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Quantifying Equity & Poverty Reduction Benefits of Vaccines

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Outline

Background

- The post-2015 agenda and the discourse on poverty

Extended cost-effectiveness analysis (ECEA)

- Economic evaluation for health policy assessment
- Seeking “cost-effective” investments in poverty reduction & equity

Application of ECEA to vaccines

- Systematic breakdown of vaccine-preventable disease by income group
- Financial risk protection provided by vaccines

Conclusions

- Vaccines & global health priority setting



Background

The post-2015 agenda and the discourse on poverty



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End of poverty by 2030

Sustainable Development Goal 1

“End poverty in all its forms everywhere”



World Bank objectives

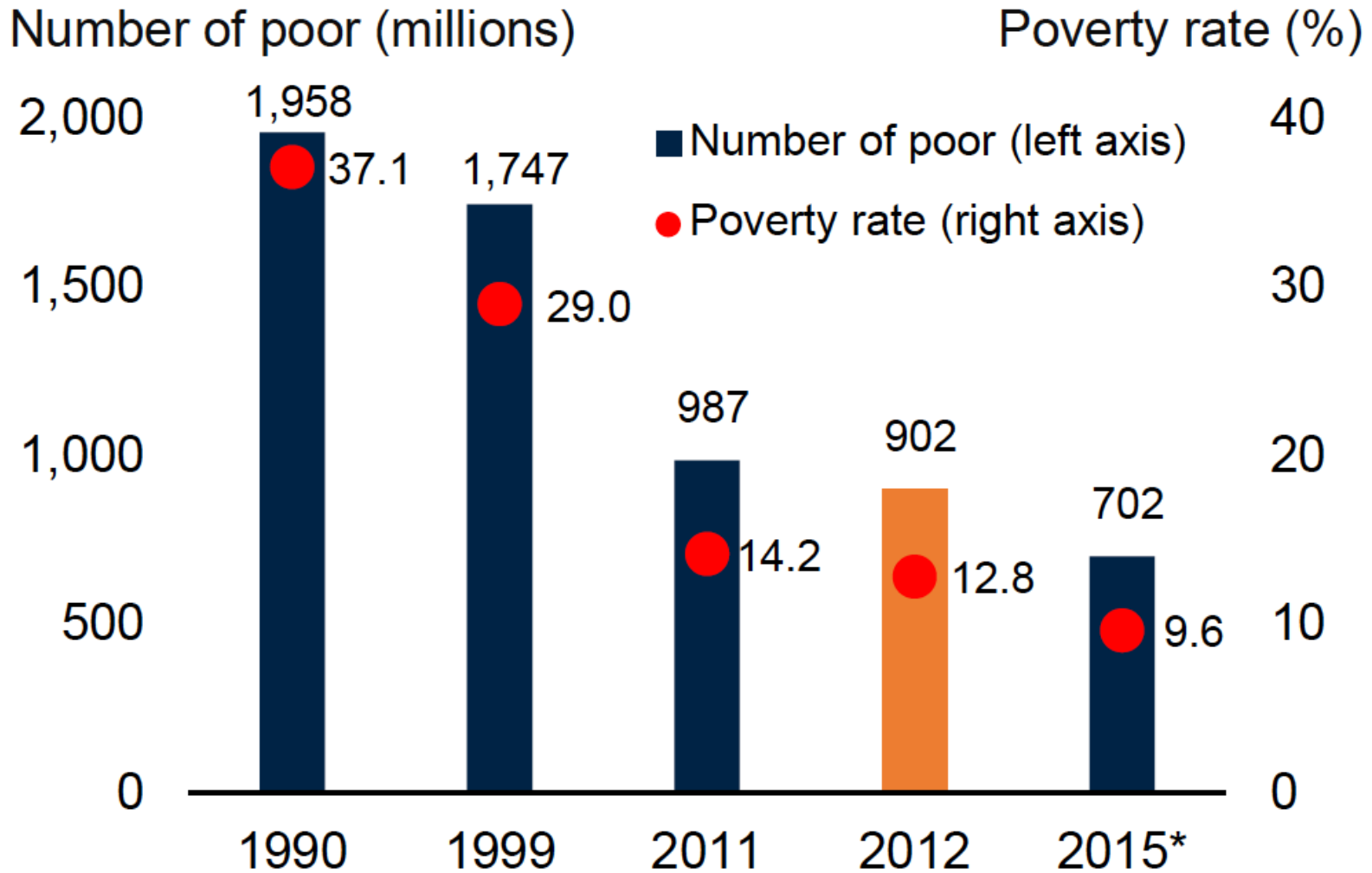
- (1) To eradicate extreme poverty (< \$1.90 per day) by 2030
- (2) To boost shared prosperity by raising the incomes of the bottom 40% of populations



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Trends in poverty



Cruz et al. World Bank 2015

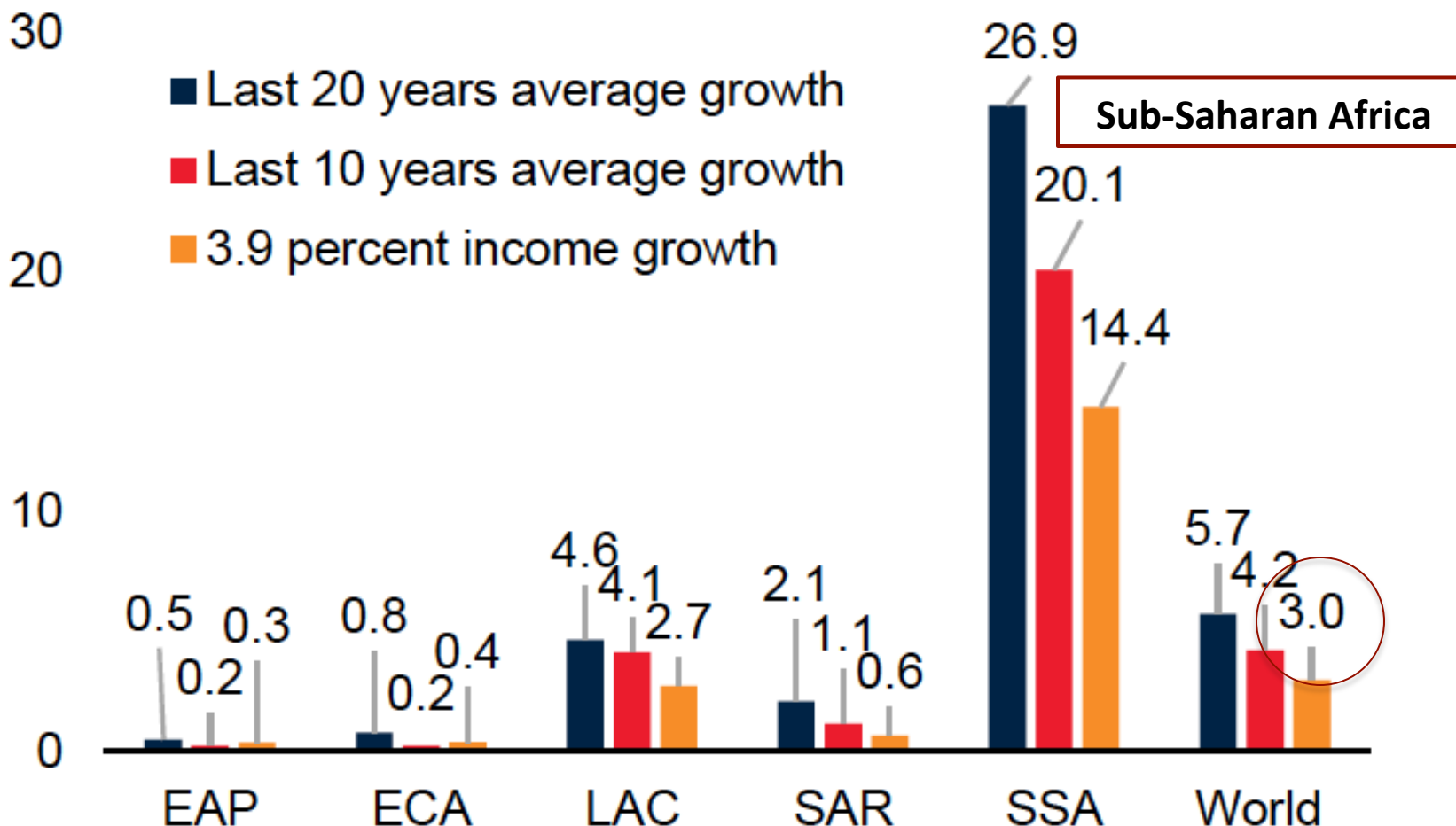


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Aspirational poverty by 2030

Simulations of poverty rate in 2030 (percent), by region and world



Sustainable Development Goal 3

“Achieve universal health coverage,
including financial
risk protection for all”



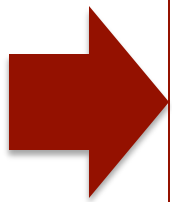
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How to achieve the poverty objective by 2030?

Usual requirements are put forward:

- **Sustaining growth:** leadership and governance, macroeconomic stability, market orientation
- **Investing in human development:** education, health
- **Insuring against risks:** social policies and programs, insurance



THEY LACK OF SPECIFIC PROPOSITIONS AND QUANTIFICATION OF IMPACT AND COST

Extended Cost-Effectiveness Analysis (ECEA)

Economic evaluation for health policy assessment

Seeking “cost-effective” investments in poverty reduction &
equity



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Economic evaluation for Health Policy Assessment

From: Traditional Economic Evaluation

- Cost effectiveness of technical interventions targeting specific diseases (e.g. antiretroviral drugs for AIDS)

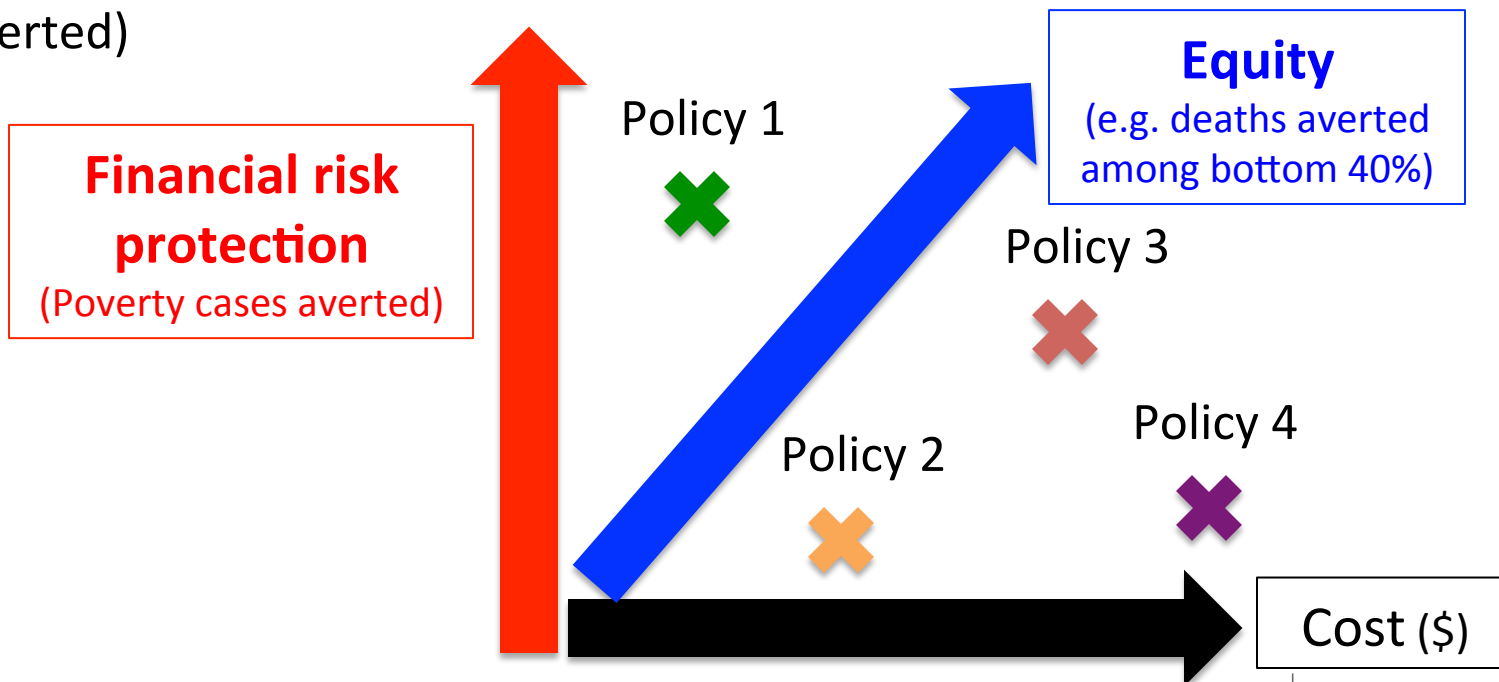
To: Priority Setting in Policy

- Resources allocated across different options:
delivery platforms, instruments of policy
(e.g. public finance, taxation, legislation)
- Multiple criteria:
burden, costs, effectiveness, affordability,
equity, medical impoverishment



Policy objective: “cost-effective” investments in poverty reduction, financial risk protection & equity

Estimate efficient purchase of financial risk protection in say **\$ per Financial Risk Protection provided** (e.g. \$ per poverty case averted)



ECEA = Health Policy Assessment, with dimensions of equity & medical impoverishment

Extended Cost-Effectiveness Analysis (ECEA)

- (1) Distributional consequences** across distinct strata of populations
(e.g. socio-economic status, geographical setting, gender)
- (2) Financial risk protection:** quantify household medical impoverishment averted by policy

ECEA approach

Examine specific health policy
(e.g. public finance for vaccine)

Health gains
(e.g. vaccine-
preventable disease
related deaths averted)

**Household
expenditure
averted**
(e.g. private vaccine-
preventable disease
treatment averted)

**Financial risk
protection
benefits**
(e.g. household
impoverishment
averted)

Poorest

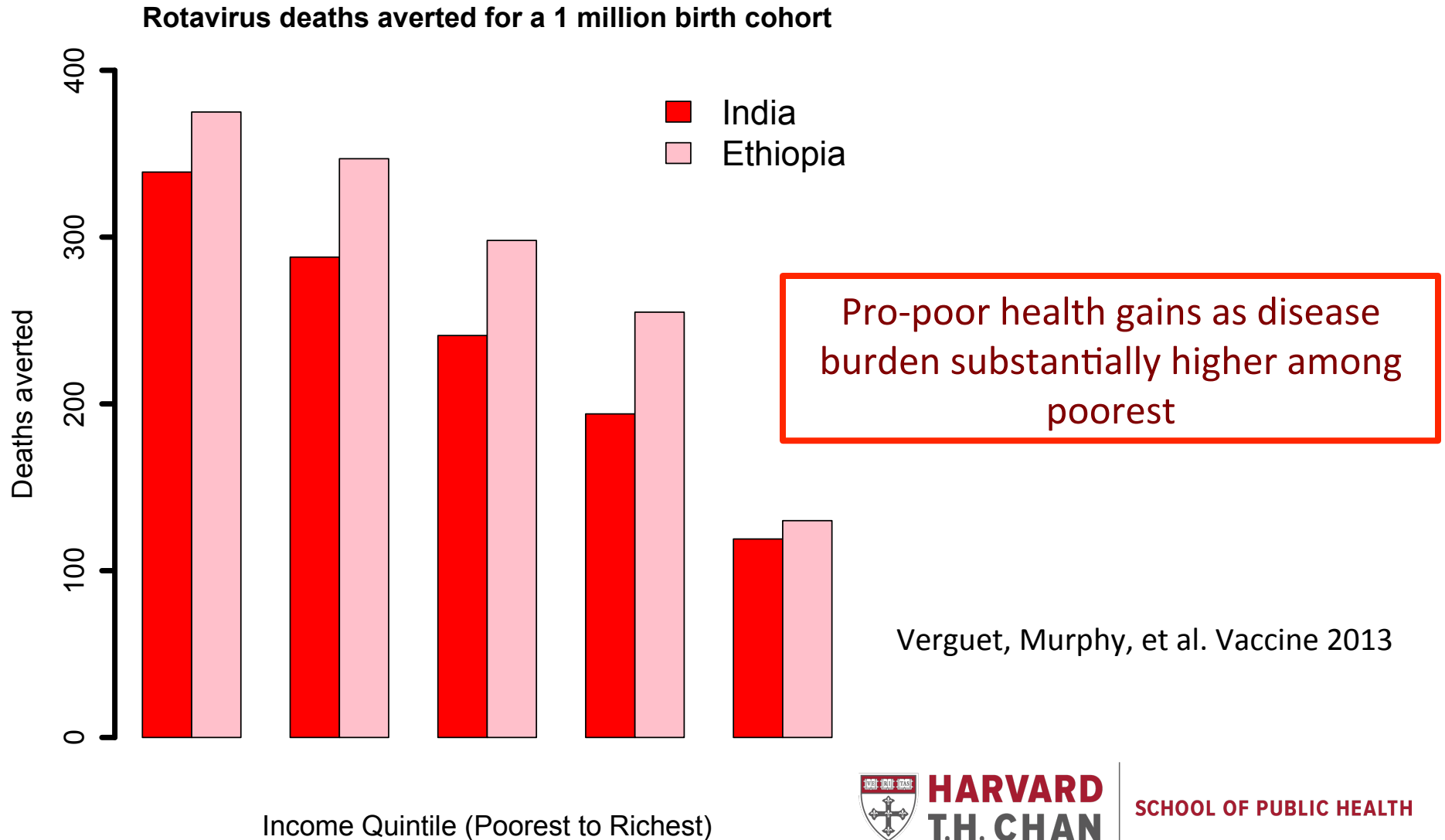
Poor

Middle

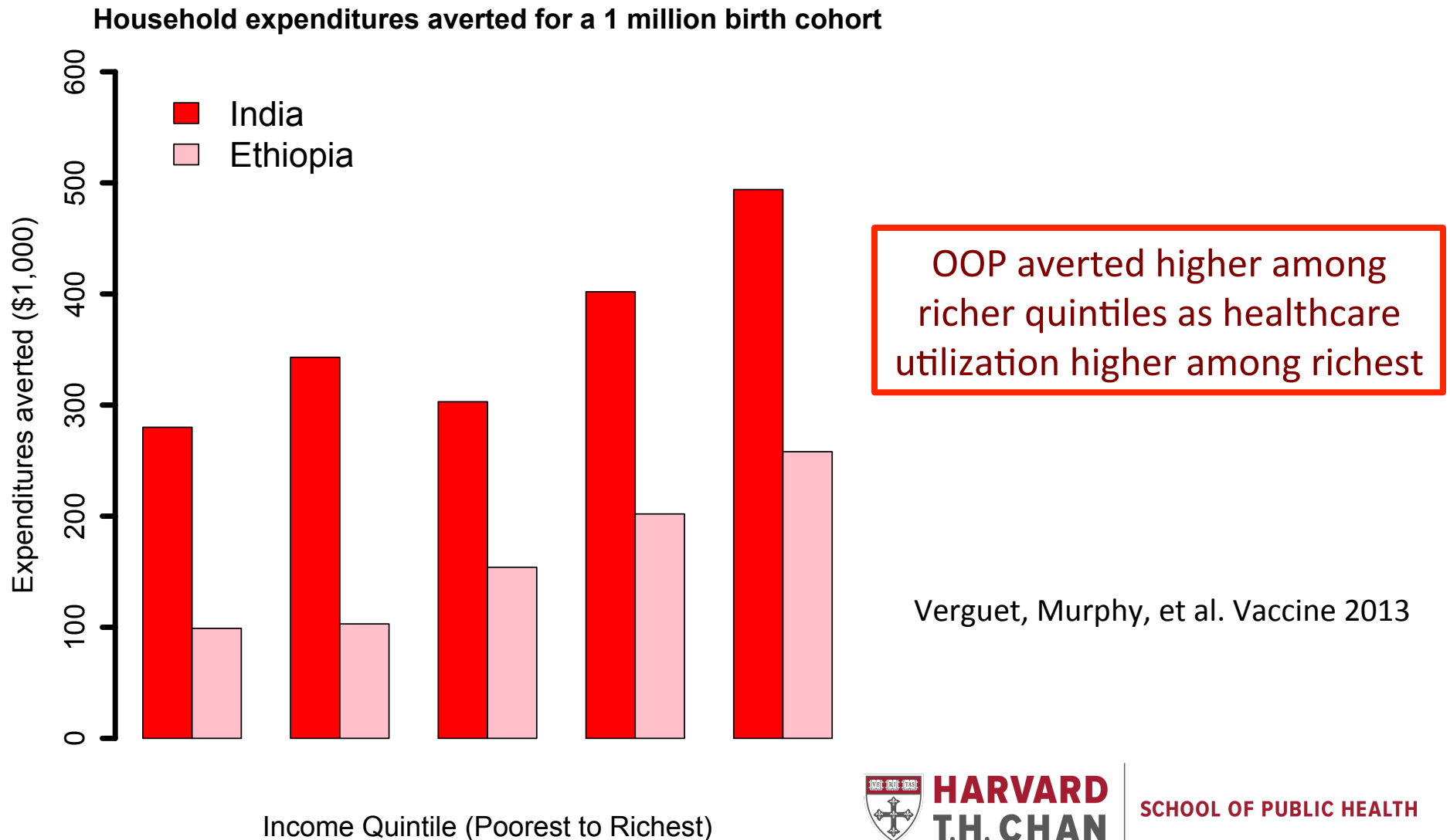
Rich

Richest

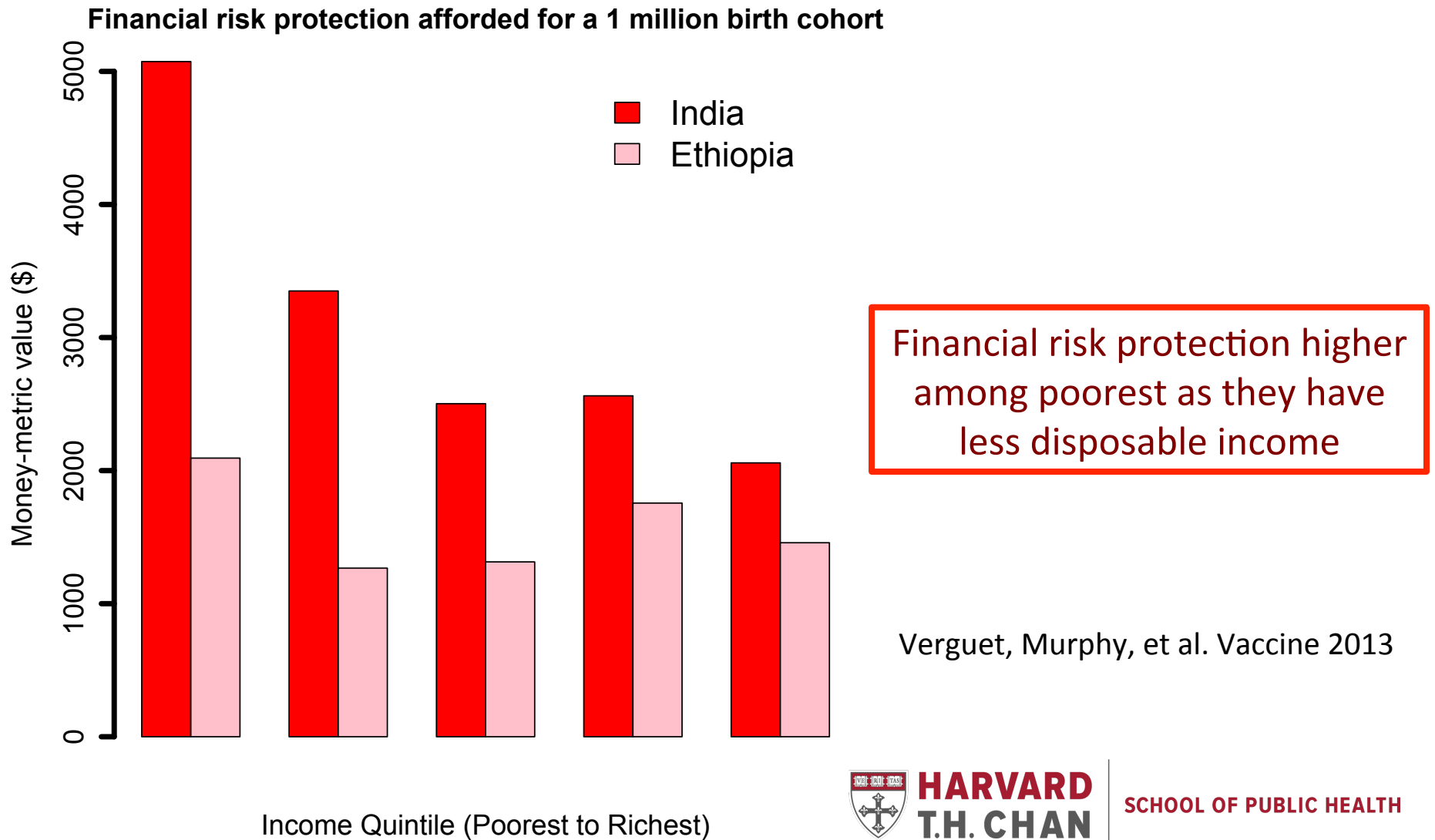
1. Distribution of health gains, e.g. rotavirus vaccine



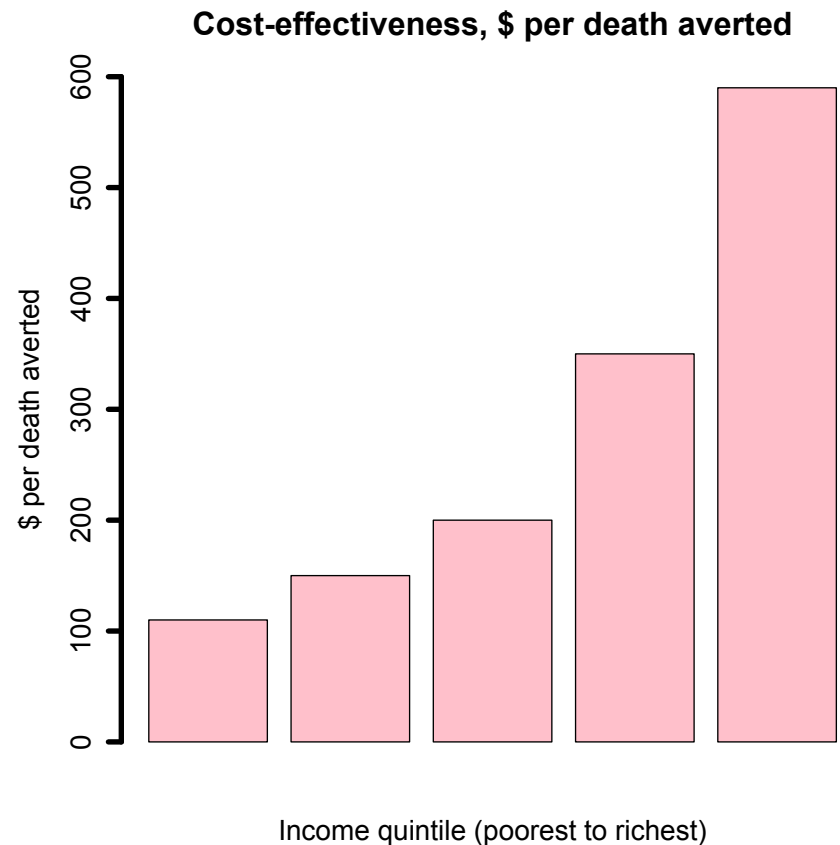
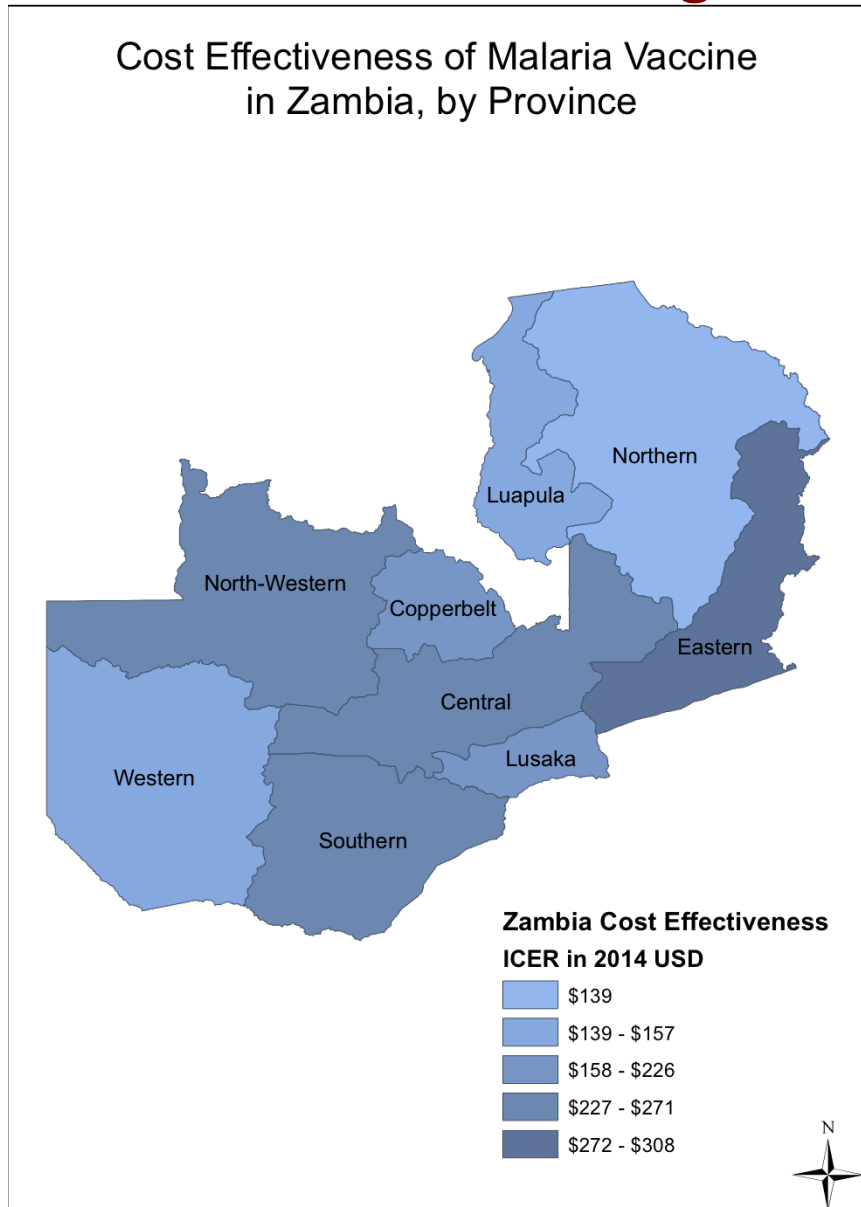
2. Distribution of out-of-pocket (OOP) costs averted, e.g. rotavirus vaccine



3. Distribution of financial risk protection, e.g. rotavirus vaccine



4. Disaggregated cost-effectiveness, e.g. malaria vaccine



Most cost-effective among poorest

Lingrui, Fink, et al. In preparation



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Conclusions

Vaccines & Global Health Priority setting



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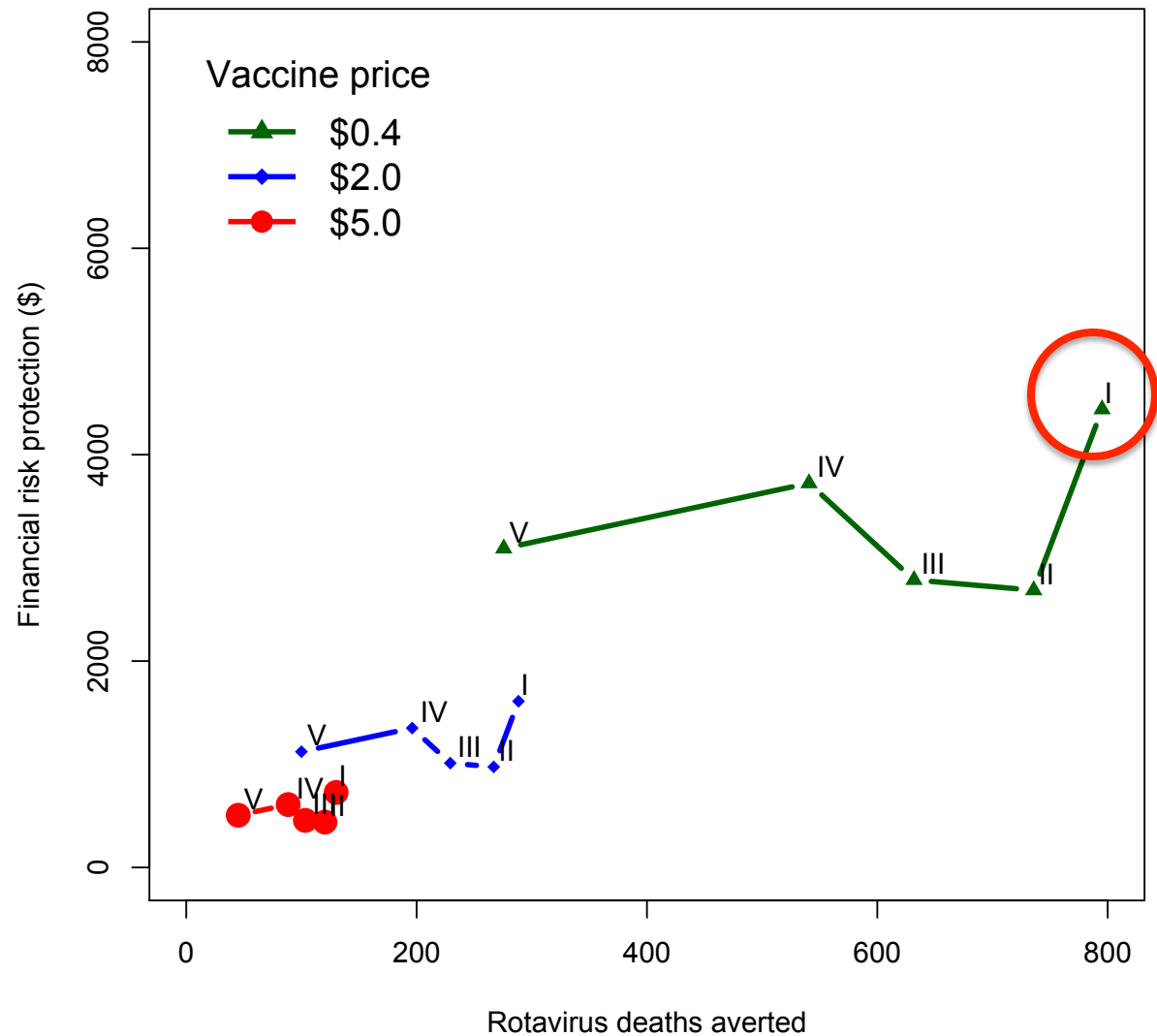
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ECEA: progressive prioritization

Public finance for
rotavirus vaccine

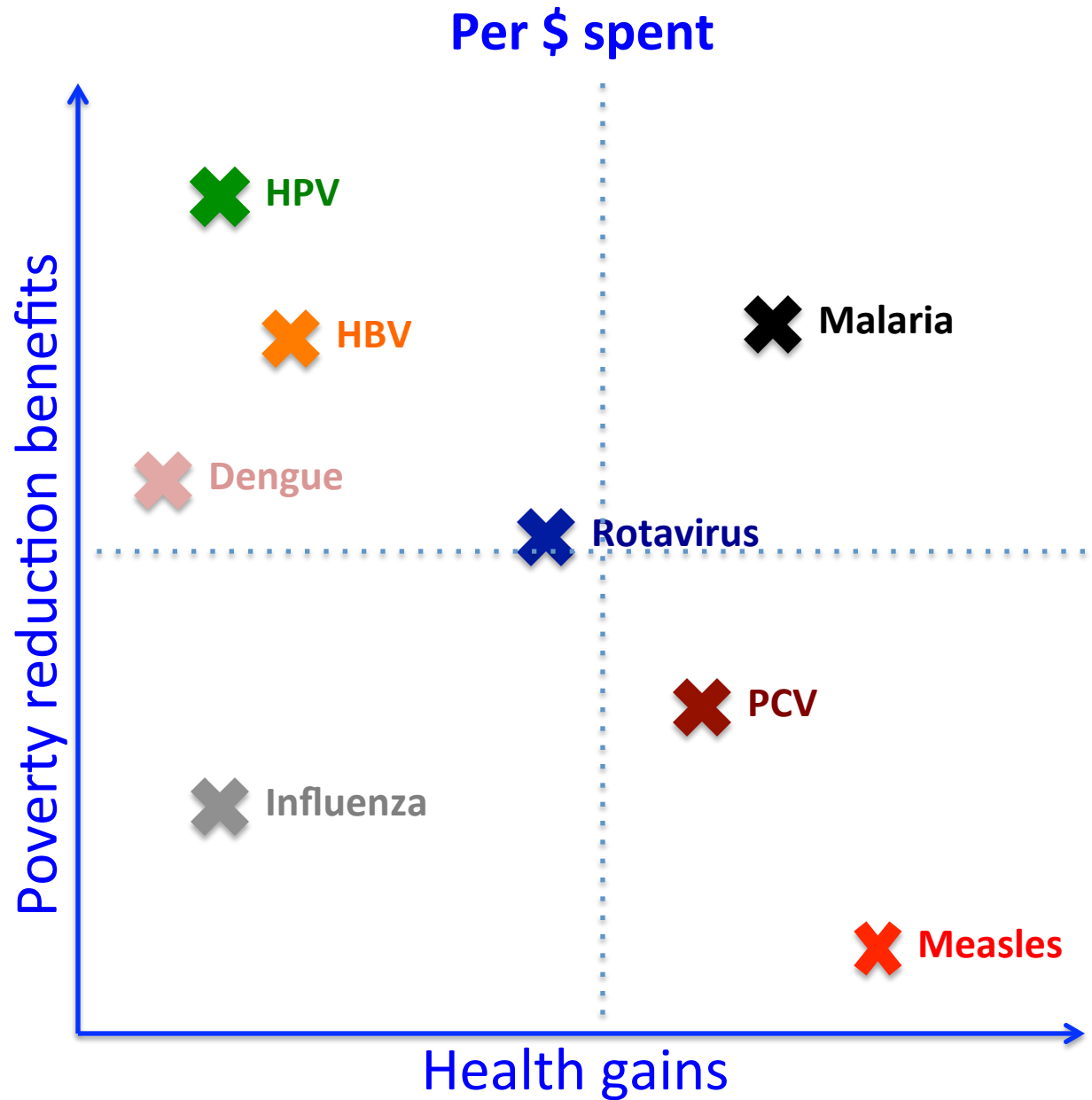
I = Poorest
V = Richest

Health gains & financial protection afforded, per \$1M spent, Ethiopia



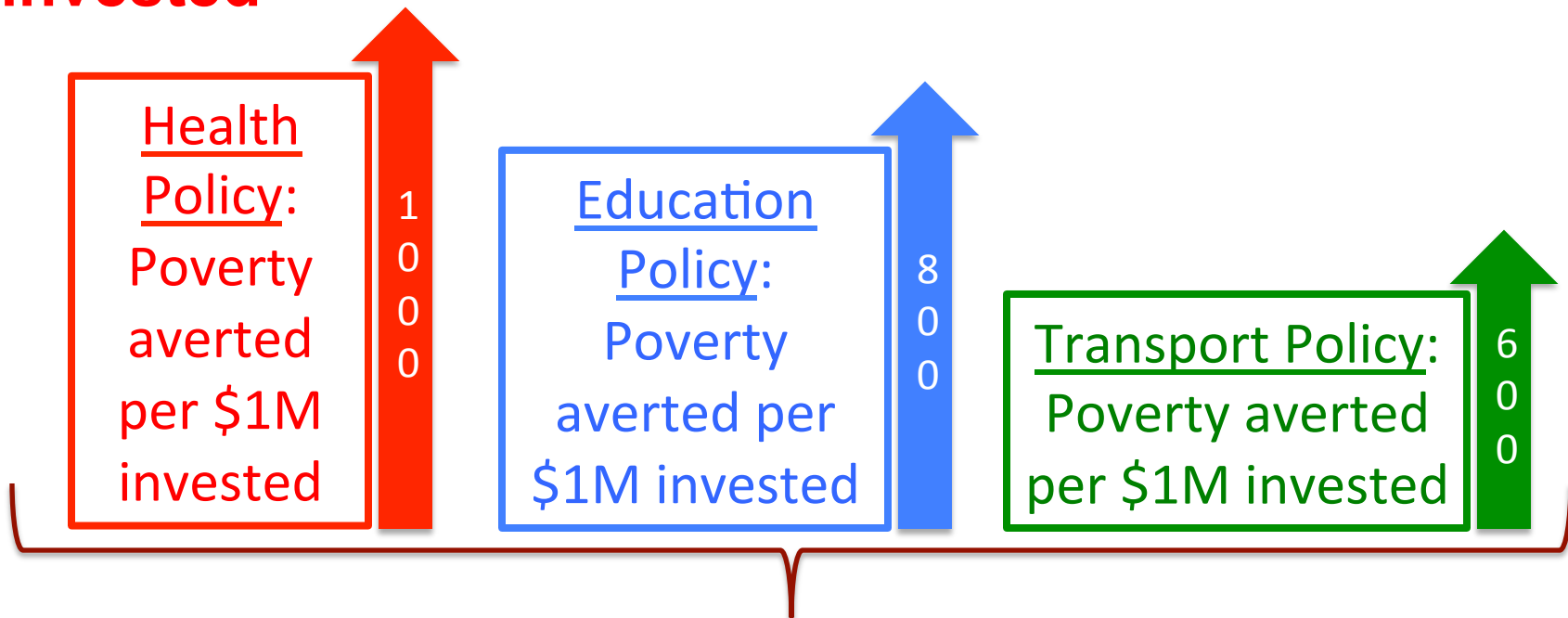
Verguet, Murphy, et al. Vaccine 2013

ECEA:
Design of basic
vaccine &
health benefits
package



ECEA: priority setting **beyond** the health sector

Estimate efficient purchase of poverty reduction benefits by vaccines i.e. **poverty cases averted per \$1M invested**



Intersectoral comparison by Ministry of Finance & Development



Acknowledgements

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