

Xpert MTB/RIF in the Global Plan 2011–2015

What will it cost?

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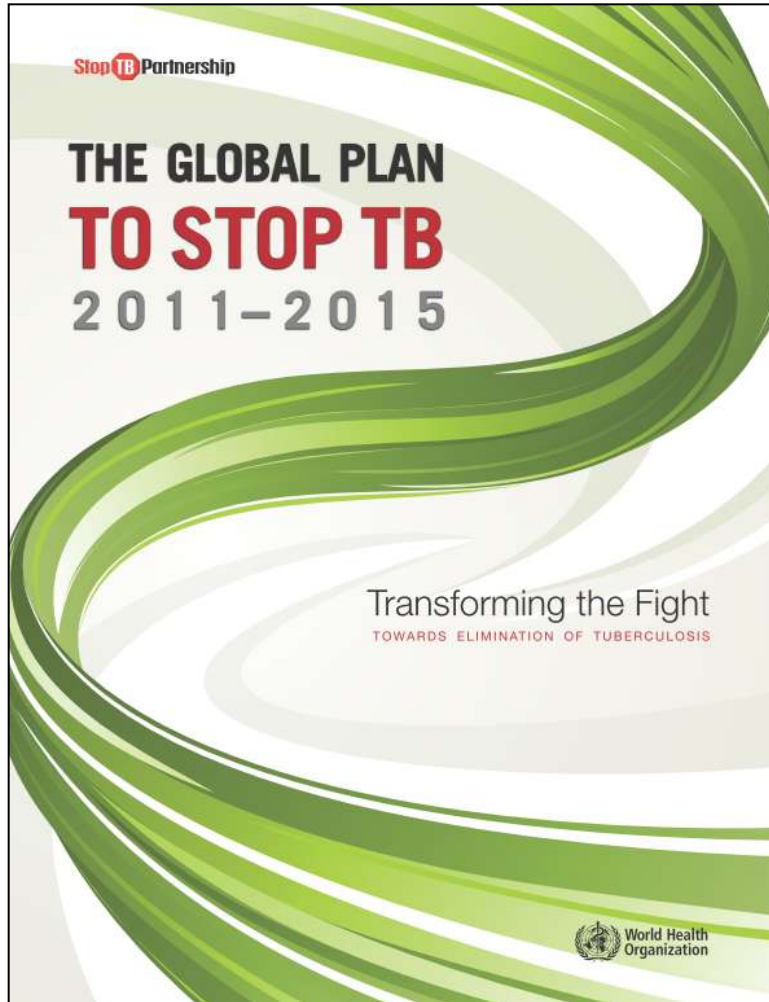
Overview

1. **The Global Plan – targets relevant to Xpert MTB/RIF**
2. **Methods to estimate costs**
3. **Cost of Xpert at global level**
4. **Six country examples**
 - **Xpert vs. diagnostic alternatives**
 - **Xpert costs in context**



Global Plan to Stop TB 2011–2015

Launched 13 October 2010



Targets (explicit or **implicit**) relevant to Xpert MTB/RIF

INDICATOR	TARGET for 2015
1. Patients notified + treated	6.9 million
2. TB suspects to be tested for TB	~30 million
3. Percentage of AFB smear-negative cases diagnosed using culture and/or molecular-based test	50%
4. Previously treated cases tested for MDR	100%
5. New cases tested for MDR	20% (all at high-risk)
6. Number of 22 HBCs and 27 MDR-TB HBCs with ≥ 1 culture lab per 5M and ≥ 1 DST lab per 10M population	36/36

Methods to estimate costs

NB important links to Day 2

1. Three eligible populations considered

- All TB cases considered at high risk of MDR-TB
- All HIV-positive TB suspects (implicitly, HIV test before Xpert)
- All TB suspects

2. Assumptions

- Cases at high risk of MDR-TB defined as in Global Plan i.e. as all previously treated cases and 20% of new cases
- Global Plan targets achieved

3. Diagnostic alternatives to Xpert considered

- MDR-TB: smear + culture (liquid/solid) + DST
- TB, HIV-positive TB suspects: smear + (for those sm-) culture
- TB, HIV-negative TB suspects: smear + (digital) X-ray

4. Costs estimated for one year - 2015



Unit costs

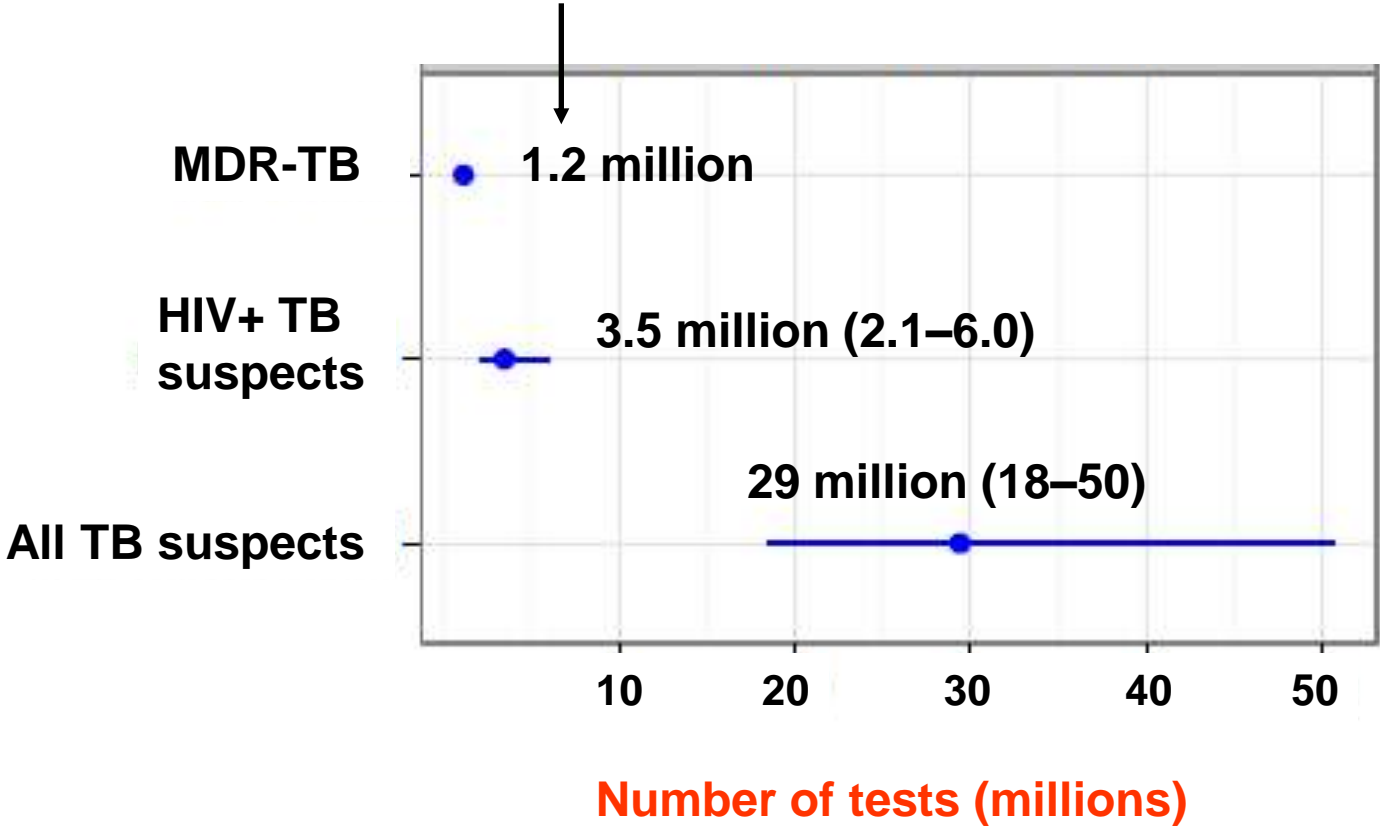
Unit	Unit cost (US\$)
Xpert (cartridge, per test)	10–18
Xpert, equipment (per test)	0.8–1.5
Smear	1
X-ray - digital or conventional	1.5, or 5
Culture (solid media)	5
Culture (liquid media)	10
DST (solid media), per drug	8
DST (liquid media), per drug	20
Equipment, 1 culture + DST lab (solid)	186,000
Equipment, 1 culture + DST lab (liquid)	239,000

Costs conservative for culture and X-ray

Costs of Xpert at global level

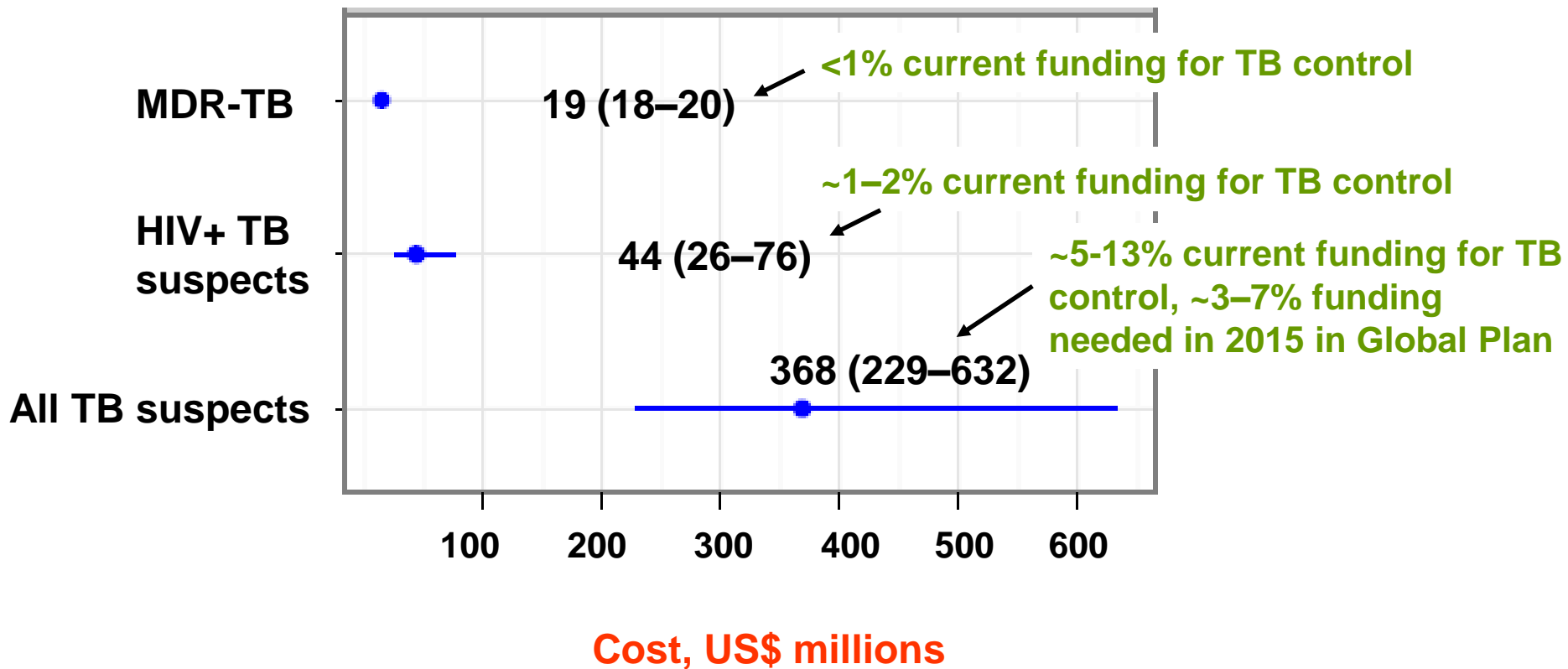
Global number of tests, 2015

Threshold of 3M tests required for lowest cost per test is not reached with testing for MDR-TB only, under Global Plan assumptions



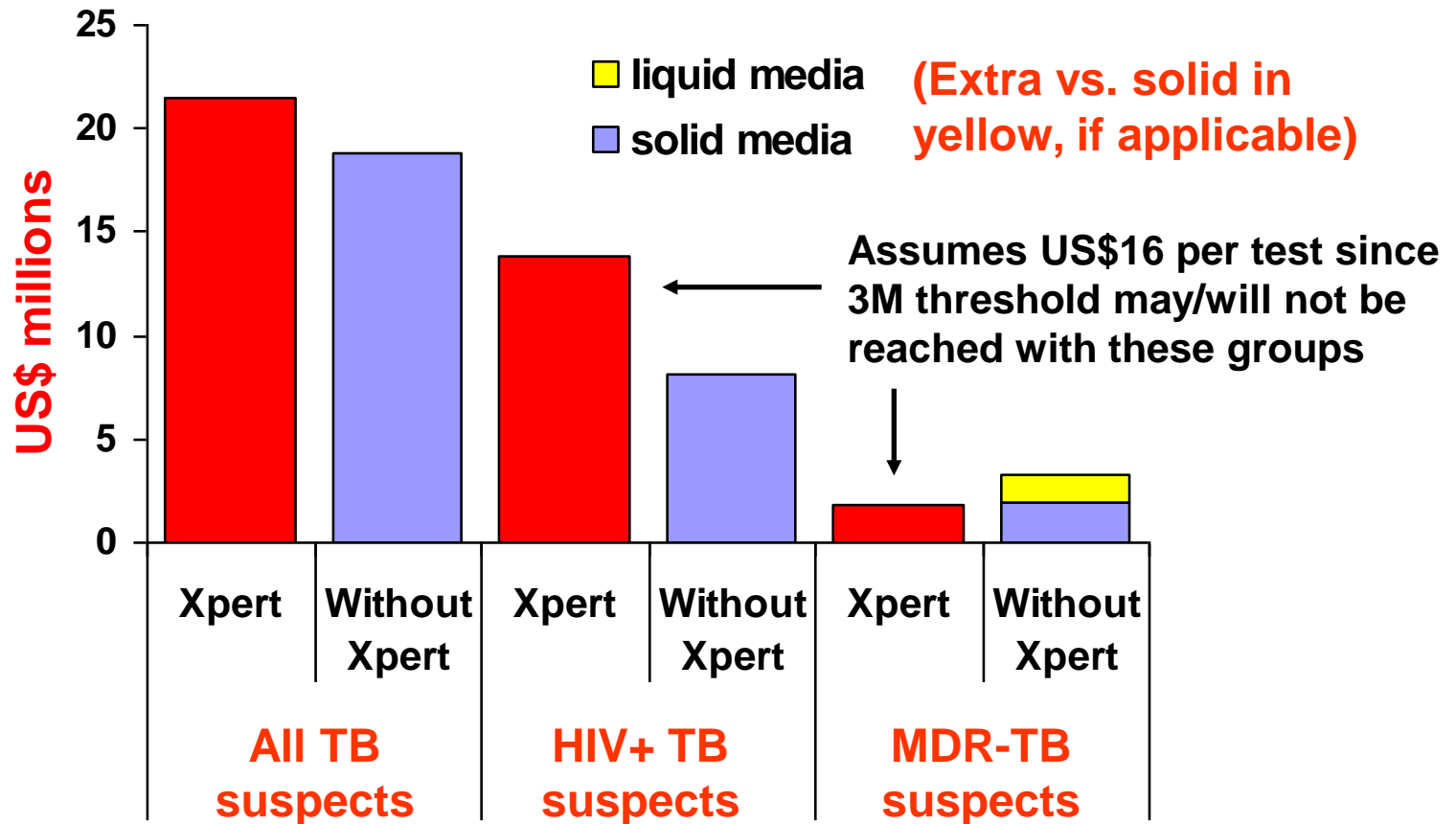
Global cost of tests, 2015

US\$ millions



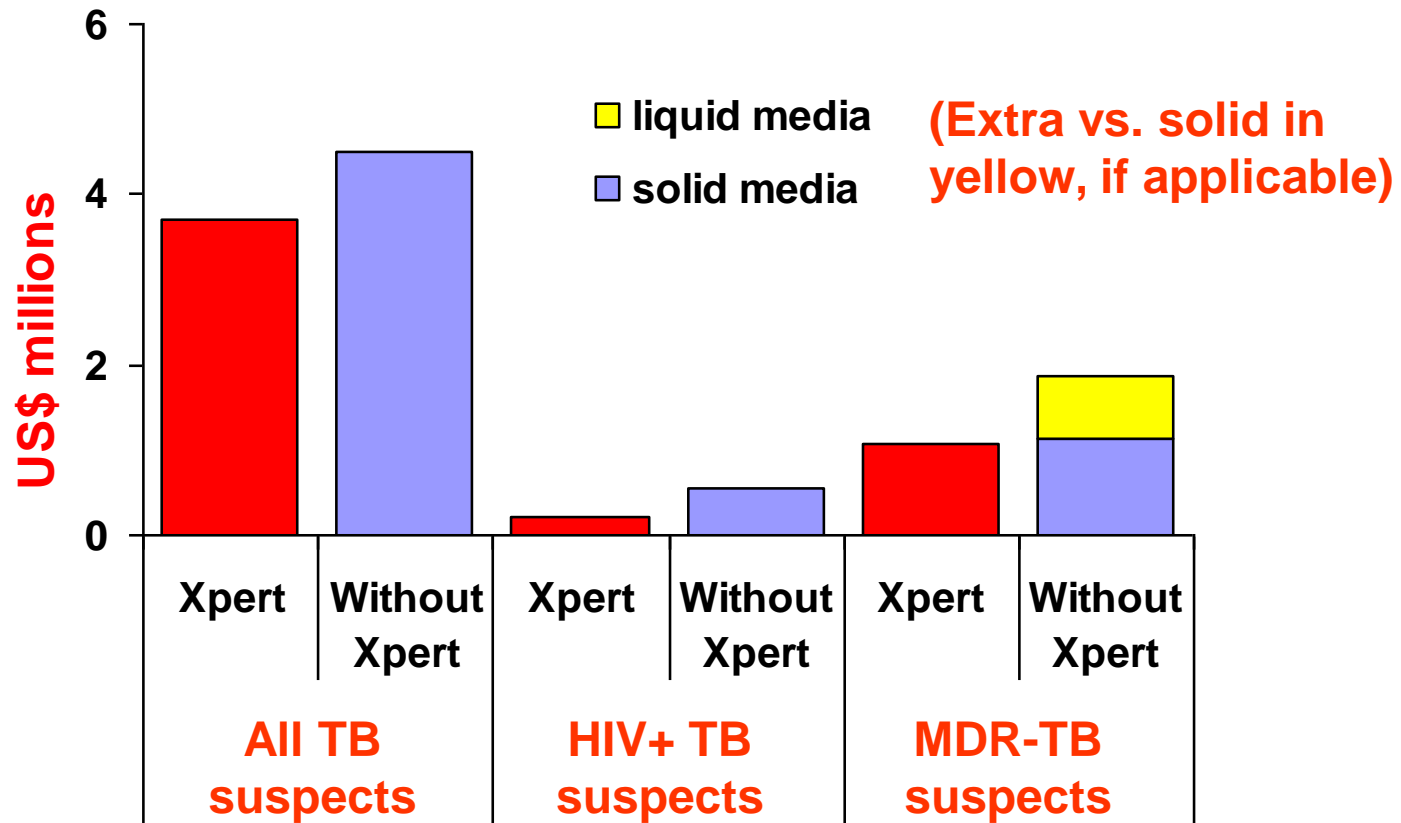
Country examples

Country example: South Africa



1. Xpert lower cost than existing diagnostic tests for MDR-TB
2. Cost of Xpert higher than existing diagnostics for all TB suspects, but not by much and costs affordable ~ 3% of current spending on TB control

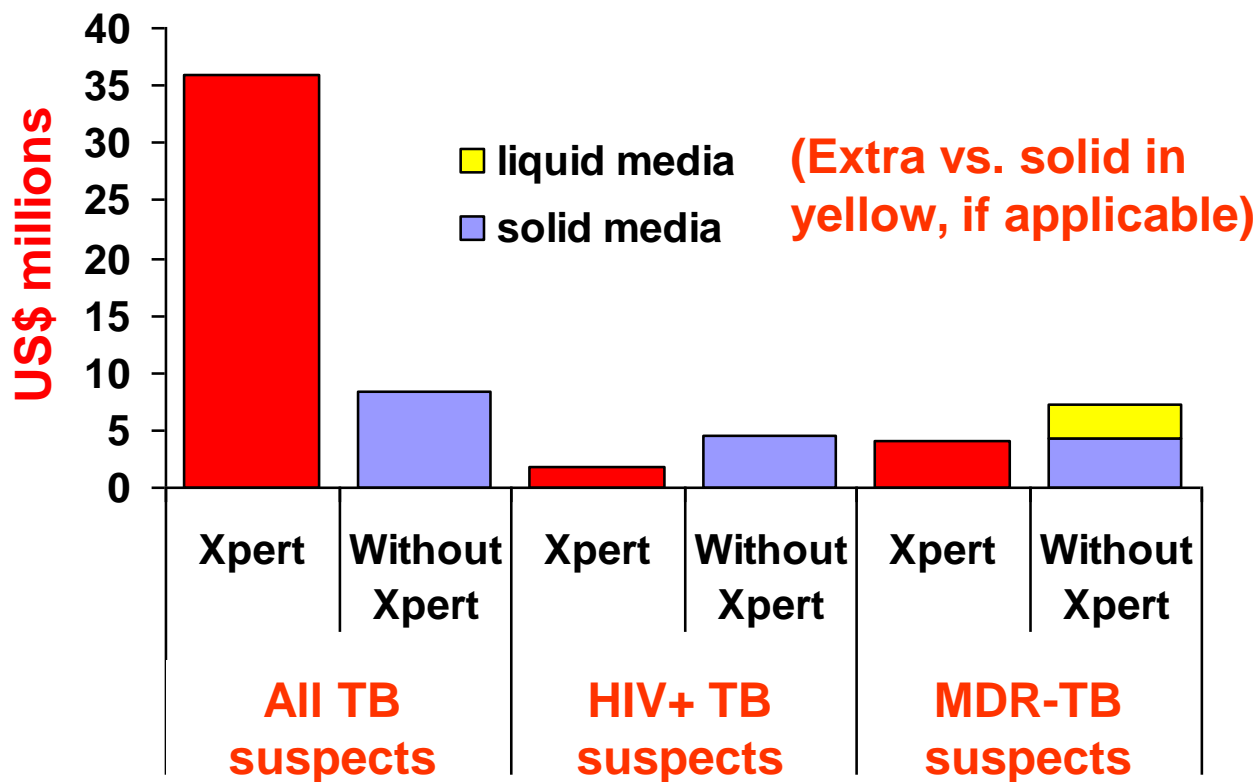
Country example: Russia



1. Xpert lower cost than existing diagnostic tests (including culture as standard) for ALL eligible populations

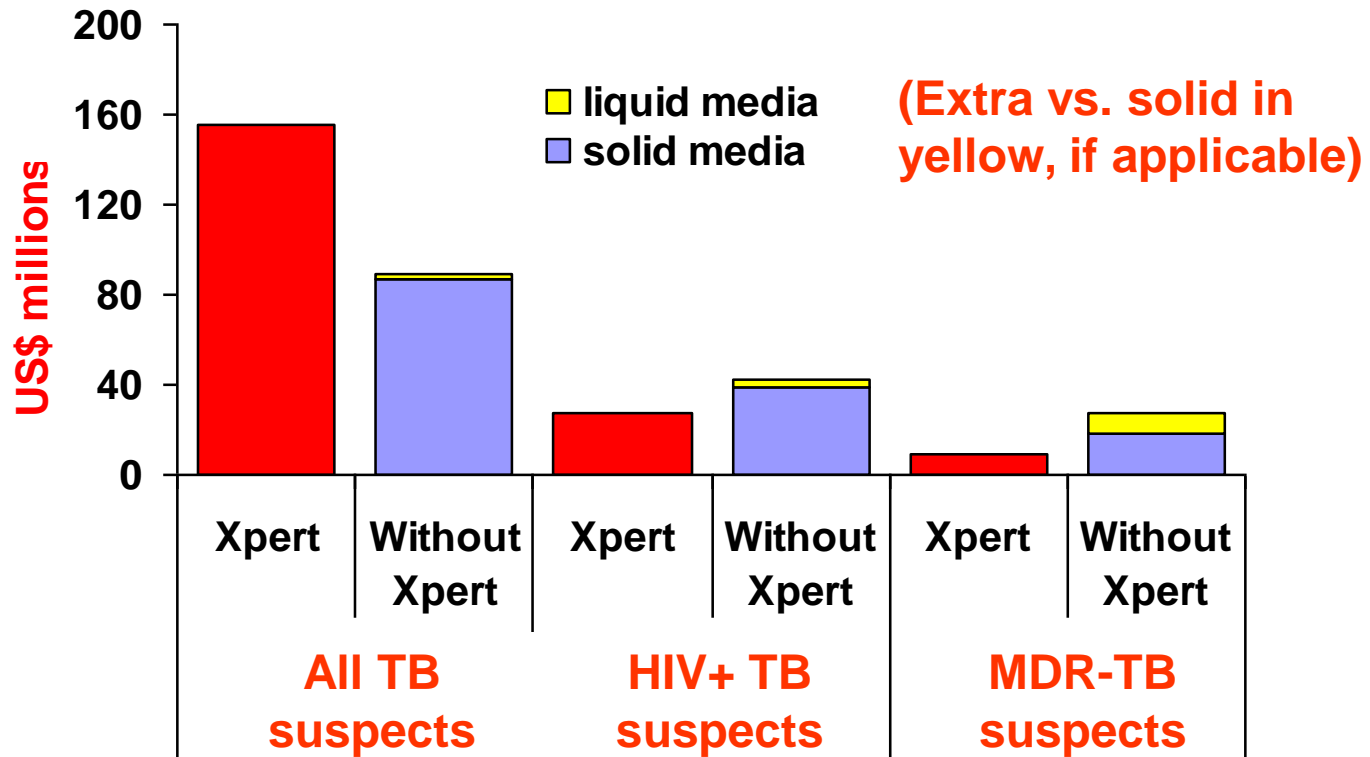
2. Cost for all TB suspects only ~ 0.5% of current spending on TB control

Country example: China



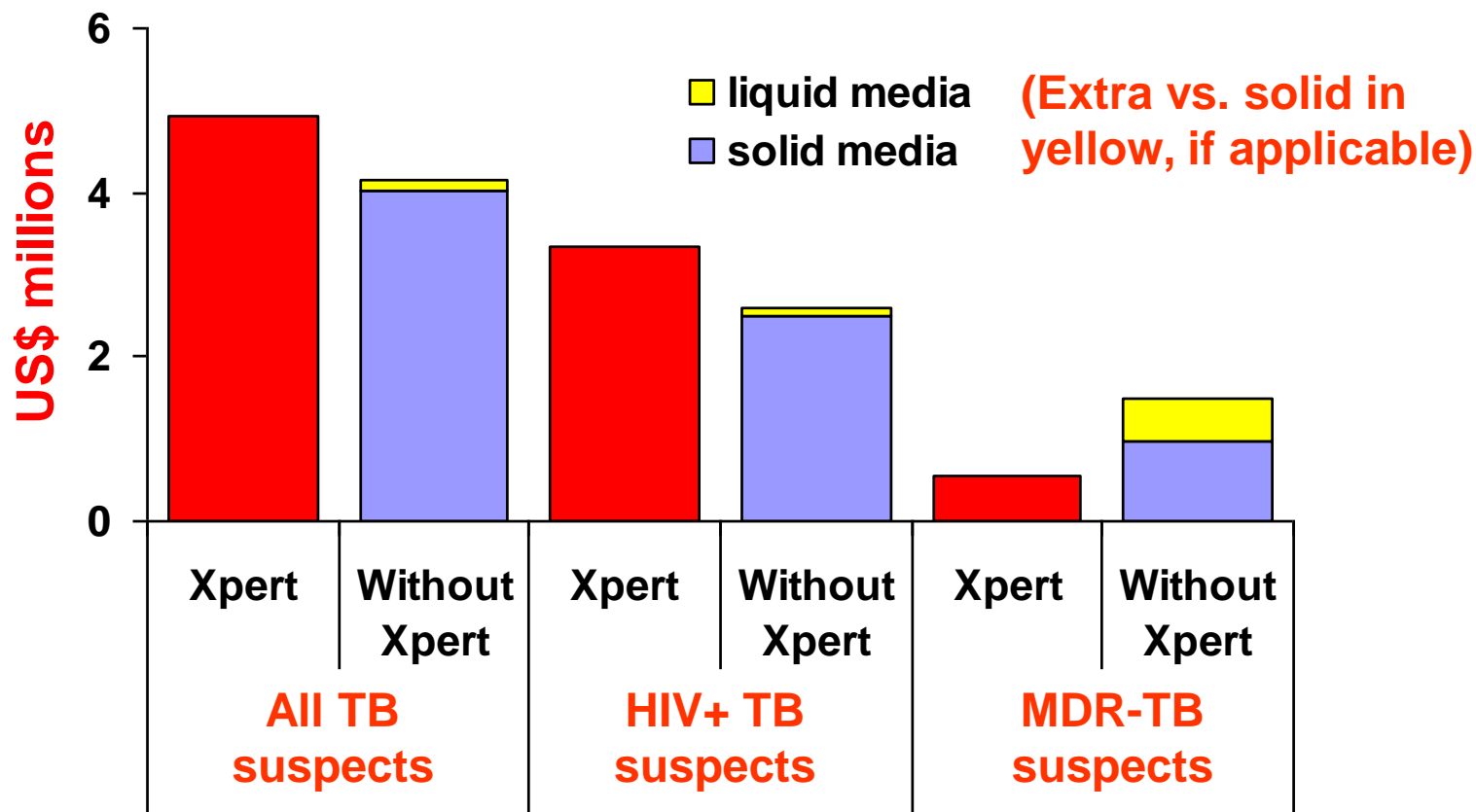
1. Xpert lower cost than alternative diagnostic tests for MDR-TB and HIV+ TB suspects (assuming use of culture for those sm-)
2. Cost for all TB suspects ~ 13% of current spending on TB control

Country example: India



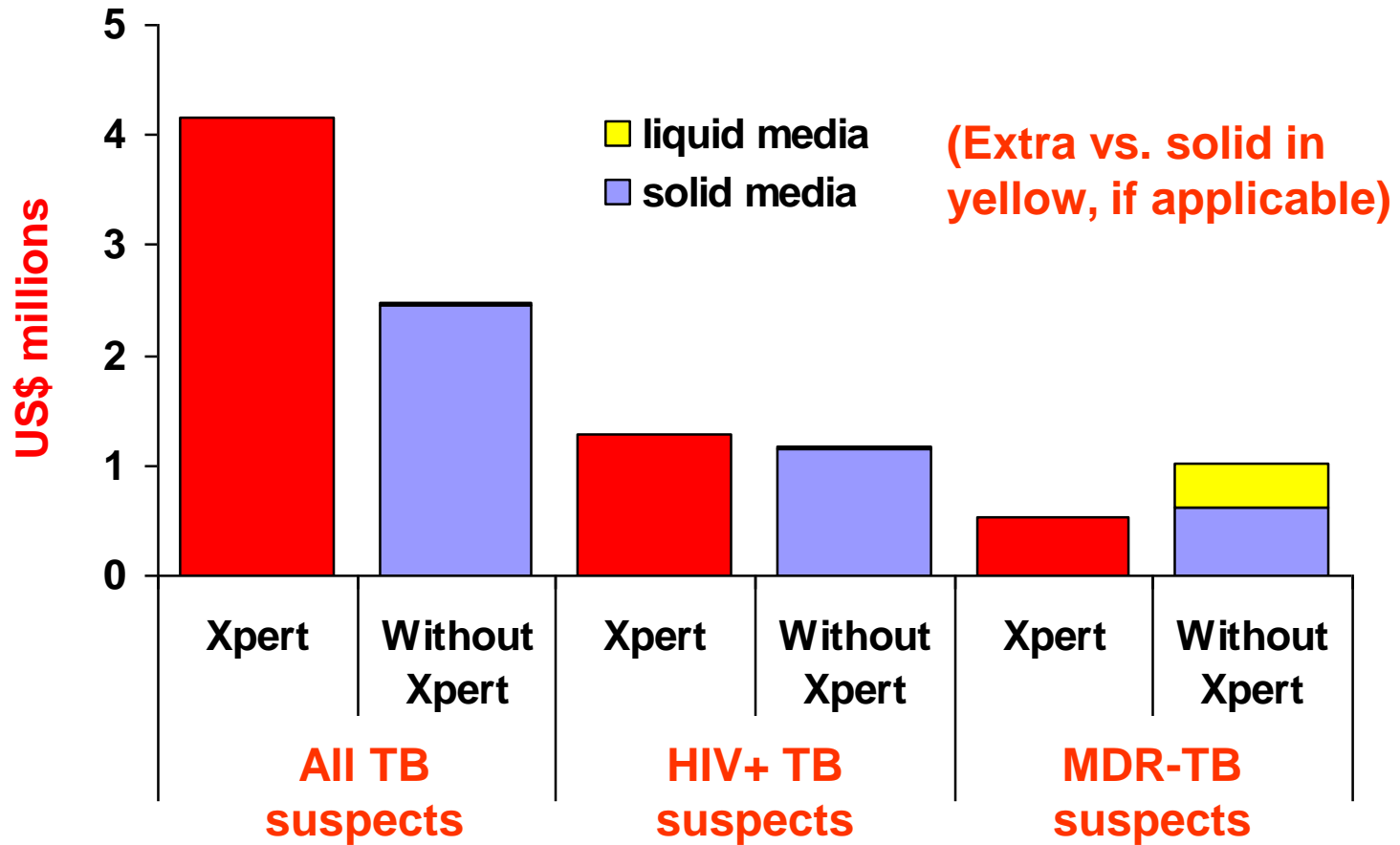
1. Xpert lower cost than alternative diagnostic tests for MDR-TB and HIV+ TB suspects (assuming use of culture for those sm-)
2. Cost for all TB suspects similar to current level of total spending on TB control, which is expected to be ~US\$150 million in 2011

Country example: Ethiopia



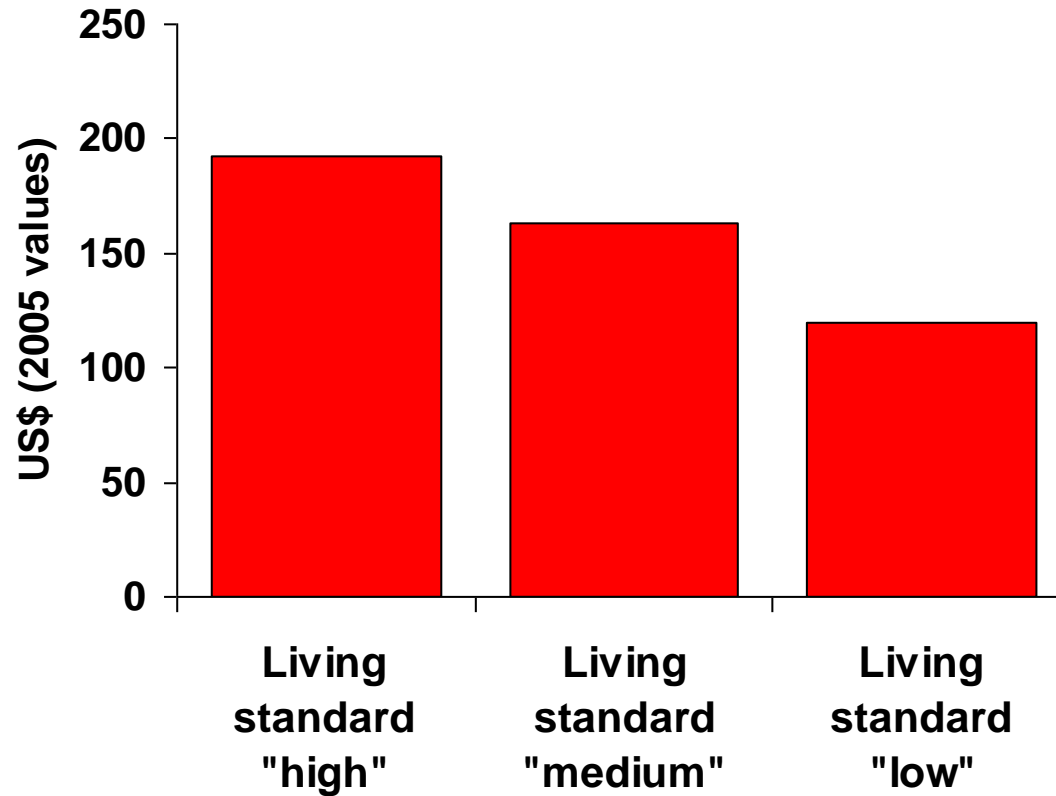
1. Xpert lower cost than alternative diagnostic tests for MDR-TB
2. Cost for all TB suspects ~ 15% of funding for TB control in 2011
3. BUT ~1% of the PEPFAR operational budget for Ethiopia in 2009

Country example: Kenya



1. Xpert lower cost than alternative diagnostic tests for MDR-TB
2. Cost for all TB suspects ~ 20% of funding for TB control in 2011
3. BUT <1% of the PEPFAR operational budget for Kenya in 2009

High costs to patients to access TB diagnosis: an example from Bangalore, India



Living standard definitions based on those used in National Family Health Survey

Pantoja A et al, IJTLD, 2009

Conclusions

1. Xpert lower cost than conventional culture+DST for diagnosis of MDR-TB globally and in varied country settings
2. Cost of Xpert for HIV+TB suspects relatively small in global context
3. Cost of introducing Xpert for TB suspects, compared with alternative diagnostics and relative to total funding for TB control, varies considerably by country
 - Appears easily affordable in middle-income countries
 - Less affordable for low-income countries, but in high TB/HIV burden countries cost similar to cost when culture is available, and small relative to available PEPFAR resources
4. For more accurate assessments of comparative costs for all TB suspects in individual countries, need better data on country-specific costs for X-rays and culture



Funding required, Global Plan

Plan component	US\$ billions, 2011–2015	% total
IMPLEMENTATION	36.9	79%
DOTS	22.6	48%
MDR-TB	7.1	15%
TB/HIV	2.8	6%
Lab strengthening	4.0	8%
Technical assistance	0.4	1%
R&D	9.8	21%
TOTAL	46.7	100%

Implementation

