

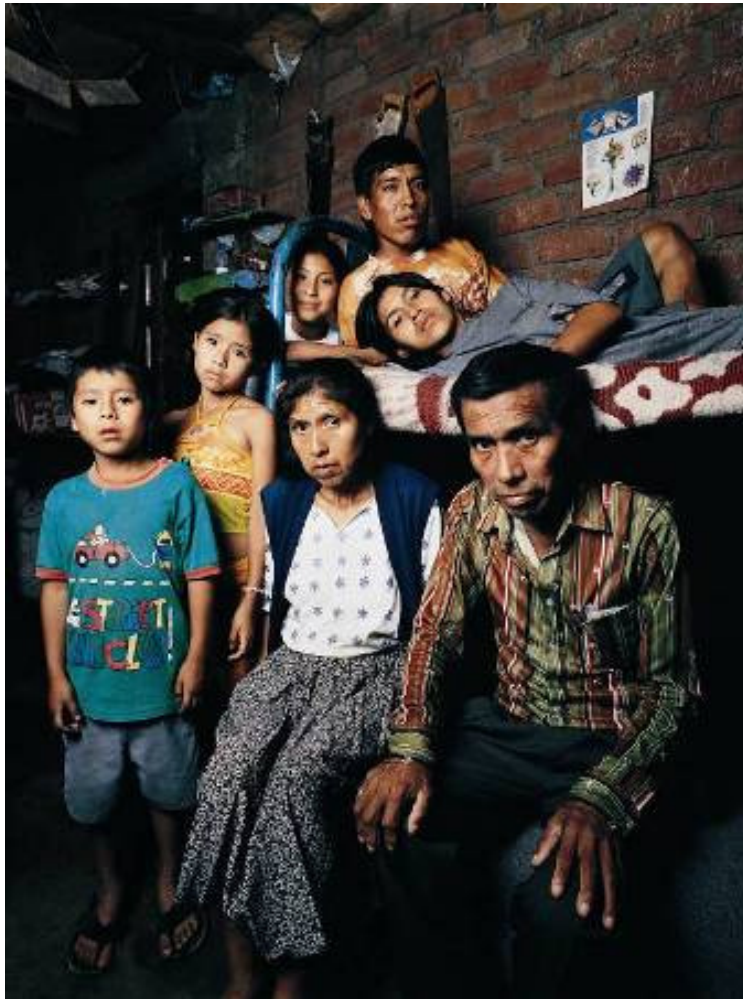


**Mario C. Raviglione, M.D.**  
Director, Stop TB Department  
WHO, Geneva, Switzerland

**Towards universal access:  
Urgent action to respond to TB and M/XDR-TB**

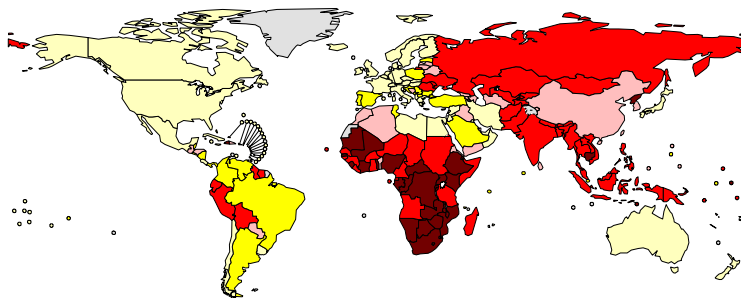
*2<sup>nd</sup> Meeting of the Global Laboratory Initiative  
Veyrier-du-Lac, France, 15-16-October 2009  
WHO & Fondation Mérieux*

# Aims of this presentation



- To review the global burden and state of control of TB, TB/HIV, MDR/XDR-TB
- To describe the impediments to progress of control efforts
- To make the point about the crucial importance of modern laboratories and rapid testing if we target universal access to care

# Latest global TB estimates - 2007



**Estimated  
number of  
cases**

**Estimated  
number of  
deaths**

## All forms of TB

Greatest number of cases in Asia;  
greatest rates per capita in Africa

**9.27 million**  
(139 per 100,000)

**1.77 million**  
(27 per 100,000)

## Multidrug-resistant TB (MDR-TB)

**511,000**

**~150,000**

## Extensively drug- resistant TB (XDR-TB)

**~50,000**

**~30,000**

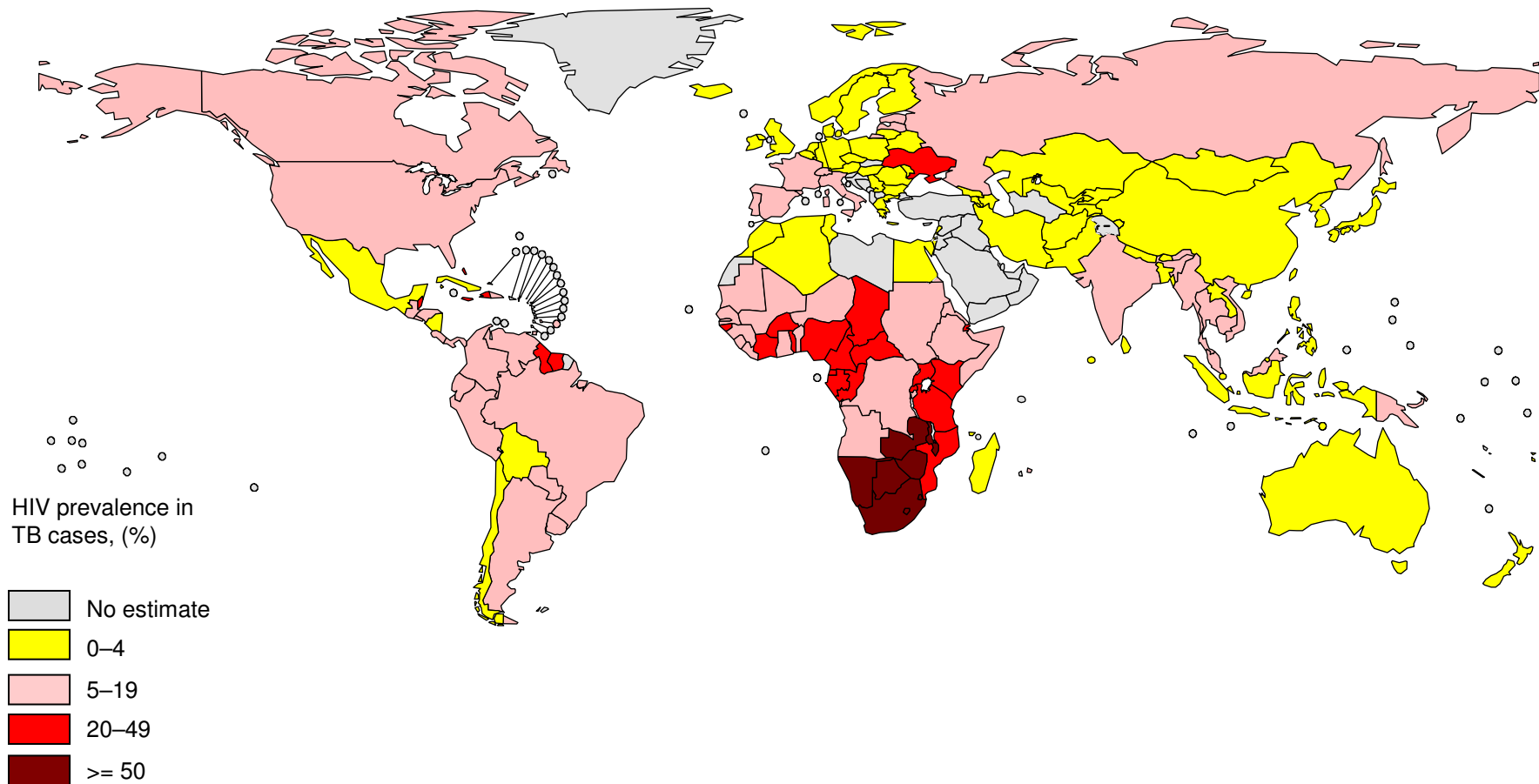
## HIV-associated TB

**1.4 million (15%)**

**456,000**

# HIV prevalence among TB cases, 2007

**Global estimate: about 1.4 million TB/HIV cases and 456,000 TB/HIV deaths a year**



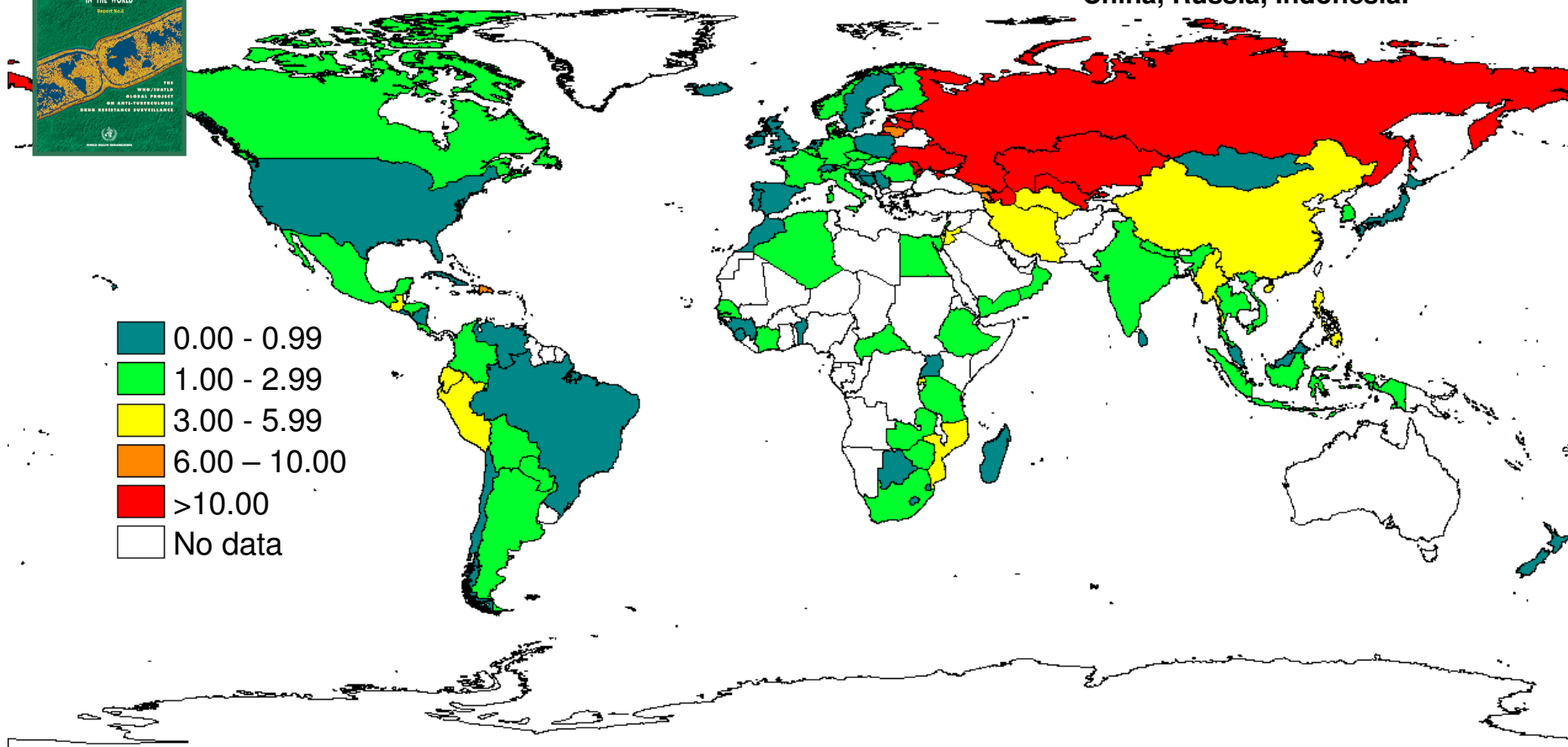
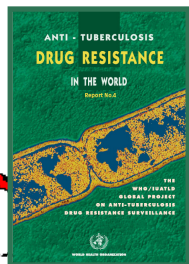
The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

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# MDR-TB % among new cases, 1994-2007



\* Sub-national coverage in India, China, Russia, Indonesia.

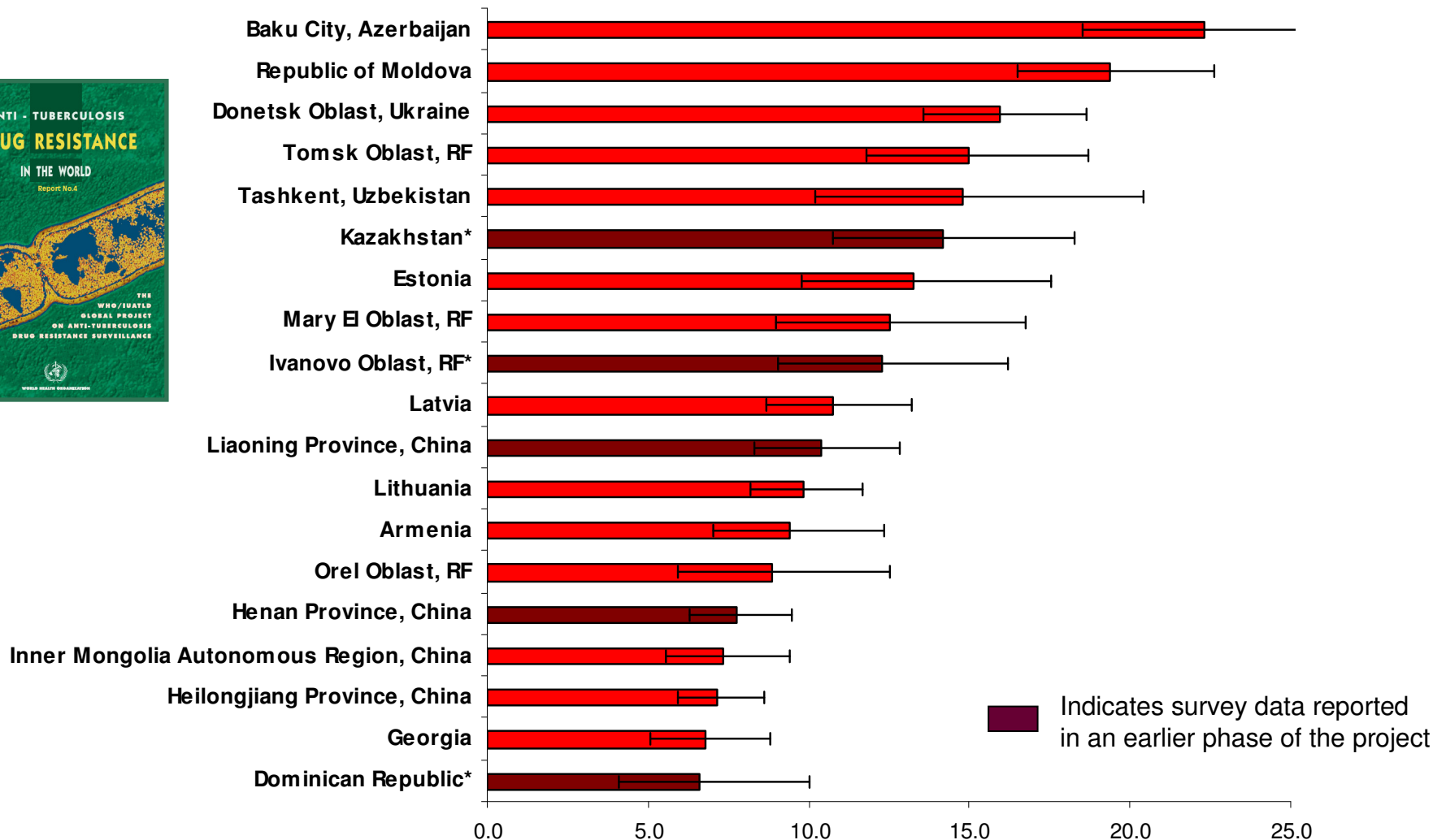
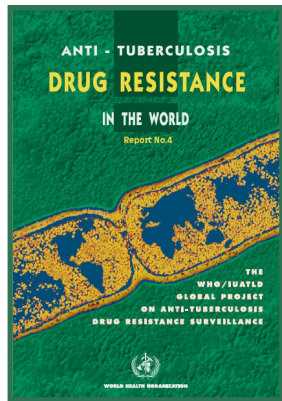


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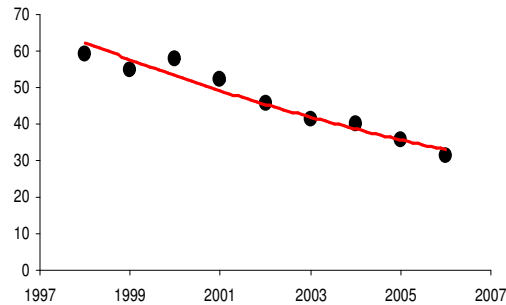
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# Top 19 settings with MDR among new cases > 6% (1994-2007)

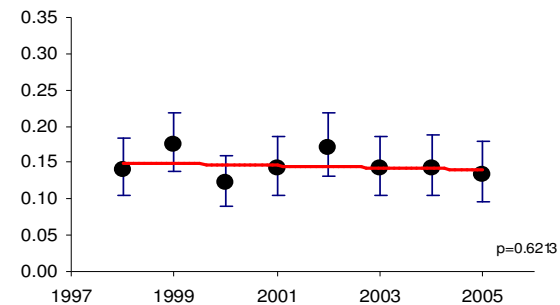




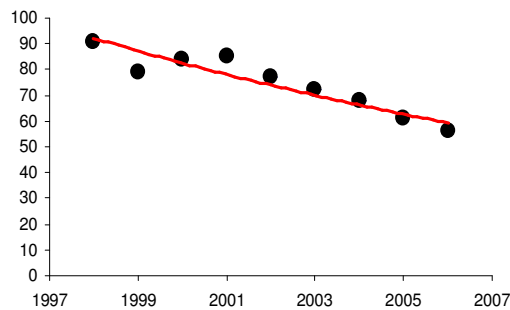
# Trend of MDR-TB among new cases Estonia, Latvia and...Tomsk, RF



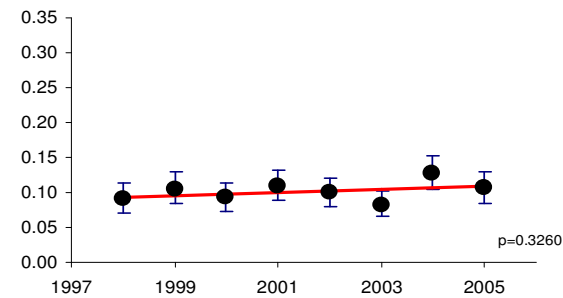
Estonia



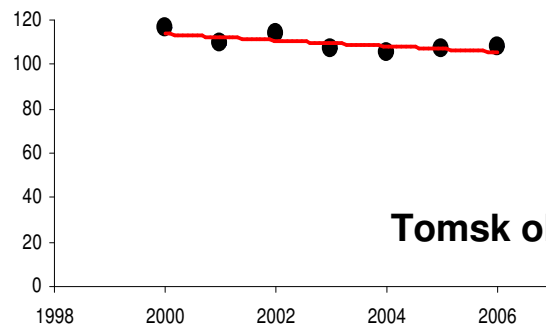
p=0.6213



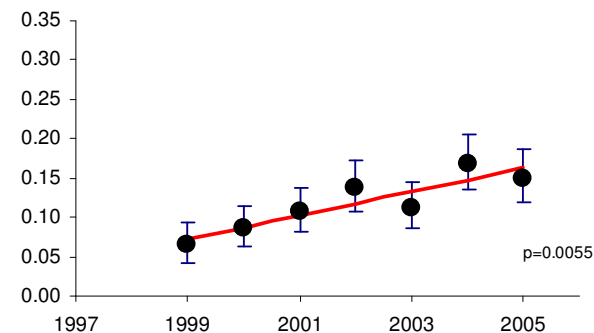
Latvia



p=0.3260



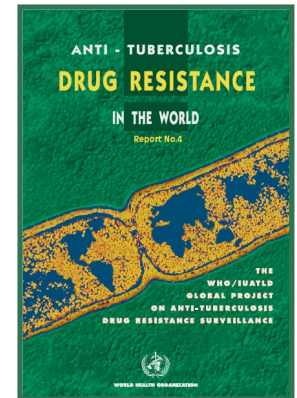
Tomsk oblast, RF



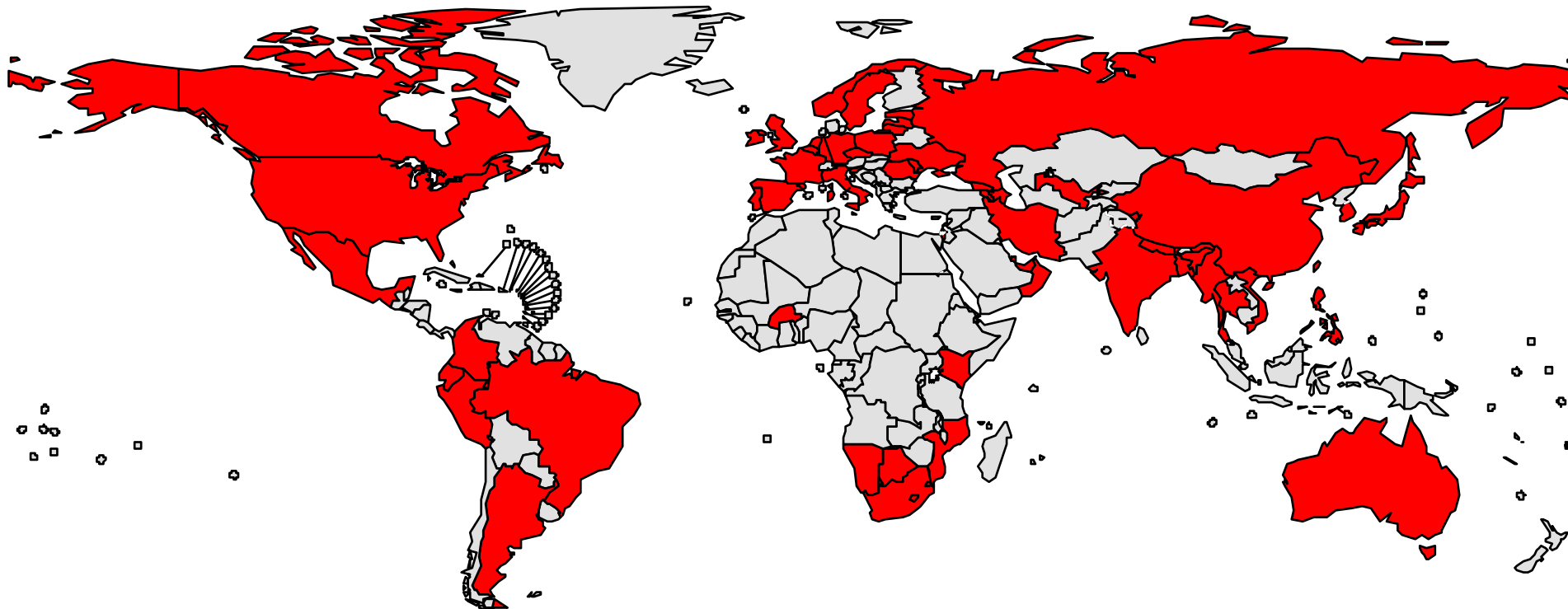
p=0.0055

TB notification rate

% MDR among new cases



# Countries with at least one confirmed XDR-TB case, as of June 2009



Argentina	Burkina Faso	Georgia	Kenya	Nepal	Qatar	Swaziland	Viet Nam
Armenia	Canada	Germany	Latvia	Netherlands	Republic of Korea	Sweden	
Australia	China	India	Lesotho	Norway	Republic of Moldova	Thailand	
Azerbaijan	Colombia	Iran (Islamic Republic of)	Lithuania	Oman	Romania	Ukraine	
Bangladesh	Czech Republic	Ireland	Mexico	Peru	Russian Federation	United Arab Emirates	
Belgium	Ecuador	Israel	Mozambique	Philippines	Slovenia	United Kingdom	
Botswana	Estonia	Italy	Myanmar	Poland	South Africa	United States of America	
Brazil	France	Japan	Namibia	Portugal	Spain	Uzbekistan	

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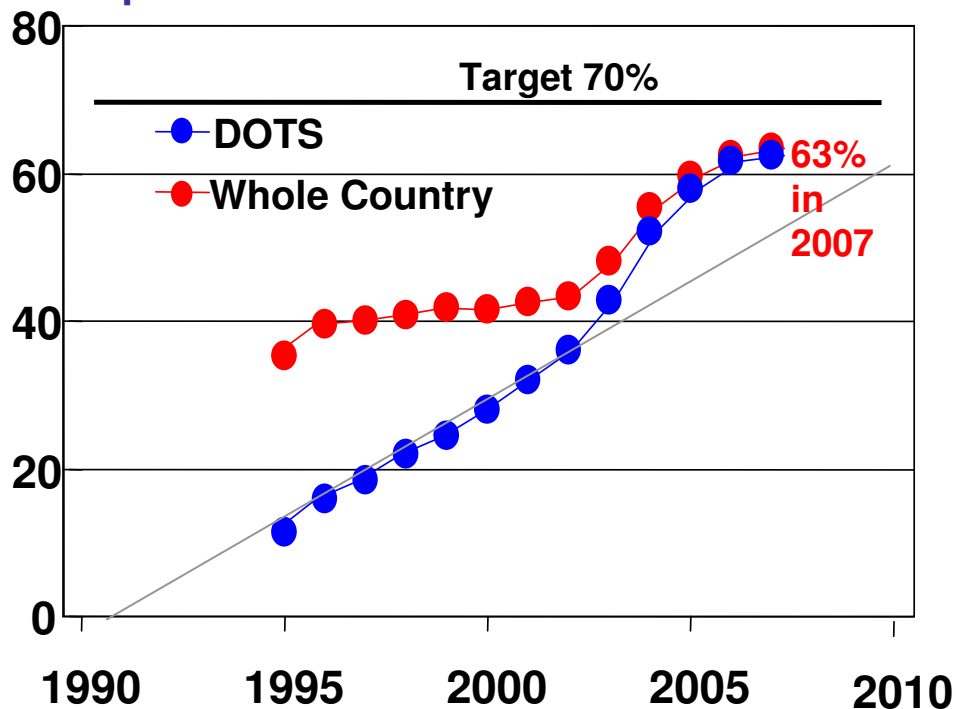
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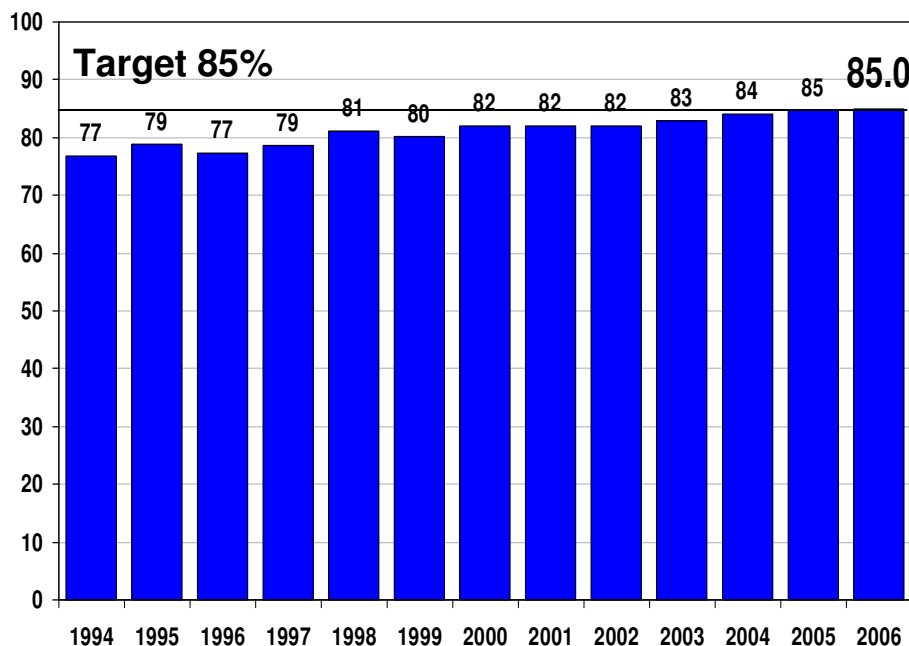
# Treatment success on target (>85%), case detection stalling after years of expansion



Estimated case detection (%) of sputum smear + cases



Treatment success (%) among sputum smear+ cases



Africa: 47%; Europe 51%; East. Med: 60%

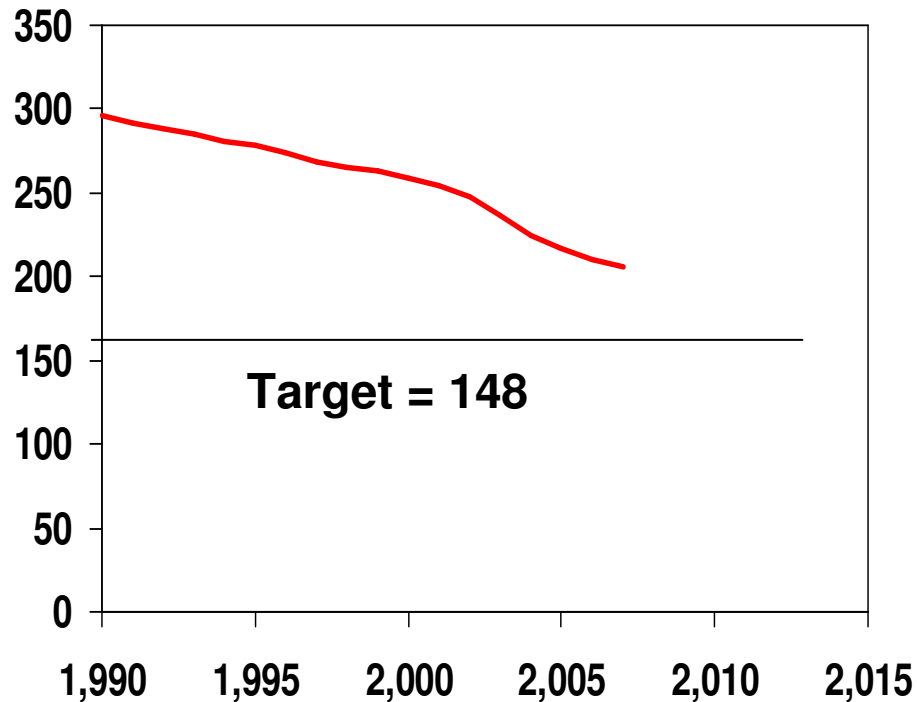
Europe: 70%, Africa: 75%, Americas: 75%

What would better laboratories and rapid testing take us to?

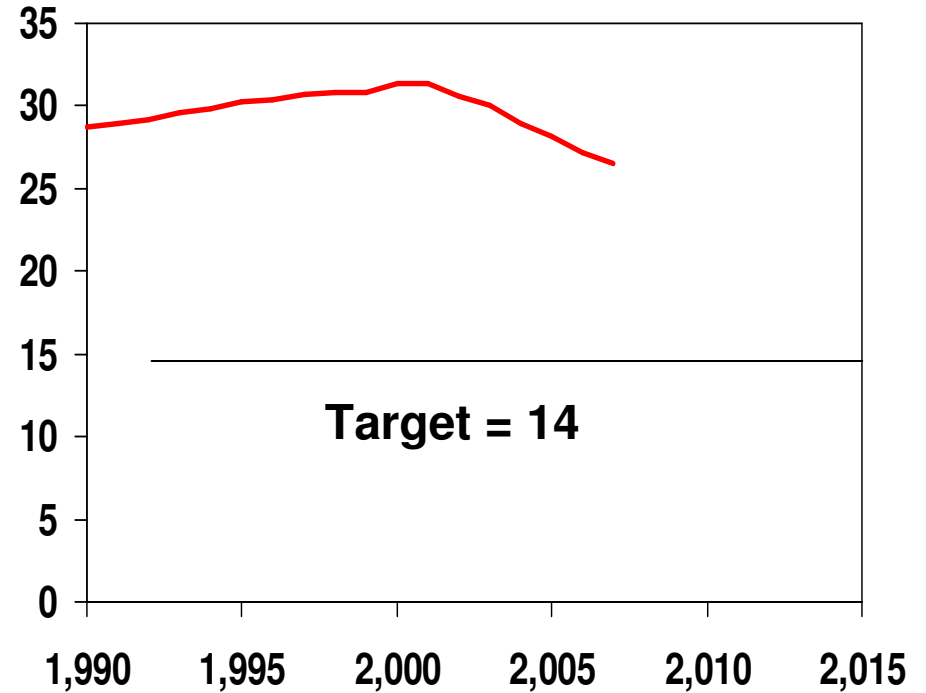
# TB prevalence and mortality



Prevalence (cases/100,000)

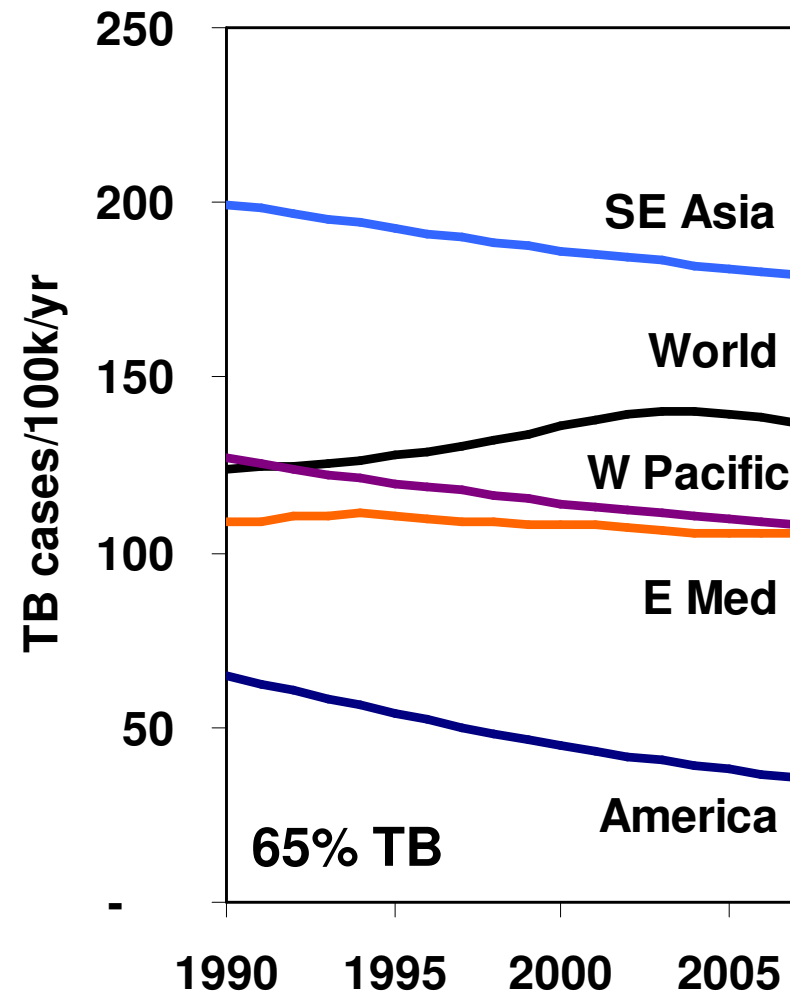
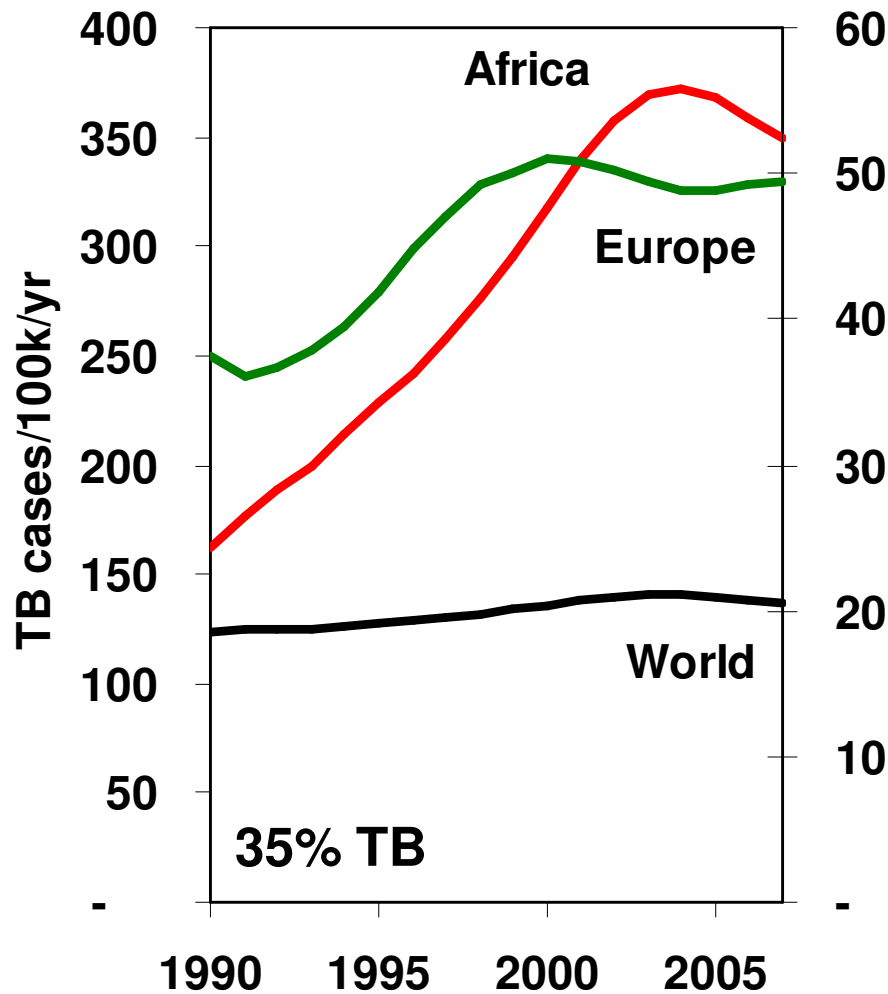


Mortality (deaths/100,000)



**On track for both in AMR, EMR and SEAR**  
**On track for prevalence in WPR**  
**Will not be reached in AFR and EUR**

# TB incidence rates stable or falling slowly after epidemic peaks in Africa and Europe



# What are the challenges in 2009?



1. **DOTS not of high quality everywhere; only 63% of all estimated cases officially notified; **delayed diagnosis****
2. **TB/HIV, especially in Africa; MDR-TB, especially in former USSR and China; XDR-TB everywhere and in Africa**
3. **Weak health systems and services compromising TB care; **lack of bold policies on laboratory services**, free access to care, drug quality, human resources, infection control, etc.**
4. **Not all practitioners, non-state and even governmental, working at high standard; weak links public-private**
5. **Communities often un-aware, un-involved, not mobilised**
6. **Research not yet delivering innovative tools, and operational research often outside of the interest of TB "controllers"**

# The direction today...



New challenges require the Stop TB Strategy

The Global Plan 2006-2015 defines direction and costs

**World Health Organization**  
**THE STOP TB STRATEGY**

**VISION** A WORLD FREE OF TB

**GOAL** To dramatically reduce the global burden of TB by 2015 in line with the Millennium Development Goals and the Stop TB Partnership targets

**OBJECTIVES**

- Achieve universal access to high-quality diagnosis and patient-centred treatment
- Reduce the human suffering and socioeconomic burden associated with TB
- Protect poor and vulnerable populations from TB, TB/HIV and multidrug-resistant TB
- Support development of new tools and enable their timely and effective use

**TARGETS**

- MDG 6: Target its halt and begin to reverse the incidence of TB by 2015
- Targets linked to the MDGs and endorsed by Stop TB Partnership:
  - By 2005: detect at least 70% of new sputum smear-positive TB cases and cure at least 85% of these cases
  - By 2015: reduce prevalence of and deaths due to TB by 50% relative to 1990
  - By 2050: eliminate TB as a public health problem (<1 case per million population)

**COMPONENTS OF THE STOP TB STRATEGY**

- 1 PURSUE HIGH-QUALITY DOTS EXPANSION AND ENHANCEMENT**
  - a. Political commitment with increased and sustained financing
  - b. Case detection through quality-assured bacteriology
  - c. Standardized treatment with supervision and patient support
  - d. An effective drug supply and management system
  - e. Monitoring and evaluation system, and impact measurement
- 2 ADDRESS TB/HIV, MDR-TB AND OTHER CHALLENGES**
  - Implement collaborative TB/HIV activities
  - Prevent and control multidrug-resistant TB
  - Address prisoners, refugees and other high-risk groups and special situations
- 3 CONTRIBUTE TO HEALTH SYSTEM STRENGTHENING**
  - Actively participate in efforts to improve system-wide policy, human resources, financing, management, service delivery, and information systems
  - Share innovations that strengthen systems, including the Practical Approach to Lung Health (PAL)
  - Adapt innovations from other fields
- 4 ENGAGE ALL CARE PROVIDERS**
  - Public, Public, and Public-Private Mix (PPM) approaches
  - International Standards for TB Care (ISTC)
- 5 EMPOWER PEOPLE WITH TB, AND COMMUNITIES**
  - Advocacy, communication and social mobilization
  - Community participation in TB care
  - Patients' Charter for Tuberculosis Care
- 6 ENABLE AND PROMOTE RESEARCH**
  - Programme-based operational research
  - Research to develop new diagnostics, drugs and vaccines

© WHO 2006 **Stop TB Partnership**

2006-2015:  
\$ 60 billion  
necessary to  
control TB in  
endemic  
countries

\$ 11 billion  
necessary to  
develop new  
tools

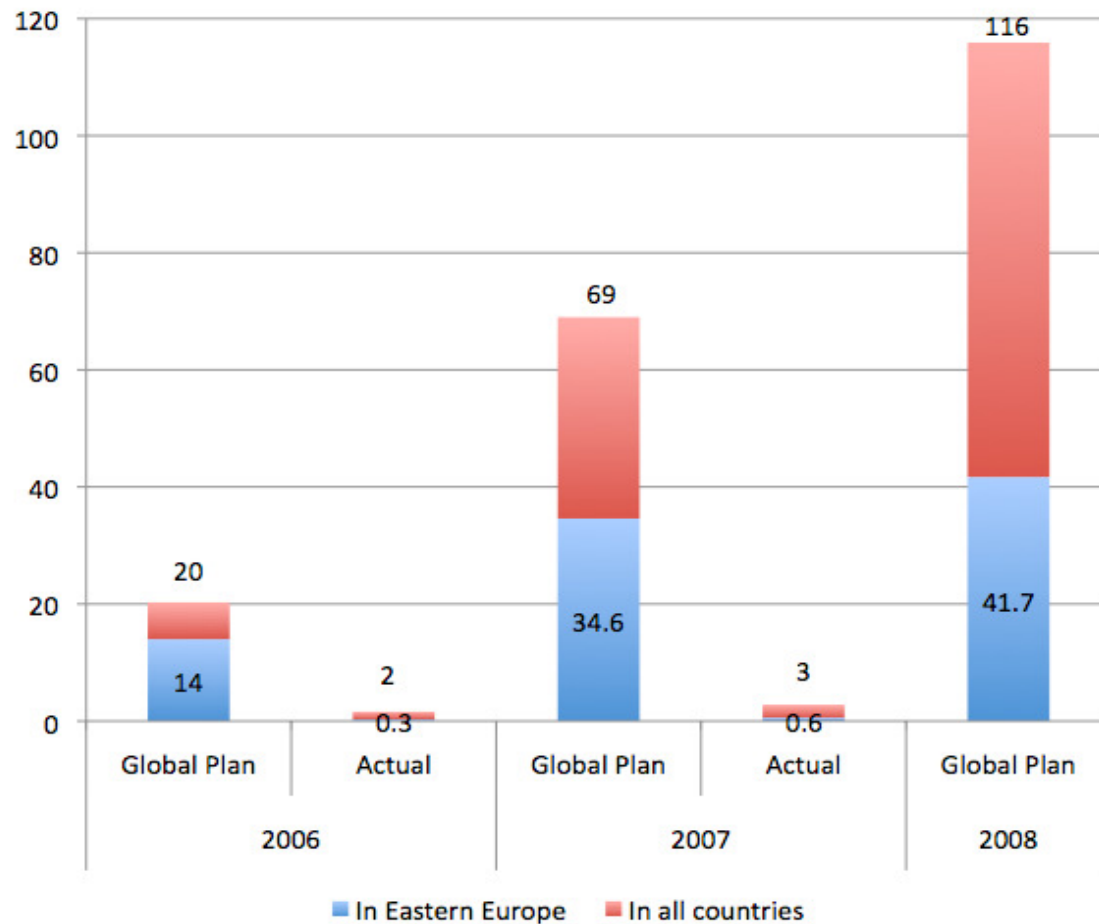
**THE GLOBAL PLAN TO STOP TB 2006-2015**

**Actions for Life**  
TOWARDS A WORLD FREE OF TUBERCULOSIS

**Stop TB Partnership**

# MDR-TB: recent progress

**Figure 4: MDR-TB cases treated by GLC-approved programmes (thousands)**



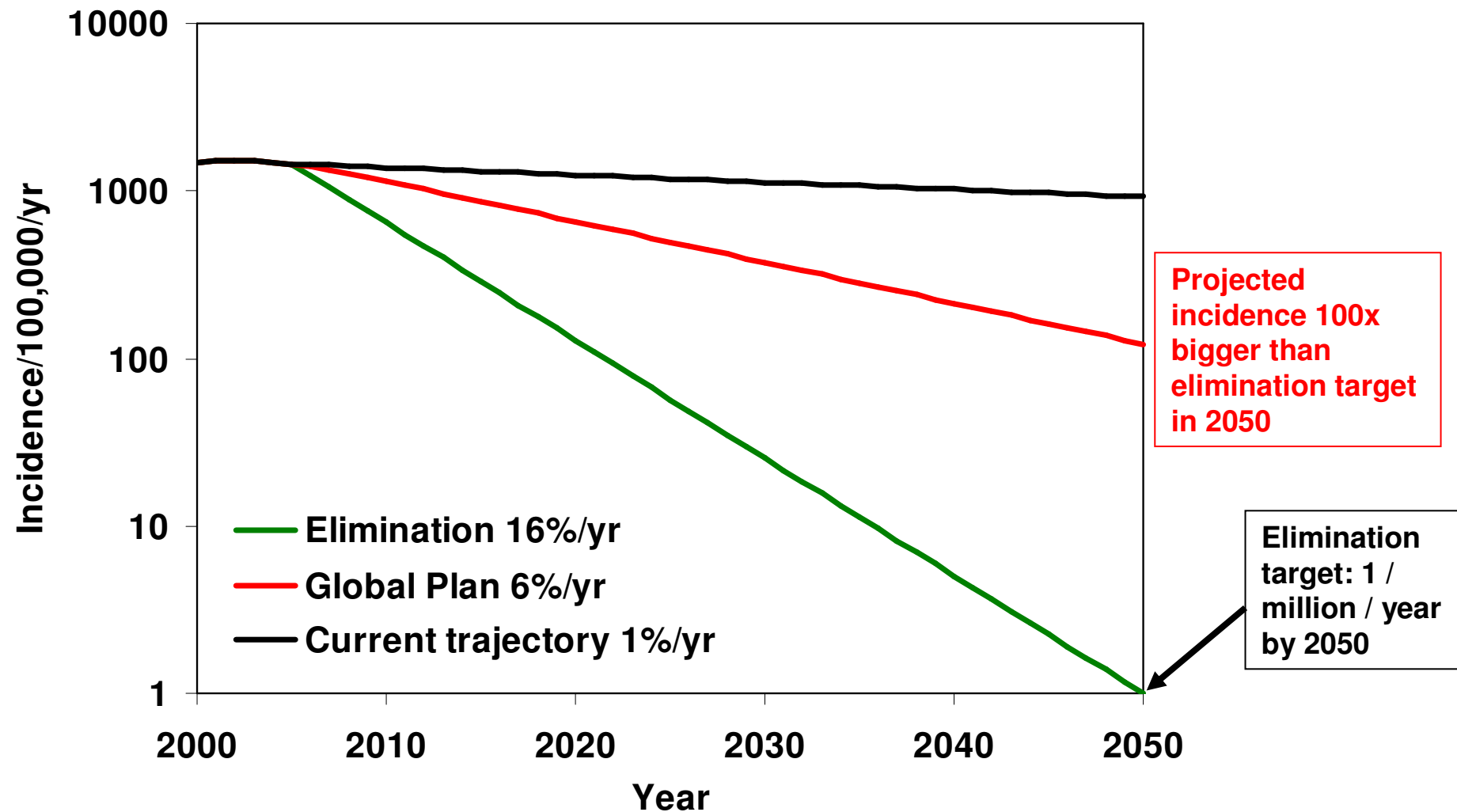
**2007: 3600 MDR-TB cases out of 30,000 notified were put on treatment under GLC standards = 1% of the estimated SS+ MDR-TB cases**

**In 2009, 14,000 projected**

**Major delay vs GP**



# Full implementation of Global Plan: 2015 MDG target reached but TB not eliminated by 2050





# Deciding on key general health policies needed to control TB



# Bottlenecks to scale-up M/XDR-TB prevention and management



- Major gaps in TB control
- Extremely weak M/XDR-TB management and care
- Health workforce crisis
- **Inadequate laboratories**
- Quality of anti-TB drugs not assured
- No restriction of anti-TB drug use
- Absent infection control
- Insufficient research
- Major financial gaps



From: *The Beijing "Call for Action" on TB Control and Patients Care, April 2009*



# 62<sup>nd</sup> World Health Assembly, 2009

## Prevention & control of M/XDR-TB



### WHA62.15 Member States are urged to:

#### 1. Achieve universal access to diagnosis and treatment of M/XDR-TB

- a) Develop a comprehensive framework for management and care of M/XDR-TB, including DOT, community-based and patient-centred care
- b) Strengthen health information and surveillance systems
- c) Aim to ensure removal of financial barriers for equitable access, and protect patient's rights
- d) Make available sufficiently trained and motivated staff
- e) Strengthen laboratory systems and accelerate access to faster and quality-assured diagnostic tests**
- f) Engage all public and private care providers in managing TB and strengthen primary care
- g) Ensure infection control policies developed and implemented in every care facility
- h) Ensure un-interrupted supply of first- and second-line medicines which meet WHO PQ or strict national regulatory authority standards, and that FDC of proven bioavailability are prioritized
- i) Strengthen mechanisms to ensure that TB medicines are sold on prescription only by accredited providers
- j) Undertake effective advocacy, communication and social mobilization
- k) Establish national targets to accelerate access to treatment

#### 2. Enhance quality and coverage of DOTS in achieving targets to prevent MDR-TB

#### 3. Use all possible financial mechanisms to fulfil commitments and fill funding gaps

#### 4. Increase investments in **operational research and R&D for new tools**

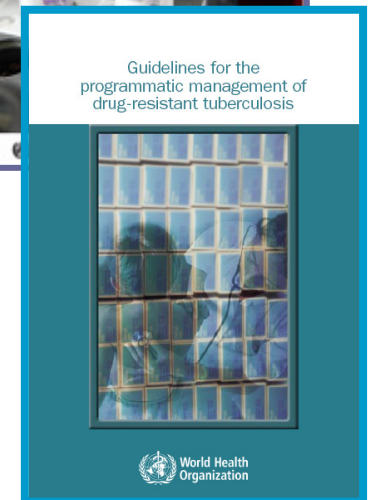
# Control of M/XDR-TB requires more than just TB programmes' efforts

## Policy changes are fundamental!

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- Remove financial barriers (UHC)
- **Establish a network of labs ensuring rapid molecular tests are available**
- Ensure availability of quality drugs
- Regulate the use of all anti-TB drugs
- Introduce infection control
- **Promote R&D**
- Mobilize resources domestically and internationally





# Diagnosing and treating MDR-TB in the un-reachable: the challenge



The "bush" - Swaziland



Favela "Rocinha", Brasil



Simply, the poorest...





**THE STOP TB DEPARTMENT**

**STB Director's Office (STB/DO)**

M. Raviglione, Director  
 D. Weil, Coordinator, Policy & Strategy  
**Policy, Planning, Research Coordination,  
 Resource Mobilization & Communications**

**Administration & Finance  
 Operations Team (AFO)**  
 A. Vijay, Department & Partnership  
 Resource Administrator

**Stop TB Strategy (TBS)**

L. Blanc, Coordinator

Care Delivery  
 Innovation

M/XDR-TB  
 Response

TB/HIV Response

**TB Operations & Coordination (TBC)**

P. Nunn, Coordinator

Global Fund  
 Collaboration

TBTEAM

Regional  
 Collaboration

Green Light  
 Committee  
 Mechanism (GLC)

**TB Laboratory Strengthening (TBL)**

K. Weyer, Coordinator

Global Laboratory  
 Initiative (GLI)

Supranational  
 Reference Laboratory  
 Network (SRLN)

EXPAND-TB Project

**TB Monitoring & Evaluation (TME)**

K. Floyd, Coordinator

Surveillance &  
 Monitoring

Epidemiology &  
 Impact Assessment

Economics,  
 Budgeting &  
 Financing

**Stop TB Partnership Secretariat (TBP)**

M. Espinal, Executive Secretary

Advocacy  
 & Strategic Planning

Social Mobilisation  
 & Partnering

Branding, Marketing  
 & Communication

Global Drug Facility (GDF)  
 & Green Light Committee  
 (procurement)

TB Research Movement

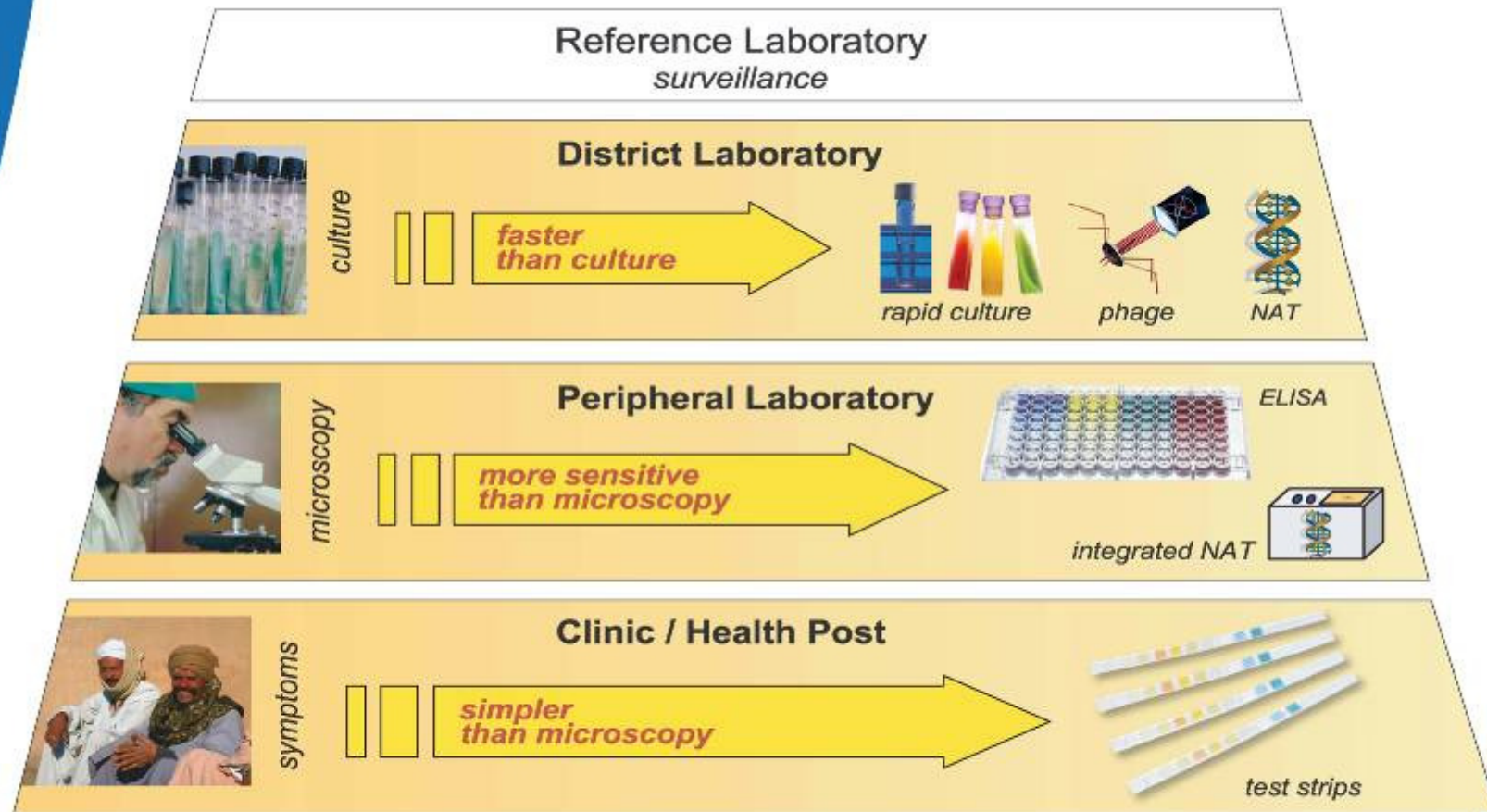
TB REACH

**6 Regional Offices,**  
 all with TB teams

**WHO Offices,**  
 including TB-specific  
 staff in **45** countries

12/3/2009

# Need for new Diagnostics at each Level of the system

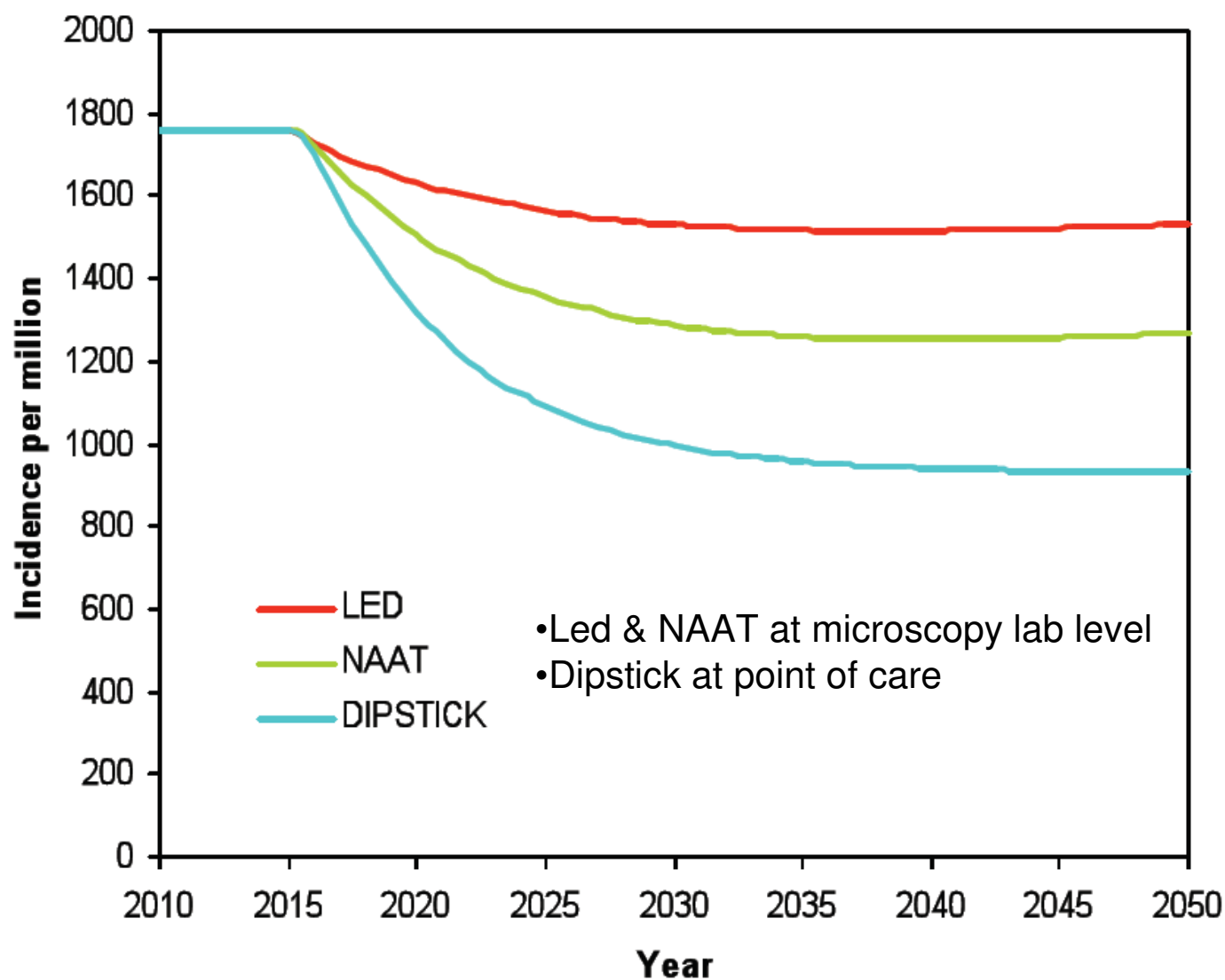


today

FIND

tomorrow

# Potential impact of new diagnostics in SE Asia



Source: L. Abu Raddad et al, PNAS, 2009

# WHO's functions in re-tooling

## Two phases

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### **1. Norms, standards and policies - *From research and evidence into policy***

- **Expert committees, review of evidence inform STAG-TB discussion**
- **STAG-TB recommends to WHO and policy is made, with guidelines**
- **Dissemination to Member States, GF, UNITAID, World Bank...**
- **Operational Research for adaptation and revision of policies**

### **2. Strategies, guidance towards implementation - *From policy to practice***

- **Guidelines for countries**
- **Technical assistance, training for implementation**
- **Support for resource mobilization**

# WHO's recently endorsed technology in diagnostics

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- 2007: Liquid culture media
- 2007: Rapid speciation technology
- 2008: Line-probe assays
- Future processes:
  - 2009: LED microscopy
  - 2010: Other NAAT?

# The example of the Line Probe Assays From Research to Policy and Practice



1. Winter 2007-08: Evidence from literature and new study in SA
2. March 2008: WHO Expert Committee's review & recommendations
3. June 2008: STAG-TB recommends to WHO to promote LPAs
4. 1<sup>st</sup> July 2008: WHO announces a new policy recommending use of LPAs for all countries for rapid MDR-TB diagnosis
5. 1<sup>st</sup> July 2008: UNITAID announces US\$ 26 million support

## The New York Times

Officials Praise New Test for Drug-Resistant TB

By [LAWRENCE K. ALTMAN](#)





# **The way forward in laboratory strengthening – what will WHO do?**



- 1. Support the Global Laboratory Initiative secretariat**
- 2. Promote with ministries the need to strengthen labs**
- 3. Support countries in their search for financing externally (UNITAID, WB, GF, bilaterals etc) or domestically**
- 4. Coordinate with all partners to make GLI a success**
- 5. Pursue endorsement of new technology, related policy making, and transfer of technology**
- 6. Never stop promoting research into new diagnostics and the need for a point-of-care tool**
- 7. Favour integrated technology and broad laboratory network development**



*To end this scourge is a mere question of civilization*  
(Jorge Sampaio, UN SE to Stop TB)

