Economic analysis of novel TB regimens

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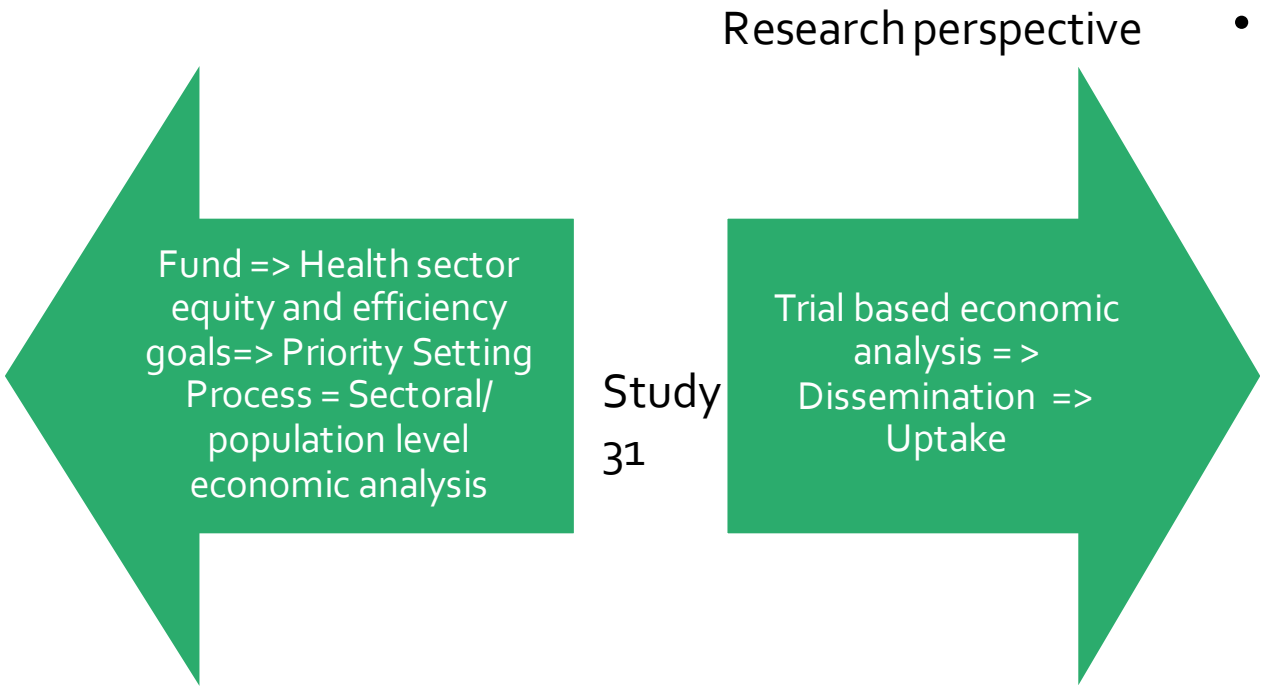
GLOBAL HEALTH ECONOMICS CENTRE

The starting point is uptake not the end point



Understanding how that sectoral process works is pivotal to designing the analysis, but why limited uptake and potentially intervention design

- Talk about:
  - how priority setting systems are evolving, with a focus on national level payers and development partners
  - reflect on why have previously effective TB interventions not been funded to scale
  - specific case of shortened and universal TB regimens and aspects of the analyses that may be particularly promising
  - promote discussion about future analyses

National priority setting systems are evolving

- In simple terms national systems:
  - National Strategic plans (incremental 3-5 years)
  - Development Assistance (global and funding applications)
  - **UHC Benefit Packages (framing of what is in or out)**
  - **Health Technology Assessment (incremental to benefit package)**

Several countries UHC benefit packages: Pakistan, India, Ethiopia..

Several countries initiate HTA: China, India, South Africa, but also Ethiopia, Ghana, Kenya…

DS-TB treatment/MDR TB treatment always considered

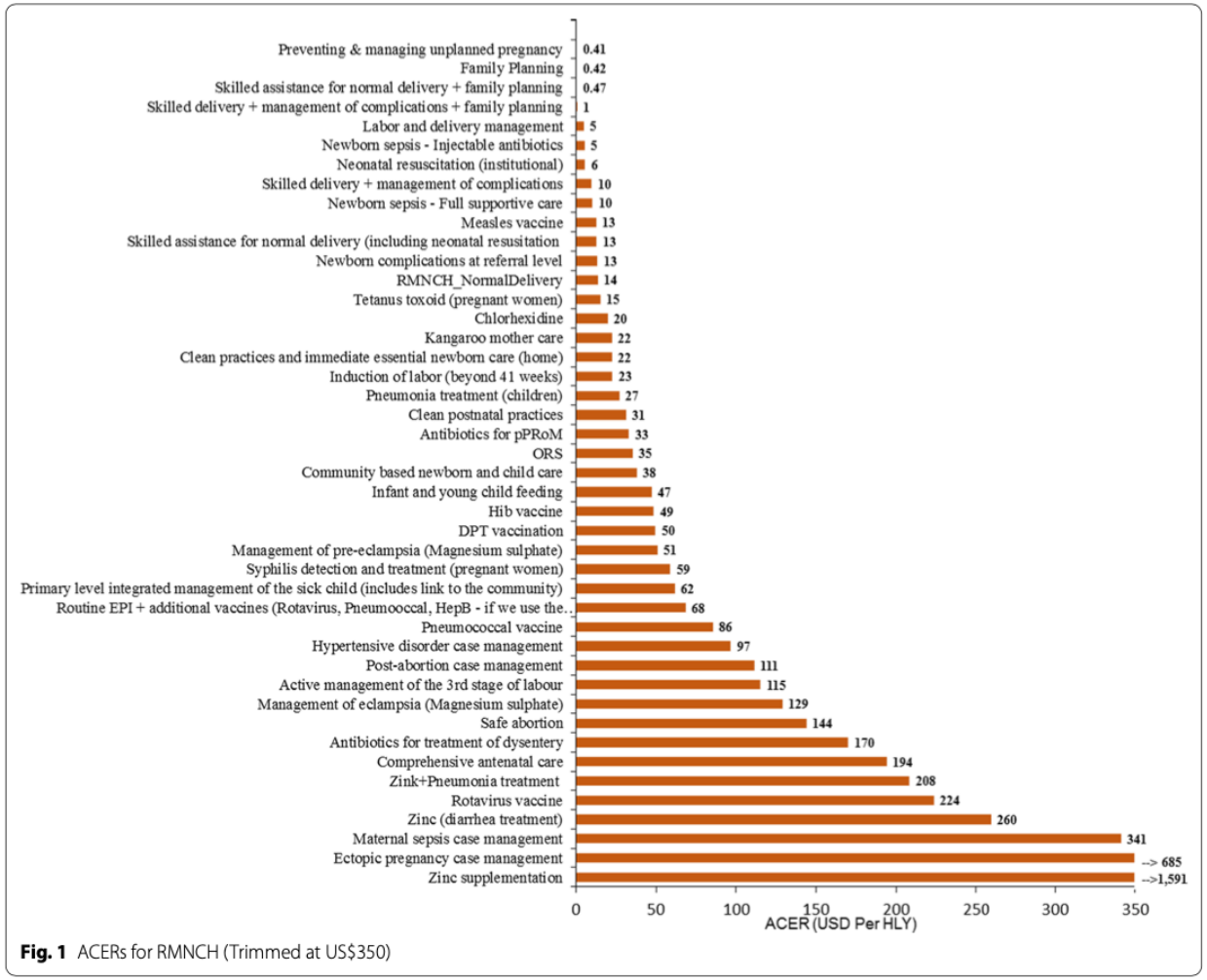


Fig. 1 ACERs for RMNCH (Trimmed at US$350)

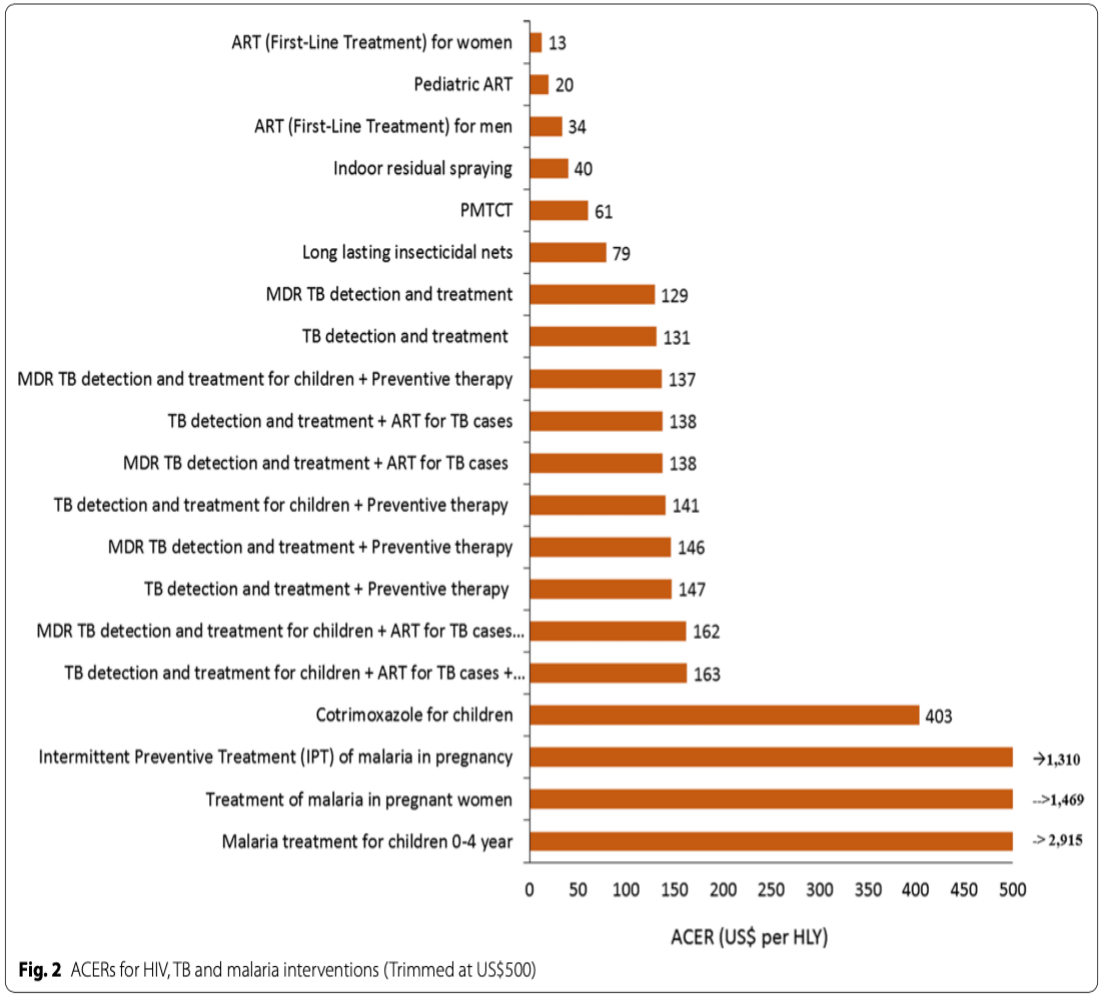
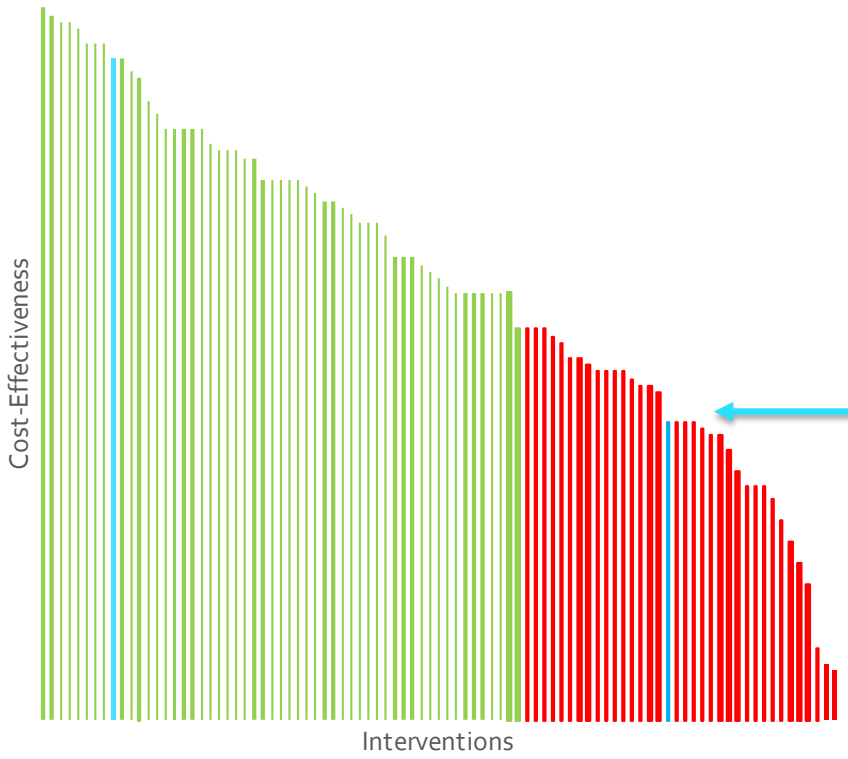


Fig. 2 ACERs for HIV, TB and malaria interventions (Trimmed at US$500)

Eregata, GT. Et al. Generalised cost-effectiveness analysis of 159 health interventions fo the Ethiopian essential health package. Cost Effectiveness and Resource Allocation (2021) 19:2

High coverage few interventions, low coverage all in terventions

EPHS, Pakistan



US$ 6 COVID-19 vaccine
CE ranking: 72
ICER: US$781/DALY averted
309K DALYs averted
Total cost: US$510.5 million
Cost per capita: US$ 2.29

- Pakistan Essential Package Health Services (District)
- Current spending US$8 per capita (green), US$ 12 per capita (red)
- DS treatment U$17 per DALY averted (11th)
- DR-TB at Us$757 per DALY averted
  - Technical working group, but national ctte did not

- Trade-off between doing the most cost-effective TB interventions at full coverage or doing all
- Depends on budget structures

What drives the economic assessment of shortened regimens

Most analyses examining non-inferior DS and DR regimens find shortened regimens to be cost-saving or highly cost-effective at prices of around US 1 to US 5 dollars a day compared to standard of care

- Limited direct impact on outcomes/ transmission (1-4% incidence)
- Indirect health improvement as funds reallocated or
- Cost reduction to health services and households
  - Substantial gains (4-week regiment approx 60% reduction)
  - Absolute terms most benefit is household costs

Cost-effectiveness highly dependent on:

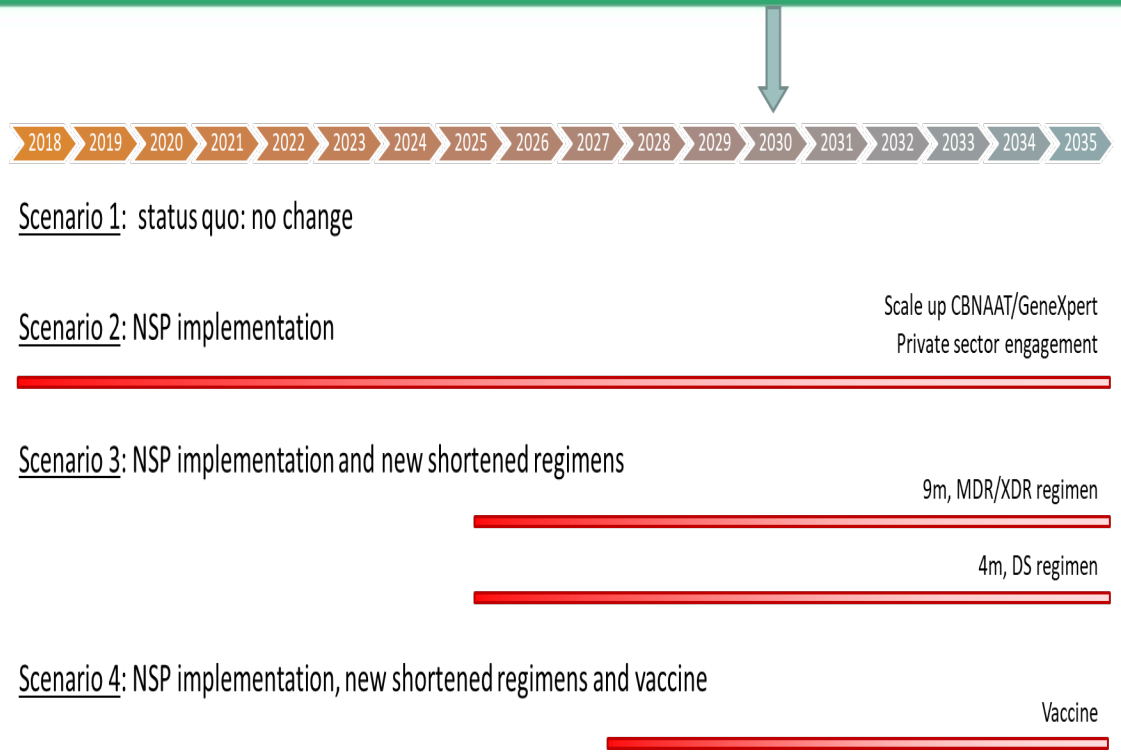
– Guideline adherence (South Africa)

– Cost of current delivery (Bangladesh exception)

– Base line level of default

Pricing for a UDR – Thinking about the future

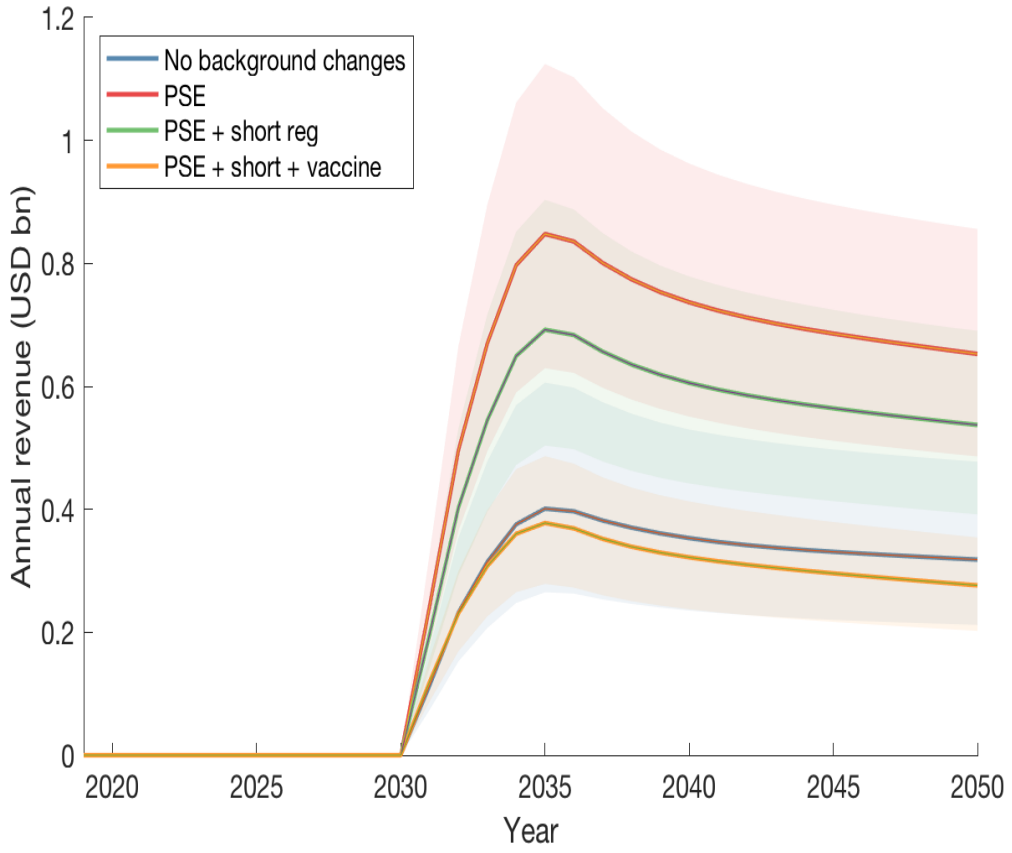
Attribute	Target
Indication	Regimen is first line treatment without DST requirement
Target Population	All groups irrespective of HIV status
Efficiency and duration	Not inferior to RIF-sensitive TB standard of care (RS SOC) in ≤2mo regimen
Safety	Incidence/severity of AEs better than DS SOC No active clinical/lab monitoring for toxicity (except in special pops) No ECG monitoring of QT interval
Drug-Drug Interactions and Metabolism	No dose adjustment w/other meds Ability to safely use regimen w/o active lab test monitoring
Barrier to emergence of drug resistance	Mutation rates not > $1/10^9$; essentially no acquired resistance (<0.1%) No pre-existing resistance
Formulation, dosage, route of administration	Oral, once daily, no special weight banding ≤ 3 novel antibacterial compounds; 2 of 3 or all in FDC
Stability/shelf life	Stable > 3 years in climate zones 3 and 4 at 30C / 75% RH

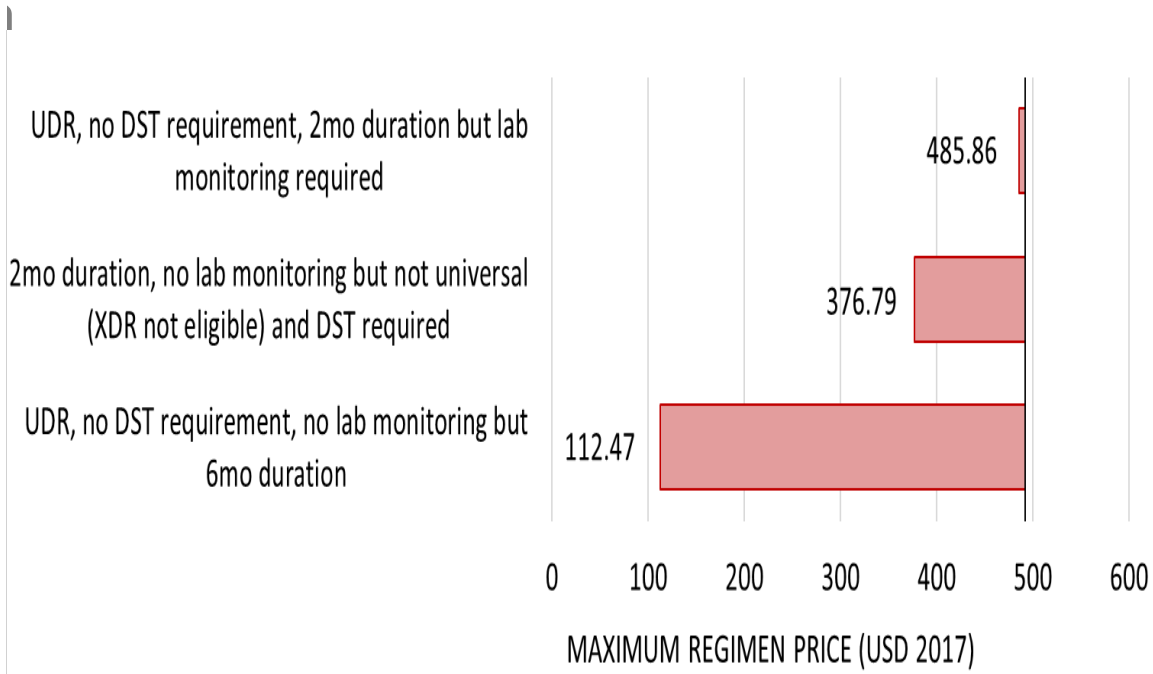


MODELLING TO INFORM PRICE AND REVENUE STREAMS FOR NEW TB DRUGS

Gabriela B Gomez, Nim Pathy, Lotte Steuten, Anna Vassall

Taking a societal perspective but how?





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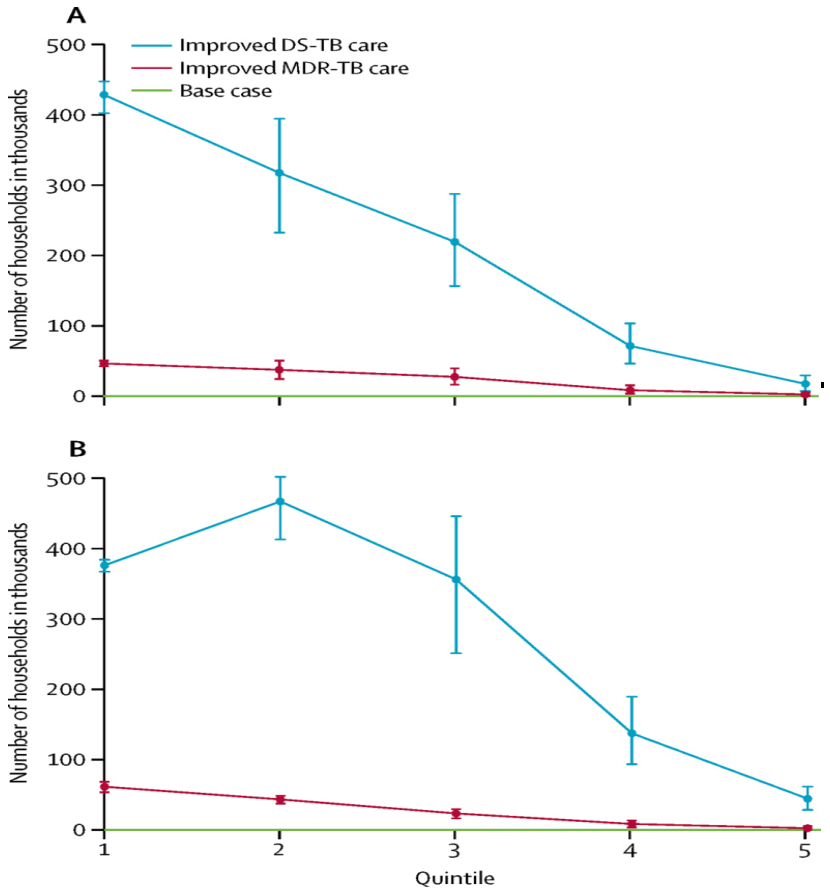
Taking a societal perspective



- Improvements in TB treatment and care can substantial reduce houshold costs and avert poverty
- BUT is this a concern of the health sector payer?
- US recommendations to take a societal perspective, but contested
- Can help make the case to other Ministries or the Treasury
  - Varies by setting
  - Factored in to sectoral allocations
  - RoI/ CGE modelling

Verguet S, Riumallo-Herl C, Gomez GB, et al. Catastrophic costs potentially averted by tuberculosis control in India and South Africa: a modelling study. *Lancet Glob Health*. 2017;5(11):e1123-e1132. doi:10.1016/S2214-109X(17)30341-8

Summary of key points

- Cost-effectiveness evidence is increasingly required
- We need a better understanding of comparative efficiency within TB **and within the sector in different settings**
- Likely to be different for DS-TB, but for DR-TB it may enable scale-up
- Clear case in terms of poverty reduction, but more work to be done on to understand how to convert this into investment by governments
- Role of evidence brokers, to inform investment and support programmes use economic evidence