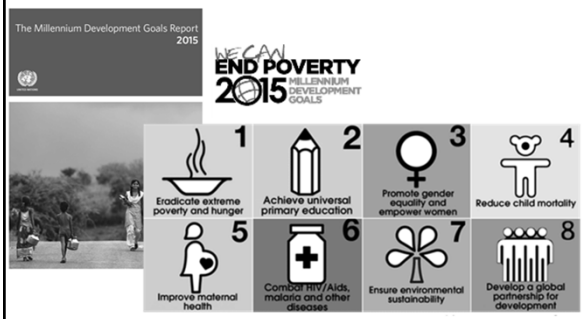
Disclosures

- 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.

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



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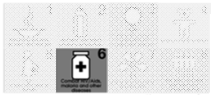
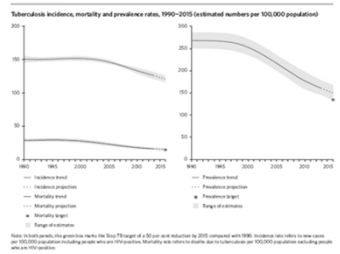
Goal 6 – Combat HIV/AIDS, malaria and other diseases: Achievements in TB



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

Tuberculosis

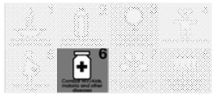
Through effective prevention, diagnosis and treatment, the burden of tuberculosis has decreased



➢ **37M lives saved between 2000 and 2013**

GLOBAL TB PROGRAMME — World Health Organization

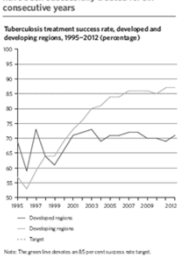
Goal 6 – Combat HIV/AIDS, malaria and other diseases: Achievements in TB



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

Tuberculosis

In the developing regions, more than 85 per cent of newly diagnosed TB cases have been successfully treated for six consecutive years



➢ **61M people cured since 1995**

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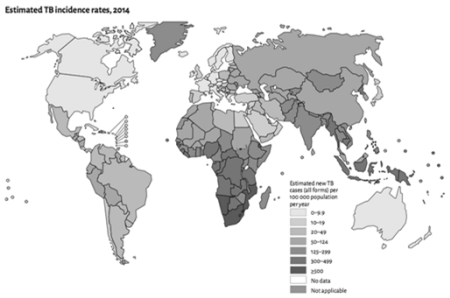
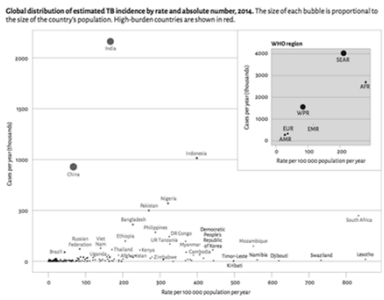
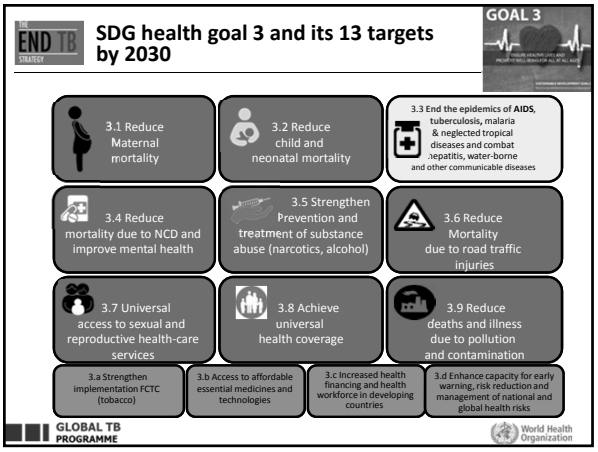
Global Epidemiology 2014

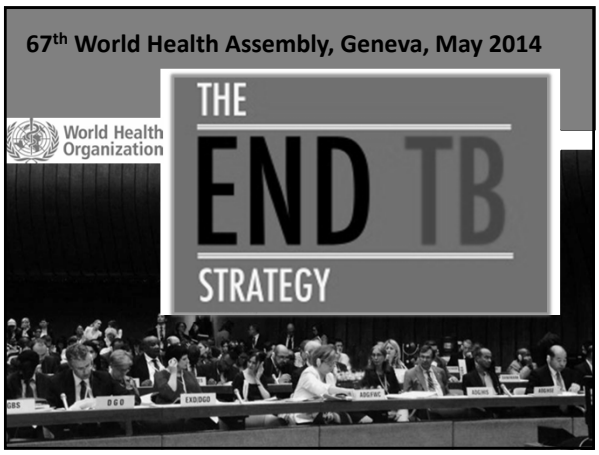
- 9.6 million estimated to have fallen ill to TB
  - 5.4 million Male; 3.2 million Female; 1 million Children
- 6 million cases were reported to WHO
  - 63% reported- the outcomes for 3.6 million are therefore unknown
- 480,000 cases of MDR estimated
  - 123,000 identified and reported
  - 110,000 reported 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









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	2006-2015	2016-2035
The DOTS Strategy	**The Stop TB Strategy**	**The End TB Strategy**
1. Government commitment 2. Case detection through passive case finding 3. Standardized chemotherapy to all sputum smear positive TB cases of under proper case management conditions 4. Establishment of a system of regular supply of anti-TB drugs 5. Establishment of a monitoring system, for programme supervision and evaluation	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	**1. Integrated, patient-centred TB care and prevention** **2. Bold policies and supportive systems** **3. Intensified research and innovation**

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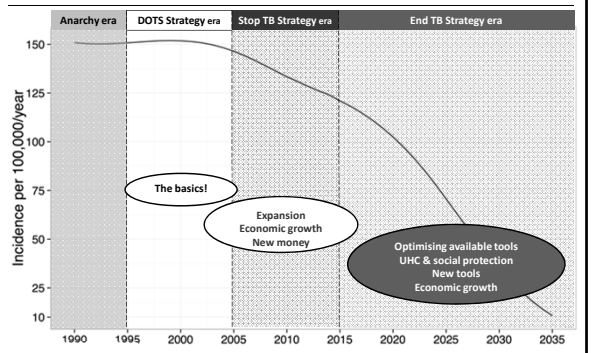
Changing paradigm and accelerating decline, 1990-2035



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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)

INDICATORS	MILESTONES		TARGETS	
	2020	2025	*SDG* 2030	*End TB* 2035
Reduction in number of TB deaths compared with 2015 (%)	35%	75%	**90%**	**95%**
Reduction in TB incidence rate compared with 2015 (%)	20% (<85/100 000)	50% (<55/100 000)	**80% (<20/100 000)**	**90% (<10/100 000)**
TB-affected families facing catastrophic expenditures due to TB (%)	Zero	Zero	**Zero**	**Zero**

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The End TB Strategy: 3 pillars and 4 Principles

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The End TB Strategy - Components

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

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

3. INTENSIFIED RESEARCH AND INNOVATION
- A. Discovery, development and rapid uptake of new tools, interventions and strategies
- B. Research to optimize implementation and impact, and promote innovations

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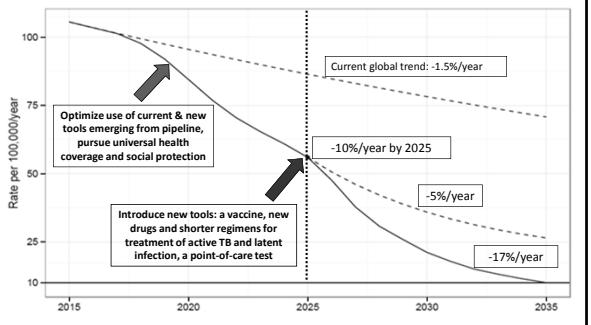
Projected acceleration of TB incidence decline to target levels (World Health Assembly 2014)



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TB low-incidence countries

Ref: Global TB Control Report 2013

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

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

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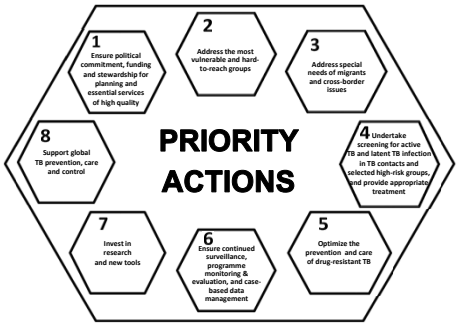
ACTION FRAMEWORK

8 priorities for elimination in low-incidence countries



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THE PARADIGM SHIFT 2016-2020

Global Plan to End TB

Stop TB Partnership

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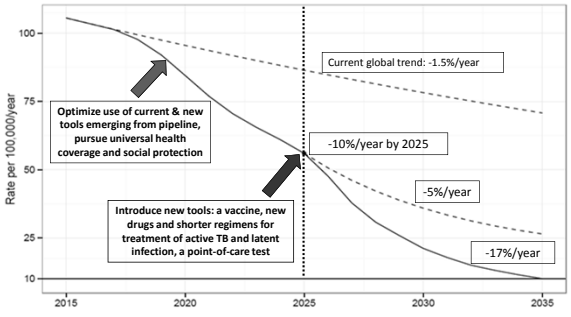
Projected acceleration of TB incidence decline to target levels (World Health Assembly 2014)



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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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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

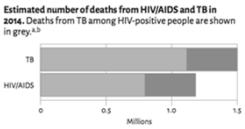
- Mobilize all
  - From high (government leaders) to low (individual leaders)
  - From all sectors
- Make partnerships
  - PPM
  - Across ministries- health and finance
  - Private sector
  - South south and regional

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



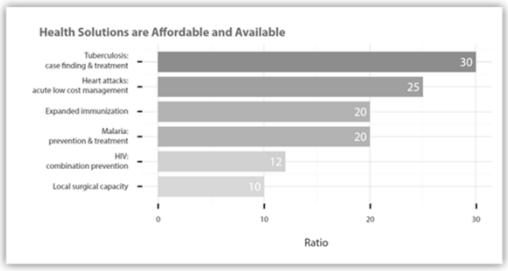
Integrated Health Care

- 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

2016-2030: Era of the Sustainable Development Goals High-level Panel sets the stage



Improved health and productivity gains per $1 spent

Reference: The report of the high-level panel of eminent persons on the post-2015 development agenda

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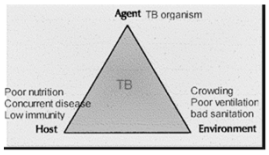
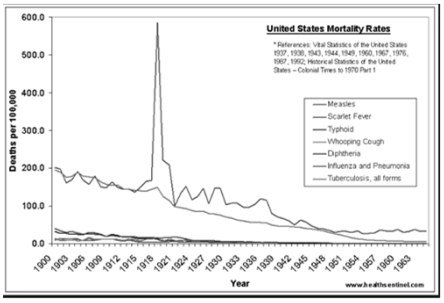
Investment in Socioeconomic Actions

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



Tuberculosis case rates fall as socioeconomic conditions improve



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

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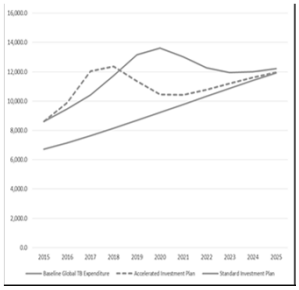
Resource needs-investment scenarios

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

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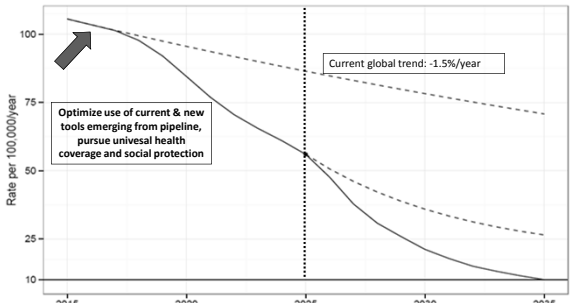
Projected acceleration of TB incidence decline to target levels (World Health Assembly 2014)



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The Union

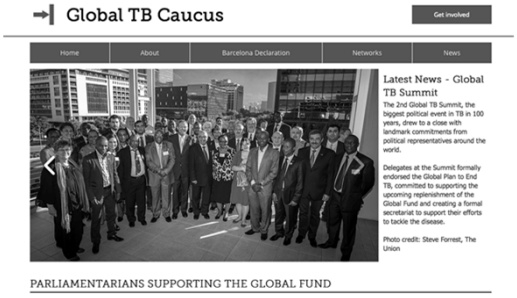
International Union Against Tuberculosis and Lung Disease

Health solutions for the poor

The Union:

KNOW SHARE ACT

Barcelona Declaration Union World Conference 2014



PARLIAMENTARIANS SUPPORTING THE GLOBAL FUND

Non Use of stigmatizing language

INT J TUBERC LUNG DIS 16(6):714–717
©2012 The Union
http://dx.doi.org/10.5588/ijtld.11.0635

PERSPECTIVES

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

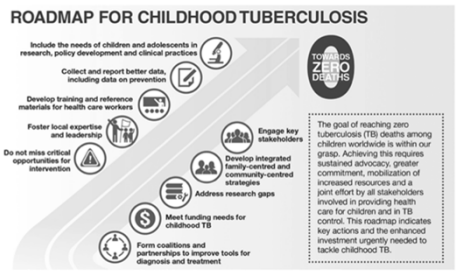
R. Zachariah,* A. D. Harries,†‡ S. Srinath,§ S. Ram,¶ K. Viney,# E. Singogo,** P. Lal,§ A. Mendoza-Ticona,†† A. Sreenivas,§ N. W. Aung,‡‡ B. N. Sharath,§§ H. Kanyerere,¶¶ N. van Soelen,## N. Kirui,*** E. Ali,* S. G. Hinderaker,††† K. Bissell,† D. A. Enarson,† M. E. Edginton†

Publication policy for all Union journals and written communications.

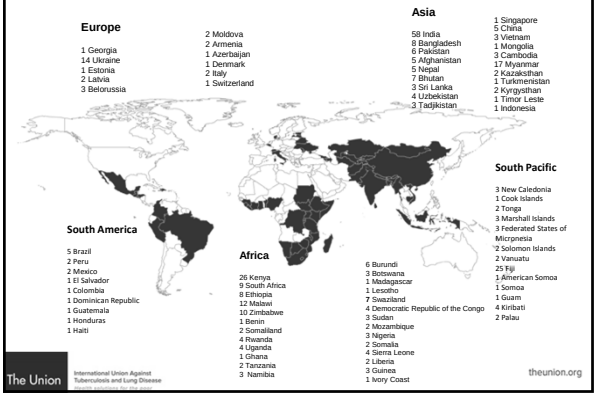
Inclusion of Civil Society

- 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

FIGURE 3.1. ROADMAP FOR CHILDHOOD TUBERCULOSIS

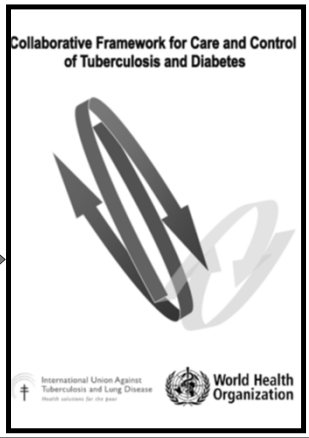


SORT IT Operational Research Courses (2009 – 2015)
TOTAL: 32 courses with 367 participants from 79 countries



RESEARCH TO GLOBAL POLICY

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



INDIA: Global Policy to National Policy

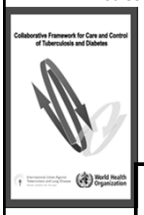
World Diabetes Foundation
The Union
WHO

(Oct 2011) Stakeholders

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

(Jan 2012)

Screening of TB patients for diabetes & 60 peripheral centres)



(Sept 2012)

Results presented back to stake holders

RNTCP and NCD Policy Decision: Routine Screening of All TB patients for DM in India

Union MDRTB Short-Course Tx Studies

STREAM
Standardised Treatment Regimen of Anti-Tuberculosis Drugs for Patients with MDR-TB

- Randomized control trial, non-inferiority design
- Control regimen: WHO recommended regimen
- Study regimen
  - 9 mo Clofazamine, Moxifloxacin, Ethambutol, Pyrazinamide
  - In addition to initial phase w/ 4 mo Kanamycin, INH, Prothionamide

Observational Cohort
(9 West African countries)

- Performed w/in framework of NTP PMDT approach
- No comparison regimen

- Study regimen
  - Same as STREAM, except moxifloxicin dose is 400mg vs weight-adjusted in STREAM up to 800mg

The Union International Union Against Tuberculosis and Lung Disease theunion.org

STREAM Stage 2 Additional Study Arms

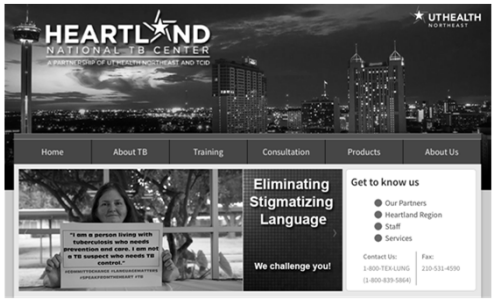
- Fully oral 9 regimen
  - kanamycin replaced by bedaquiline
  - moxifloxacin replaced by levofloxacin
- 6 month regimen (includes kanamycin)
  - prothionamide replaced by bedaquiline
  - moxifloxacin replaced by levofloxacin
  - ethambutol removed
  - INH dose increased

The Union International Union Against Tuberculosis and Lung Disease theunion.org

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?



Make the commitment

#ChangeTB

- 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

Look Under a rock

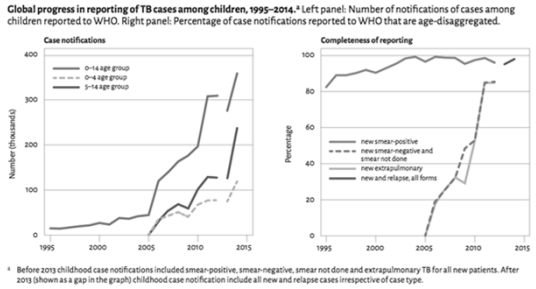
What I found under my "rock" in RI?

- 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

#ChangeTB

Acknowledgement for slide use:
Mario Ravigione, WHO
Paula Fujiwara, The Union

How are the estimates determined?



Observational Cohort Treatment outcome

	N = 408	%
Cured	328	80.4%
Treatment completed	7	1.7%
Failure	12	2.9%
Died	32	7.8%
Lost to follow-up	27	6.6%
Not evaluated	2	0.5%

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

TB, HIV, Lung Health, NCDs, Tobacco Control and Policy