WHO THE STOP TB DEPARTMENT

Emerging Threats: XDR/MDR-TB

The TB frontier:
New Strategy, HIV linkages, Threats and Tools

Center for Strategic and International Studies Policy Luncheon
Washington D.C., 17 October 2007

Dr Mario Raviglione
Director
WHO Stop TB Department

Latest global TB estimates - 2005

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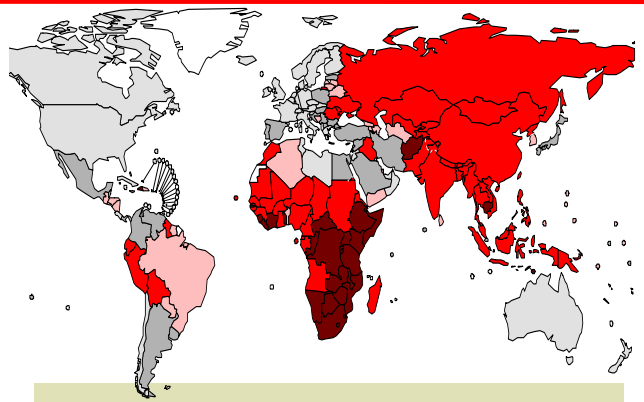

	Estimated number of cases	Estimated number of deaths
All forms of TB Greatest number of cases in Asia; greatest rates per capita in Africa	**8.8 million**	**1.6 million**
Multidrug-resistant TB (MDR-TB)	**424,000**	**116,000**
Extensively drug-resistant TB (XDR-TB)	**27,000**	**16,000**
HIV-associated TB	**630,000**	**200,000**

Global TB control targets

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Stop TB Partnership

2015: 50% reduction in TB prevalence and deaths by 2015

UN Millennium Development Goals

2015: Goal 6: Combat HIV/AIDS, malaria and other diseases

Target 8:	to have halted by 2015 and begun to reverse the incidence…
Indicator 23:	prevalence and deaths associated with TB
Indicator 24:	proportion of TB cases detected and cured under DOTS

The Stop TB Strategy & The Global Plan to achieve the 2015 Millennium Development Goals

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World Health Organization | THE STOP TB STRATEGY

COMPONENTS OF THE STOP TB STRATEGY

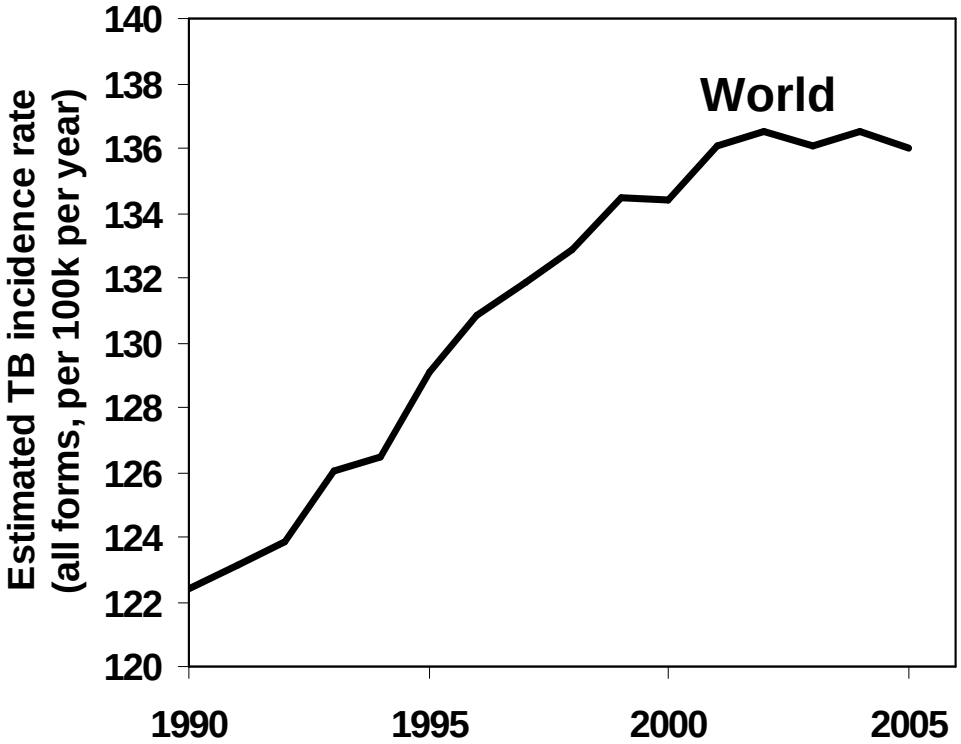
1. **Pursue high-quality DOTS expansion and enhancement**
2. **Address TB/HIV, MDR-TB and other challenges**
3. **Contribute to health system strengthening**
4. **Engage all care providers**

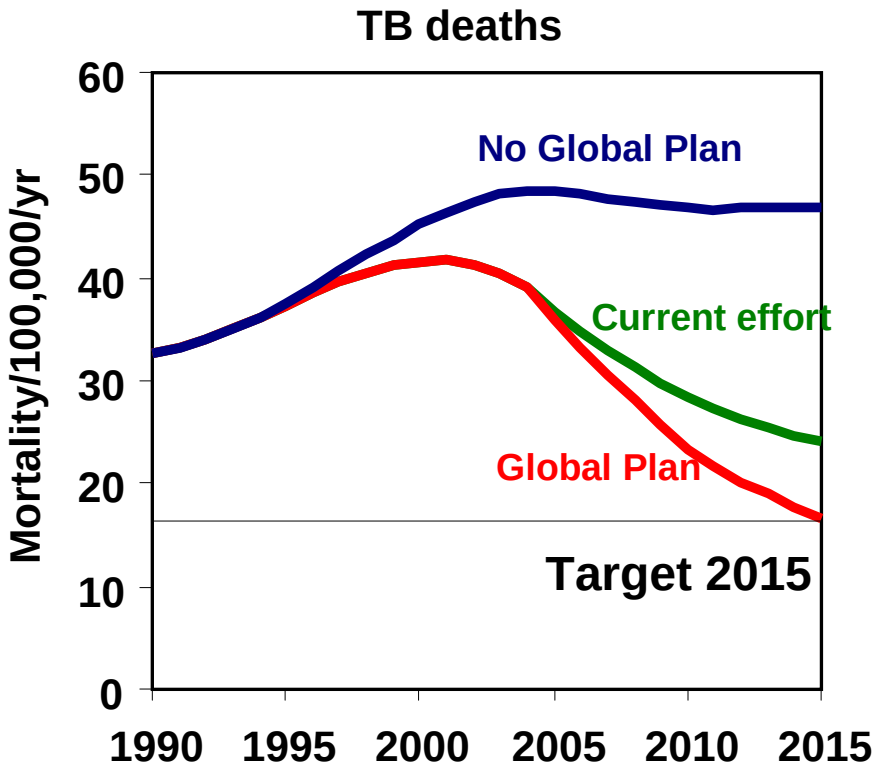
...TREAT 50 million patients

...SAVE 14 million lives

...NEW TOOLS for TB elimination

The Global Plan will reverse TB incidence and halve TB deaths by 2015





With full implementation of Global Plan, targets achieved; without full implementation, targets will not be achieved

MDR-TB prevalence in new TB cases, 1994-2003: peaks in ex-USSR and China

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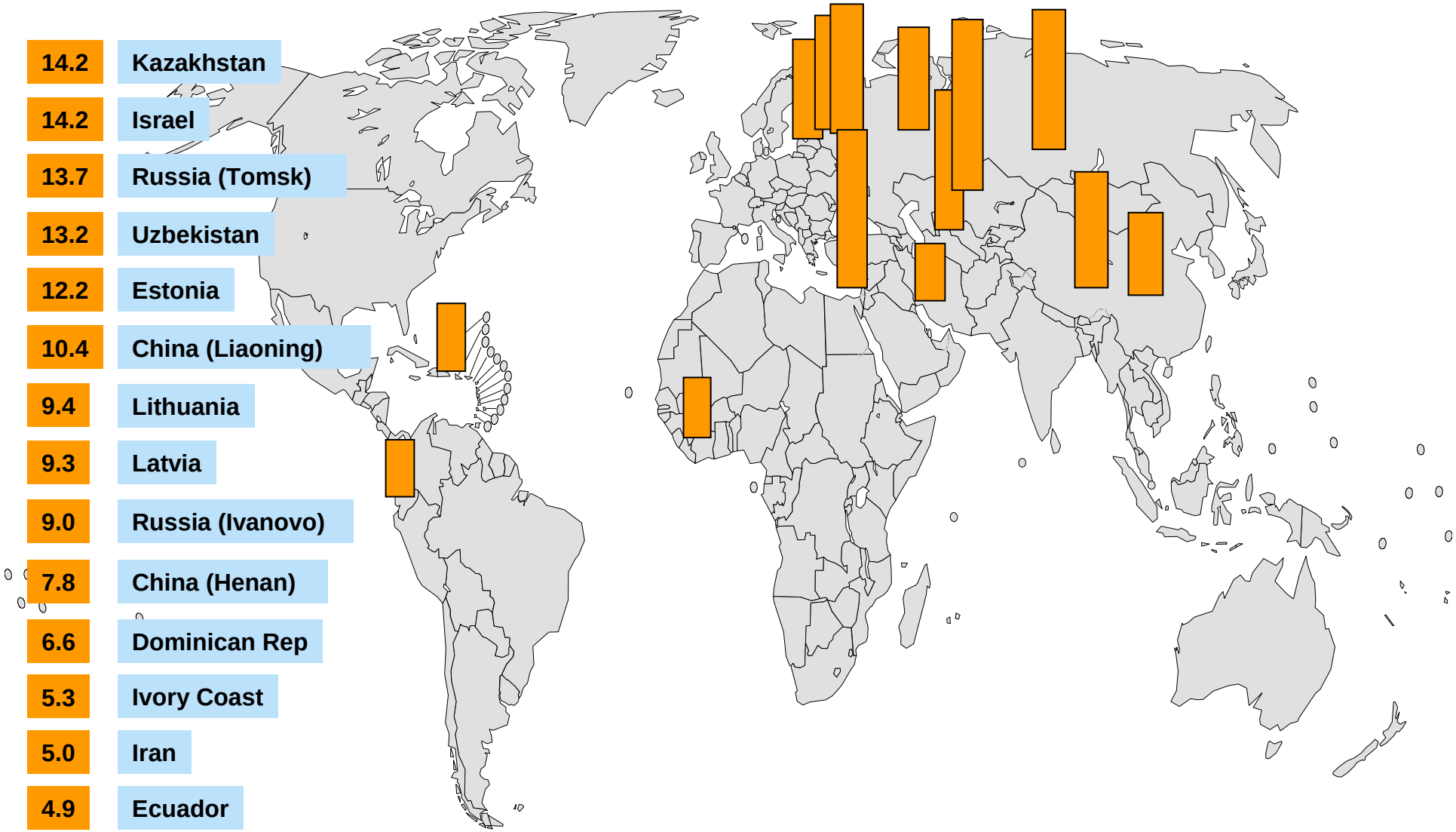

XDR-TB – Extensively Drug Resistance
The new threat

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MMWR™
Morbidity and Mortality Weekly Report

Weekly March 24, 2006 / Vol. 55 / No. 11

World TB Day — March 24, 2006

World TB Day is March 24. This annual event commemorates the date in 1882 when Robert Koch announced his discovery of *Mycobacterium tuberculosis*, the bacterium that causes tuberculosis (TB). Worldwide, TB remains one of the leading causes of death from infectious disease. An estimated 2 billion persons (i.e., one third of the world's population) are infected with *M. tuberculosis*. Each year, approximately 9 million persons become ill from TB, and approximately 2 million die as a result. World TB Day provides an opportunity for TB programs, nongovernmental organizations, and other partners to describe TB-related problems and solutions and to support TB control worldwide.

During 1985–1992, after more than 30 years of decline, the number of TB cases reported in the United States increased by 20%. This resurgence generated a renewed emphasis on TB control and prevention during the 1990s, which reversed the trend. Although the 2005 TB rate was the lowest recorded in the United States since national reporting began in 1953, the average annual decline has slowed during the past 3 years, multidrug-resistant TB remains a threat, and disparate rates of TB persist among certain racial, ethnic, and foreign-born populations.

Many states are offering educational programs organized by local TB coalitions in recognition of World TB Day. For example, the Georgia Department of Human Resources, Division of Public Health, Tuberculosis Program is hosting an observance recognizing the activities of a coalition working to reduce disparities in TB among blacks in the Atlanta area. Additional information about World TB Day and CDC TB-elimination activities is available at http://www.cdc.gov/nchstp/tb/worldtbday/2006/activities.htm.

Emergence of *Mycobacterium tuberculosis* with Extensive Resistance to Second-Line Drugs — Worldwide, 2000–2004

During the 1990s, multidrug-resistant (MDR) tuberculosis (TB), defined as resistance to at least isoniazid and rifampin, emerged as a threat to TB control, both in the United States (*1*) and worldwide (*2*). MDR TB treatment requires the use of second-line drugs (SLDs) that are less effective, more toxic, and costlier than first-line isoniazid- and rifampin-based regimens (*3*). In 2000, the Stop TB Partnership's Green Light Committee was created to increase access to SLDs worldwide while ensuring their proper use to prevent increased drug resistance. While assisting MDR TB treatment programs worldwide, the committee encountered reports of multiple cases of TB with resistance to virtually all SLDs. To assess the frequency and distribution of extensively drug-resistant (XDR) TB cases,* CDC and the World Health Organization (WHO) surveyed an international network of TB laboratories. This report summarizes the results of that survey, which determined that, during 2000–2004, of 17,690 TB isolates, 20% were MDR and 2% were XDR. In addition, population-based data

*Defined as cases in persons with TB whose isolates were resistant to isoniazid and rifampin and at least three of the six main classes of SLDs (aminoglycosides, polypeptides, fluoroquinolones, thioamides, cycloserine, and para-aminosalicyclic acid).

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DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION

XDR = Resistance to at least INH and RIF (MDR) PLUS resistance to any fluoroquinolone, AND any one of the second-line injectable drugs (amikacin, kanamycin, or capreomycin)

Countries with XDR-TB confirmed cases as of October 2007

WHO

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Argentina
Japan
Armenia
Latvia
Azerbaijan
Lithuania
Australia
Mexico
Bangladesh
Mozambique
Brazil
Netherlands
Canada
Norway
Chile
Peru
China, Hong Kong SAR
Czech Republic
Poland
Ecuador
Portugal
Estonia
Republic of Korea
France
Romania
Georgia
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Ireland
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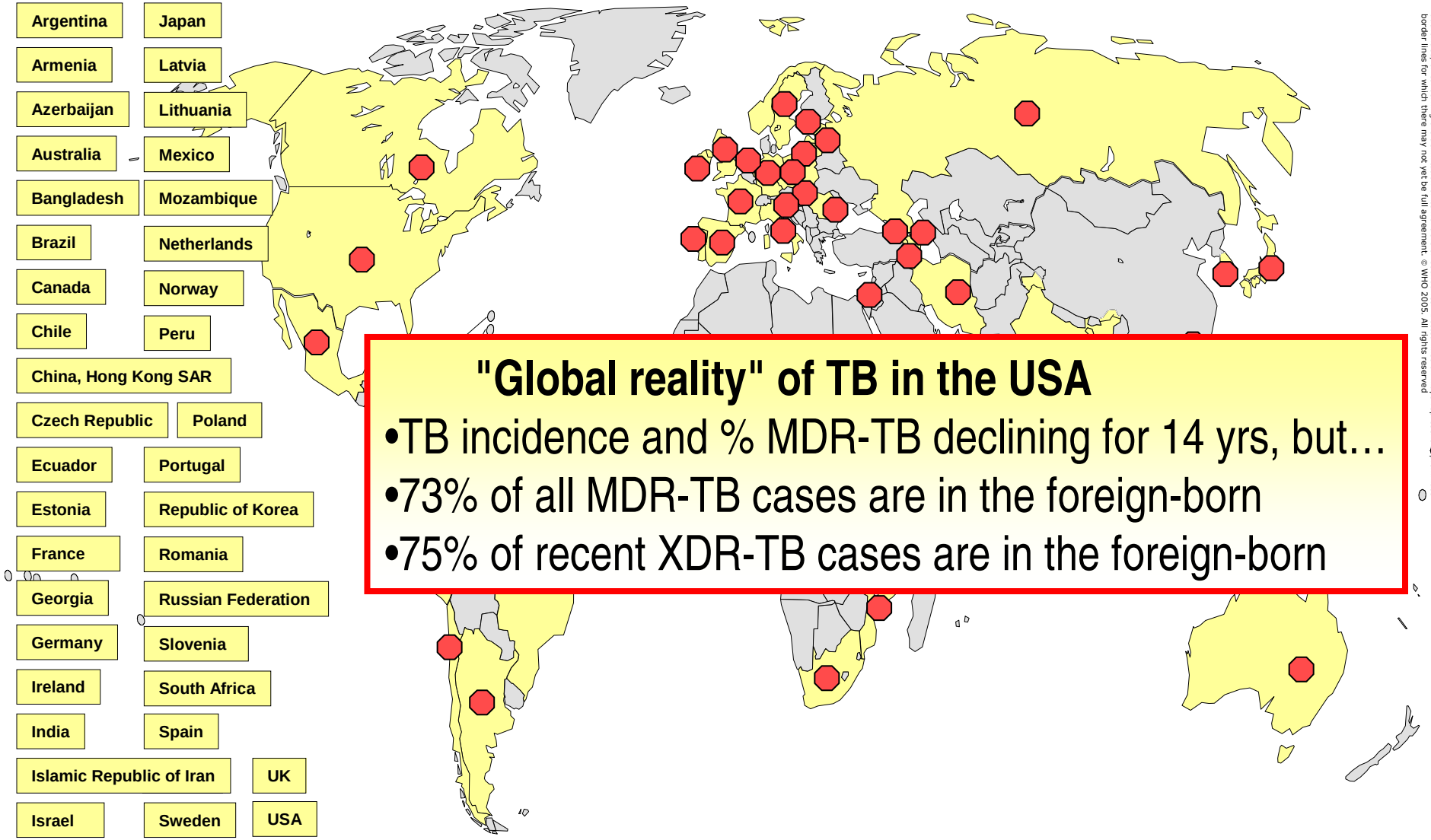
India
Spain
Islamic Republic of Iran
UK
Israel
Sweden
USA
Italy
Thailand
Vietnam



"Global reality" of TB in the USA

- TB incidence and % MDR-TB declining for 14 yrs, but…
- 73% of all MDR-TB cases are in the foreign-born
- 75% of recent XDR-TB cases are in the foreign-born

Based on information provided to WHO Stop TB Department - 13 October 2007

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 WHO 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. © WHO 2005. All rights reserved

How to respond to MDR/XDR-TB

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1. Access to quality TB and HIV care and control
2. Effective MDR/XDR-TB management
3. Laboratory services for diagnosis
4. Enhanced surveillance systems
5. Infection control
6. Public awareness given global health security concerns
7. Ethics of TB control & human rights
8. Research and development of new tools

Global response plan 2008-2015:

TREAT **160,000 MDR** and **16,000 XDR** patients

Total cost: **US$ 2.1 billion**

Conclusions

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- XDR-TB is a powerful wake-up call - status quo is no option
- Stop the spread of MDR-TB via good TB care and control
- Scale-up must be well-thought, massive & rapid
- Bottlenecks must be addressed:
  - drug procurement
  - lab capacity
  - political and community engagement