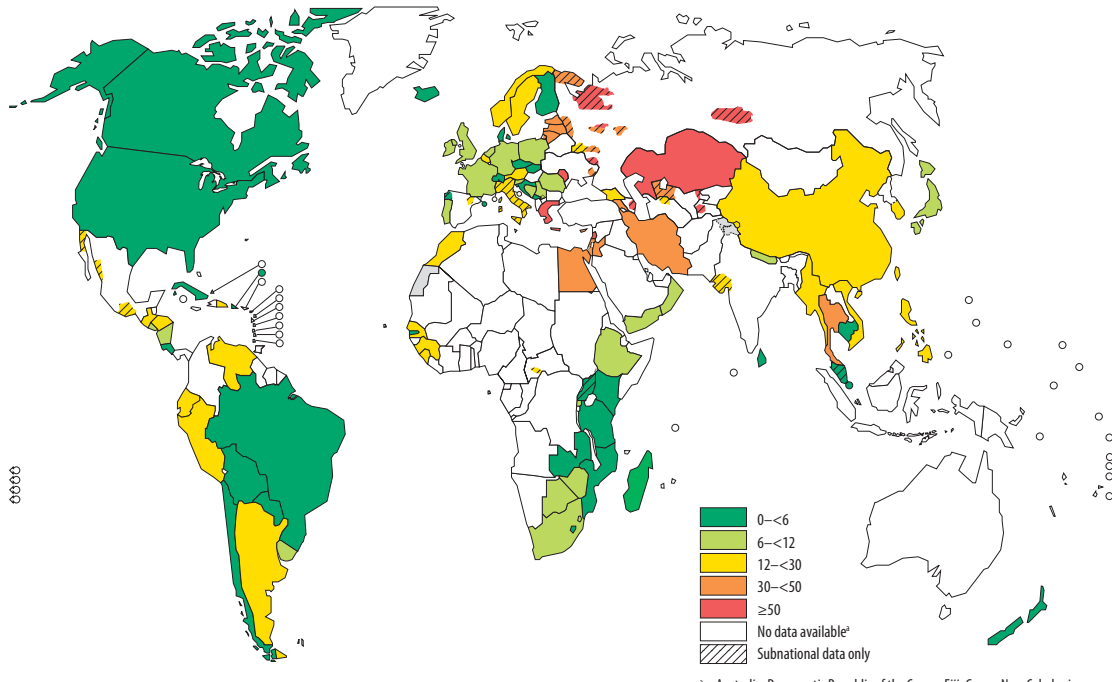


MAP 4 Distribution of proportion of MDR-TB among previously treated TB cases, 1994–2009



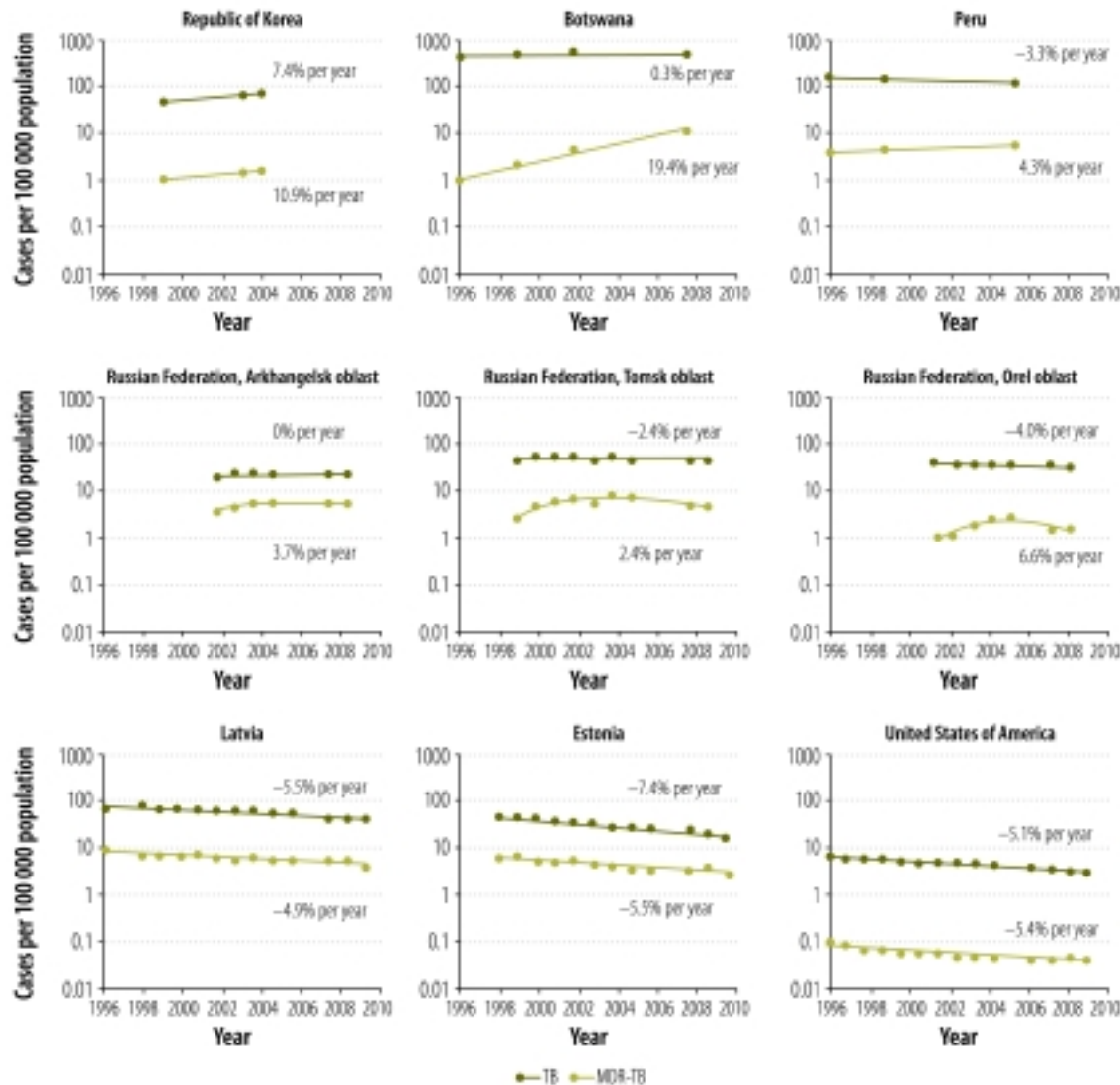
# “Know Your Epidemic”

**David Dowdy, MD PhD**

Johns Hopkins Bloomberg School of Public Health

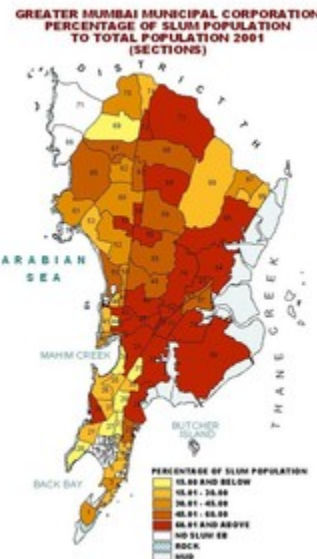
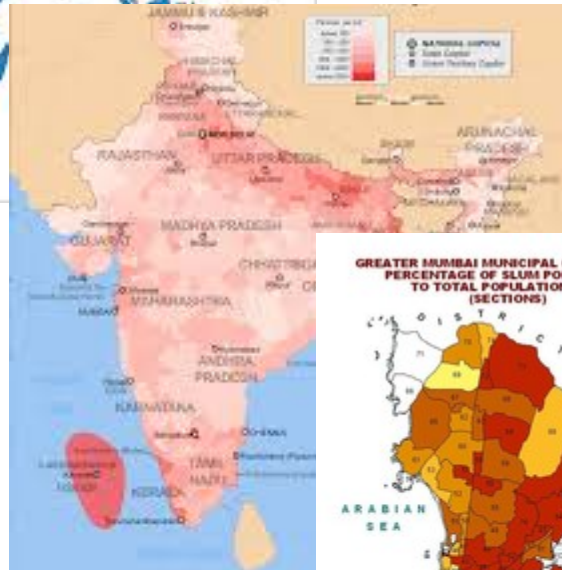
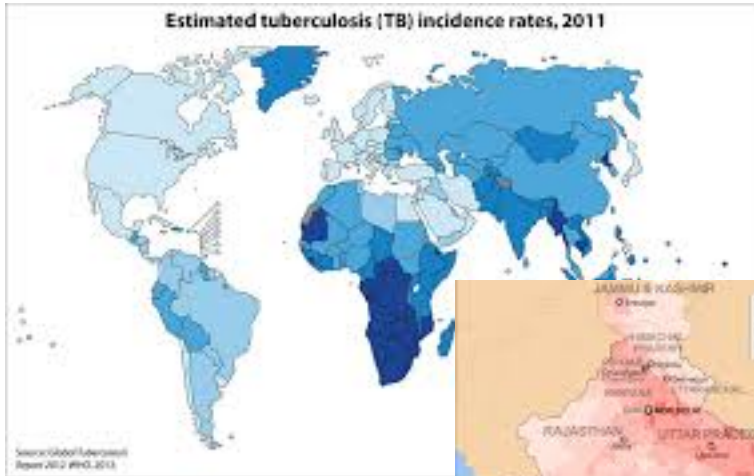
Center for Tuberculosis Research, Johns Hopkins University

# In TB, “One Size Fits None”

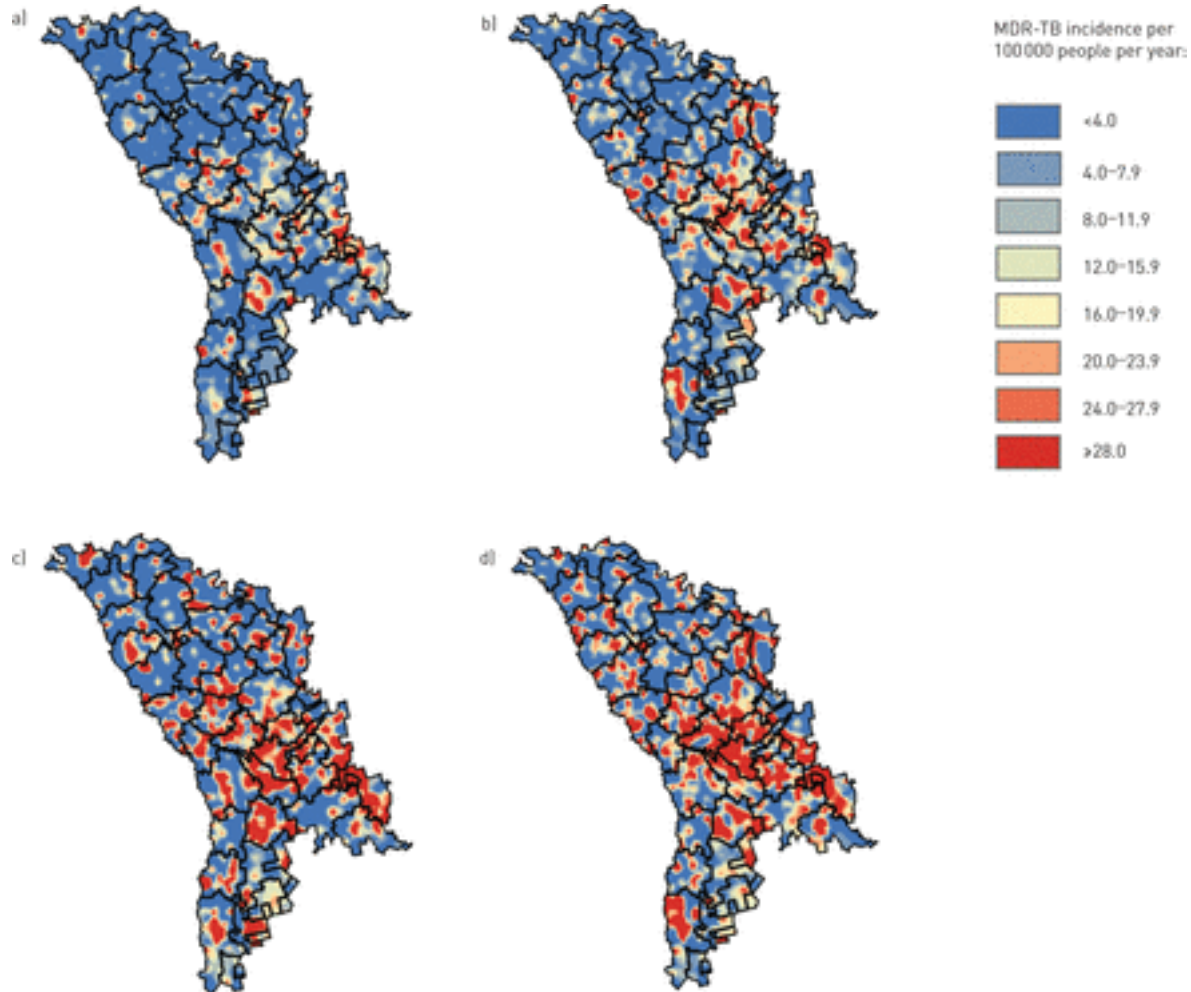


Zignol et al,  
BWHO 2012

# Where Is TB Transmitted?



# Heterogeneity in MDR-TB

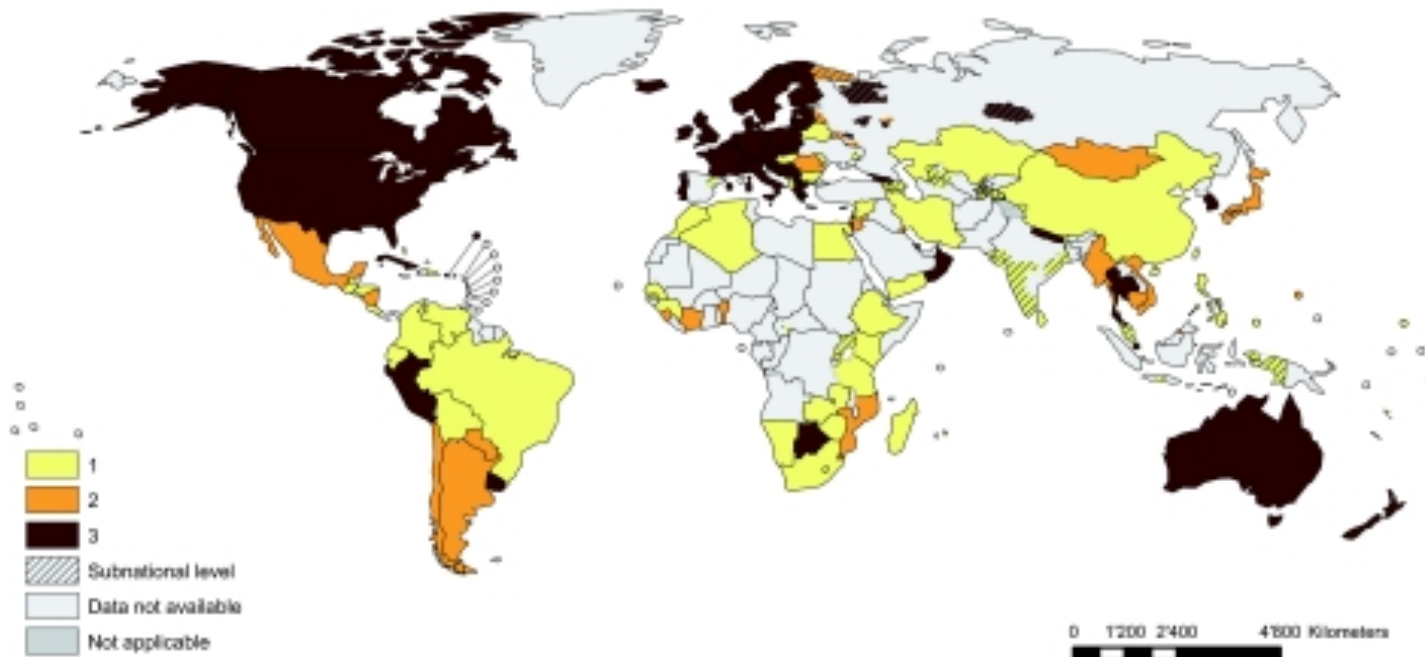


Jenkins et al,  
ERJ e-pub

# Knowledge is Power...

## And We Are Weak.

**Number of country-year data points on DR-TB, 1994-2010**  
(Zignol, BWHO 2012)



# The Response

## What went wrong with India's TB control

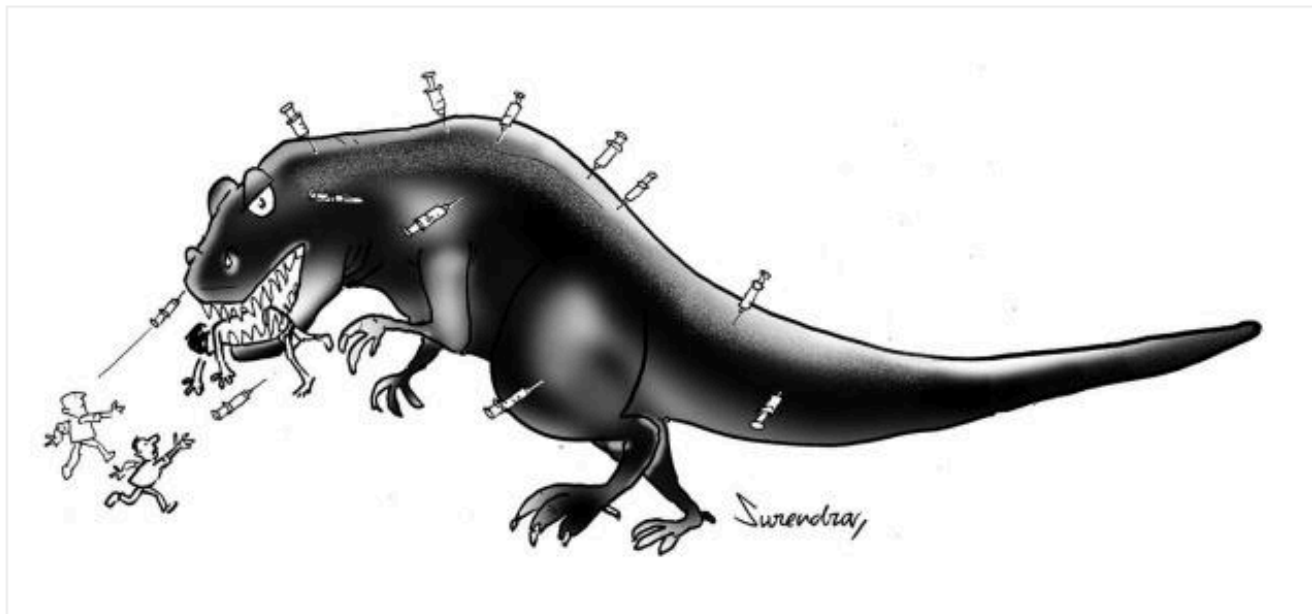
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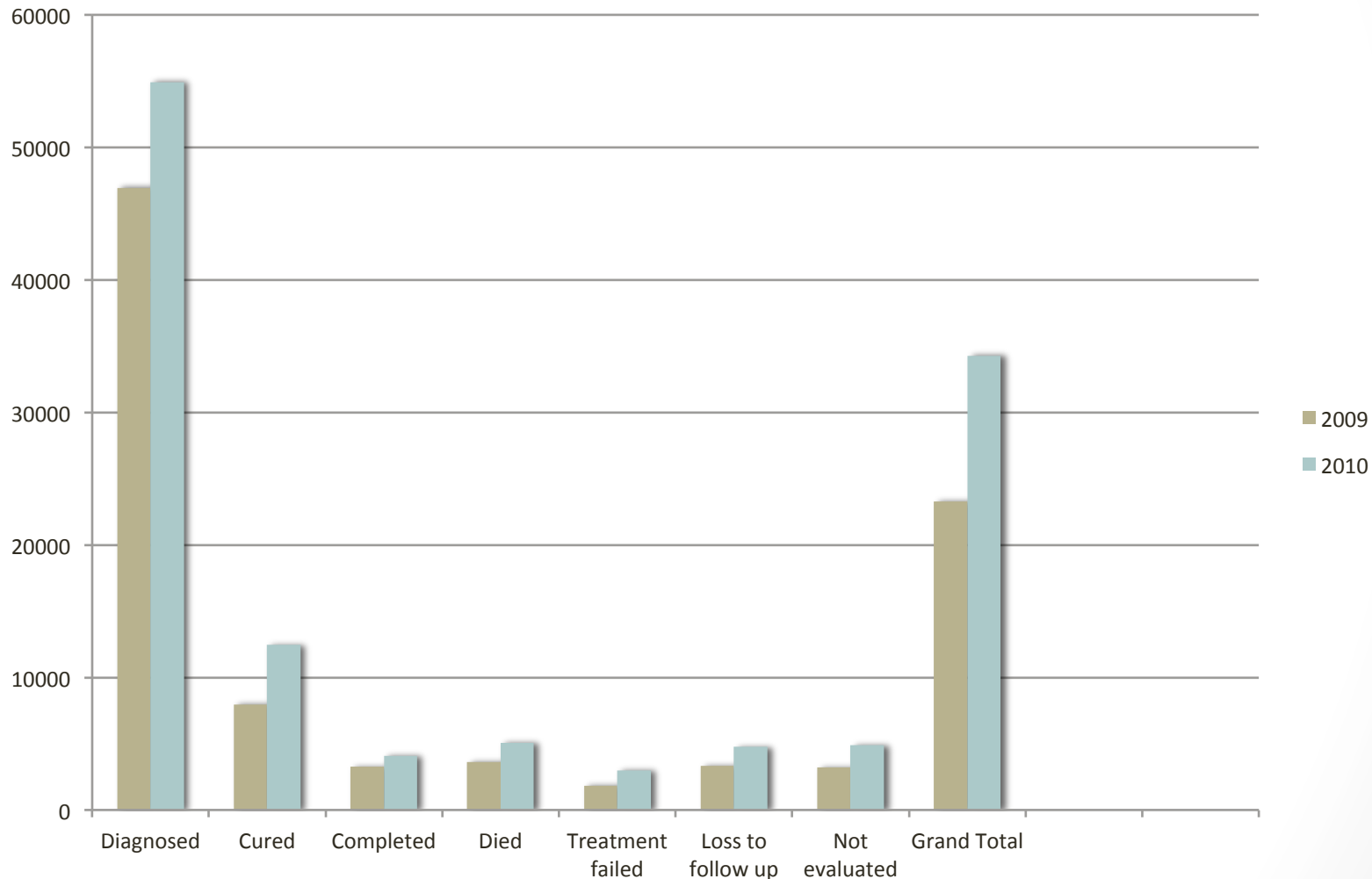
T. JACOB JOHN

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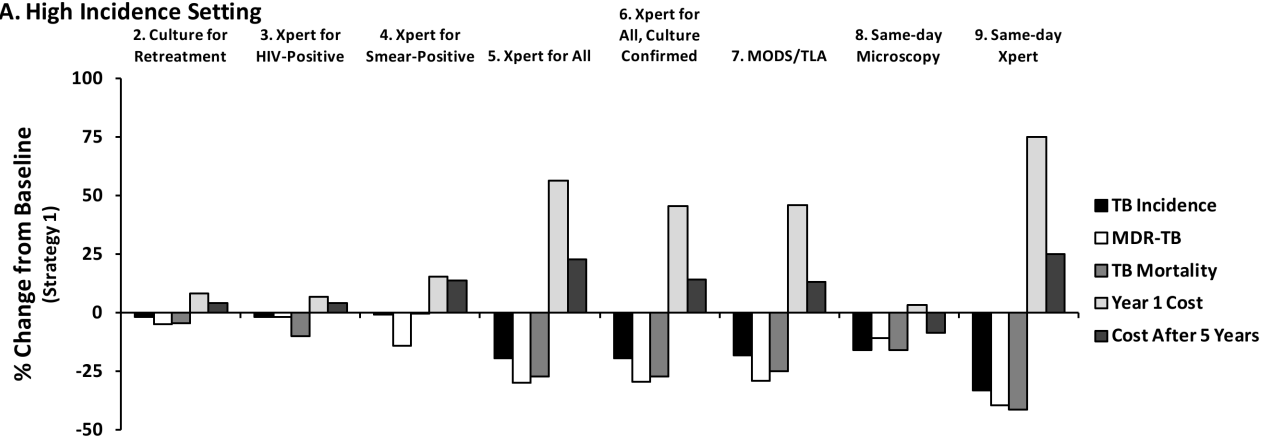
*The Hindu*  
Aug, 16, 2013

# Different Epidemics: Different Cascades

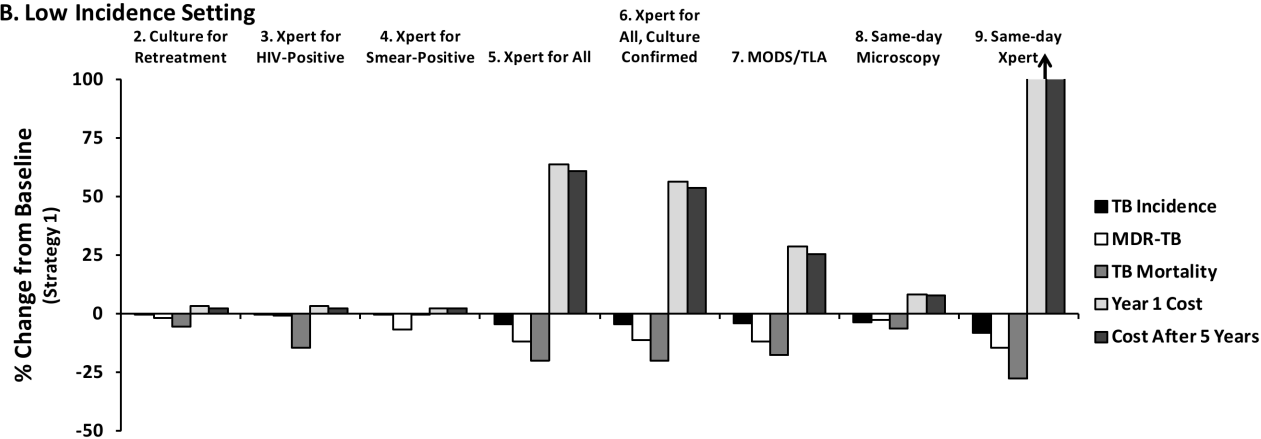


# Different Epidemics: Different Outcomes

## A. High Incidence Setting



## B. Low Incidence Setting



Flex<sup>D</sup> TB Model

### MODEL INPUTS

- ☐ Single Strategy (Click for List)
- ☒ All Strategies

#### Epidemiological Scenario

Target TB incidence, per 100,000:

Target MDR-TB prevalence among new cases, %:

Target adult HIV prevalence, %:

#### Costs (please include ALL costs, including labor, infrastructure, supplies, etc.)

Treatment of one patient with first-line drugs, \$:

Treatment of one patient with retreatment ("category 2") regimen, \$:

Treatment of one patient with second-line (MDR) drugs, \$:

One outpatient visit (e.g., for TB diagnosis), \$:

Full sputum smear evaluation (e.g., collection & evaluation of 2 smears), \$:

Full sputum smear, including extra costs to make results available same day, \$:

Single Xpert MTB/RIF test, \$:

Single Xpert, including extra costs to make results available same day, \$:

Single automated liquid-media culture (MGIT) without DST, \$:

Single automated liquid-media culture (MGIT) with DST, \$:

Single microcolony-based culture (MODS or thin-layer agar), \$:

# A Way Forward: 3 Steps

- **Step 1: Know Your Epidemic**
  - Surveillance
  - Sources (of TB)
  - Systems



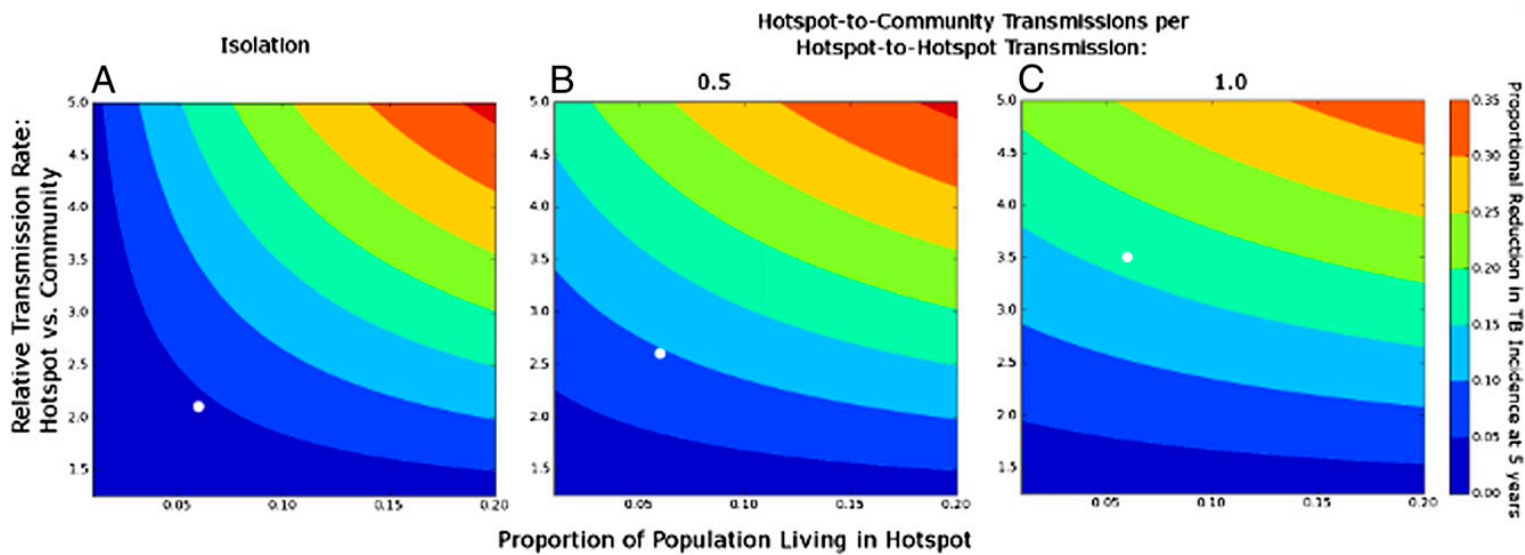
# A Way Forward: 3 Steps

- **Step 2: Know Your Local Options**
  - Tools
  - Teams
  - Trust



# A Way Forward: 3 Steps

- **Step 3: Make The Match**
  - Put your effort where your epidemic is.
  - Use the “trusted teams and tools” to target the sources of transmission.
    - Normalize the hotspots.



# Summary

- In TB control, one size fits none.
- Knowledge is power: we need more.
- 3 Steps Forward:
  - Know Your Epidemic
  - Know Your Local Options
  - Make The Match
- *The global TB community must develop flexible tools to advance local-level knowledge & solutions, not aim for a global “one size fits all” policy package.*