

# Improving the quality of health spending in India



Ramanan Laxminarayan

Resources for the Future and DCPP

# How many years of healthy life can Rs 10 crores buy?

The answer is:

- a) 100
- b) 1,000
- c) 10,000
- d) 1 to more than 100,000

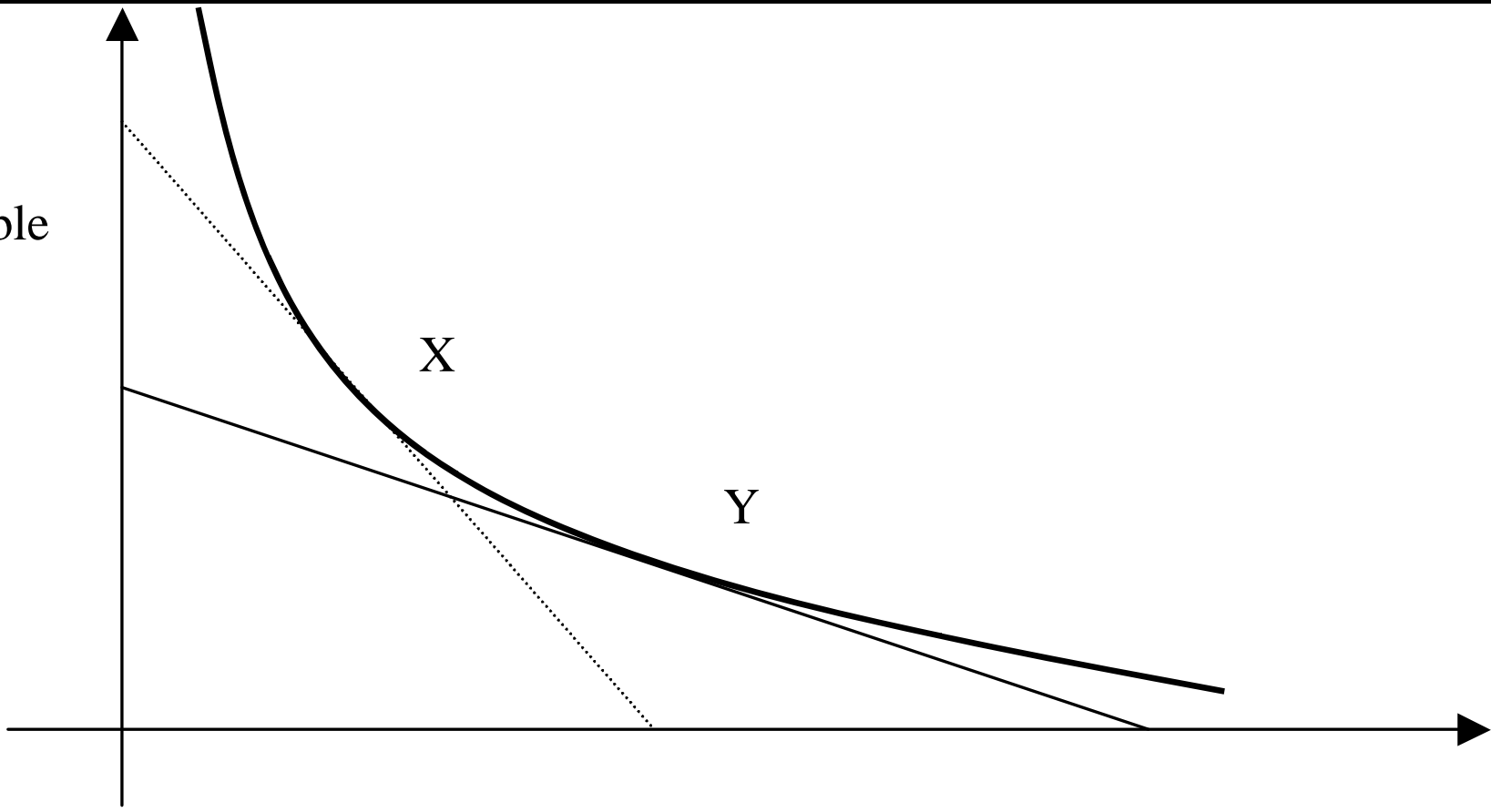
# The best health interventions:

- Target major causes of death, disability and illness in developing countries;
- Are cost-effective; and
- Can be scaled up easily.

# Objective: Improve Quality of Health Spending

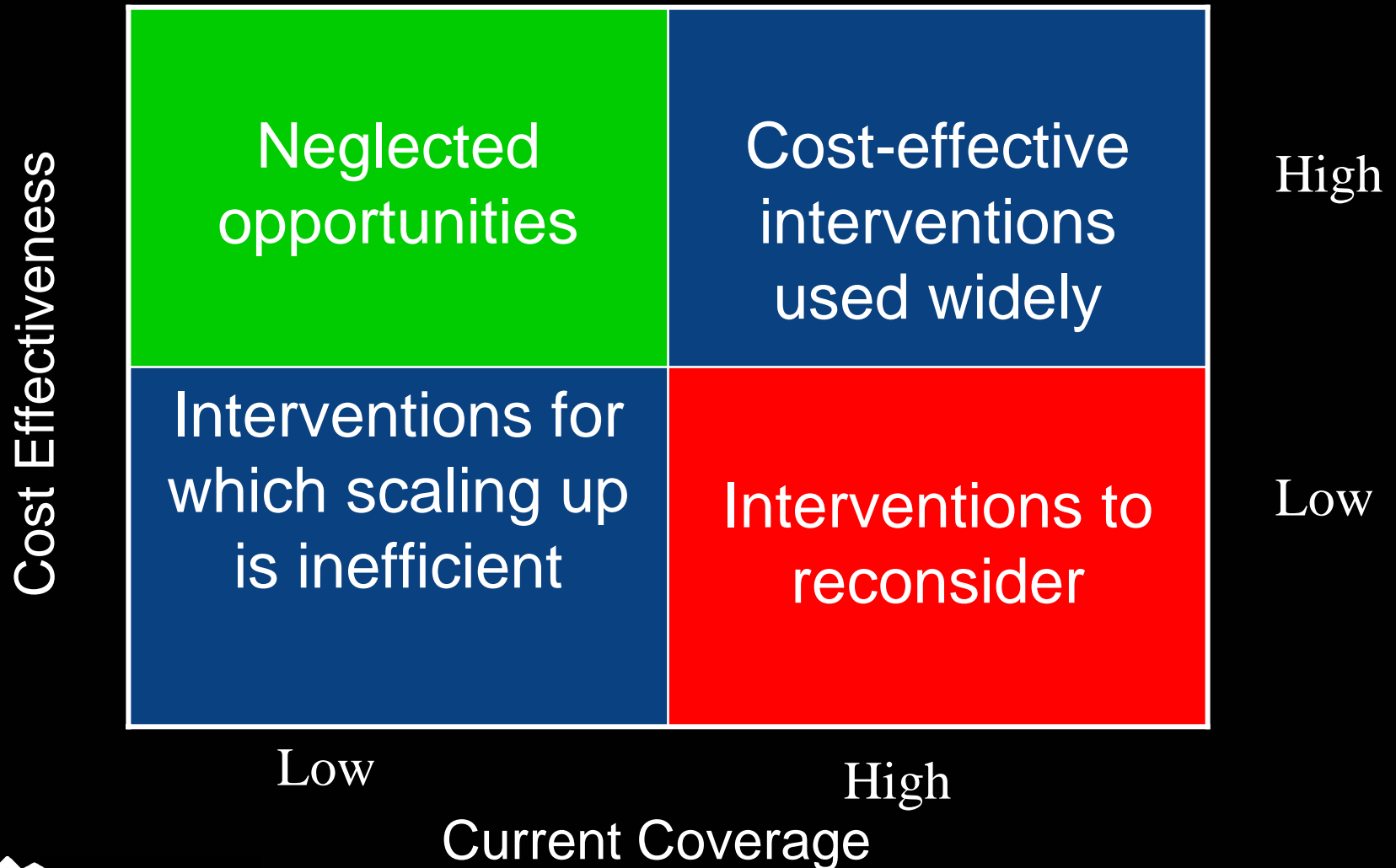
- Provide information on the “price” of buying health through different interventions
- Policymakers can combine this information with other considerations to determine how best to improve health

Vaccine  
Preventable  
Disease

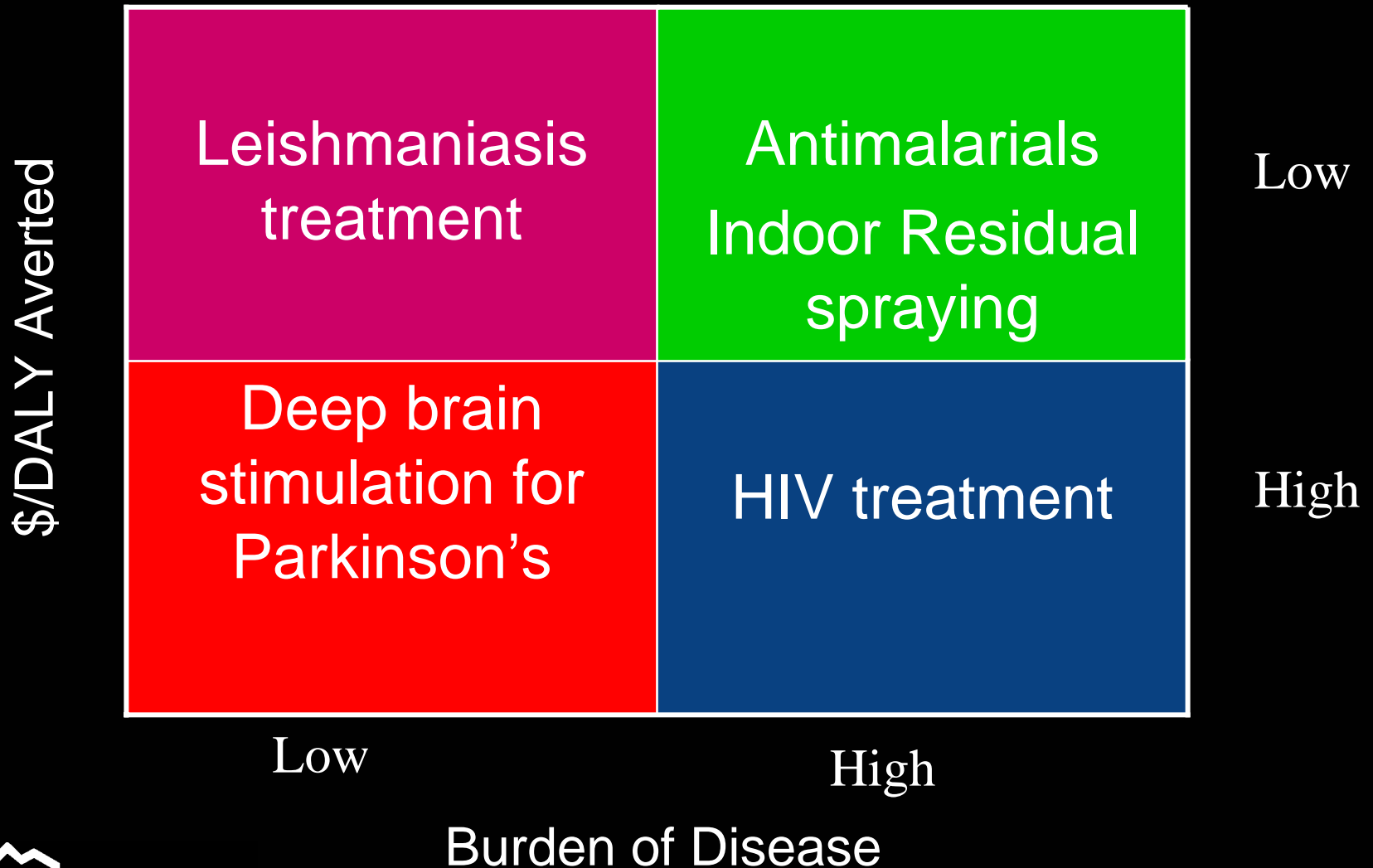


Psychiatric disorders

# Identifying the efficiency of current and potential interventions



# Criteria for Evaluating Interventions



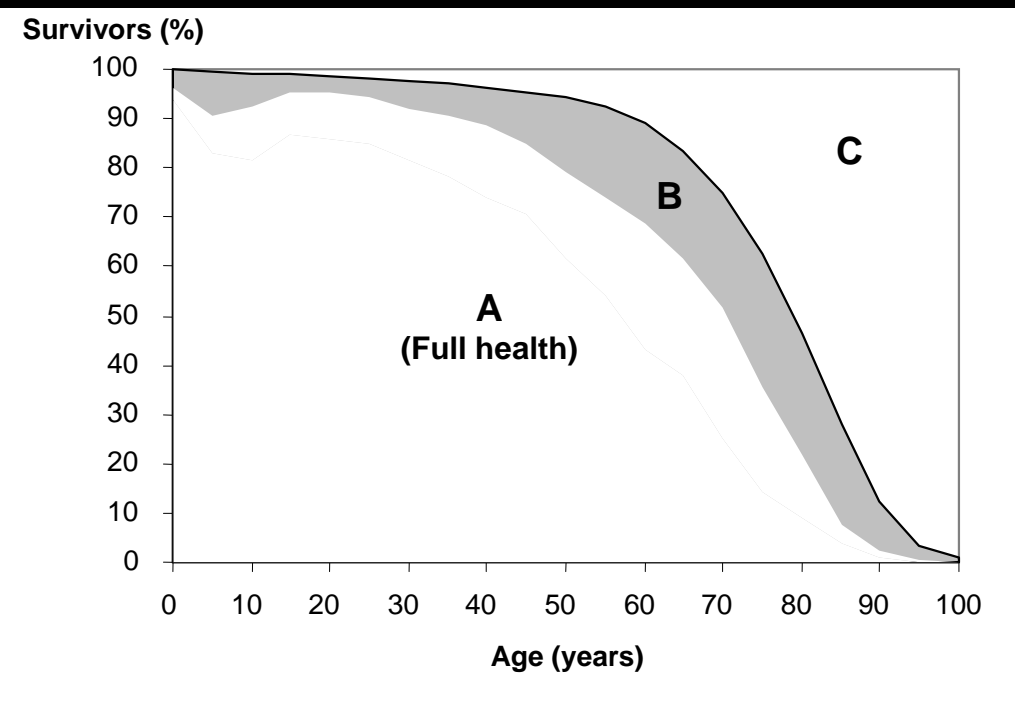
# DCP2: Interventions covered

- Cost effectiveness of 257 interventions in \$/DALY averted (DCP1 had 68)
- Cost effectiveness of an additional 62 interventions using other metrics (26)
- Also provide information on
  - Cost-effectiveness by region
  - Target population
  - Personal versus population
  - Avertable burden
  - Quality of evidence

# Caveats

- Relatively greater focus on health-care based interventions
- Variation in analytical approaches and data quality
- Cost-effectiveness numbers are invariant to scale of intervention
- Pay attention to order of magnitude of estimates

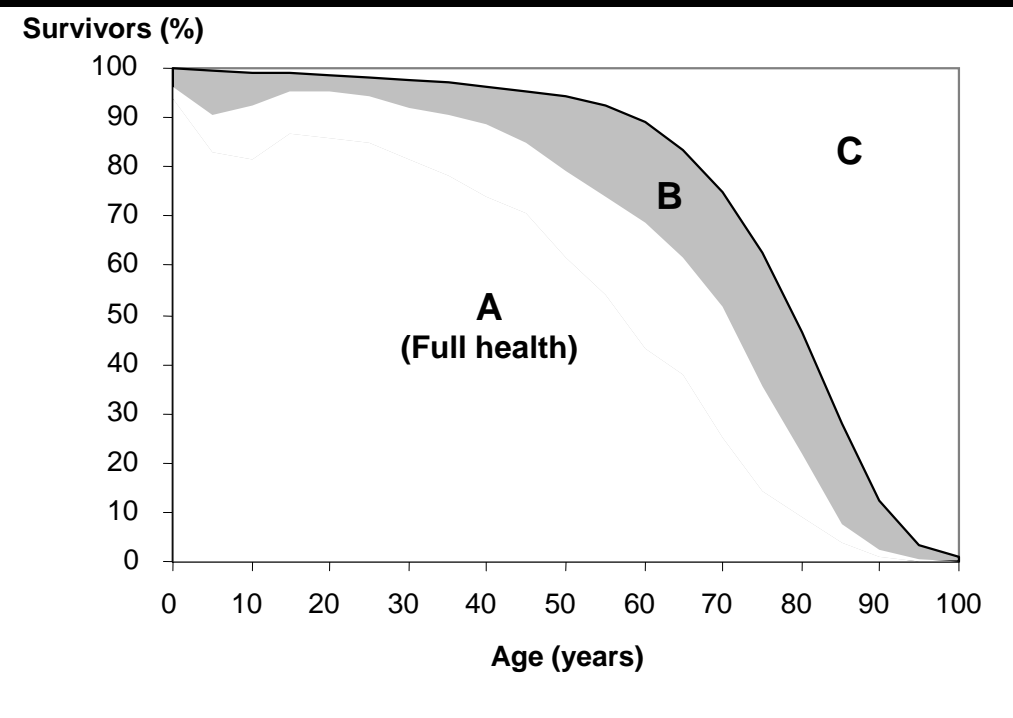
# Summarizing time spent at different health levels



Divides each lifetime into

- A part lived in full health (A)
- A part lived in less than full health (B)

# Two families of measures



## 1. Health expectancies

$$= A + f(B)$$

Where full health = 1

Eg DALE

## 2. Health gaps

$$= C + g(B)$$

Where 1 is equivalent to death

Eg DALY

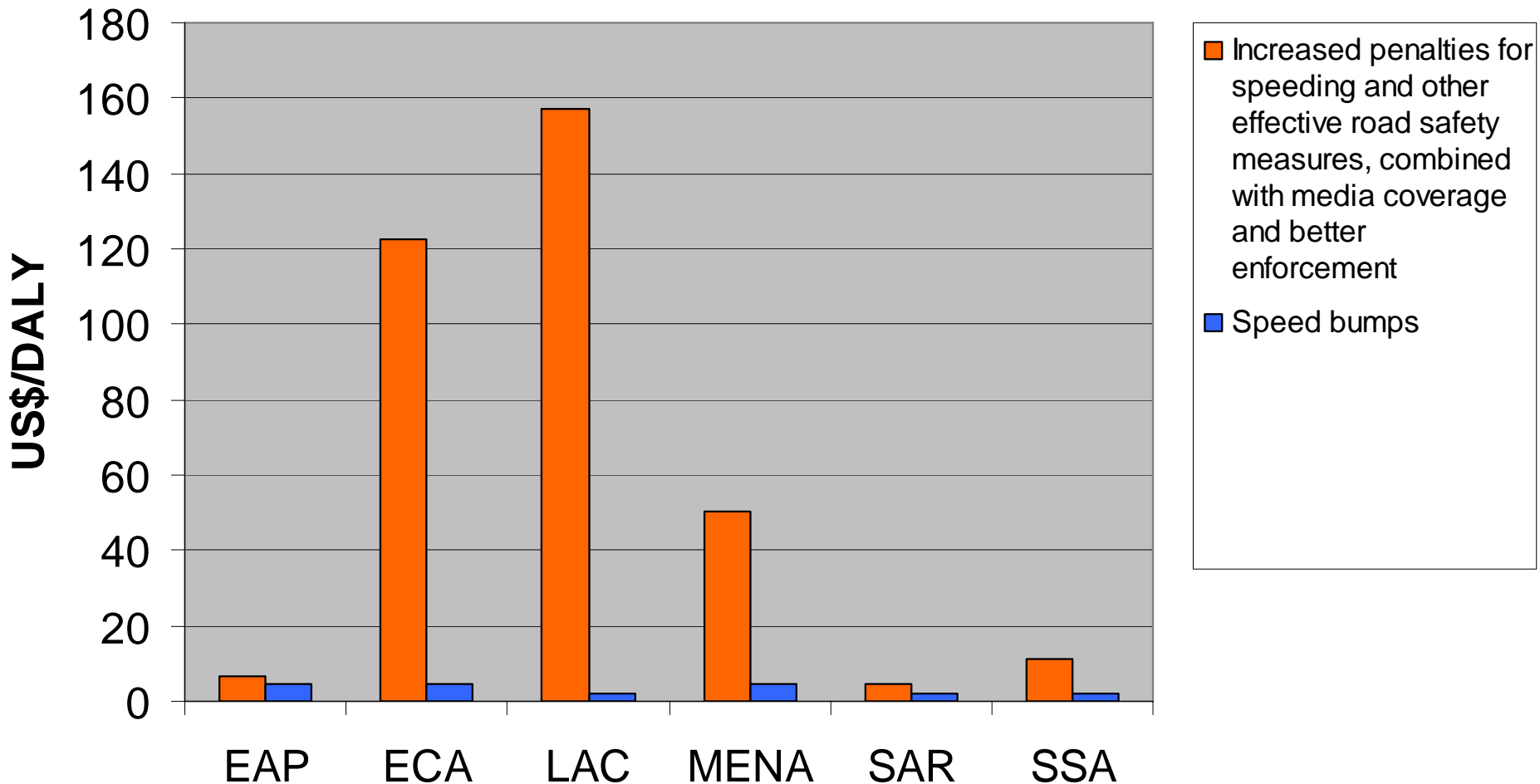
# Disability Adjusted Life Years (DALYs)

- Quantify burden of disease and disability in populations
- Allow morbidity and mortality to be expressed in a single measure
- Value attached to a particular disease rather than health status

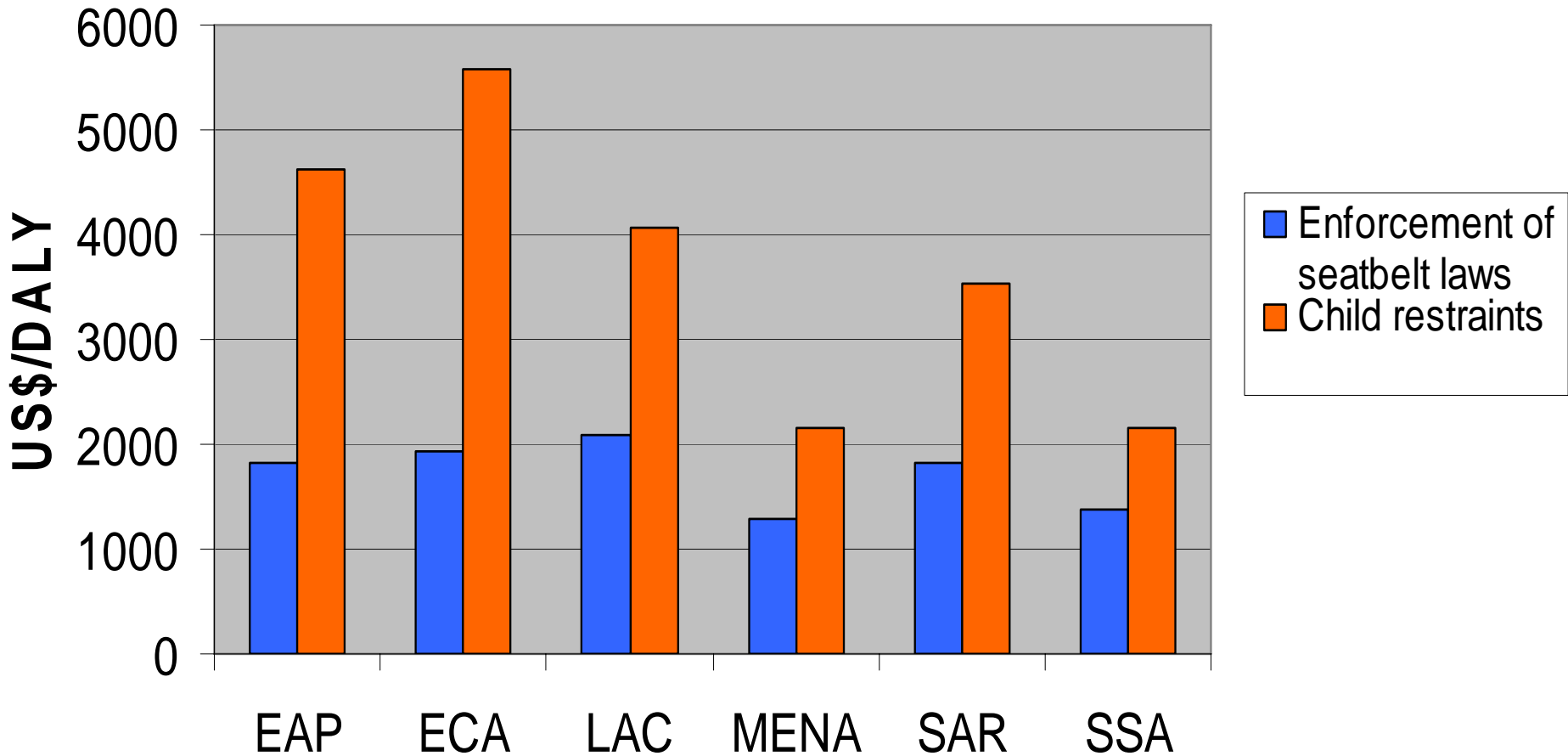
# Disability Adjusted Life Years (DALYs)

- States of health are assigned a disability weight on a scale from zero (perfect health) to one (death)
- DALYs are obtained by multiplying the number of years lived in that health state and added to the years lost due to death

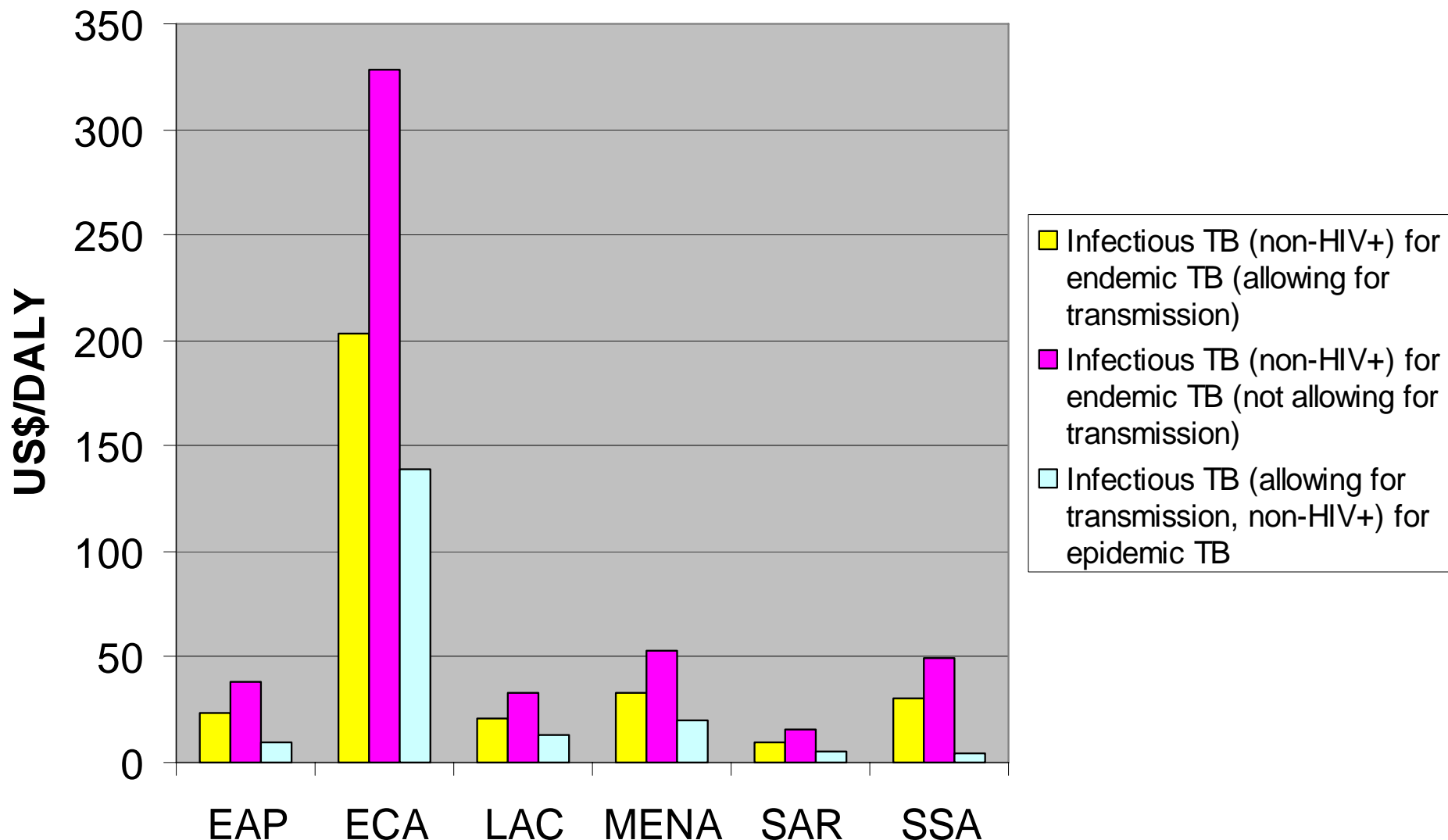
# Traffic Accidents: Interventions to reduce injuries



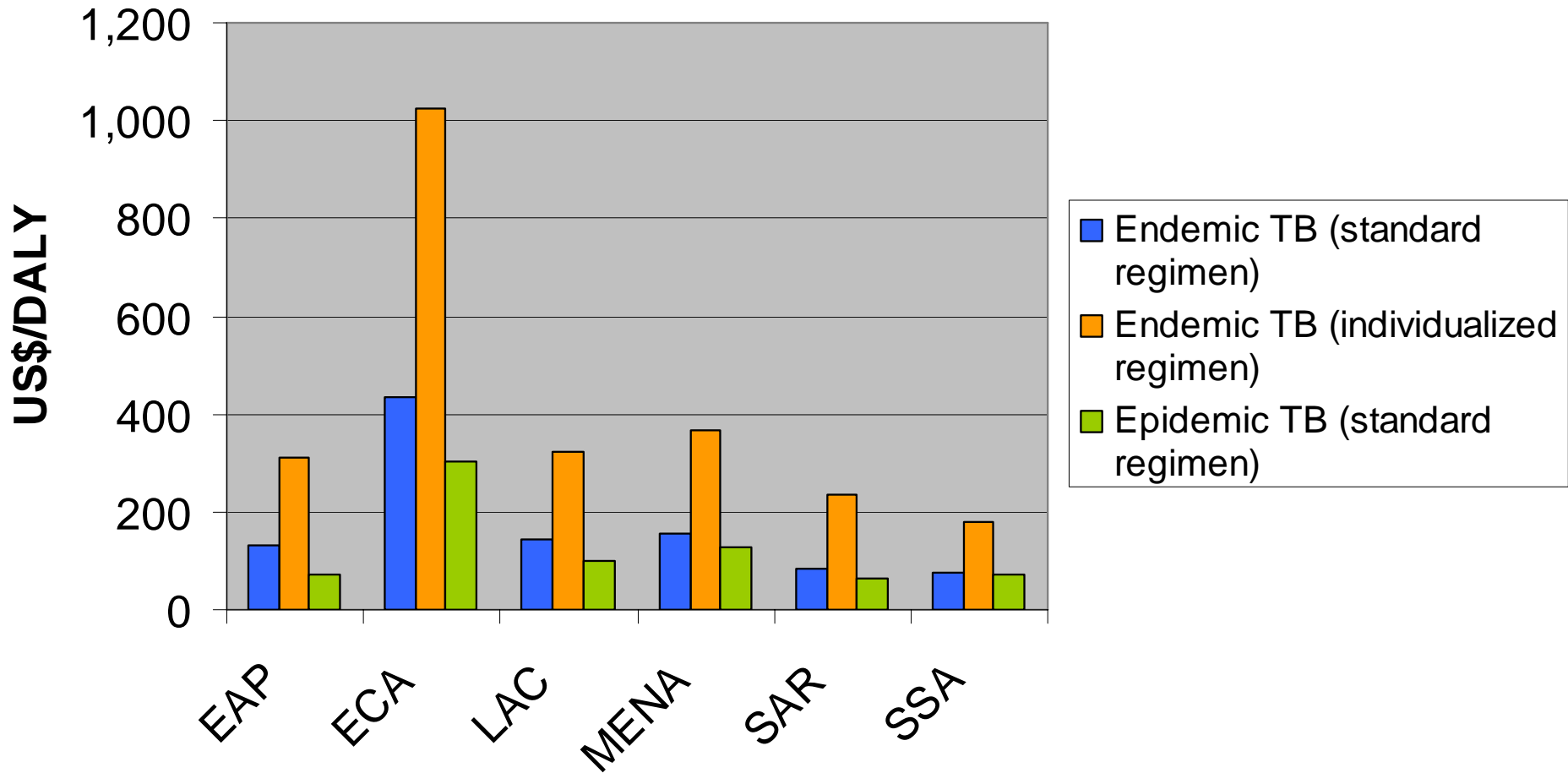
# Traffic Accidents: Interventions to reduce Injuries



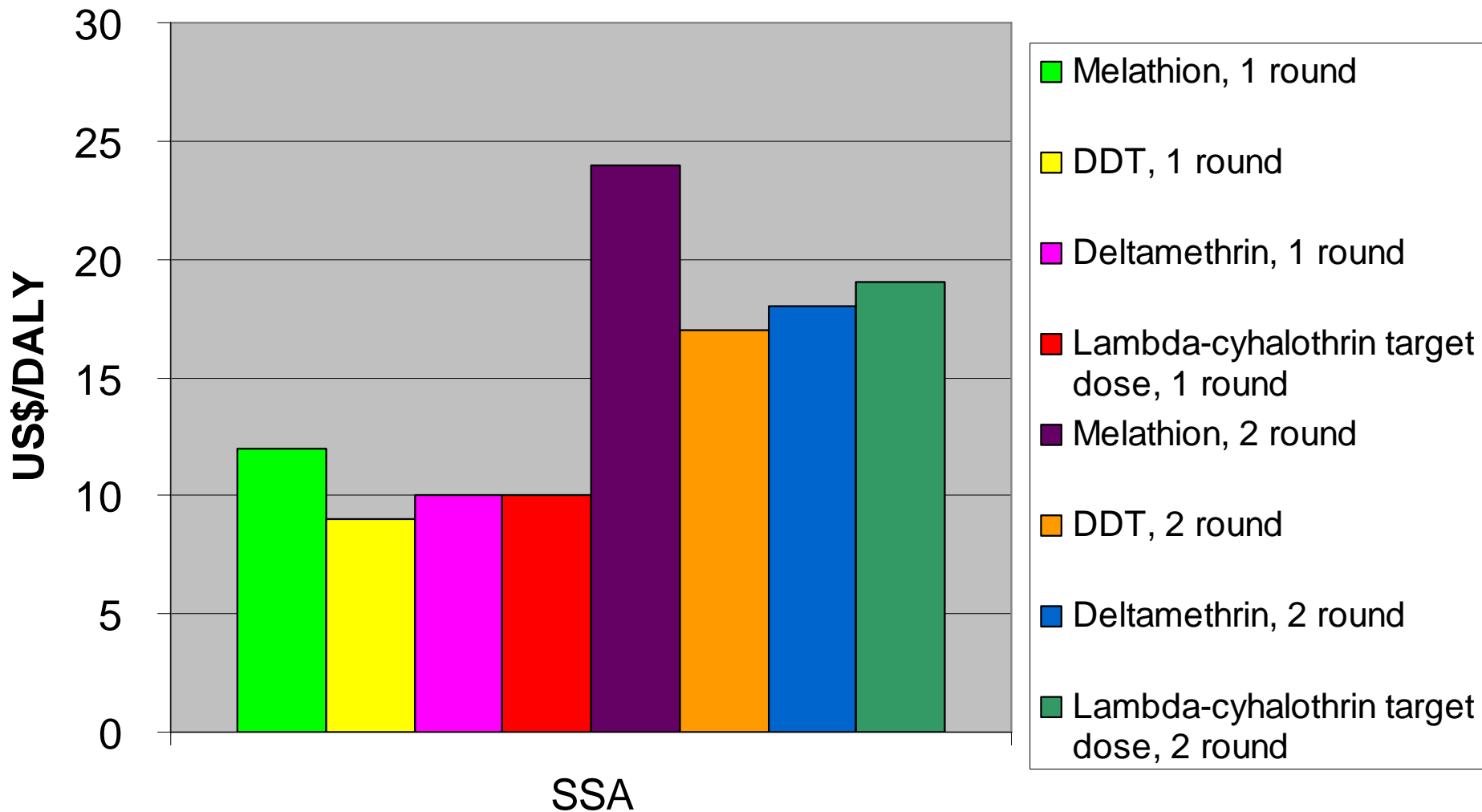
# Tuberculosis: Short-course Chemotherapy



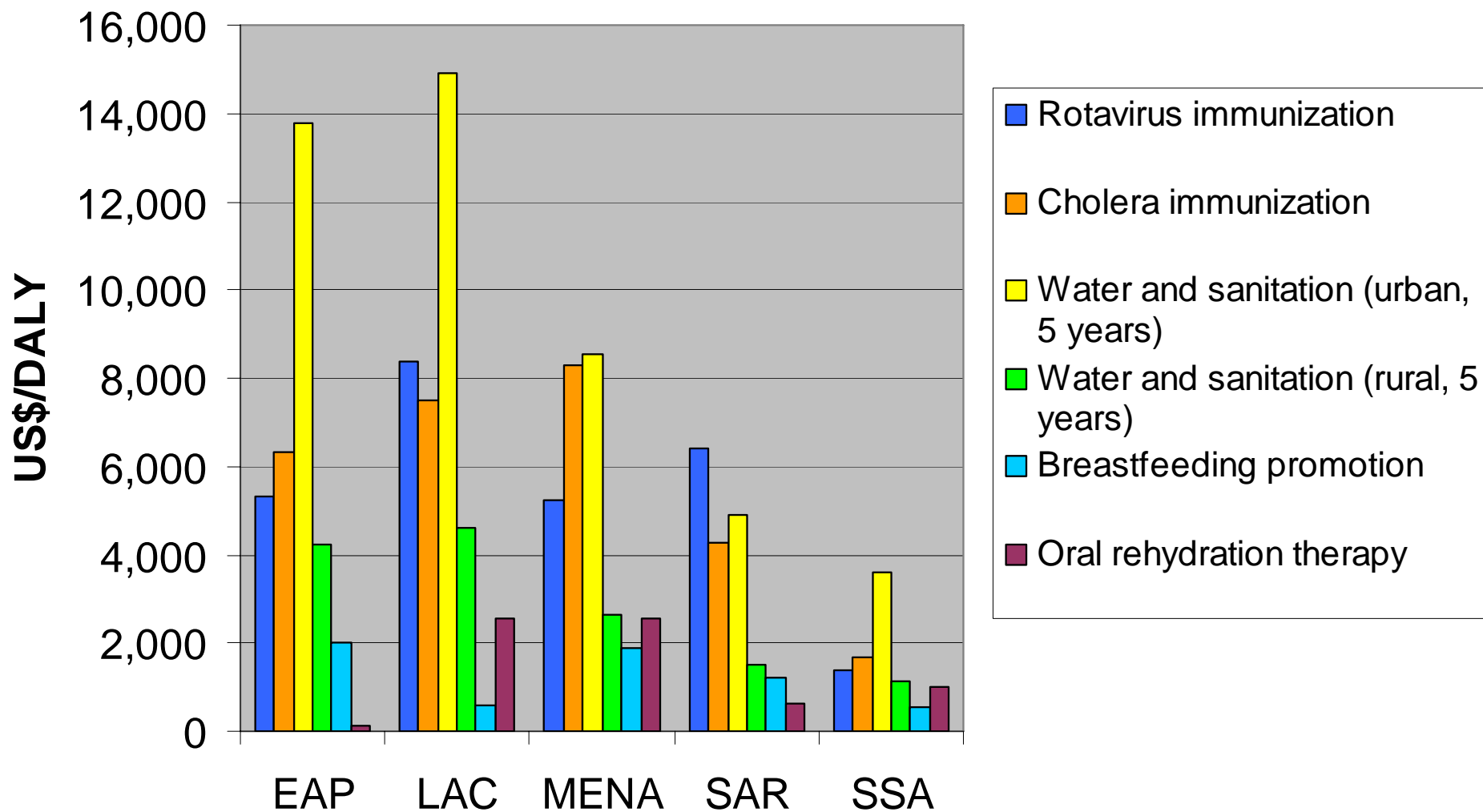
# Tuberculosis: Management of Drug Resistance



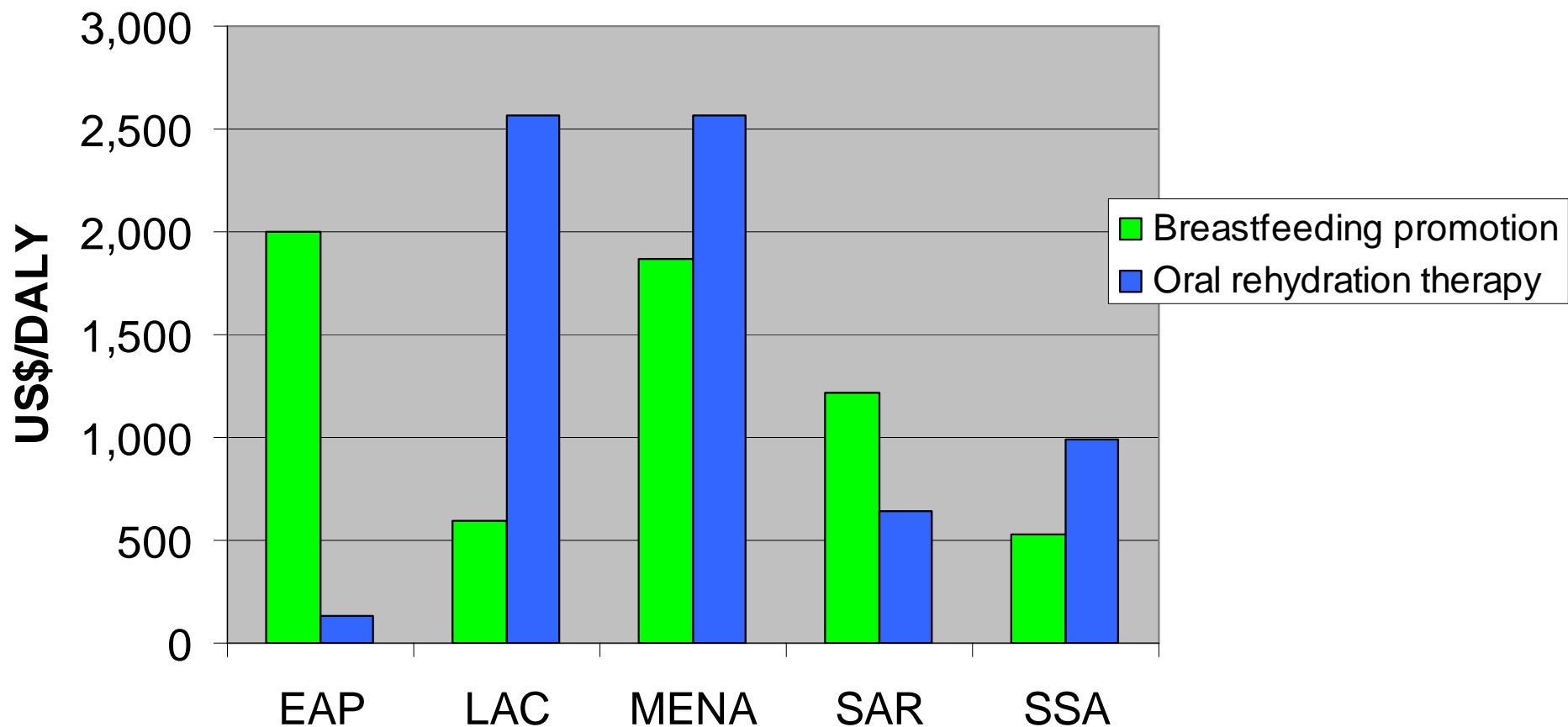
# Malaria: Residual Household Spraying



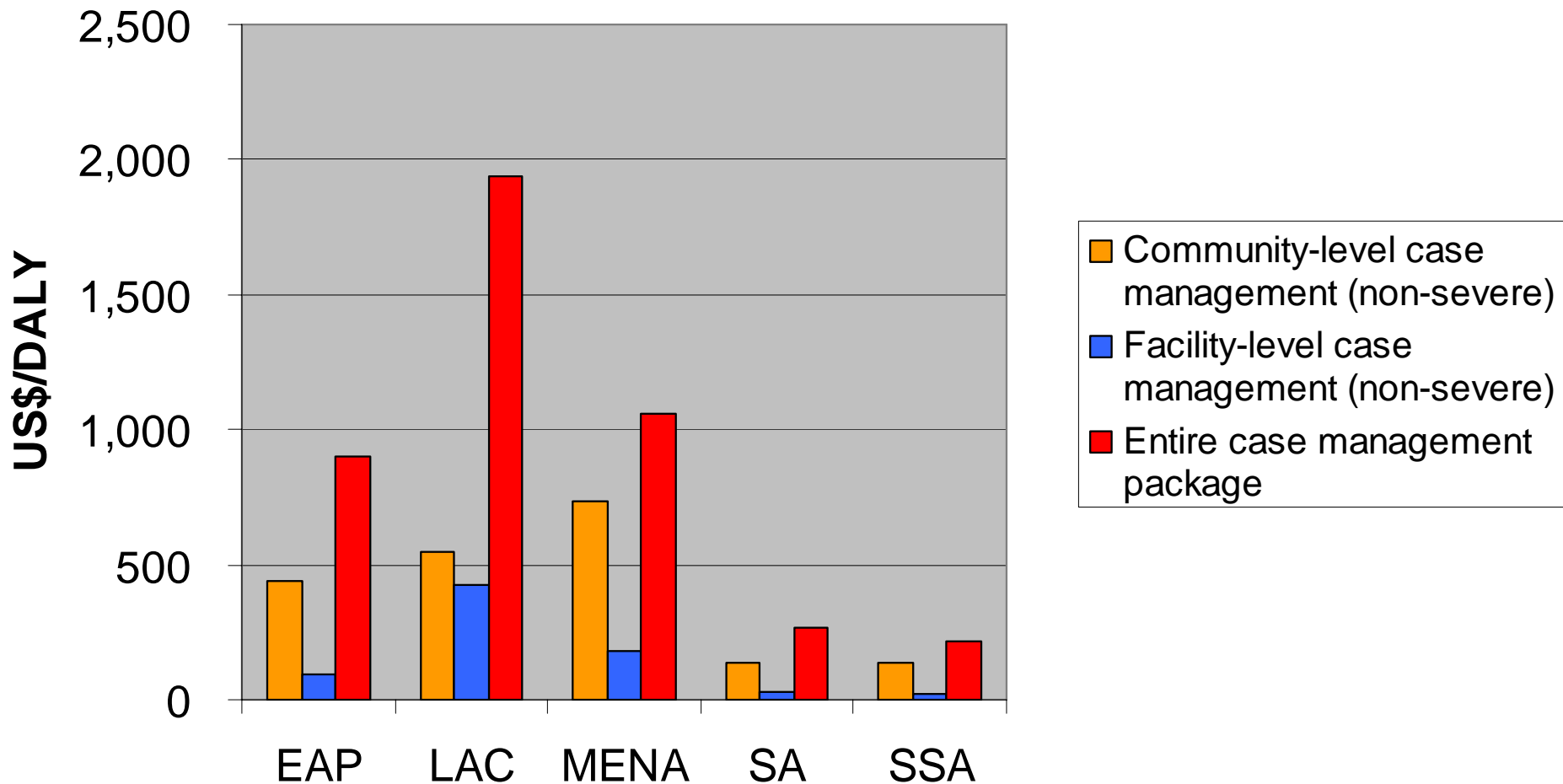
# Diarrheal Disease



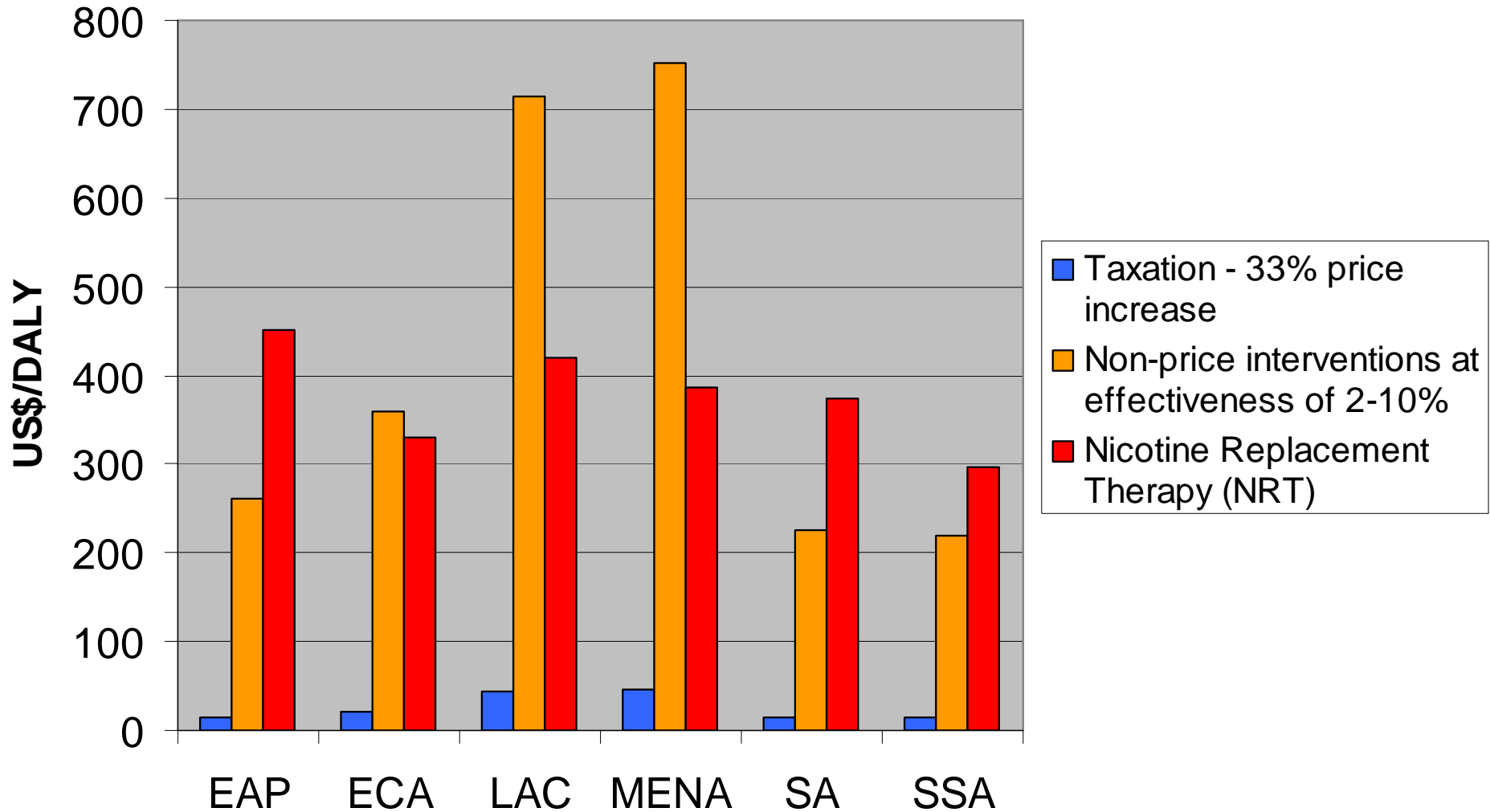
# Diarrheal Disease: CEA for Breastfeeding and Oral Rehydration Therapy Interventions



# Childhood Illness: Interventions for Acute Respiratory Infections



# Tobacco Use and Addiction



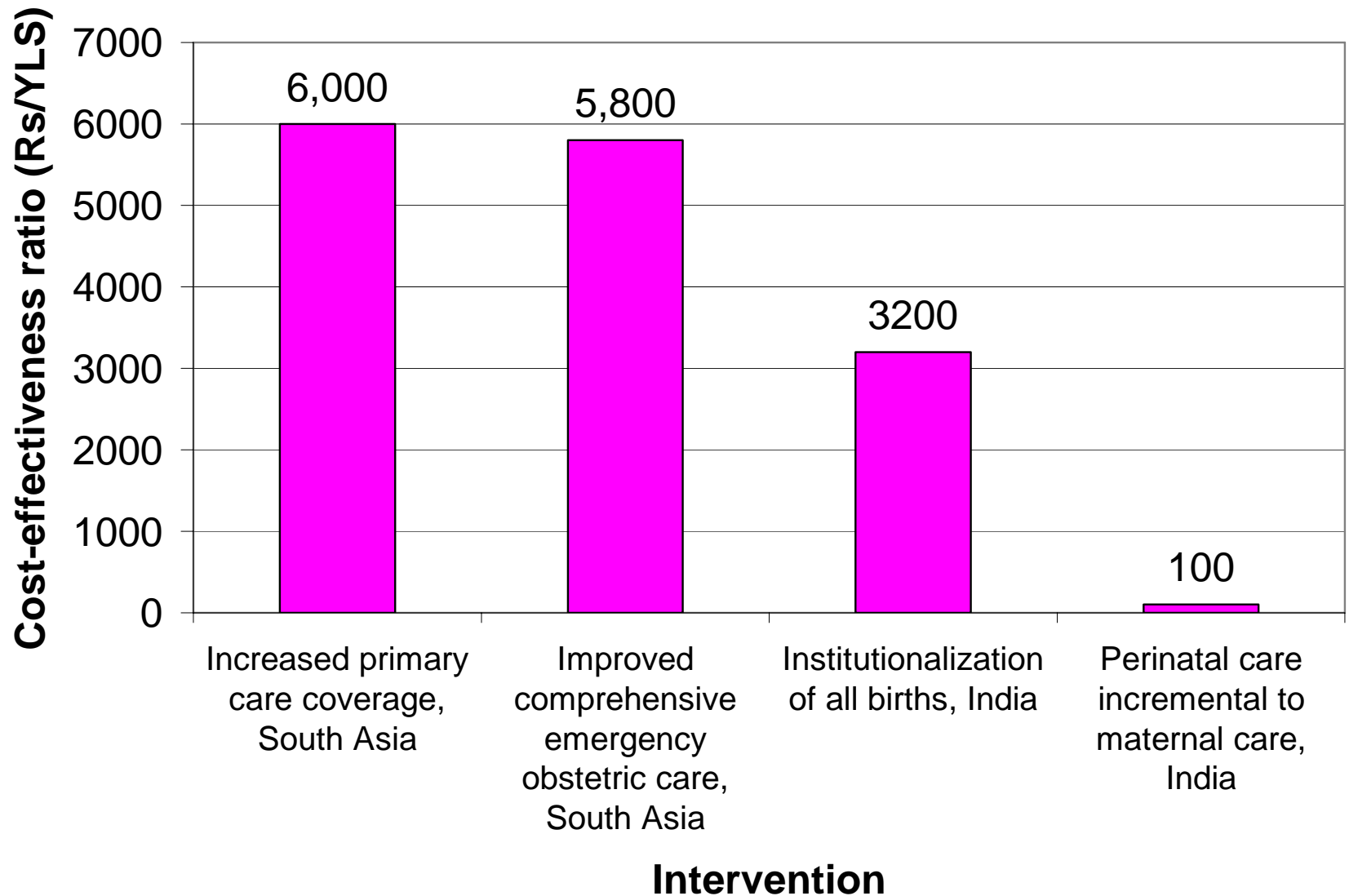
# Choosing health in India



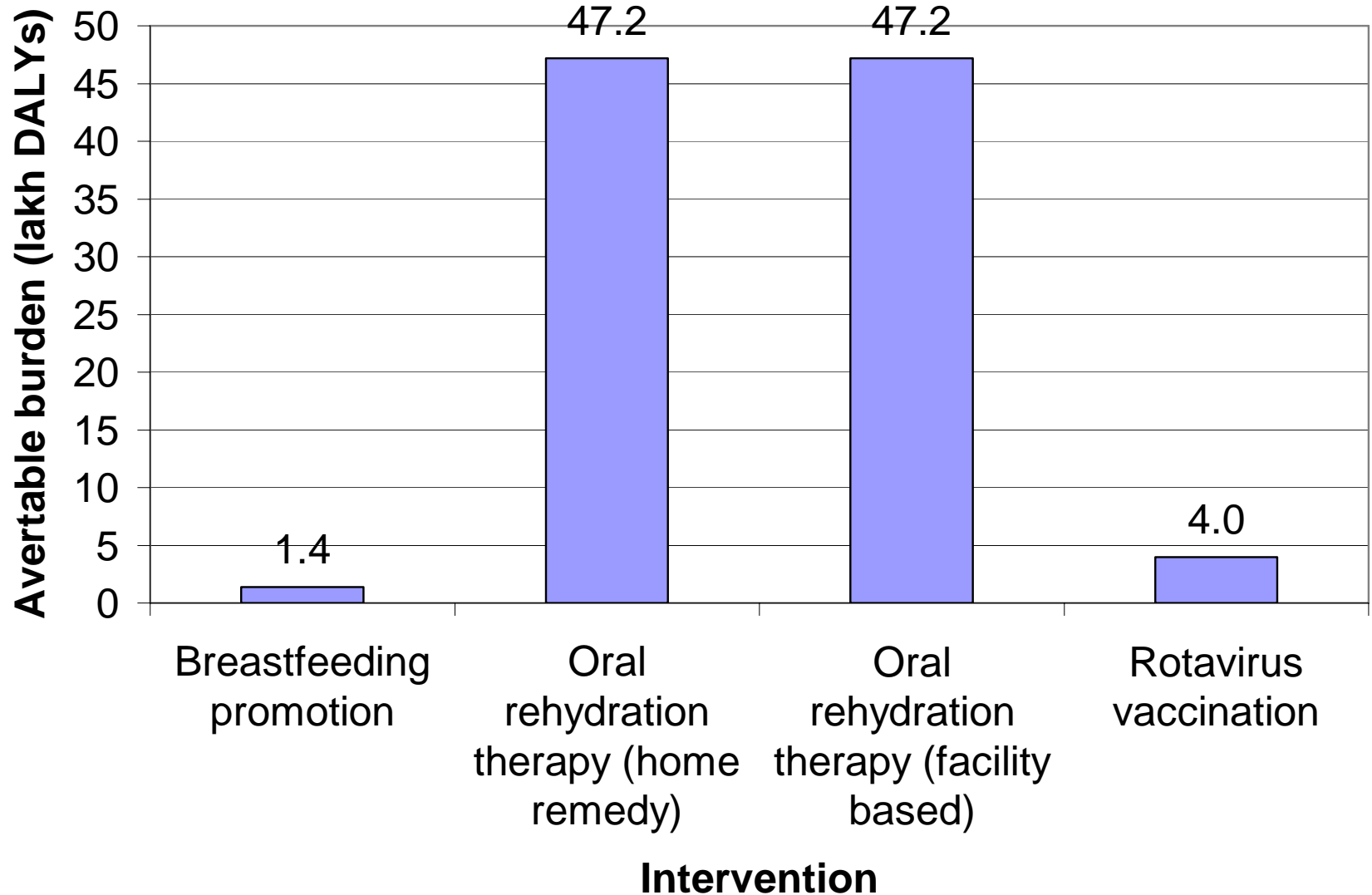
# Avertable burden of Maternal and Perinatal Mortality Interventions in India

- Institutionalization of all births:
  - 40,000 maternal deaths
  - 10.0 lakh maternal DALYs
  - 882,000 neonatal deaths
  - 248.9 lakh neonatal DALYs

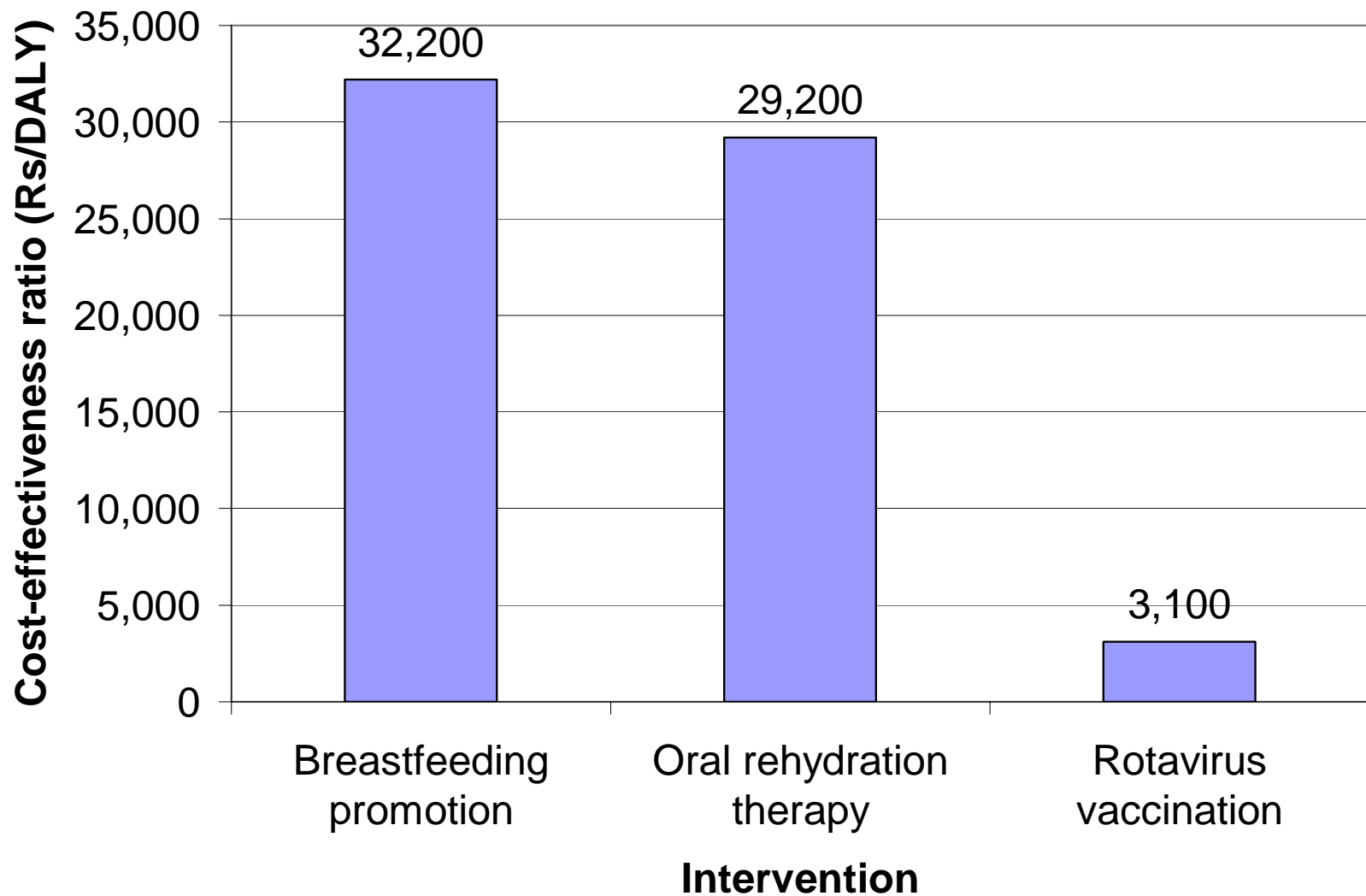
# Cost-effectiveness of Maternal and Perinatal Mortality Interventions



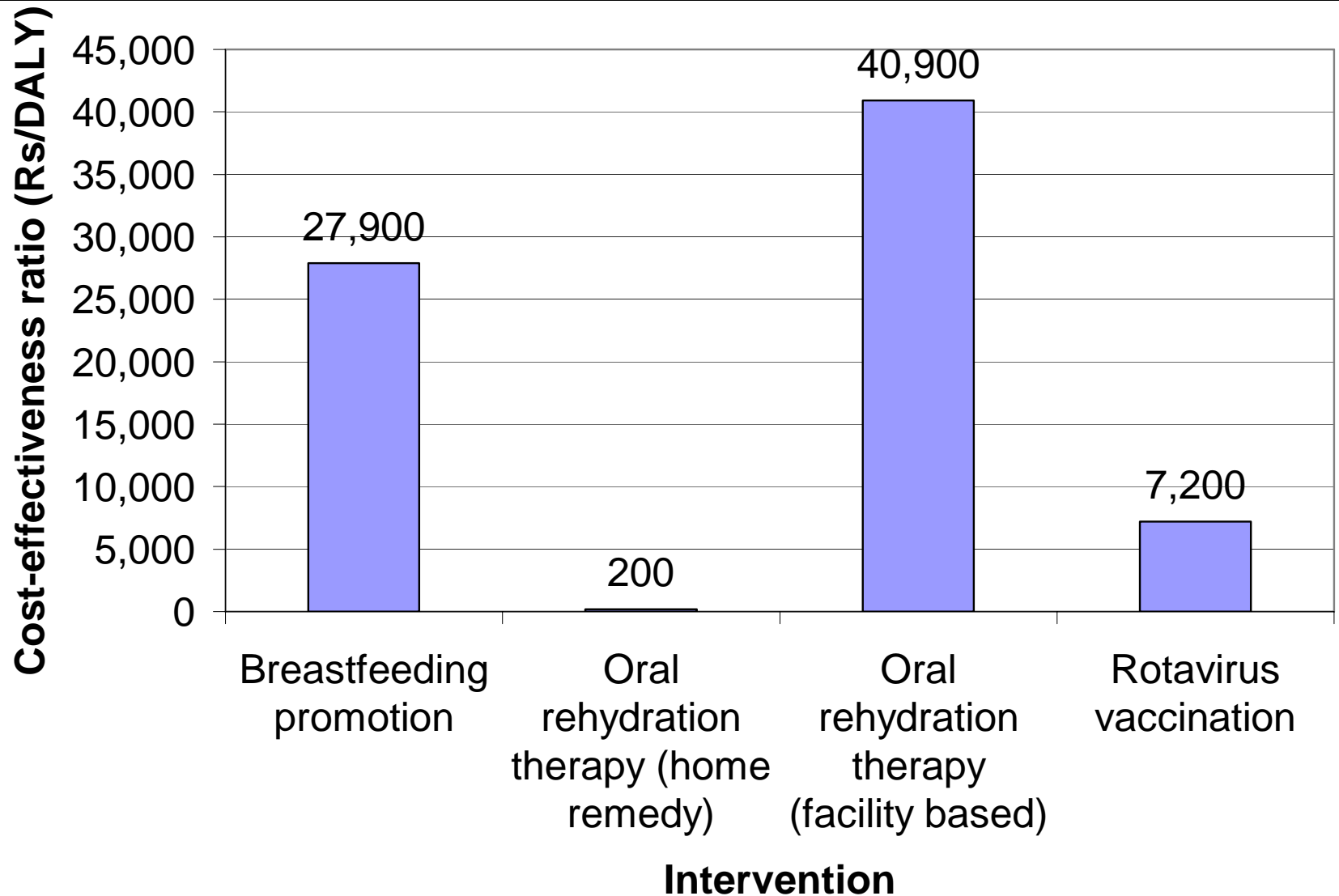
# Avertable Burden of Diarrhea in India



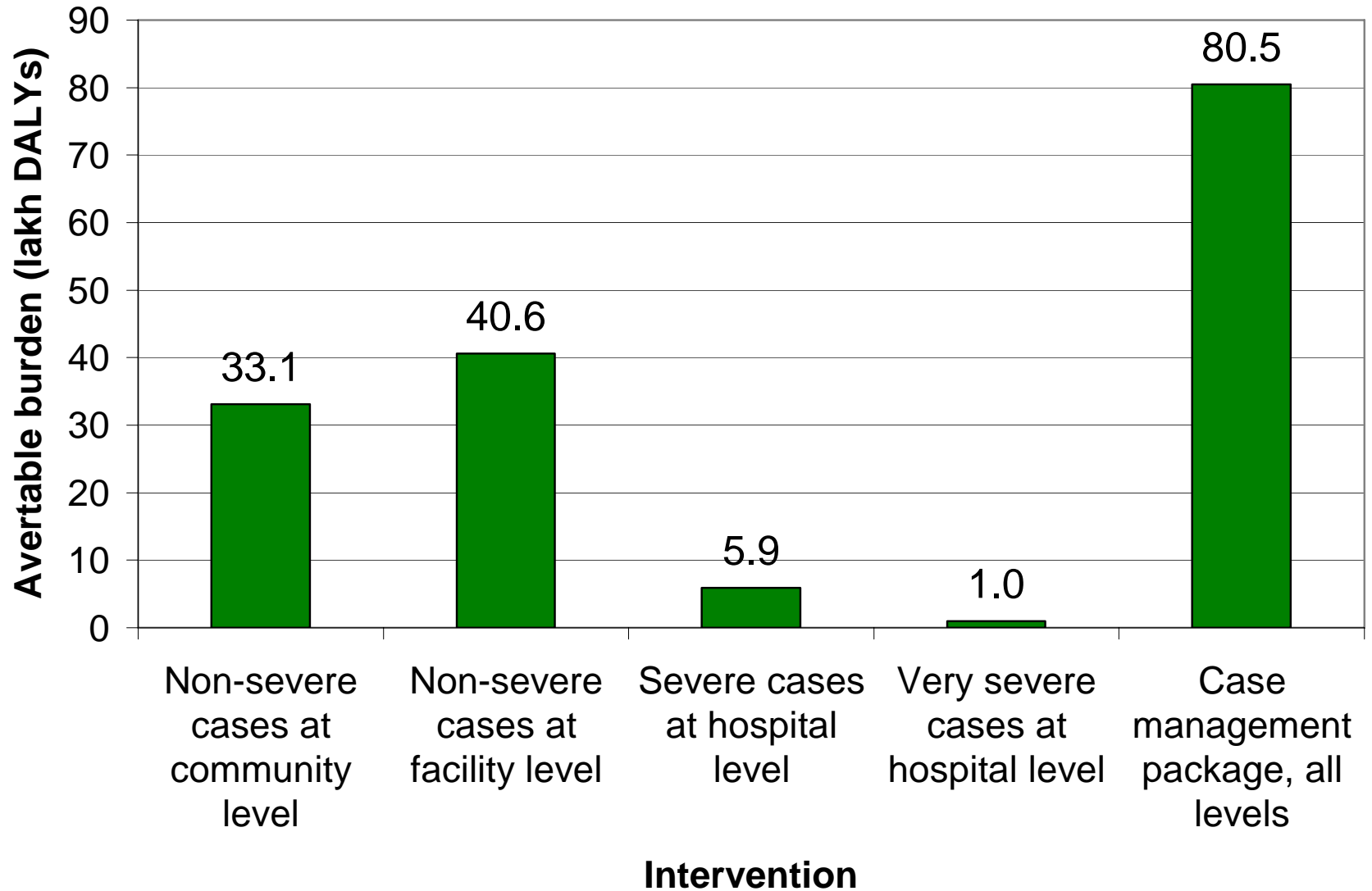
# Cost-effectiveness of Diarrhea Interventions in South Asia



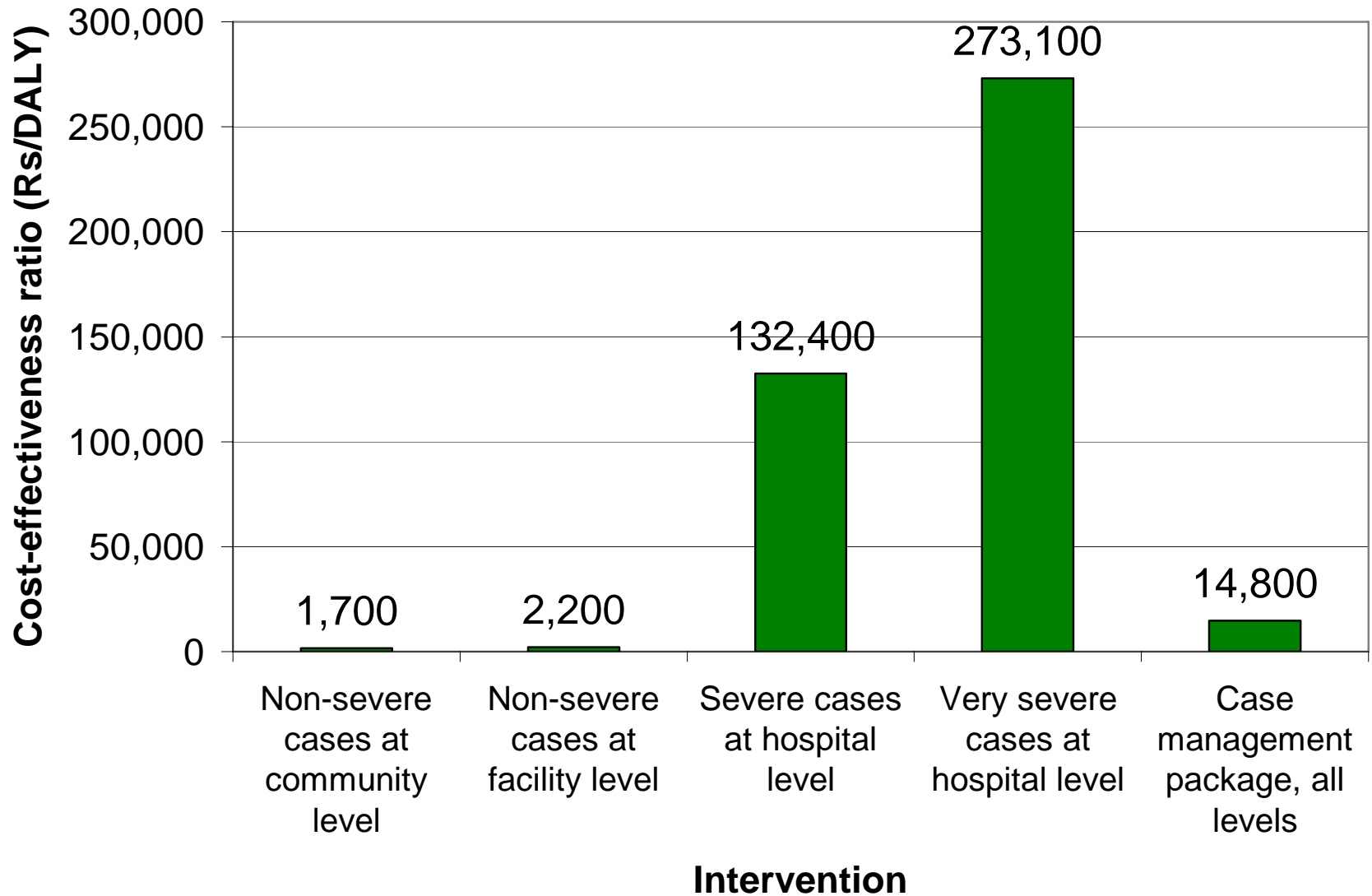
# Cost-effectiveness of Diarrhea Interventions in India



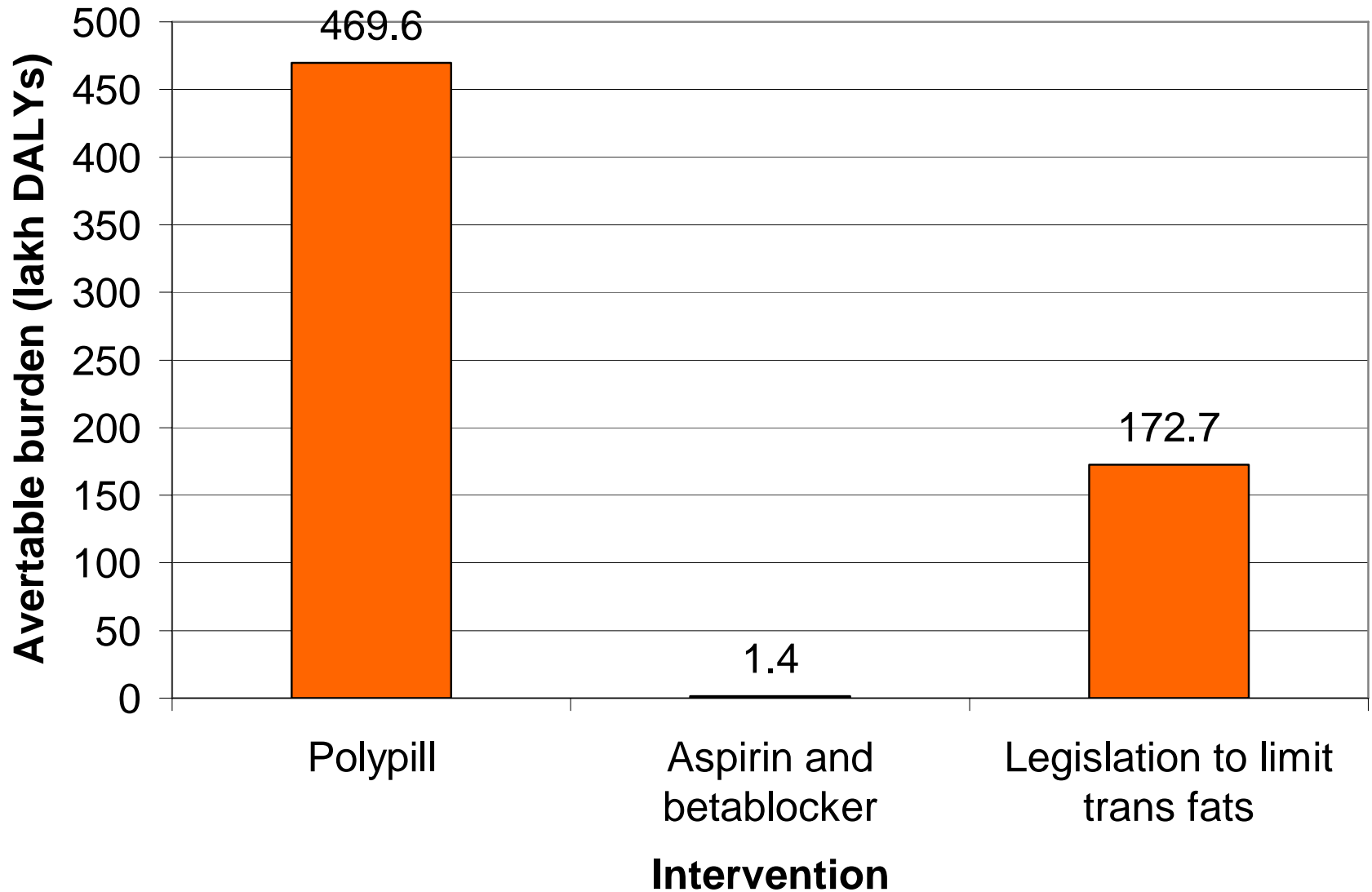
# Avertable Burden of Acute Respiratory Infections in India



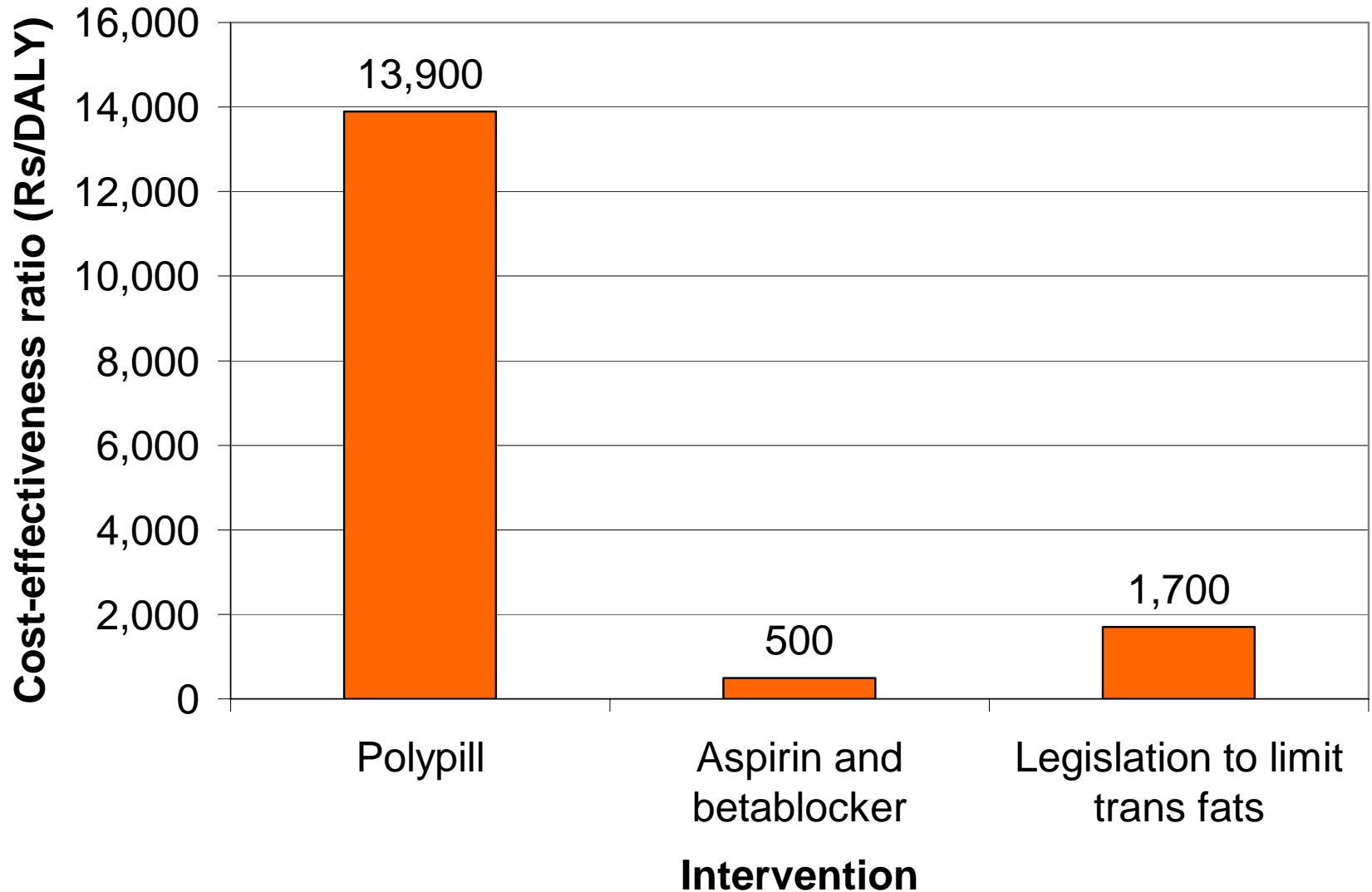
# Cost-effectiveness of Acute Respiratory Infection Interventions in India



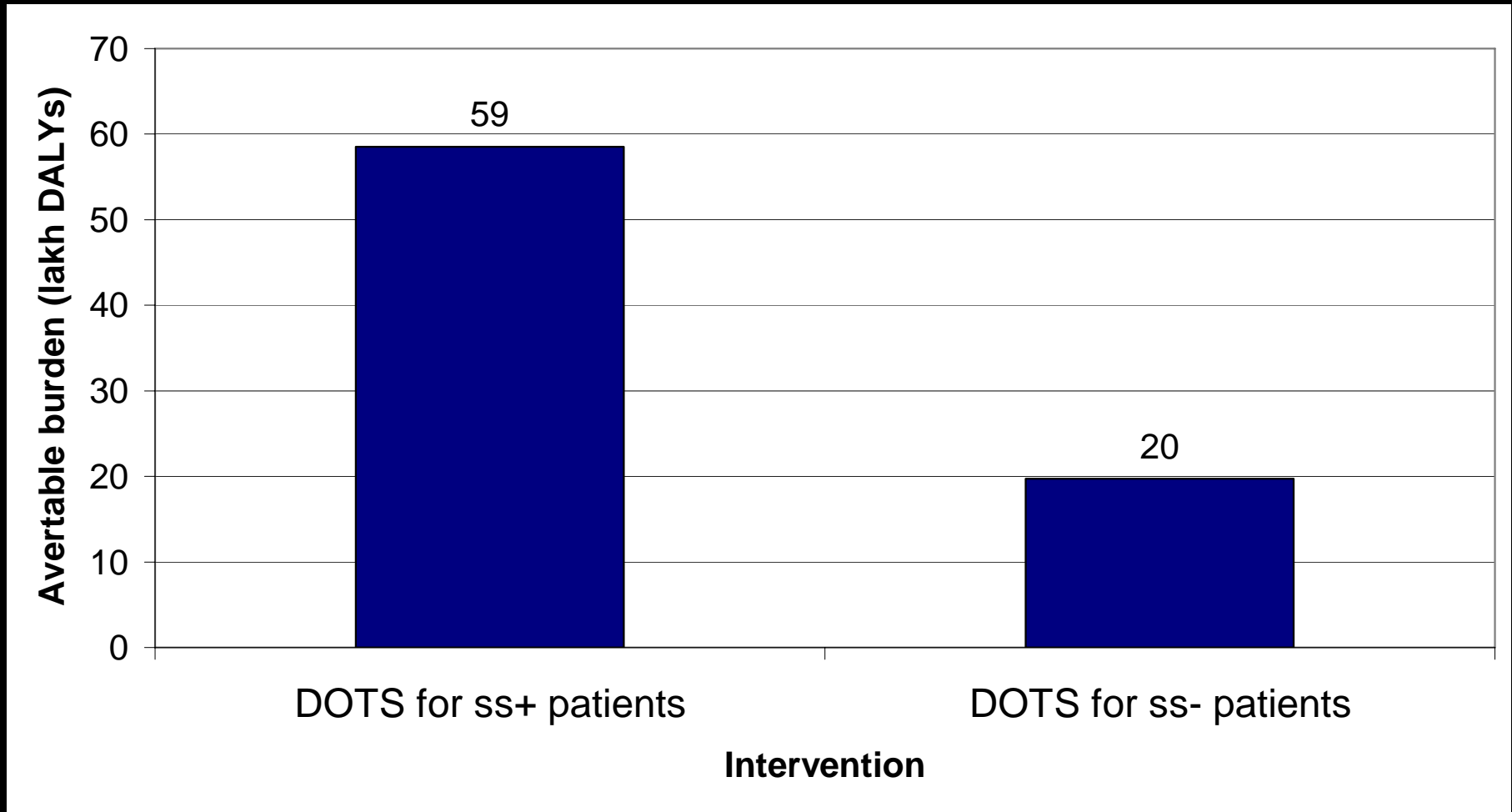
# Avertable Burden of CVD in India



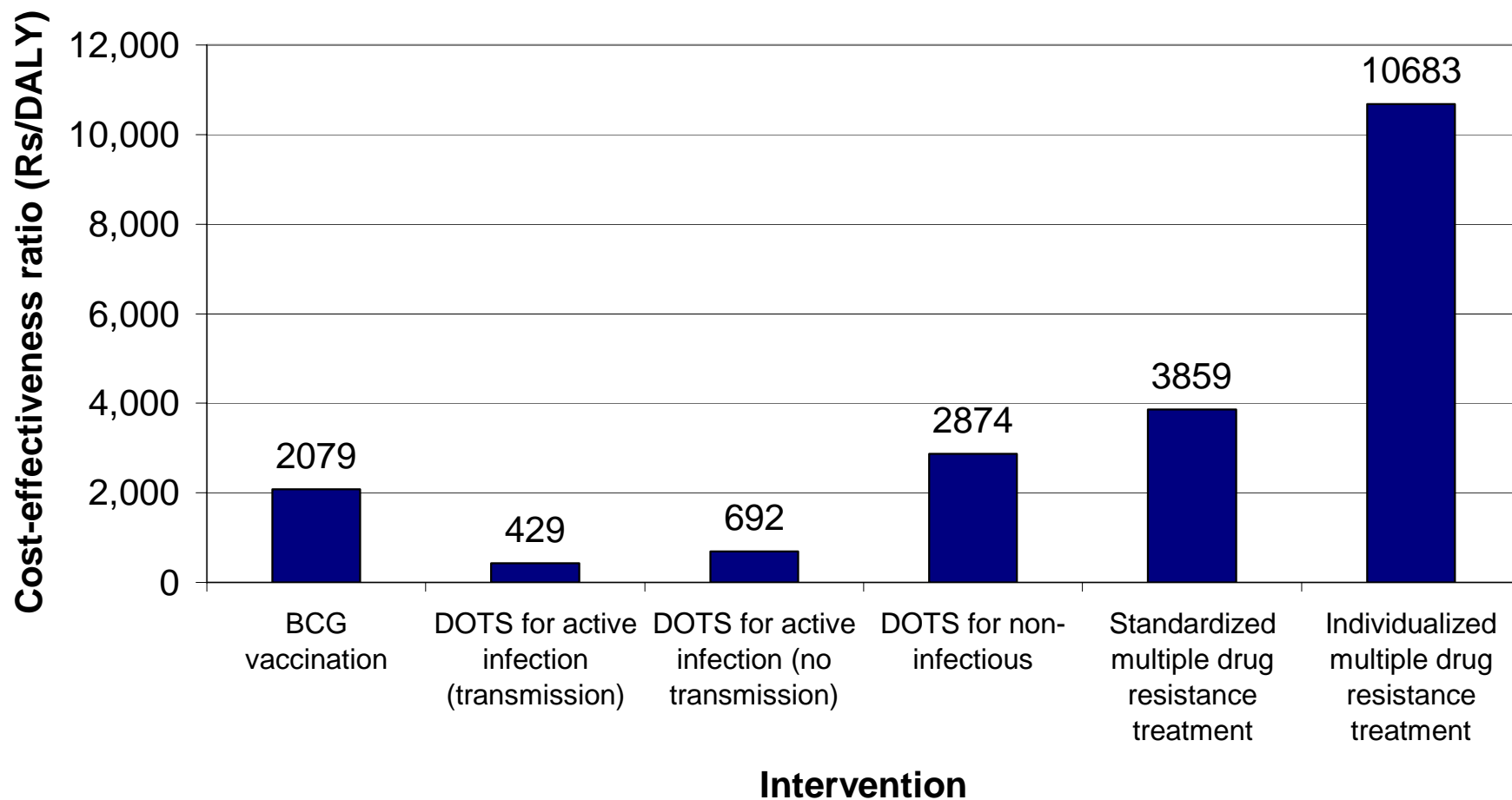
# Cost-effectiveness of CVD Interventions in India



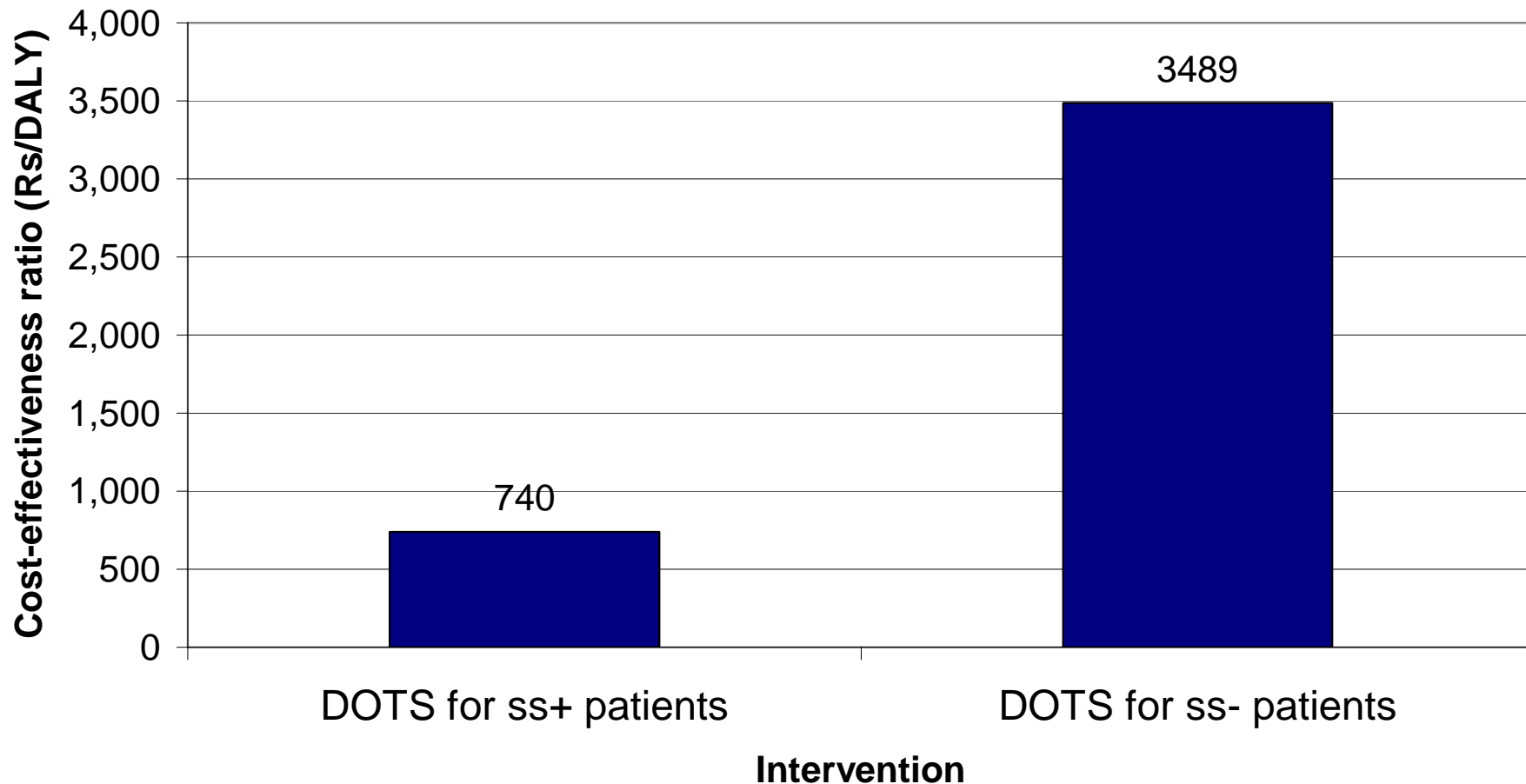
# Avertable Burden of Tuberculosis in India



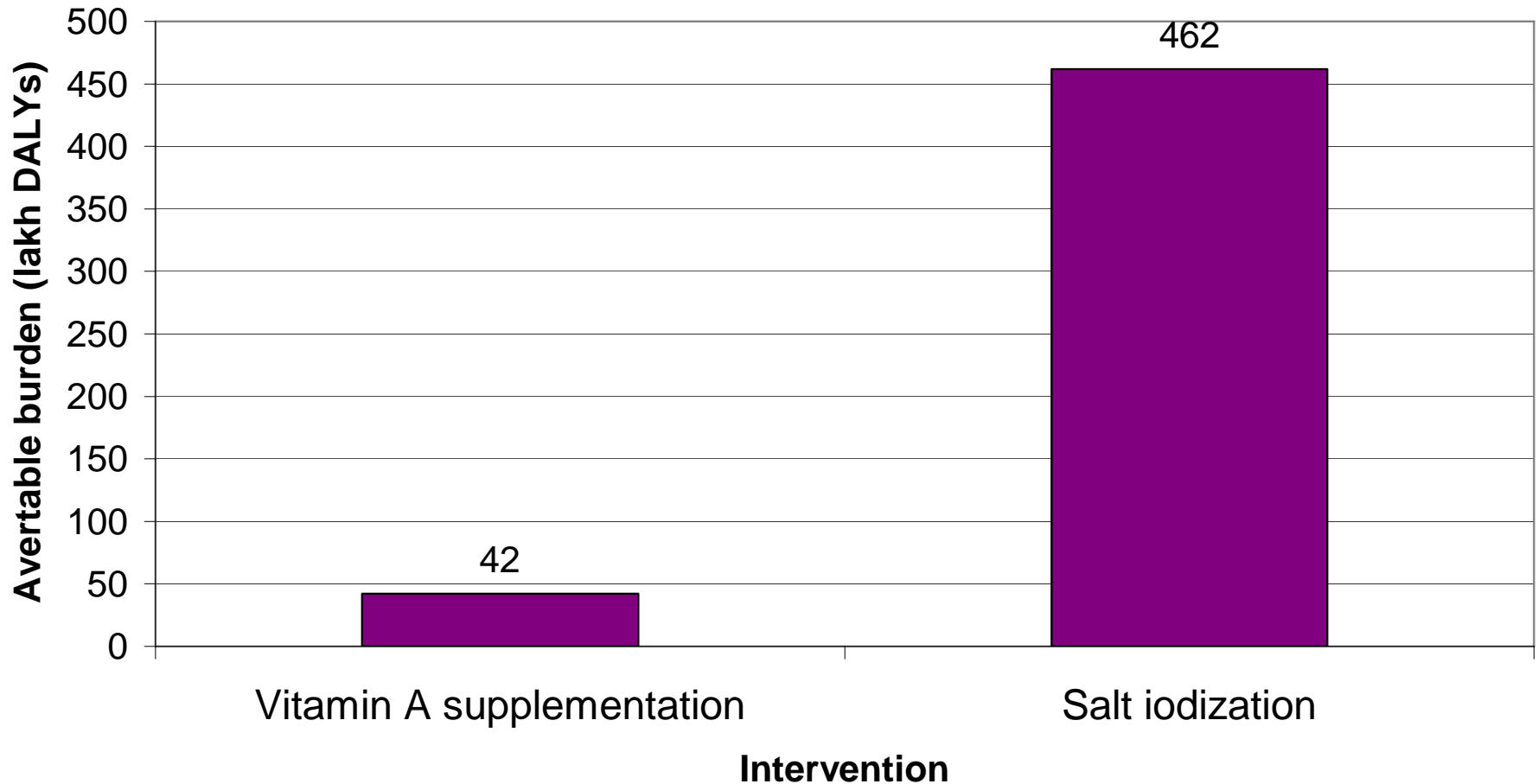
# Cost-effectiveness of Tuberculosis Interventions in South Asia



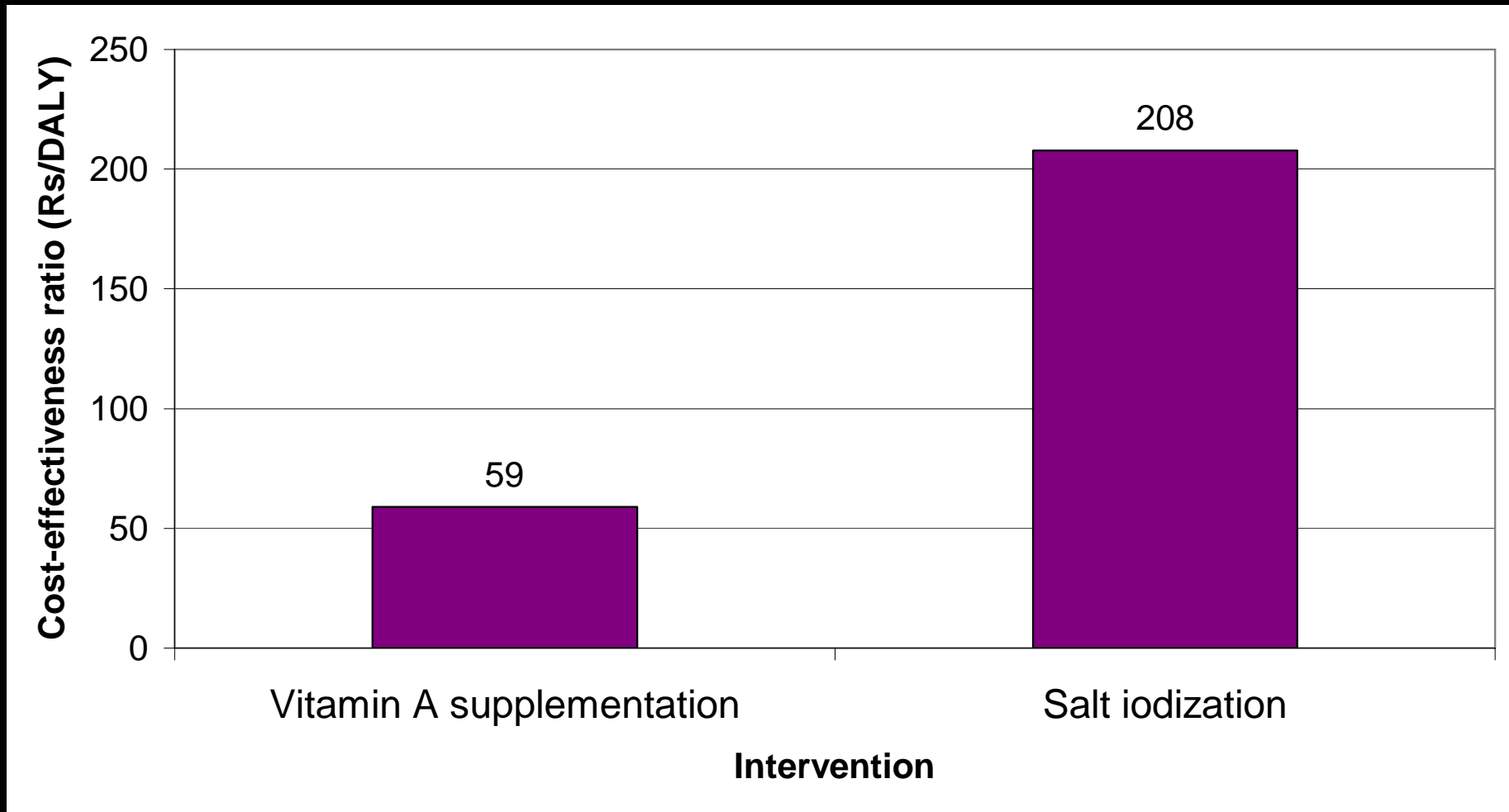
# Cost-effectiveness of Tuberculosis Interventions in India



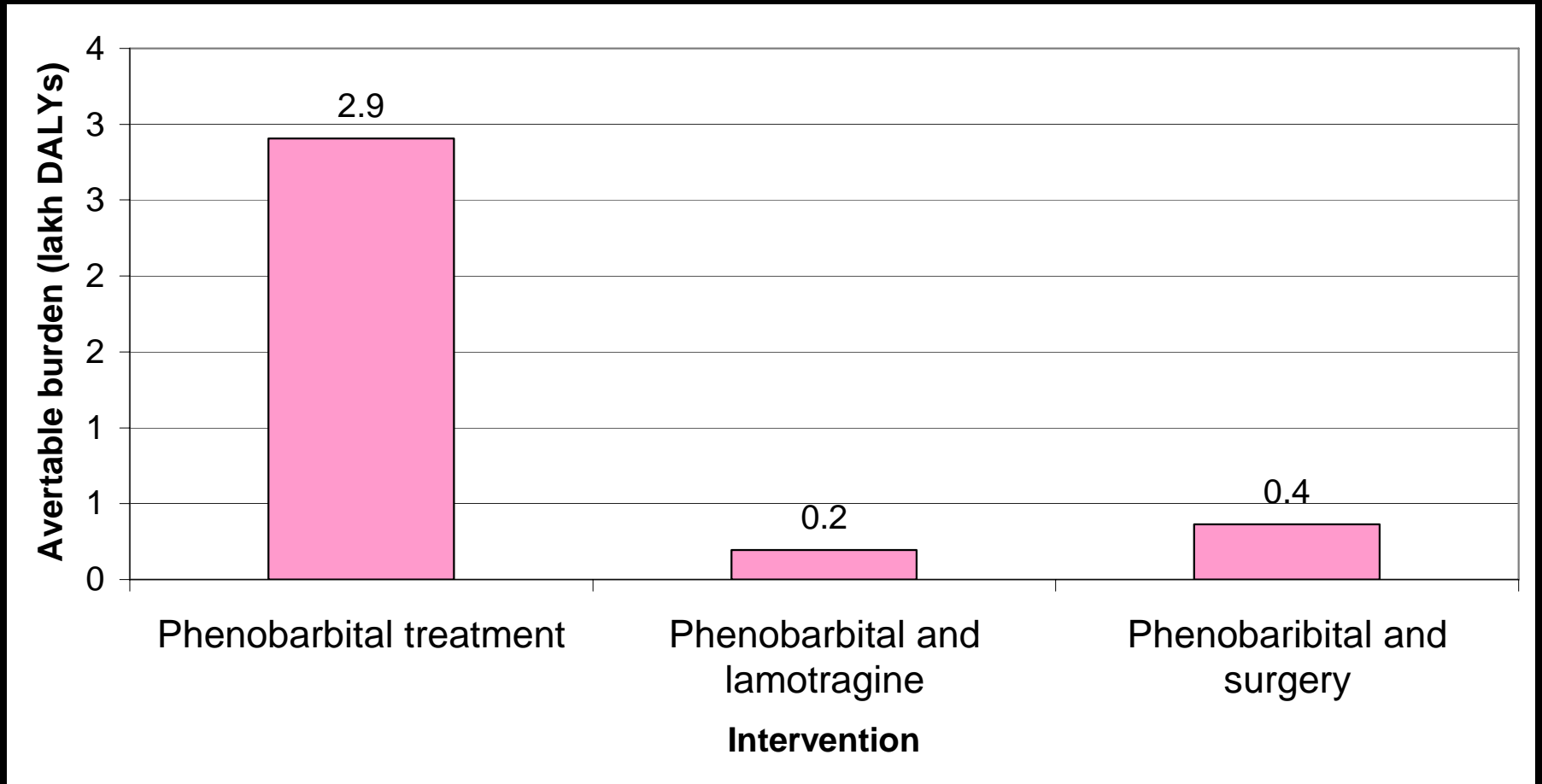
# Avertable Burden of Micronutrient Deficiencies in India



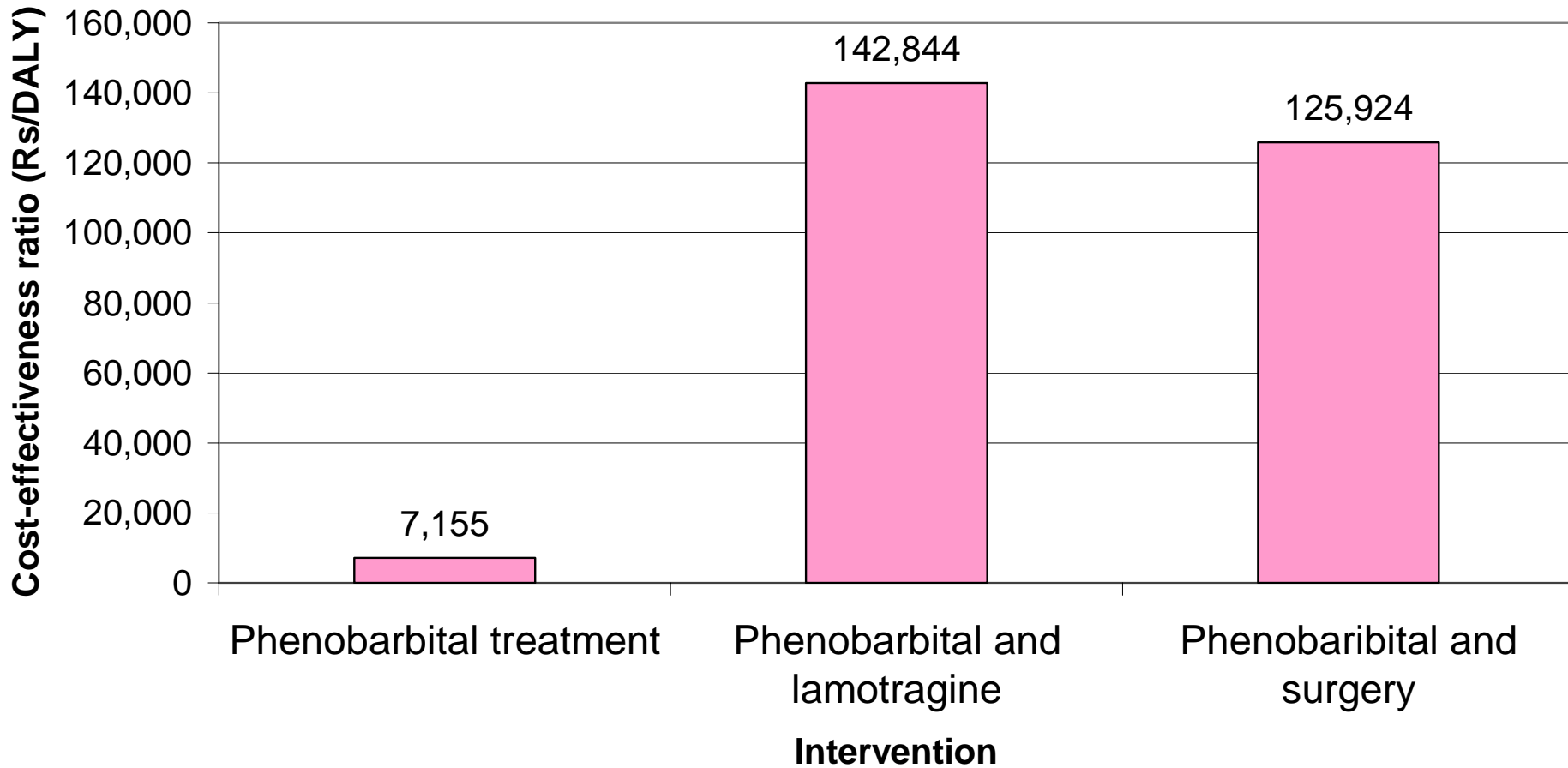
# Cost-effectiveness of Micronutrient Deficiency Interventions in India



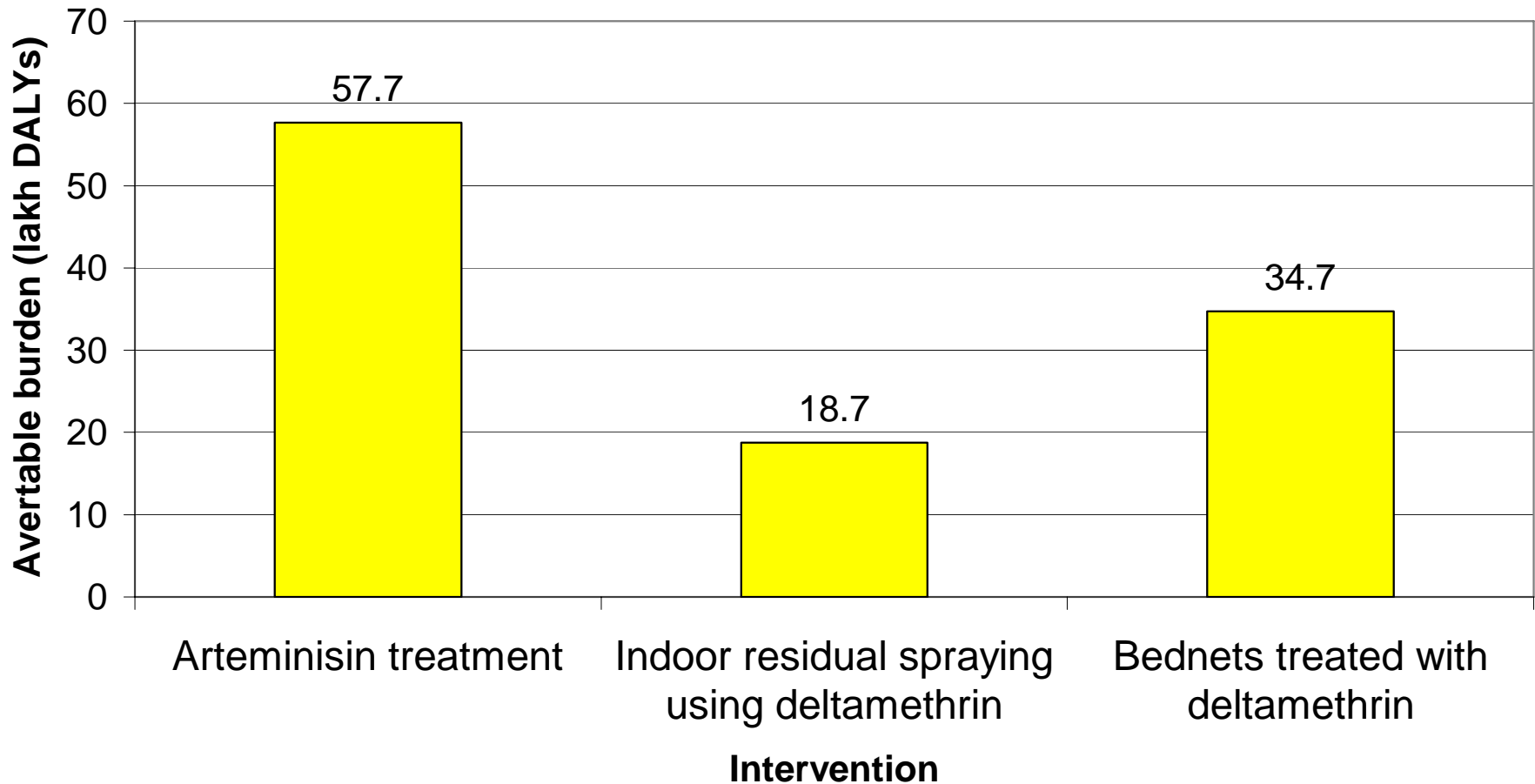
# Avertable Burden of Epilepsy in India



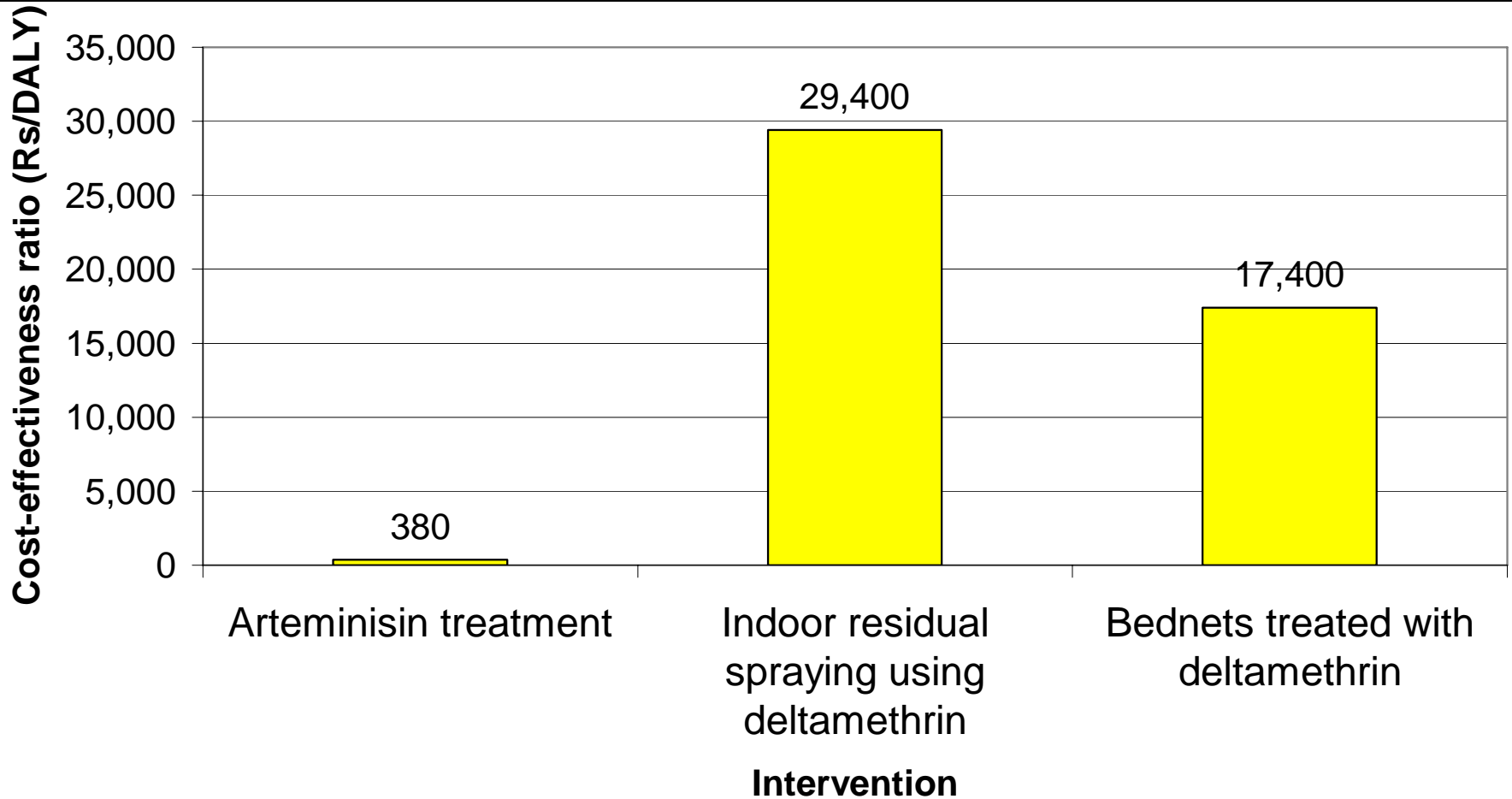
# Cost-effectiveness of Epilepsy Interventions in India



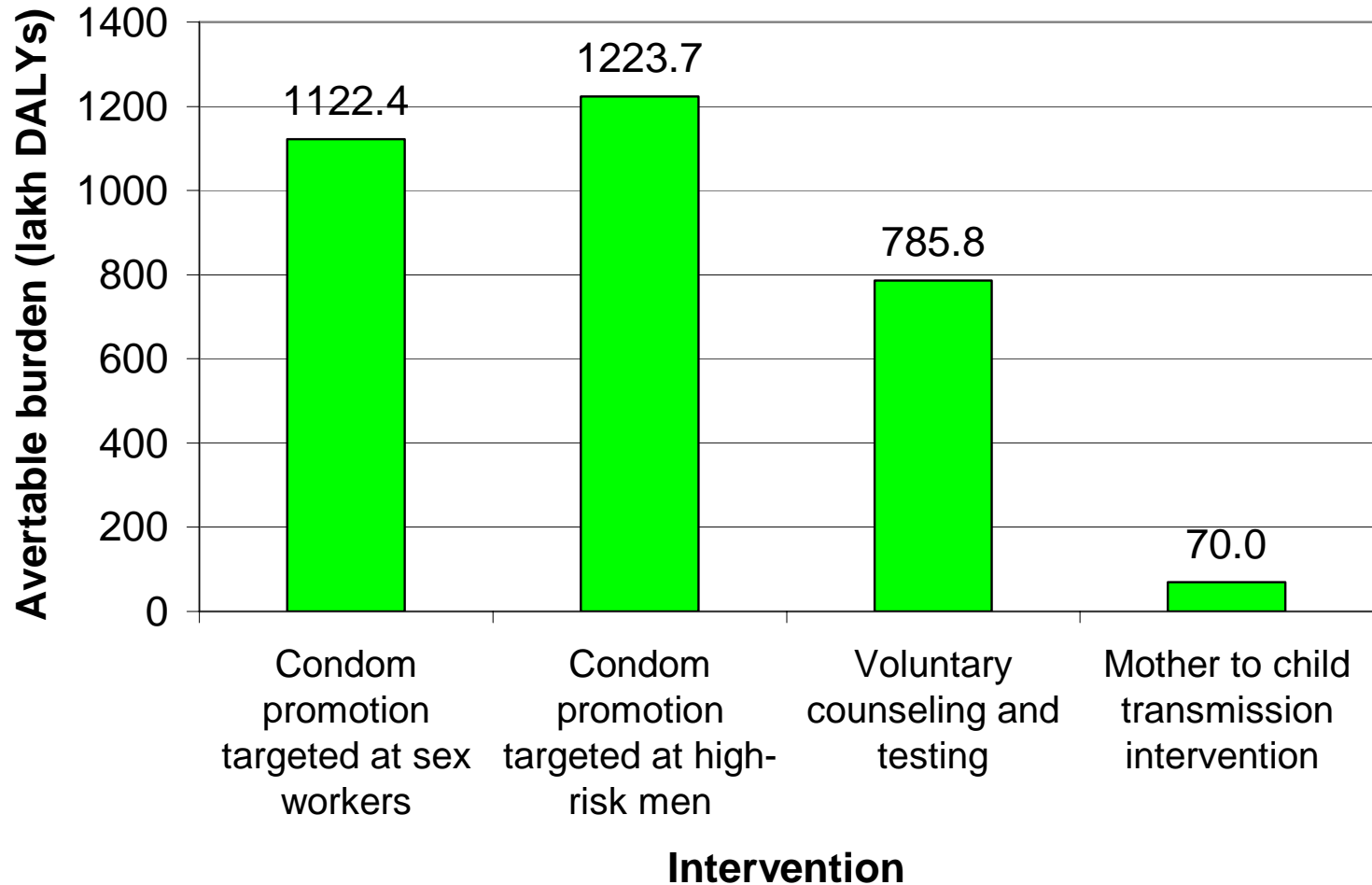
# Avertable Burden of Malaria in India



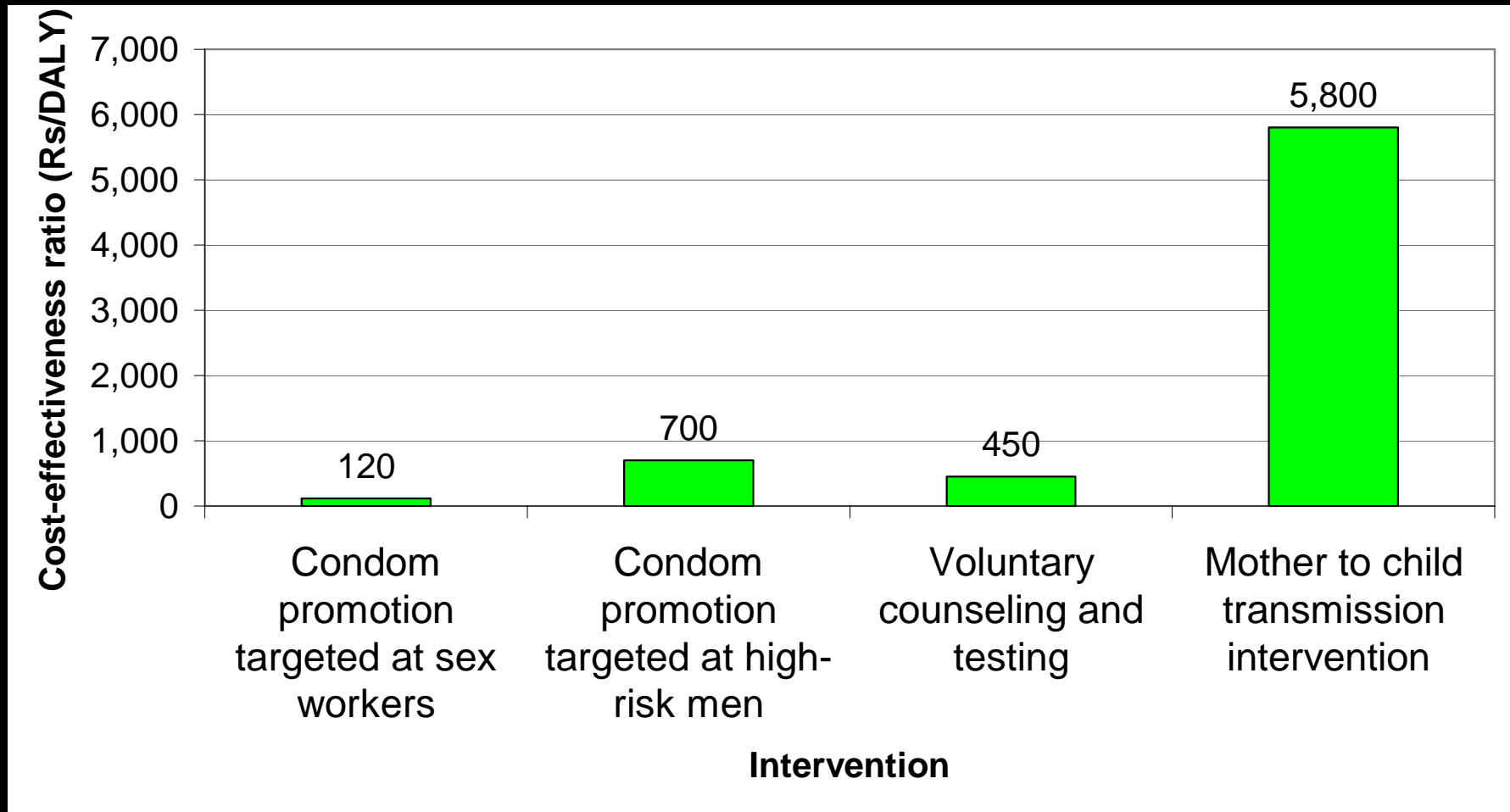
# Cost-effectiveness of Malaria Interventions in India



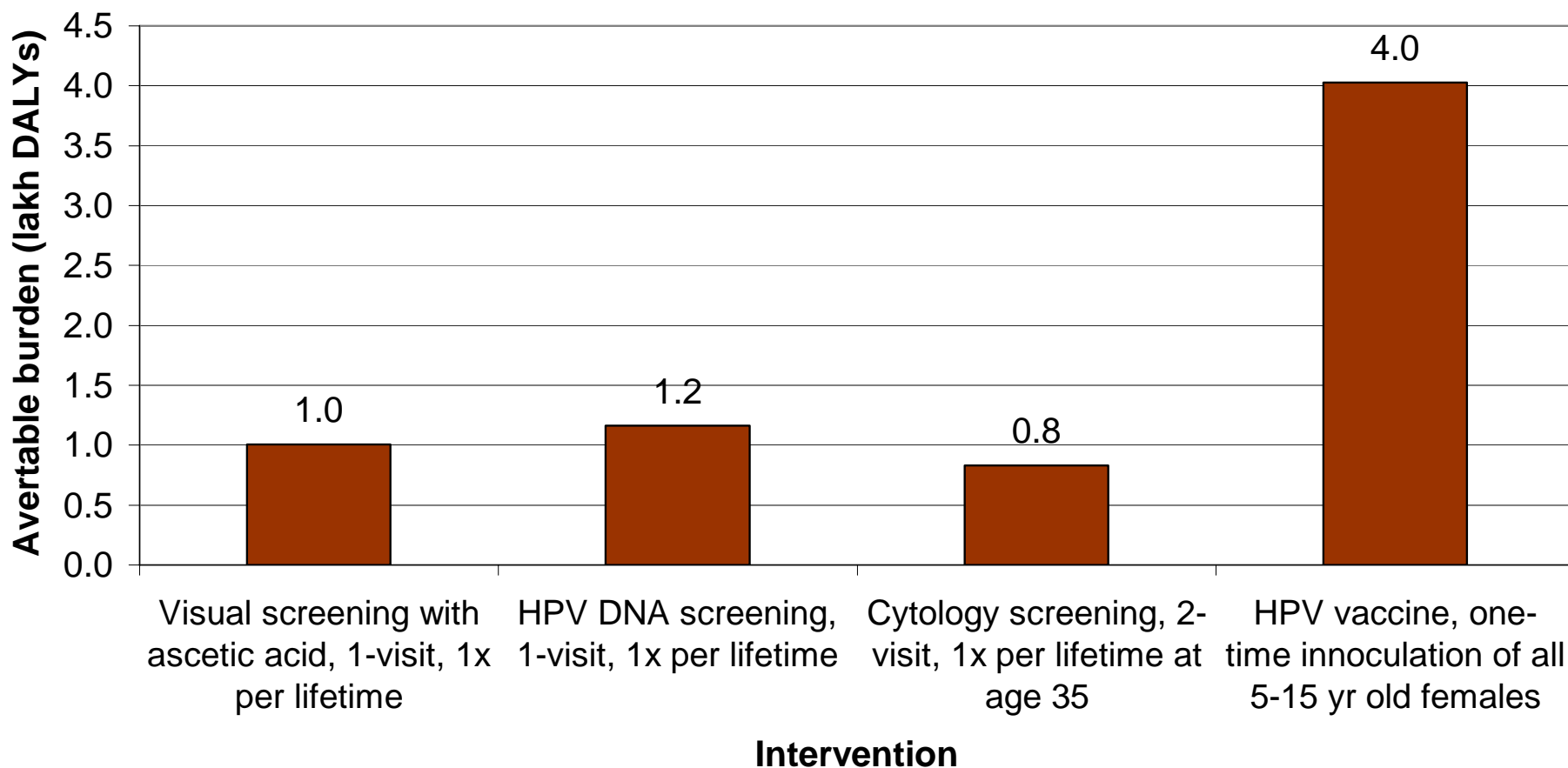
# Avertable Burden of HIV/AIDS Interventions in India



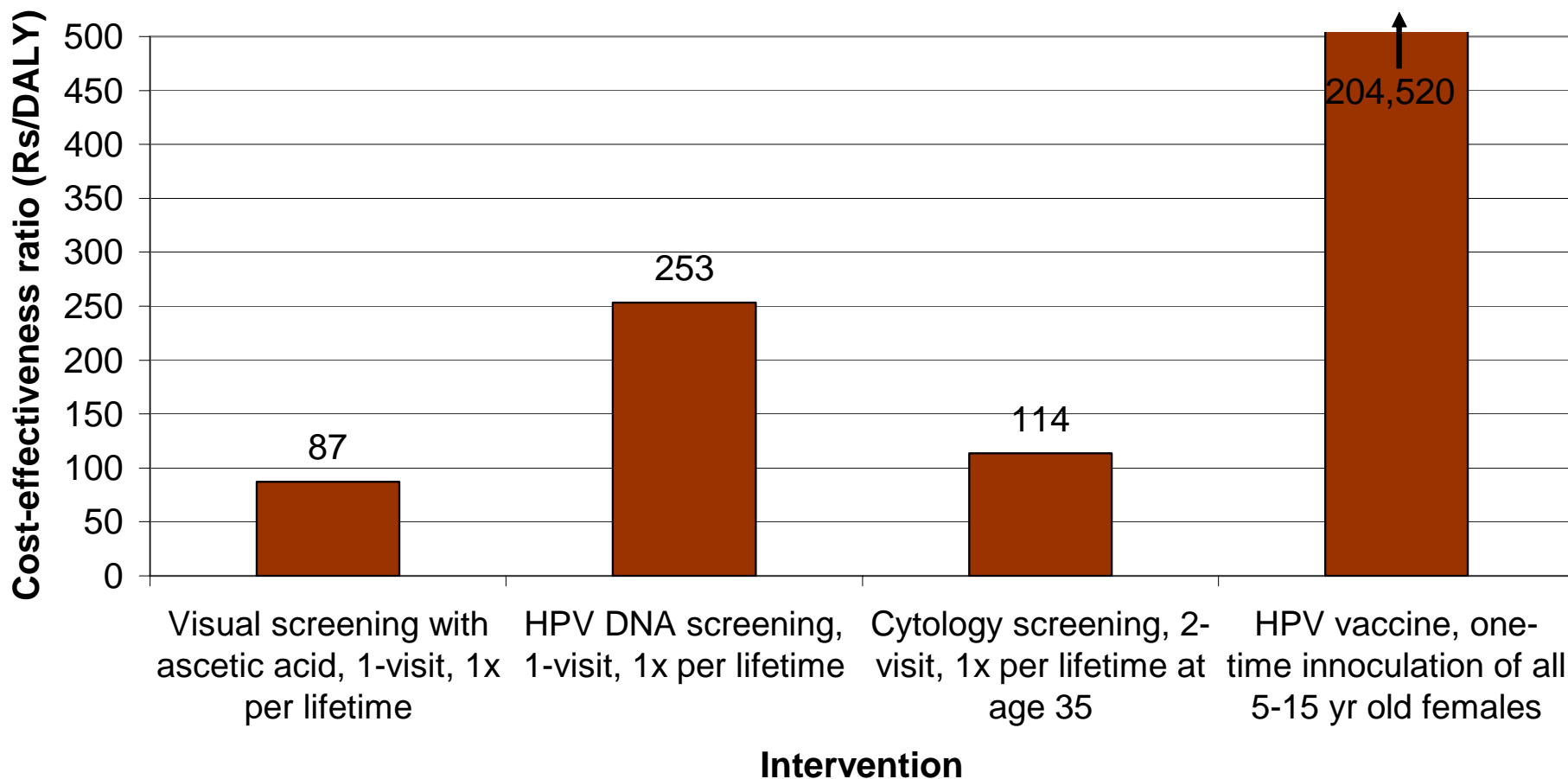
# Cost-effectiveness of HIV/AIDS Interventions in India



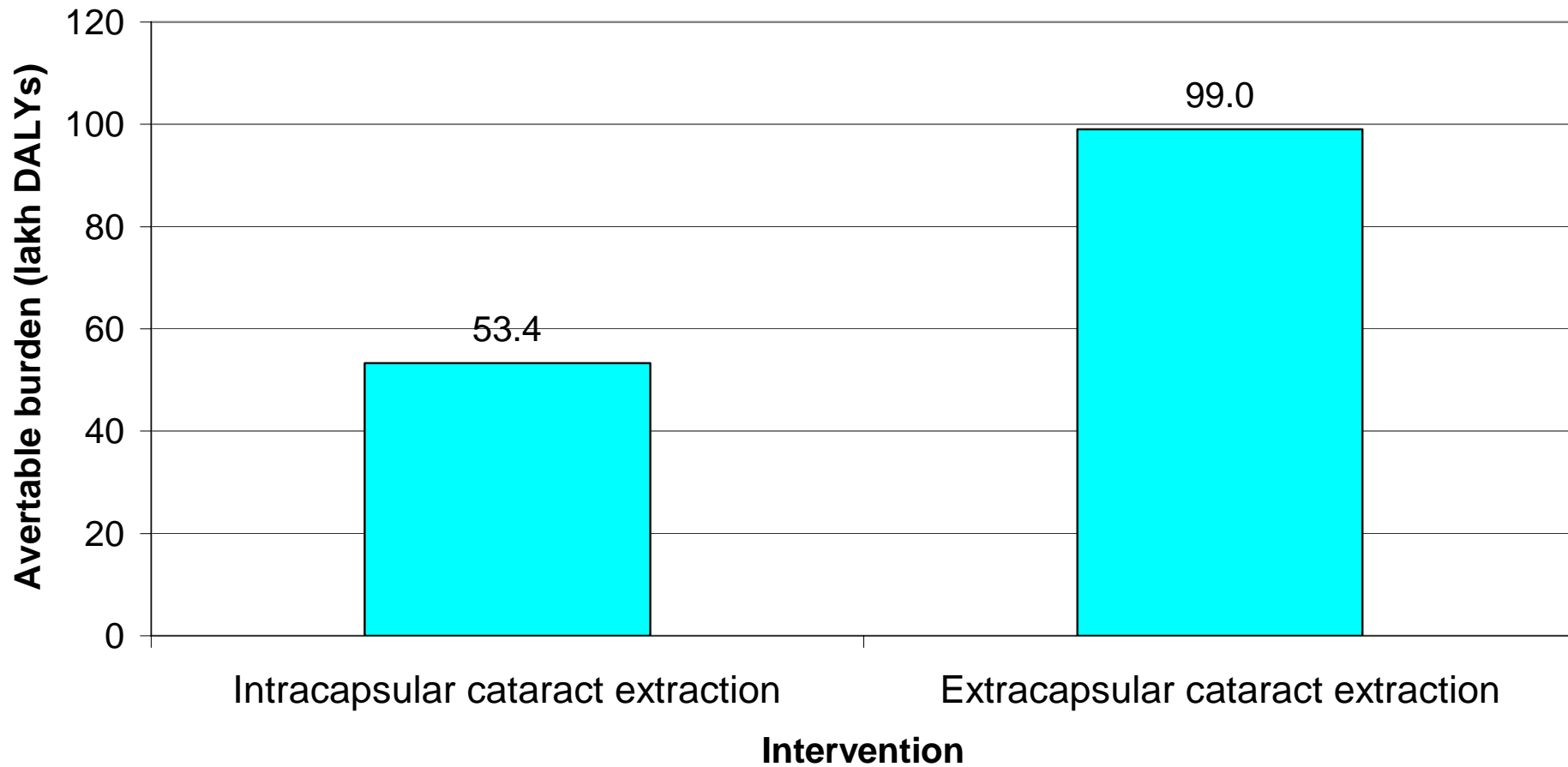
# Avertable Burden of Cervical Cancer Interventions in India



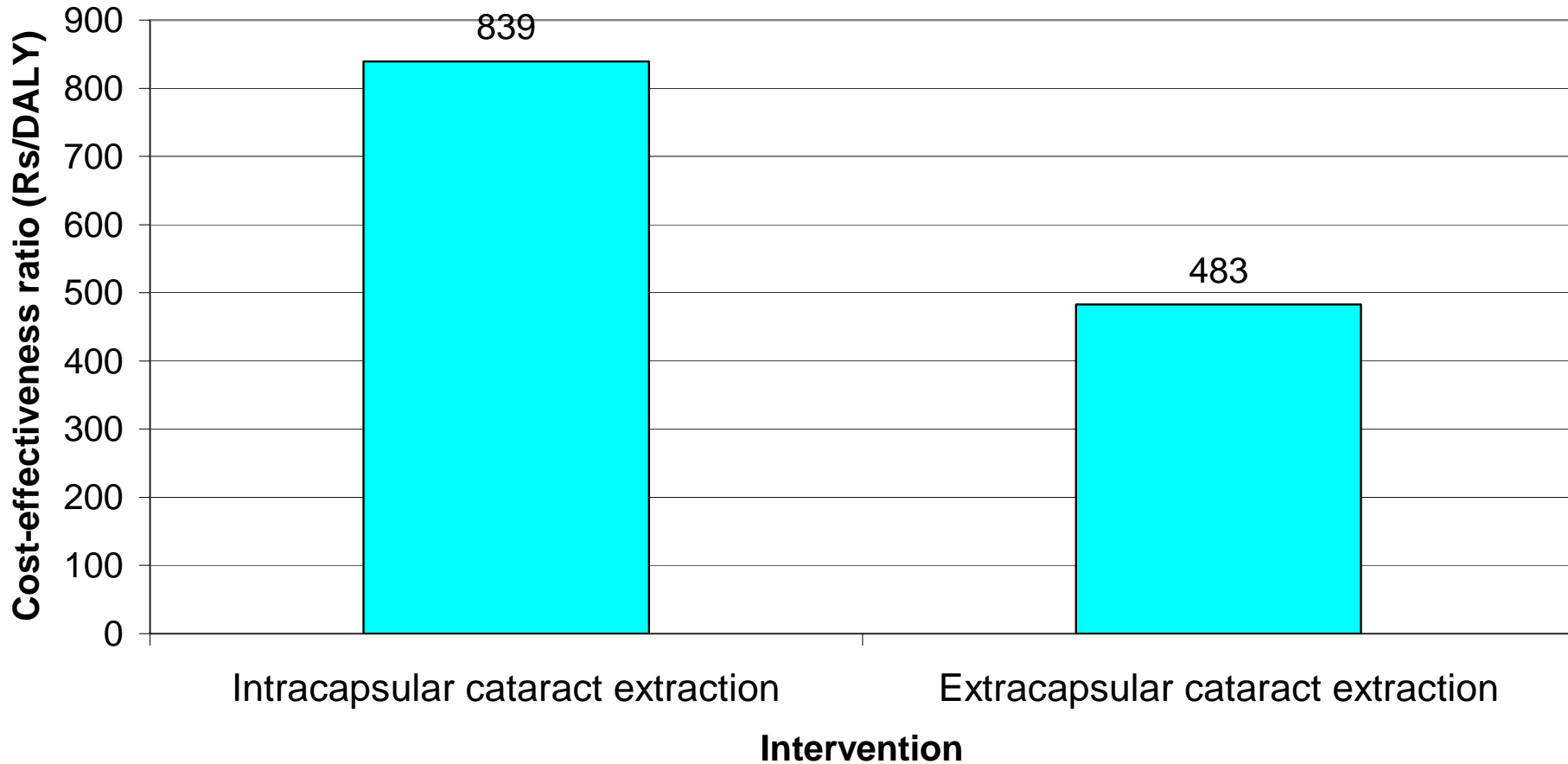
# Cost-effectiveness of Cervical Cancer Interventions in India



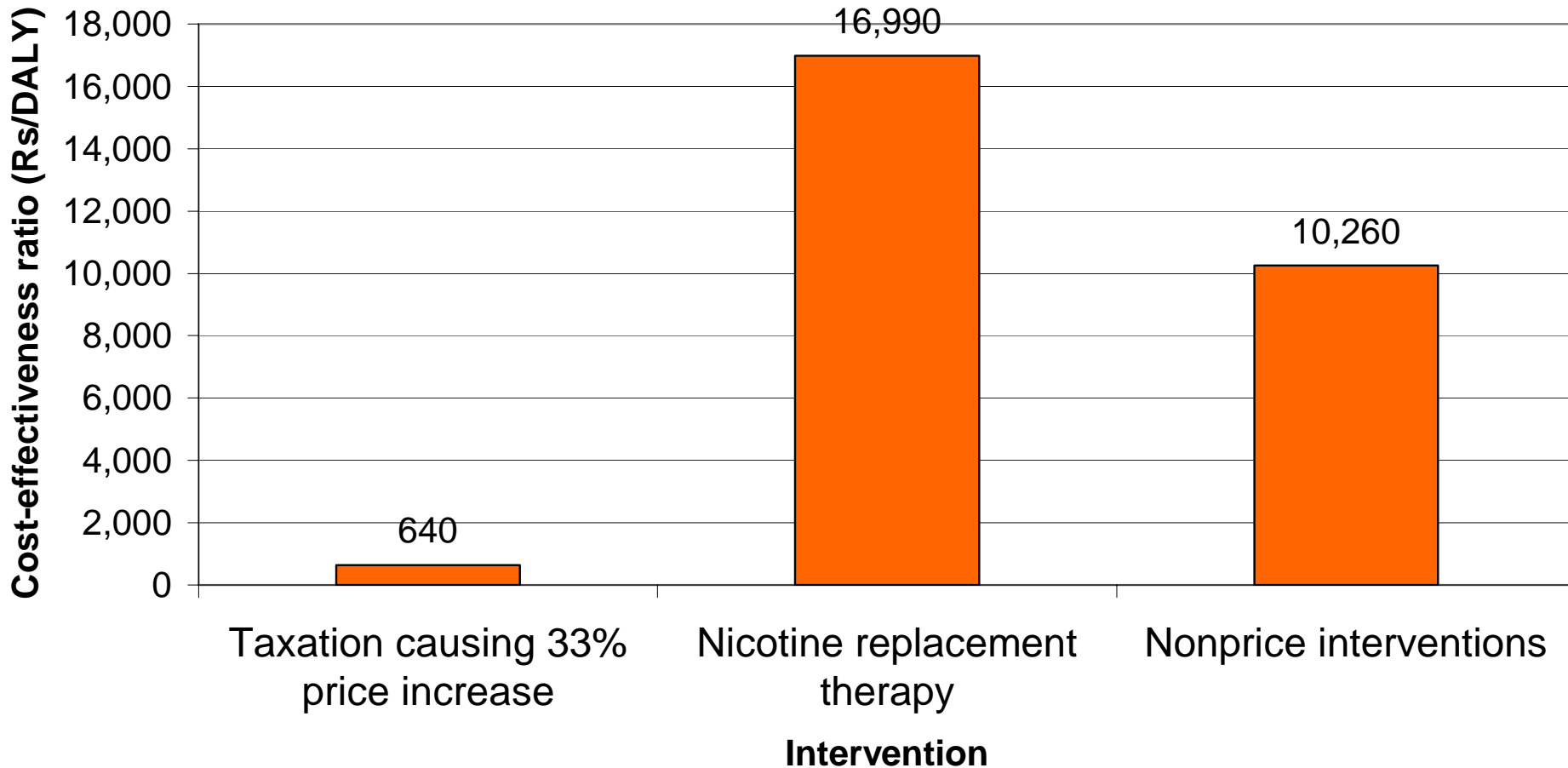
# Avertable Burden of Blindness Interventions in India



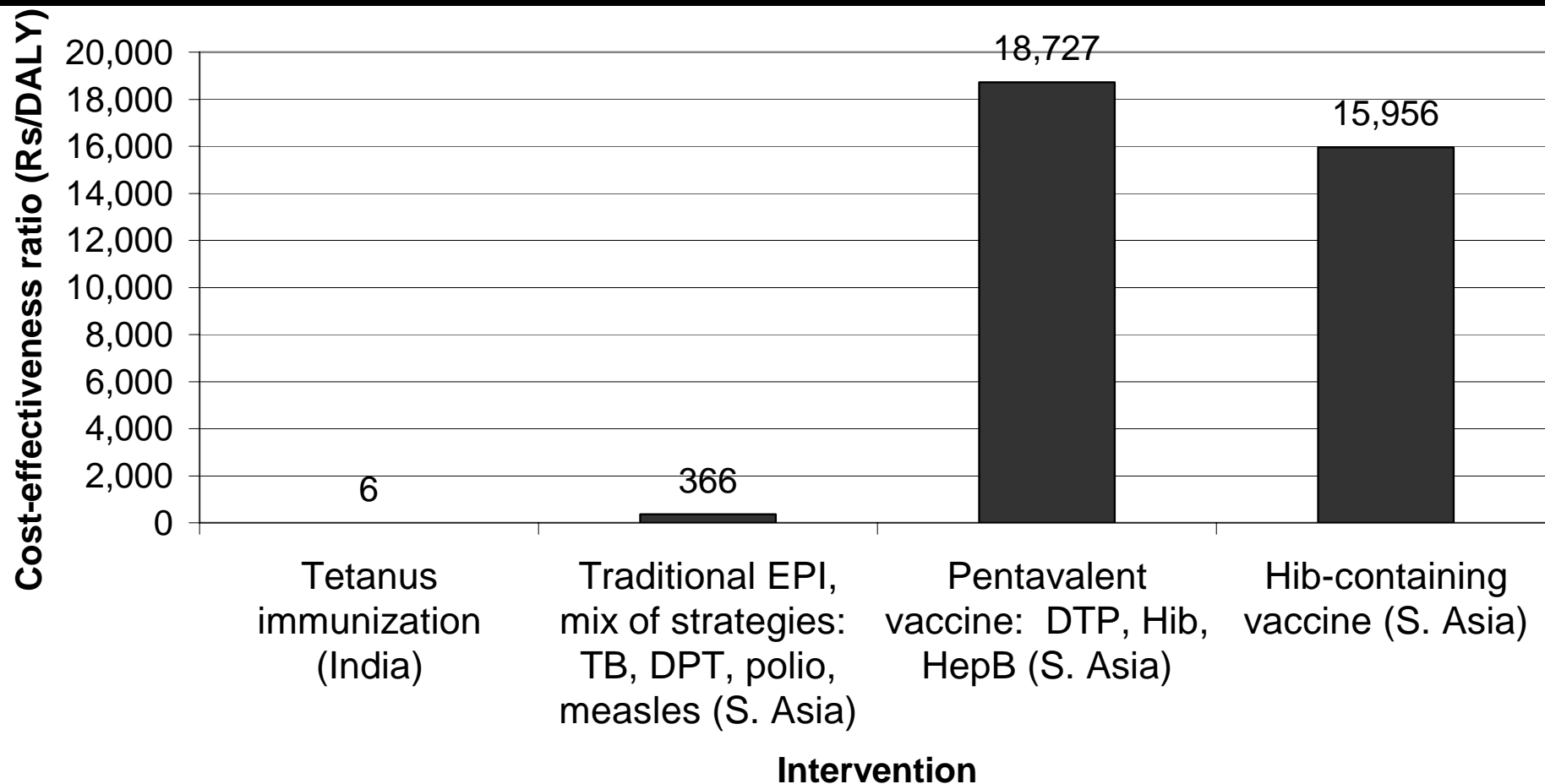
# Cost-effectiveness of Blindness Interventions in South Asia



# Cost-effectiveness of Tobacco Interventions in South Asia



# Cost-effectiveness of Immunization Interventions in South Asia and India



# CMH versus MHEP

Condition	Per Capita Costs (Rs.)	
	CMH Package	MHEP*
Maternal health	23.94	37.26
Tuberculosis	7.16	9.99
Vector-borne diseases	0.32	2.90
Childhood diarrhea	11.44	54.65
Childhood ALRI	4.70	7.12
Blindness	0.47	0.46

\*MHEP=Minimum Health Entitlement Package

# CMH Interventions not in MHEP

<b>Condition</b>	<b>Per Capita Cost (Rs.)</b>
<b>Other Childhood Conditions</b>	<b>2.42</b>
<b>Leprosy</b>	<b>0.40</b>
<b>Reproductive tract / Sexually-transmitted infections</b>	<b>4.59</b>
<b>Preventive &amp; promotive activities</b>	<b>20.63</b>
<b>Minor injuries including falls</b>	<b>5.21</b>
<b>Other minor ailments</b>	<b>14.84</b>
<b>Snake bite</b>	<b>1.78</b>

# MHEP Interventions not in CMH list

<b>Condition</b>	<b>Per Capita Cost (Rs.)</b>
<b>Infant mortality</b>	<b>28.42</b>
<b>HIV/AIDS</b>	<b>17.50</b>
<b>Micro-nutrient deficiency (Vitamin A &amp; Iodine)</b>	<b>11.47</b>
<b>Cardiovascular disease</b>	<b>8.45</b>
<b>Cervical cancer</b>	<b>0.01</b>
<b>Epilepsy</b>	<b>13.47</b>

# Key Messages

1. Policymakers can vastly improve quality of government spending on health by focusing on a few key interventions
2. Improving efficiency of health spending can substantially “increase” available resources
3. Cost-effective interventions exist both for communicable and non-communicable diseases

# Annual Cost of Minimum Health Entitlement Program



**Rs 169 per capita for Communicable Disease Interventions**

**Rs 22 per capita for Non-Communicable Disease Interventions**

**Total Cost: Rs 191 per capita**