

Cost effectiveness analysis of REMOxTB regimens

A hand is holding a blister pack containing several white and dark pills. The blister pack is held over a grid chart with handwritten data. The chart has columns and rows, with some cells containing numbers and text. The background is a blurred image of a person's hand holding the blister pack.

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PDP Access Group meeting

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TB ALLIANCE

GLOBAL ALLIANCE FOR TB DRUG DEVELOPMENT

Benefits of REMox Regimen

Shorten Treatment from 6 to 4 months

- Treatment outcome benefits (potentially higher effective cure rates & less emergence of MDR-TB)
 - Increased adherence/reduced drop-out
 - Less resistance to drugs in regimen (e.g. isoniazid or ethambutol)
- Health Systems benefits
 - Reduced cost in healthcare utilization
 - Effective patient load at any one time is reduced by one third
- Patient benefits
 - Reduced out of pocket costs (fewer visits)
 - Less time exposed to side effects

Cost effectiveness analysis: what is it and why do we do it?

- Cost effectiveness analysis (CEA) expresses the money required to gain a certain quantity of health benefit
- CEA provides multiple benefits:
 - National decision makers, donors, and global decision makers (e.g., at WHO) use it to judge whether a new intervention brings sufficient value for money
 - Provides an estimate of what matters: which of our qualitative arguments for new regimens are significant quantitatively.
 - By conducting a CEA, we clarify how a new regimen would likely be implemented.
 - WHO has explicitly stated that it will use a CEA as part of its decision-making for new TB drugs.

The VALUE-TB consortium

London School, AIGHD, and Johns Hopkins

- The consortium brings together expertise in:
 - Economic evaluation, including of new diagnostics
 - Modeling epidemiology
 - Technical assistance to national TB programs
 - Presentation of CEA to national and global stakeholders
- The individuals in the team have:
 - Already evaluated GeneXpert and other diagnostic strategies;
 - Already collected some of the necessary health systems costing data during other studies.
- TB Alliance (and our donors) providing funding & guidance
- Initiated study at end of 2012; results in Q3-Q4 2013

Primary objective

Estimate the cost-effectiveness of new shortened regimens including M (4-month) compared to the current regimen (6-month)

Primary outcomes

Number of deaths averted

Number of TB cases averted

Cost per death averted

Cost per DALY averted

Provider and patient perspective: measure costs directly in 4 study countries

Settings

- Brazil
- South Africa
- Tanzania
- Bangladesh
- Explore other contexts with available data

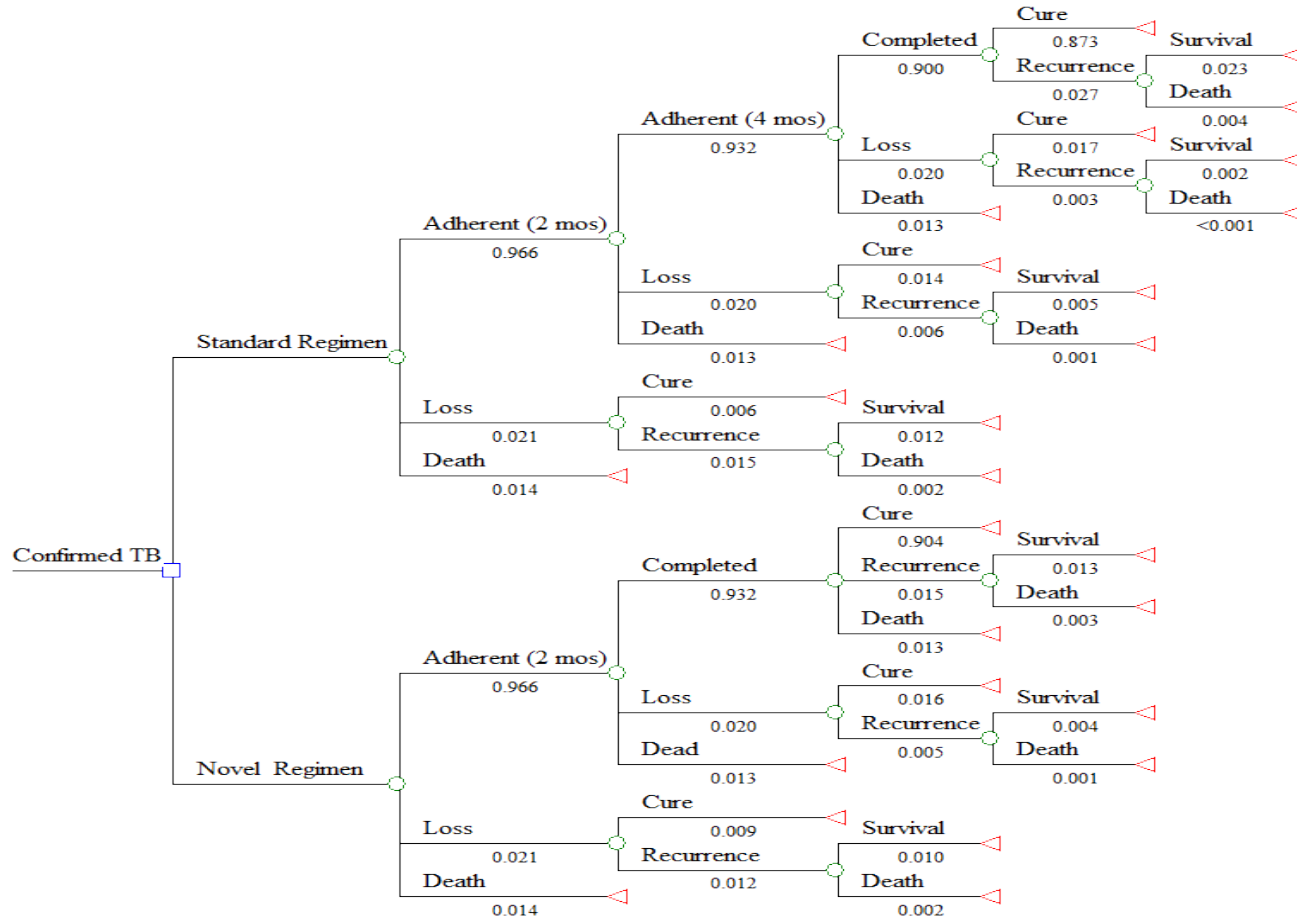
Combined CEA and impact modeling

Two stages:

Model a cohort of TB patients (pulmonary, extra-pulmonary, smear negative and smear positive) (HIV+/HIV-) (MDR-TB, INH resistant) through to **cure**, recovery or death for each alternative

Transmission model of indirect impact (TB incidence, TB cases averted, numbers of ART treatments averted, MDR-TB)

Primary data collection on costs



Add costs to each branch
Estimate number of deaths averted

Dowdy D et al. Johns Hopkins University

Challenges of cost effectiveness analyses

Mid-project, several issues are emerging

- Models can be conservative
 - A typical model has a *lot* of variables. For many of these variables, evidence is poor or lacking entirely
 - In this case, modelers revert to the most conservative assumption
 - This may reduce or eliminate an expected benefit of your new technology
- Models are subjective
 - There are many decisions, so there will be many differences of opinion
 - Sensitivity analysis – including the combination of several changes at once – is essential to increase a model's credibility both to the PDP and other users
- Cost effectiveness might not be the most important determinant
 - ART is not very cost effective, but activists & patients demanded it
 - Current TB treatment is very cost effective, but we need to demand a better standard of care, even if it is less cost effective
 - How should cost effectiveness evidence be packaged and publicized?