

The Future of Drug-Resistant TB: How Do We Prevent a Nightmare? *(HINT: By Treating It!)*

David Dowdy, MD PhD

B. Frank Polk Assistant Professor of Epidemiology
Johns Hopkins Bloomberg School of Public Health

March 24, 2015



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The Forgotten Ones



- 80% of the 480,000 new cases of MDR TB globally in 2012 were not treated.
 - These individuals are a huge source of MDR TB transmission in the community.
- Treating a case of MDR TB in the USA can cost \$500,000/person.
 - 21+ months of treatment, 8 months of daily injections, 30% of patients can expect permanent hearing loss.
- 88% of MDR TB patients in the US are foreign-born.
 - The number of these cases is on the rise.
- **Treating more people with MDR TB will prevent transmission and death, at home and abroad.**

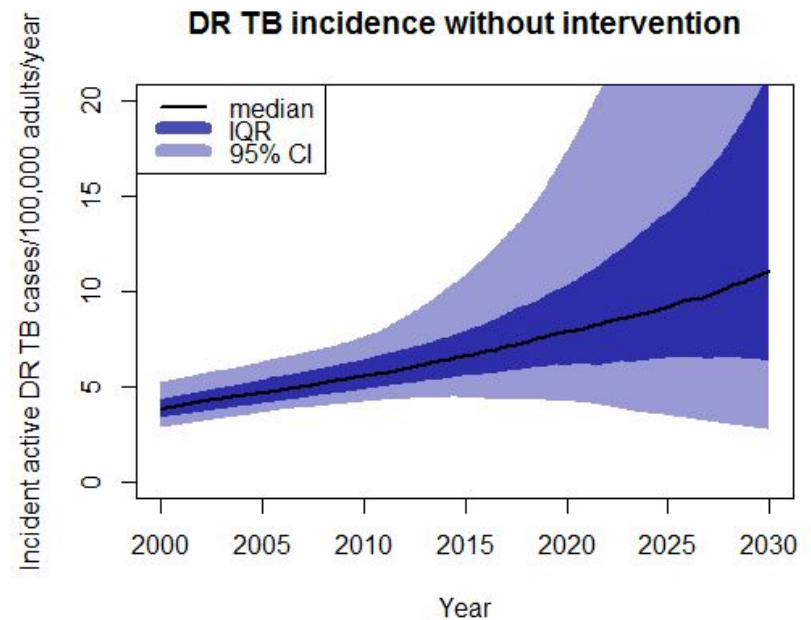
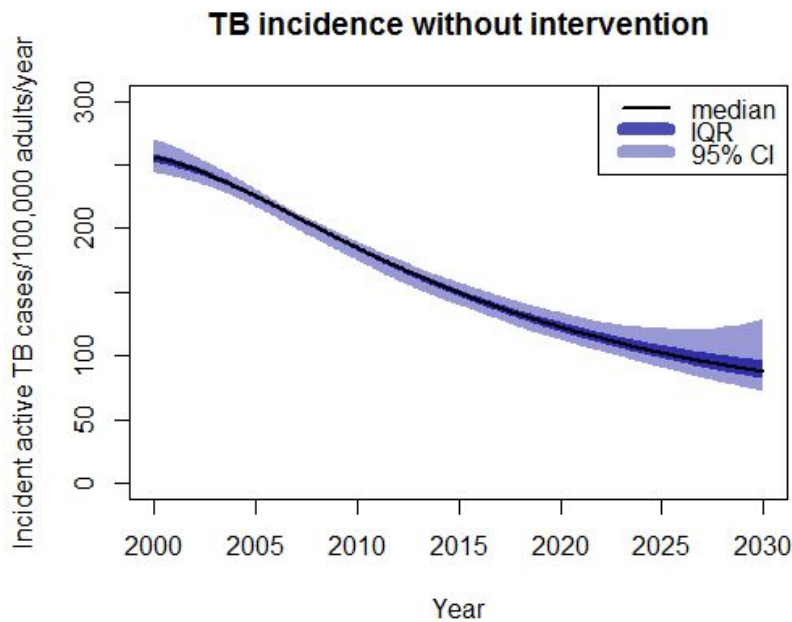
MDR TB in Southeast Asia



- Primary source of MDR-TB cases in the USA
- What happens to people with MDR TB?
 - Patients are often discharged home because money/capacity to treat MDR doesn't exist.
 - Most remain infectious 1-4 years later.
 - *Mortality and "spontaneous" cure rates are no different than in the 1940s.*
- **If we treated patients diagnosed with MDR TB, what would the impact on the epidemic be?**

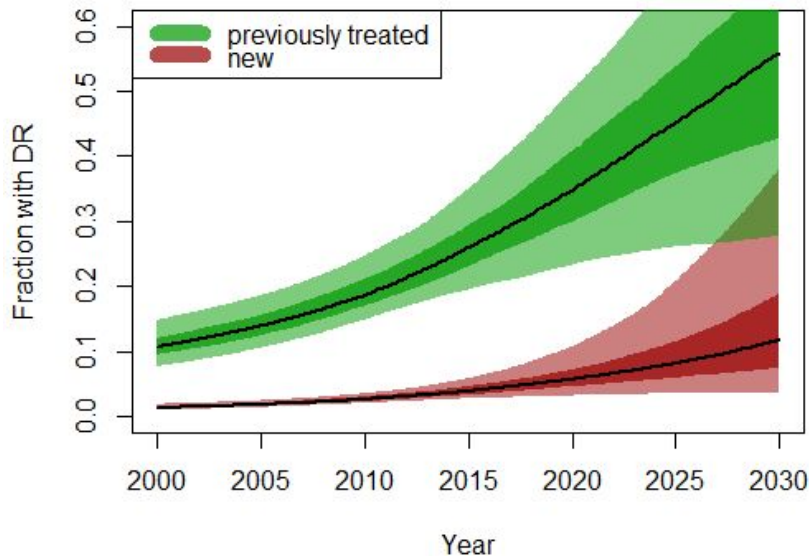
Results from Vietnam

- Median duration of MDR TB infectiousness: **2.9 (2.1-4.3) years**
 - *Each case generates 29 (17-57) infections and 4.1 (2.8-8.7) secondary active cases*

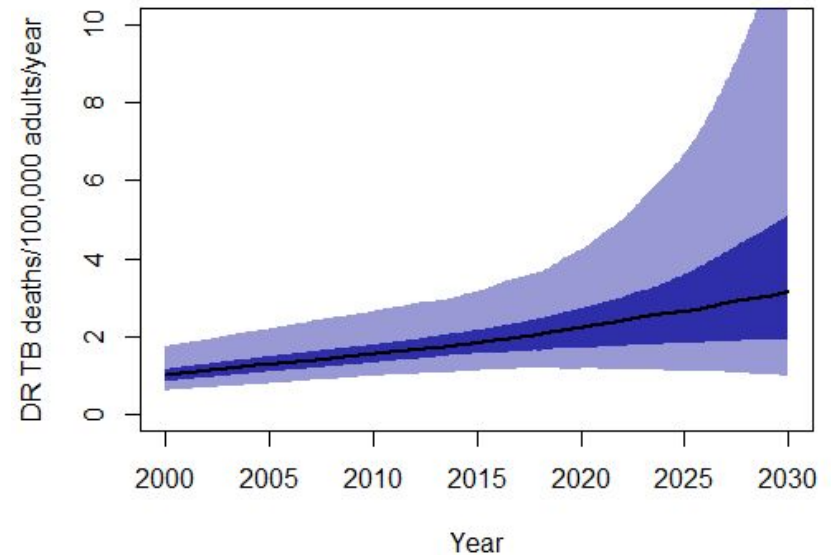


What Can We Expect if We Maintain the Status Quo?

DR prevalence among presenting TB patients

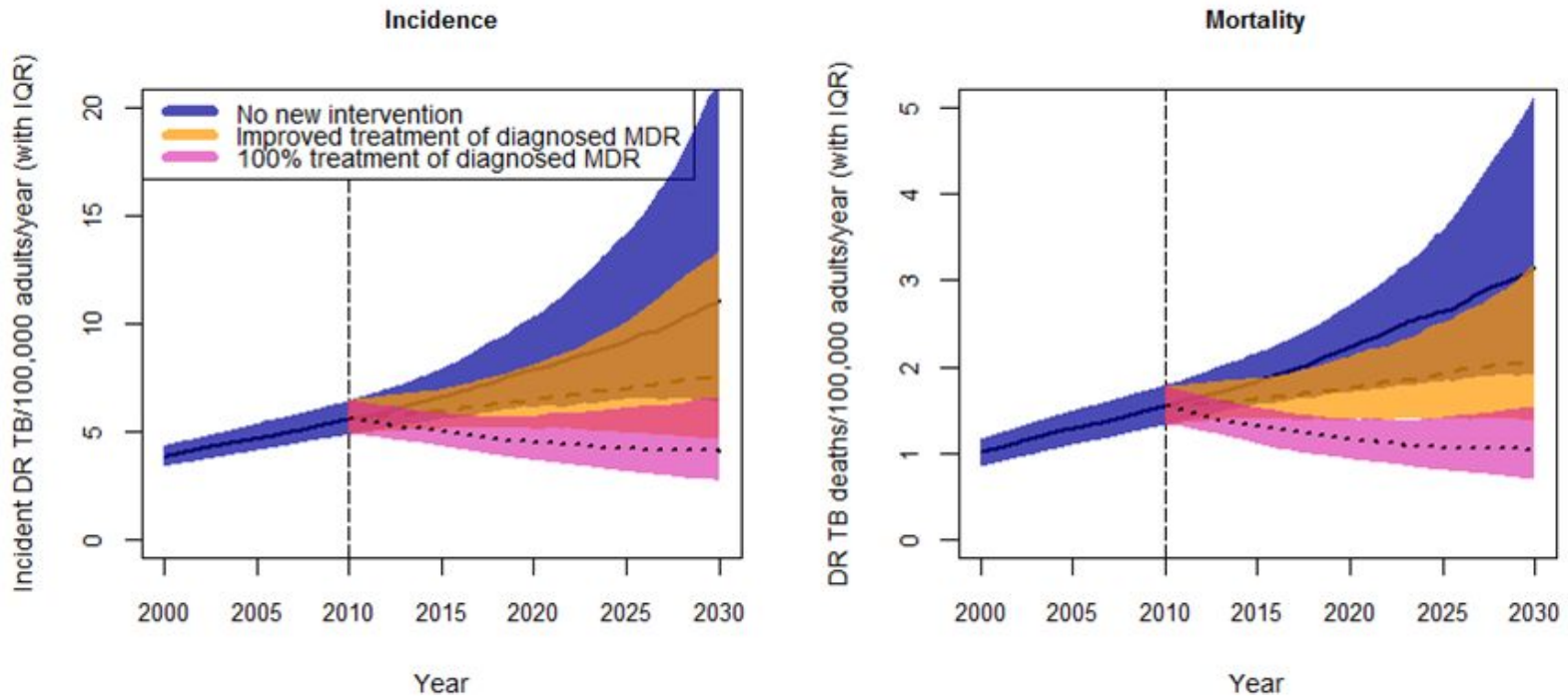


DR TB mortality without intervention



- Scenarios in which **MDR TB rates double in 15-20 years** are a reasonable expectation.
 - This means a doubling of MDR TB in the USA too!

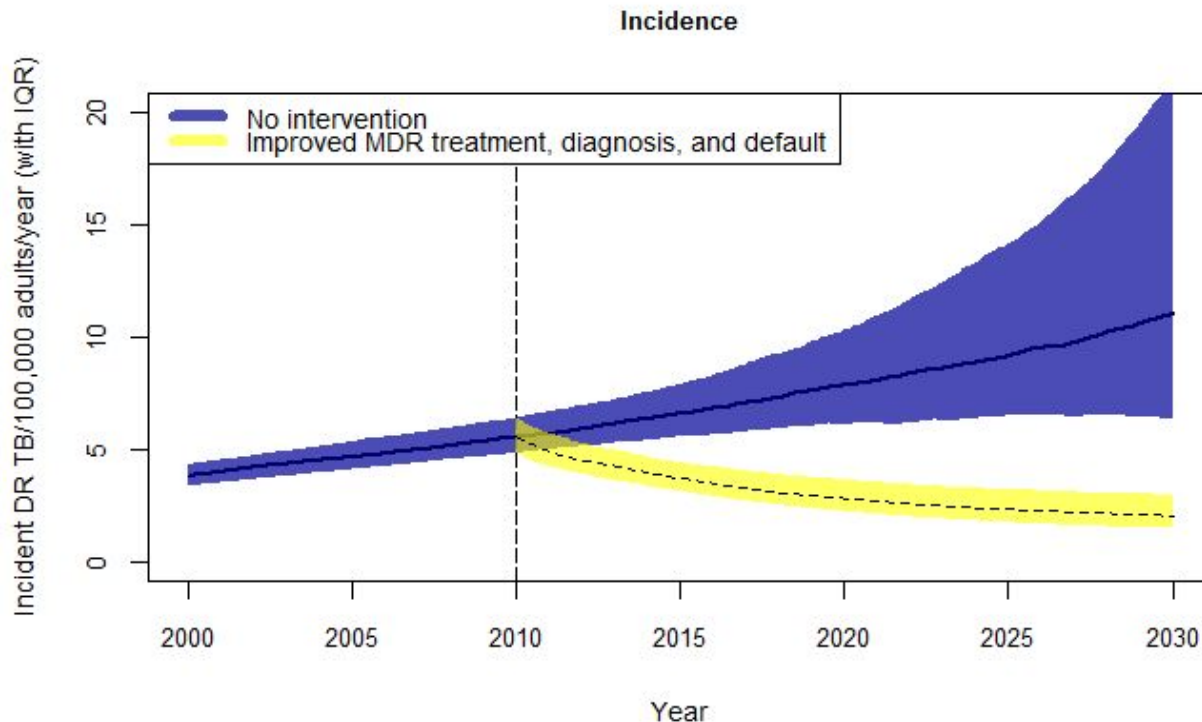
MDR Treatment as Prevention: Treat people diagnosed with MDR



- Best estimate:
- **Avert >50% of all cases and deaths by 2030**
- **Flatten the epidemic curve of MDR TB**

Need for R&D:

Test and Treat MDR TB with an Oral 2nd-Line Regimen



- **We can eliminate MDR TB in Southeast Asia.**
 - The primary source of MDR TB in the USA

Conclusions



- Patients with untreated MDR are infectious!
- **Treatment as Prevention of MDR TB:**
 - Treating patients with MDR-TB **can flatten the trend of the MDR TB epidemic.**
- **Improve MDR TB treatment:**
 - Wide treatment with an oral 2nd-line regimens **can eliminate MDR TB in a Southeast Asian setting.**
- Funding for MDR TB testing, treatment, and drug development is essential to prevent an MDR TB “nightmare”, abroad and in the USA.

Acknowledgments

- JHSPH TB Translational Epi and Modeling Group
 - Emily Kendall
 - Mariam Fofana
 - Sourya Shrestha
- Funding:
 - National Institutes of Health (T32 training grant)
 - B. Frank and Kathleen Polk Assistant Professorship in Epidemiology
 - Bill and Melinda Gates Foundation