



DISEASE CONTROL  
PRIORITIES PROJECT



# Investing in Global Health

## “Best Buys” and Priorities for Action in Developing Countries

Fogarty International Center of the U.S. National Institutes of Health, the World Bank,  
the World Health Organization, and the Population Reference Bureau

Global Health Mini-University, 27 October 2006

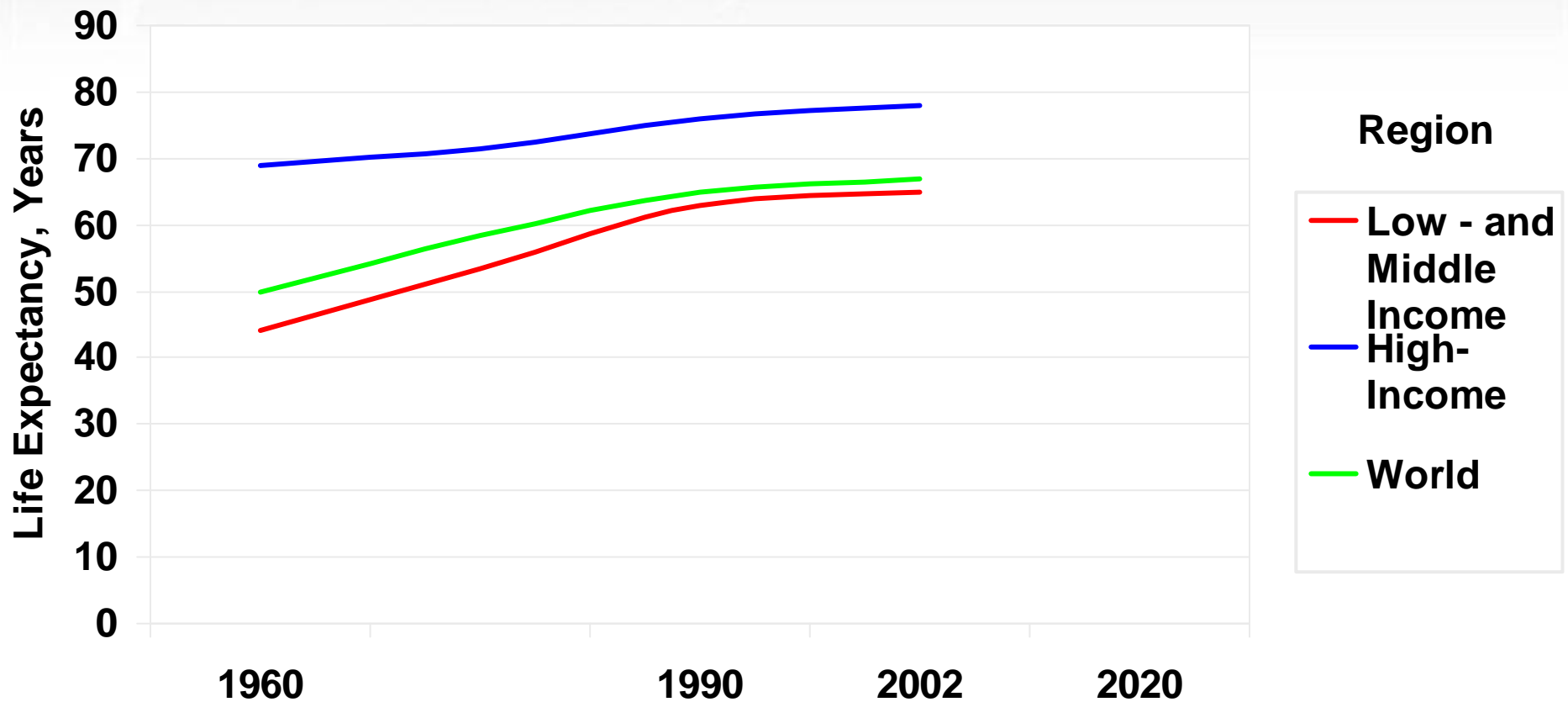
INVESTING IN GLOBAL HEALTH “BEST BUYS” AND PRIORITIES FOR ACTION IN DEVELOPING COUNTRIES

[www.dcp2.org](http://www.dcp2.org)

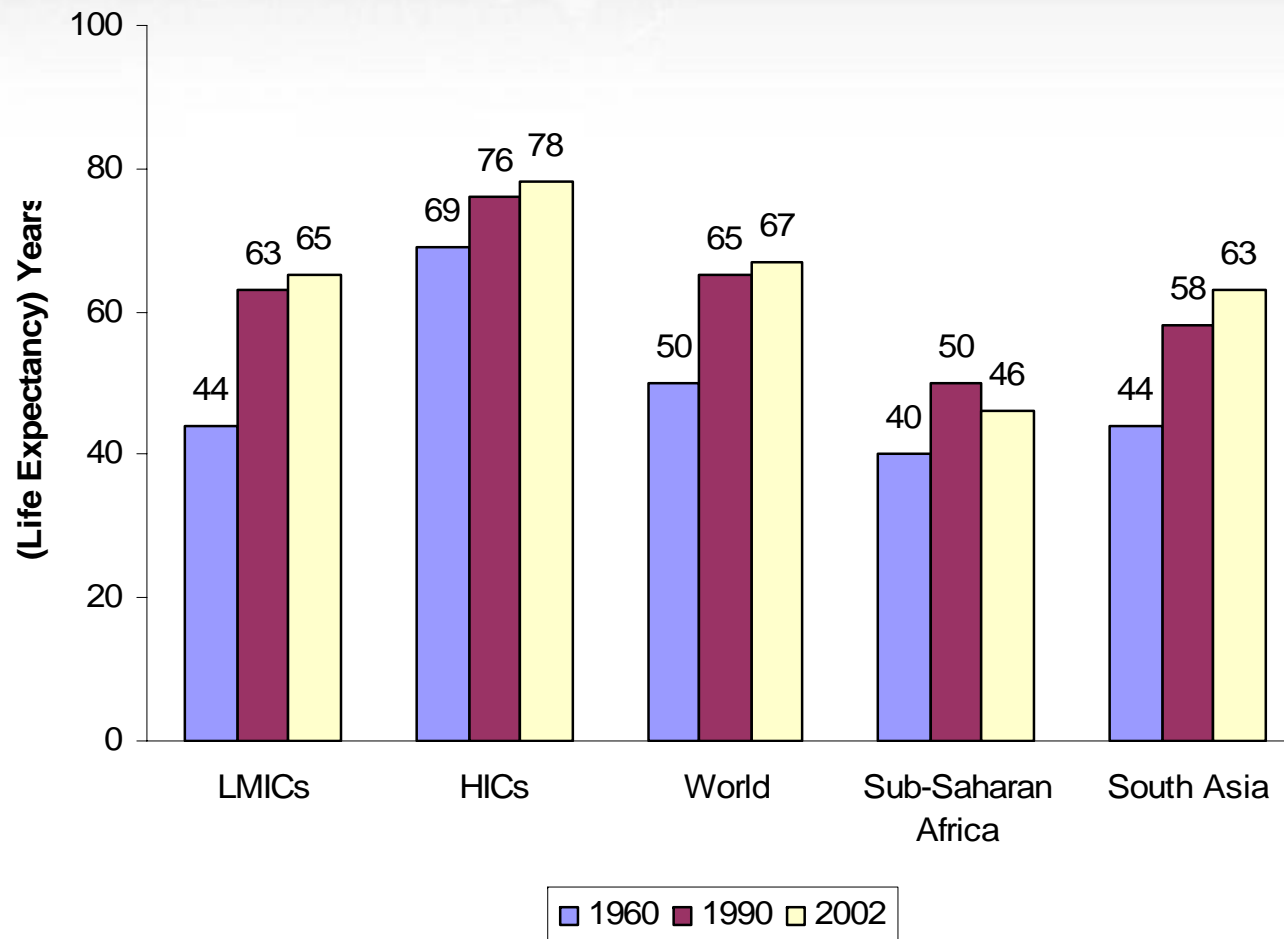
# Presentation Overview

- Rationale for Disease Control Priorities
- Objectives of the Project
- Burden of Disease
- Need for Cost-Effective Interventions
- Cost-Effectiveness Analysis Results
- Recommendations and Pearls

# Changes in Life Expectancy by World Bank Region



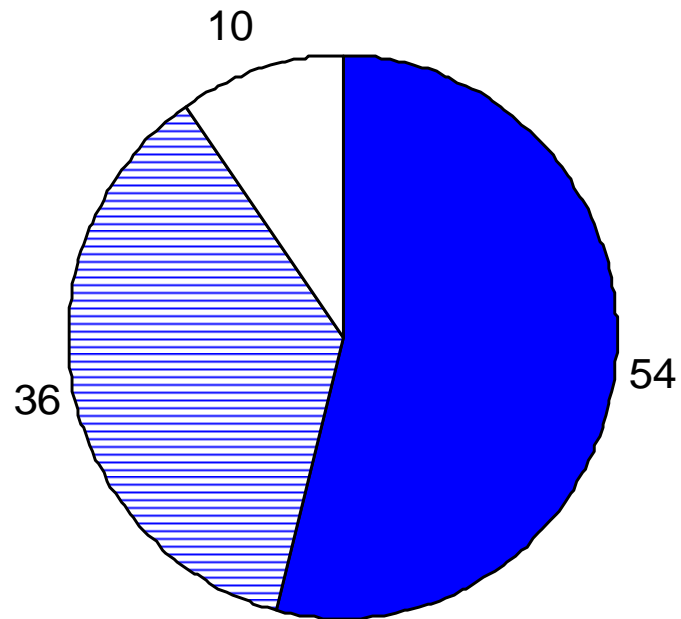
# In spite of improvement in the 20<sup>th</sup> century, progress has been uneven



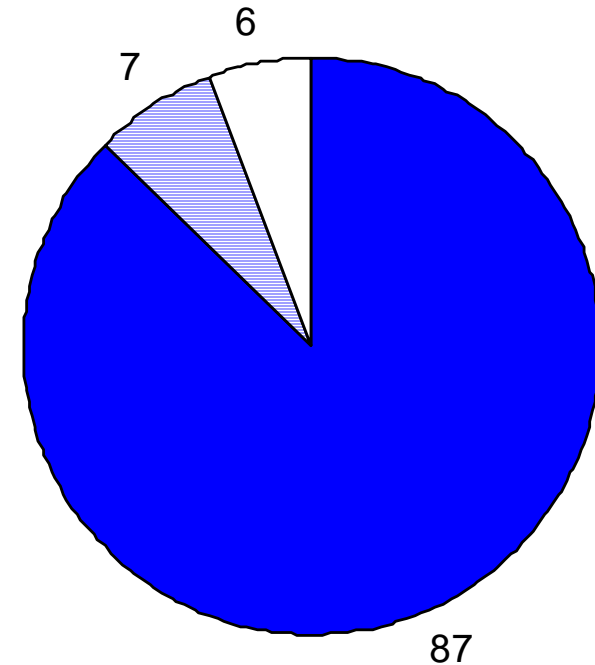
# Developing countries carry a double disease burden

Percentage of deaths by cause


Low- and Middle-income countries



High-income countries



■ non-communicable diseases  
▨ communicable diseases  
□ injuries



The 20<sup>th</sup> century witnessed the largest global increase in life expectancy in history.

Will the 21<sup>st</sup> century build on the successes of the last century, plateau, or will we see a retreat from the gains of the past?

# Will this be the century of disease?

Four challenges:

- HIV/AIDS
- Cardiovascular disease
- The persistence of high, but preventable levels of malaria, TB, diarrhea, and pneumonia
- Avian flu/emerging infections/pandemics



The Disease Control Priorities Project offers priorities for action that will lead to healthier and longer lives in developing countries.

# What is the DCPP?

DCPP is an alliance of organizations/partners designed to review, generate and disseminate information on how to improve population health in developing countries.

- Fogarty International Center, US National Institutes of Health
- World Bank
- World Health Organization
- Population Reference Bureau
- Supported by the Bill & Melinda Gates Foundation

# Objectives of DCPP (1)

Inform health sector decision-making in developing countries to decrease illness, disability, death, and economic burden by:

- Developing an evidence base to inform decision-making by:
  - Providing estimates of the cost-effectiveness and impact of single interventions and packages
  - Collaborating in defining disease burdens globally and regionally
  - Summarizing implementation experience in different regions and globally

## Objectives of DCPP (2)

- Communicating major findings
  - Suggesting the “best buys” and the “worst buys” in any given setting
  - Disseminating the results widely to multiple audiences
  - Stimulating national priority setting and program implementation

## The best health care solutions:

- Target major causes of death, disability and illness in developing countries;
- Are cost-effective; and
- Are available.

# How can DCP2 improve health globally?

- Helps countries choose the best health care investments.
- Recommends 10 **best health buys** that are highly cost-effective in many settings.
- Identifies health policy priorities for developing countries.
- Suggests changes to infrastructure (health systems, financing, policies, R&D) to maximize results.

# Burden of Disease (BOD)

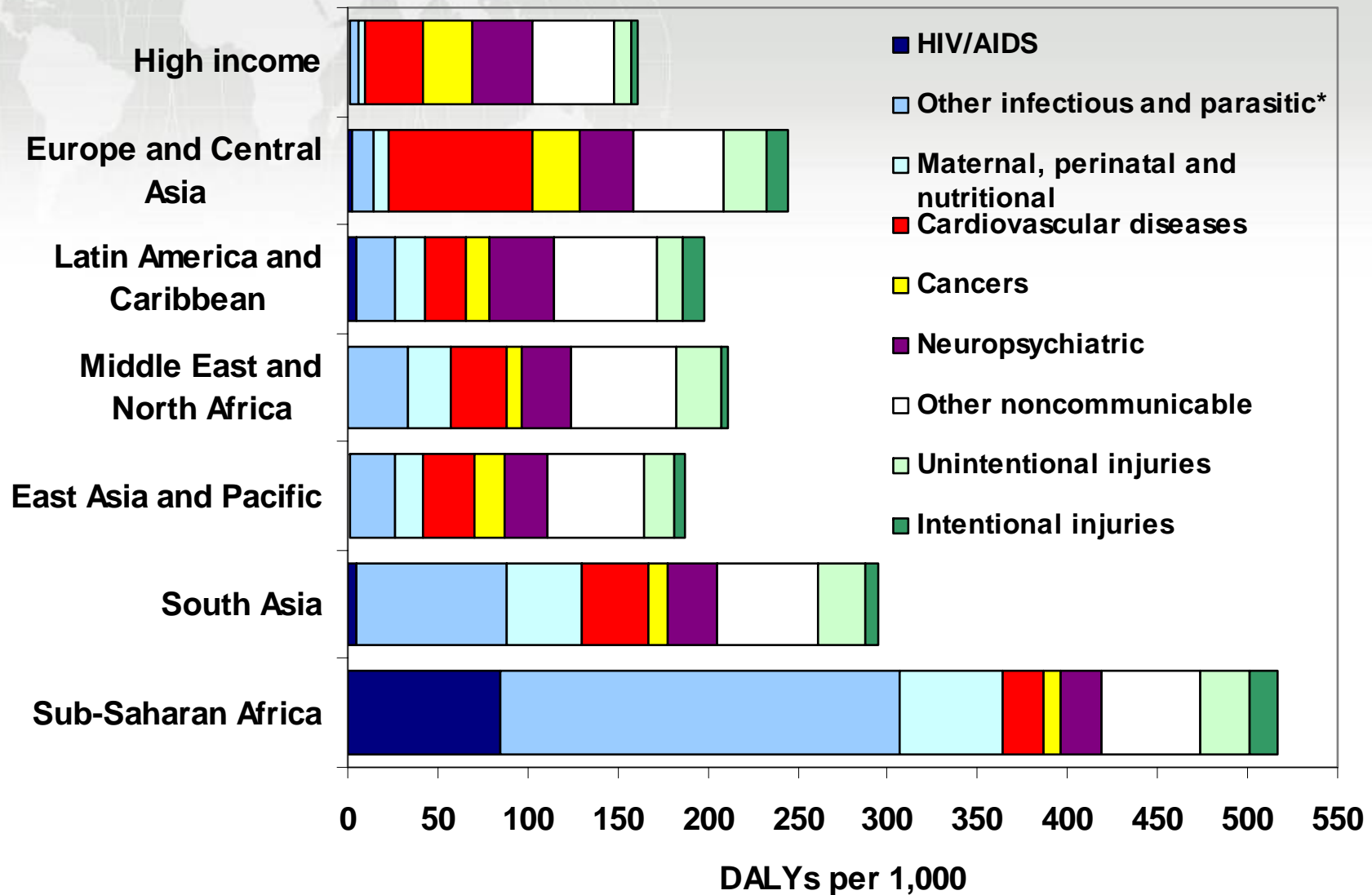
BOD analysis provides a standardized framework for integrating all available information on mortality, causes of death, individual health status, and condition-specific epidemiology to provide an overview of the levels of population health and the causes of loss of health

- Consistent, comprehensive descriptive epidemiology
- Common metric or summary measure (e.g. DALY), that allows for comparisons across diseases and interventions

## The DALY:

- Combines years of life lost to premature mortality and years spent with a disability or illness
- Provides a metric of disease impact (“burden of disease”) reflecting both mortality and morbidity
- For example, diabetes in high income countries comprises 2.1% of deaths and 2.8% of DALYs

# The cause distribution of burden of disease, by region, 2001



Source: Mathers, Lopez & Murray, Burden of Disease Volume, 2006.

# BOD and Comparative Risk Assessment (CRA)

- BOD reflects impact of illness and disability
- Risk factors tell us the causes behind disease and disability
- Comparative risk assessment shows potential gains in population health from reducing the risk exposures

# Global Burden of Disease Study 1990:

DALYs attributable to 10 selected risk factors

<u>Risk factor</u>	<u>Percent global total</u>
Malnutrition	16%
Poor water/sanitation	7%
Unsafe sex	4%
Alcohol	4%
Occupation	3%
Tobacco	3%
Hypertension	1%
Physical inactivity	1%
Illicit drugs	0.6%
Air pollution	0.5%



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# Intervention Cost-Effectiveness Summary of key messages

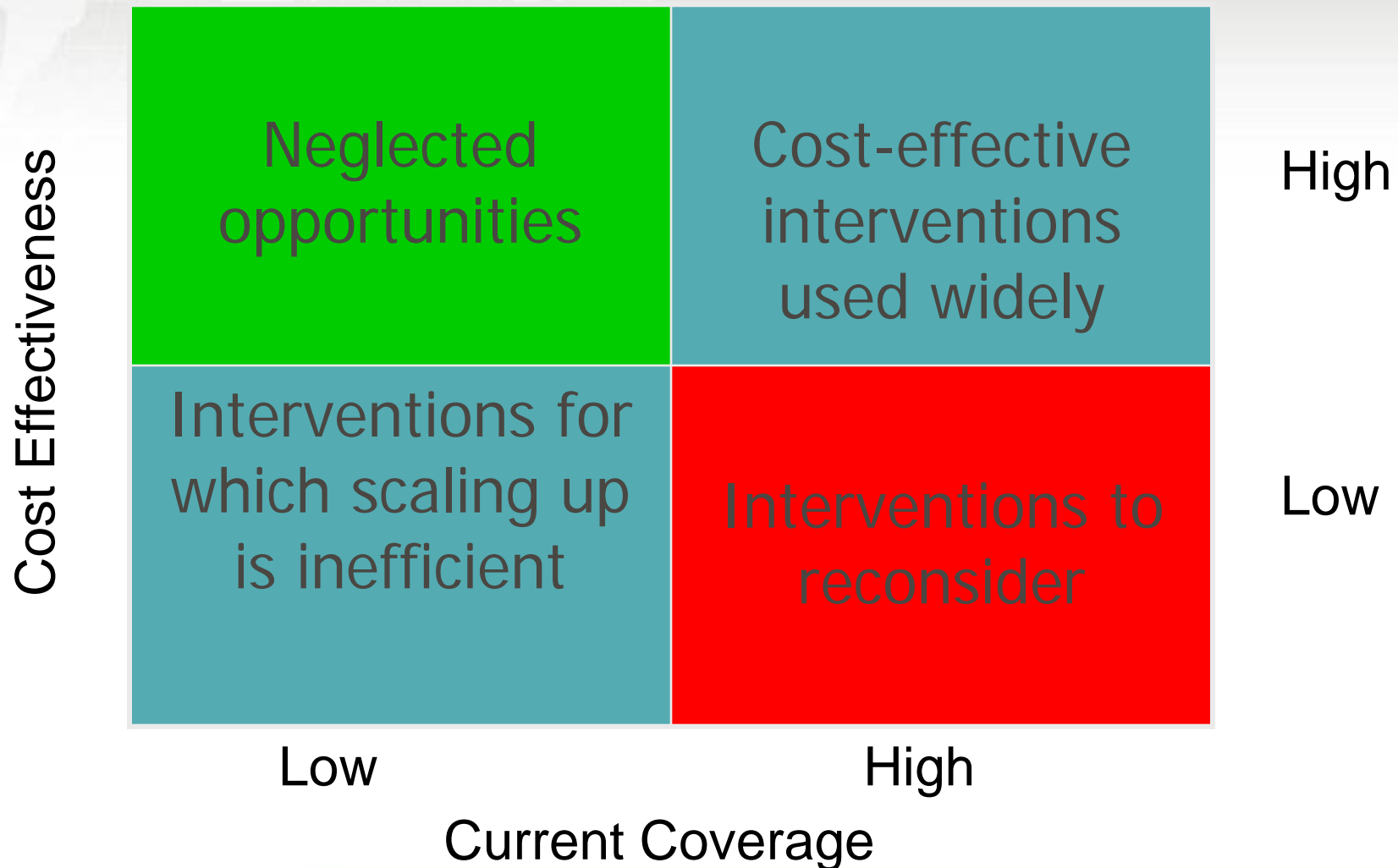
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## Objective: Improve Quality of Health Spending

- 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

# Identifying the Efficiency of Current and Potential Interventions



# Interventions Covered

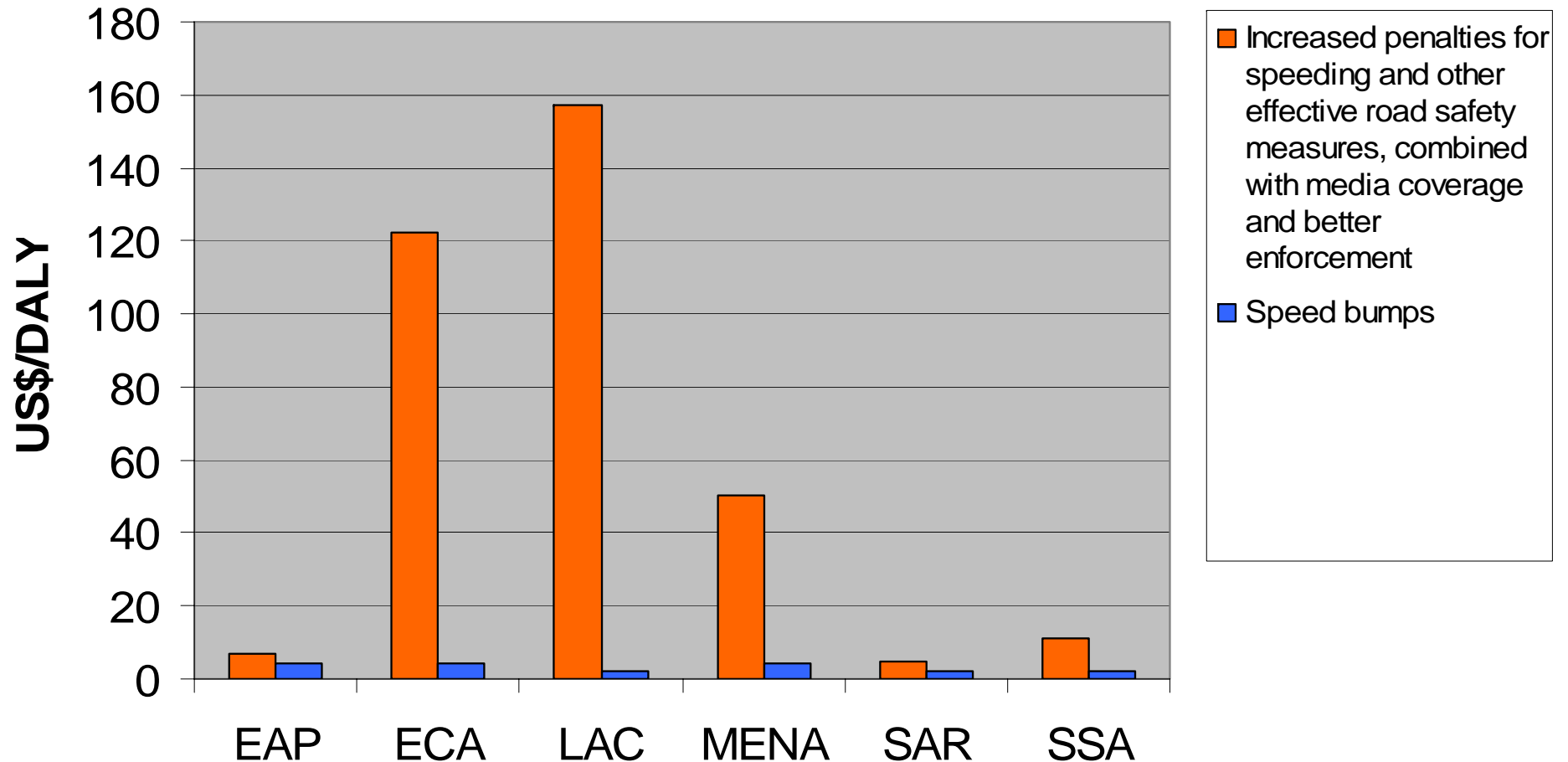
- Cost effectiveness of 257 interventions in \$/DALY averted (DCP1 had 68)
- Cost effectiveness of an additional 62 interventions using other metrics (26 in DCP1)
- Also provide information on
  - Cost-effectiveness by region
  - Target population
  - Personal versus population
  - Avertable burden
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

# Reduce Fatal and Disabling Injuries

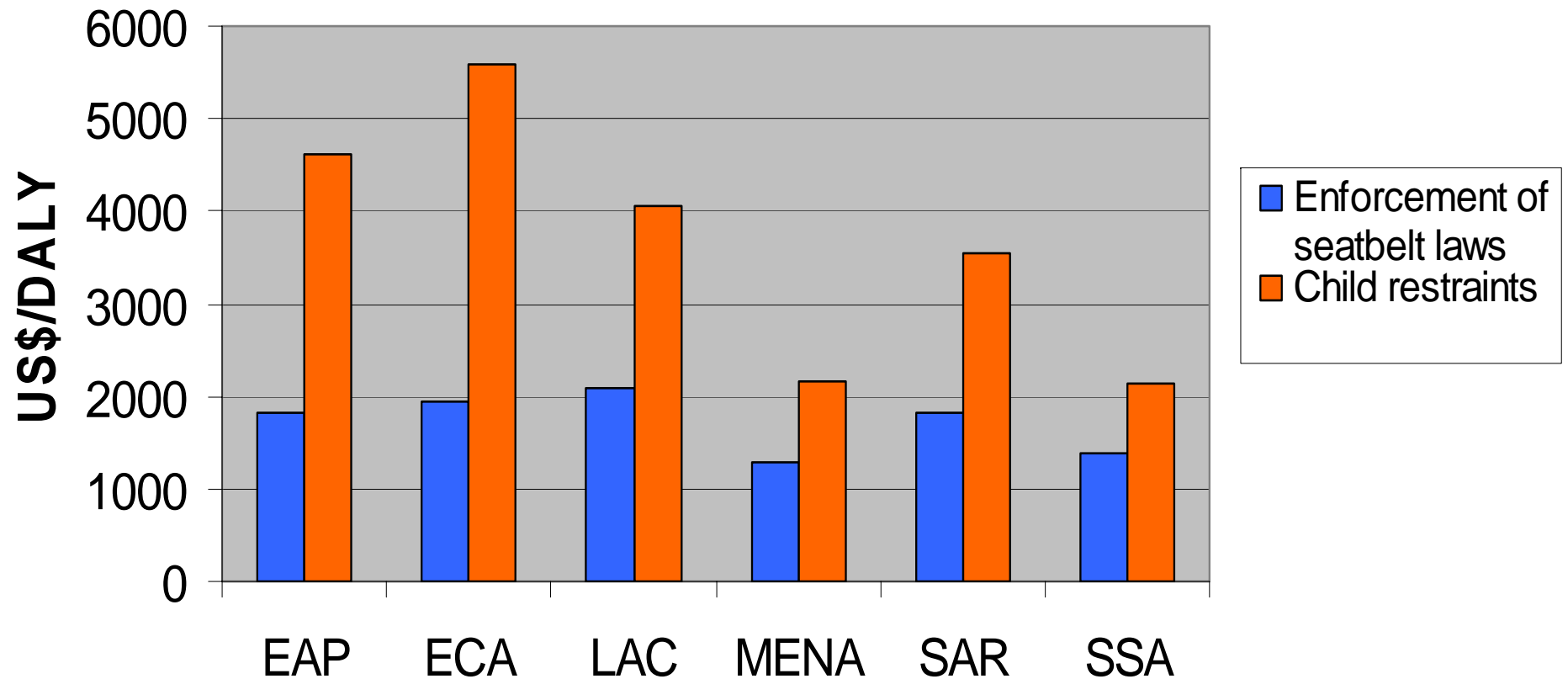
*Injuries and violence caused more than 5 million deaths in 2001, with an especially heavy toll on young men.*

- Install speed bumps at dangerous intersections.
- Increase penalties for speeding; awareness through media; and law enforcement.

# Traffic Accidents: Interventions to Reduce Injuries



# Traffic Accidents: Interventions to Reduce Injuries

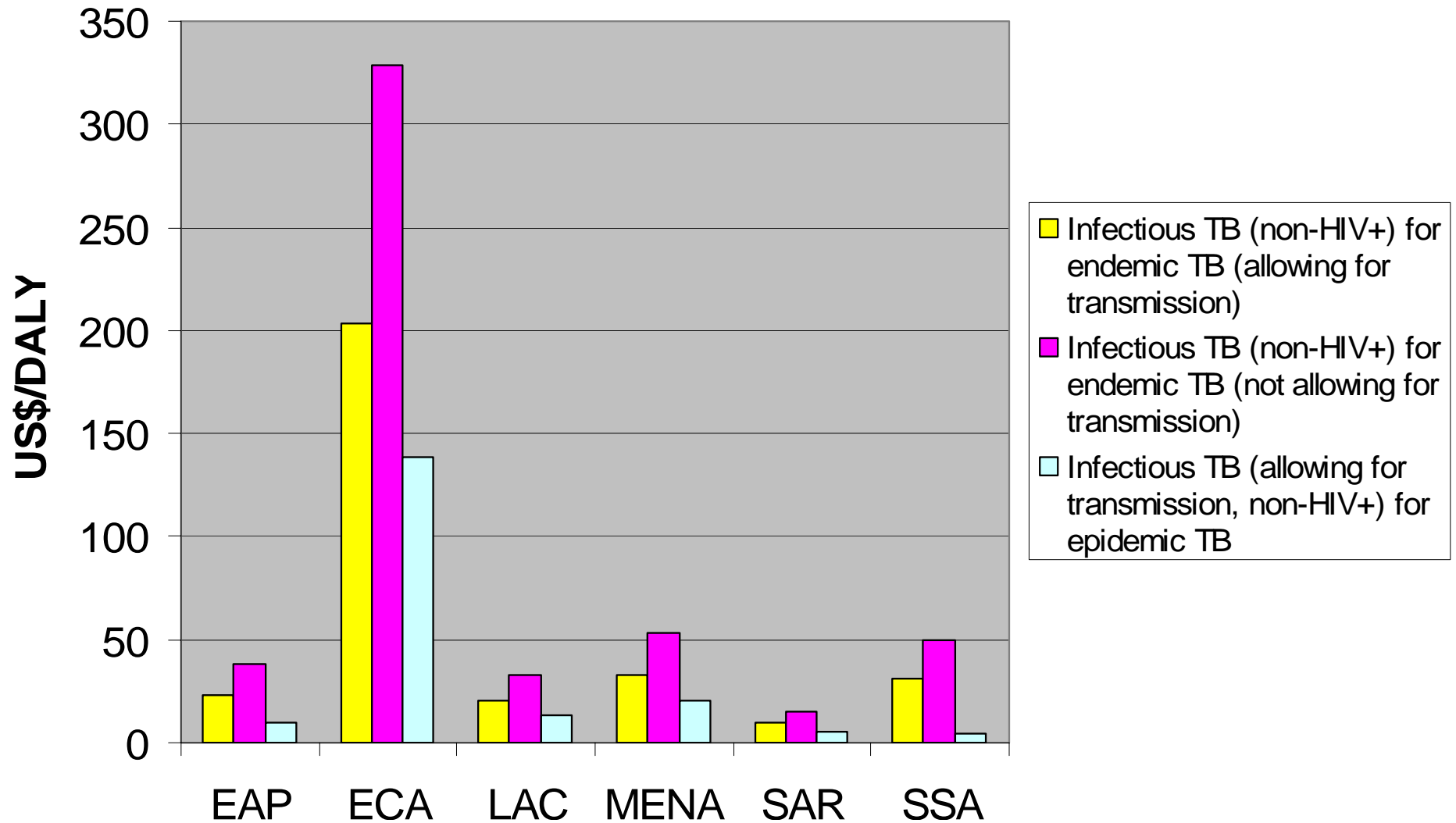


# Stop the Spread of Tuberculosis

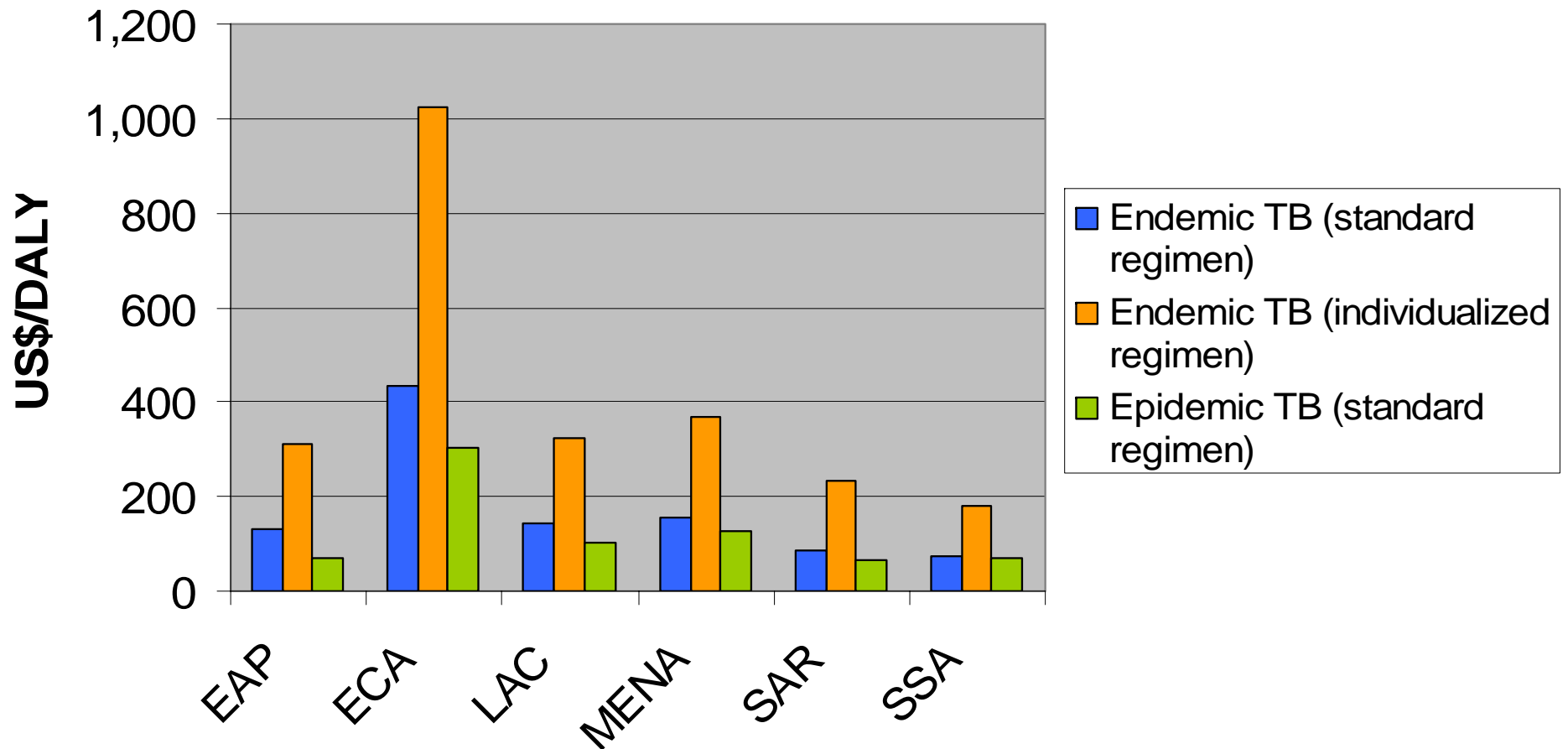
*Tuberculosis (TB) is spreading into new populations  
and resisting treatment*

- **Treat active TB cases with short-course chemotherapy.**
- Increase case detection.
- Manage multidrug resistant TB with new drugs and drug combinations.

# Tuberculosis: Short-course Chemotherapy



# Tuberculosis: Management of Drug Resistance



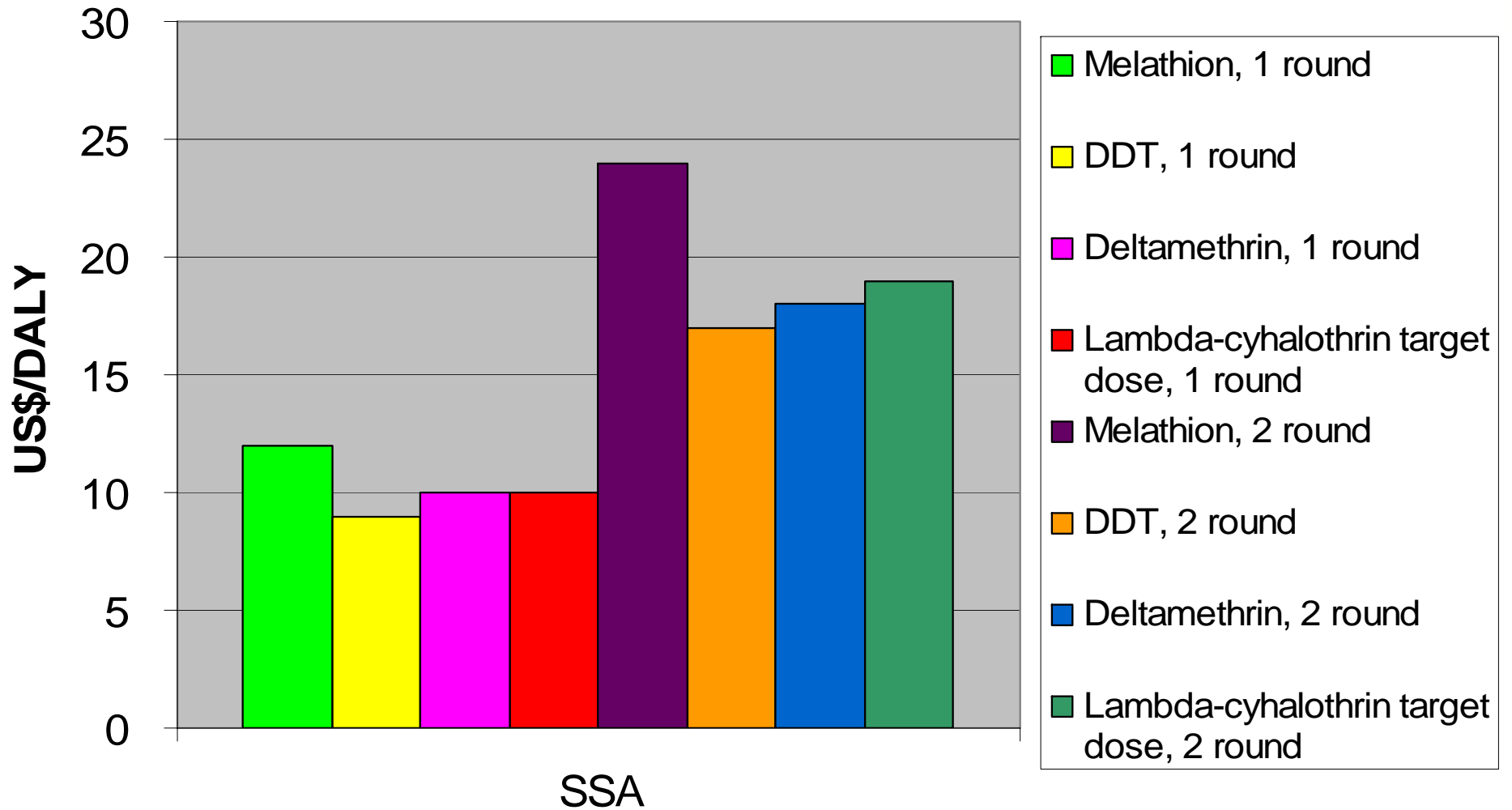


# Control Malaria

*Malaria claims the lives of 1 million children yearly, and it threatens nearly one-half of the world's population.*

- Provide universal access to insecticide-treated nets in areas where malaria is endemic.
- Expand intermittent preventive treatment for pregnant women.
- Subsidize artemisinin combination therapy to ensure effective treatment.

# Malaria: Residual Household Spraying

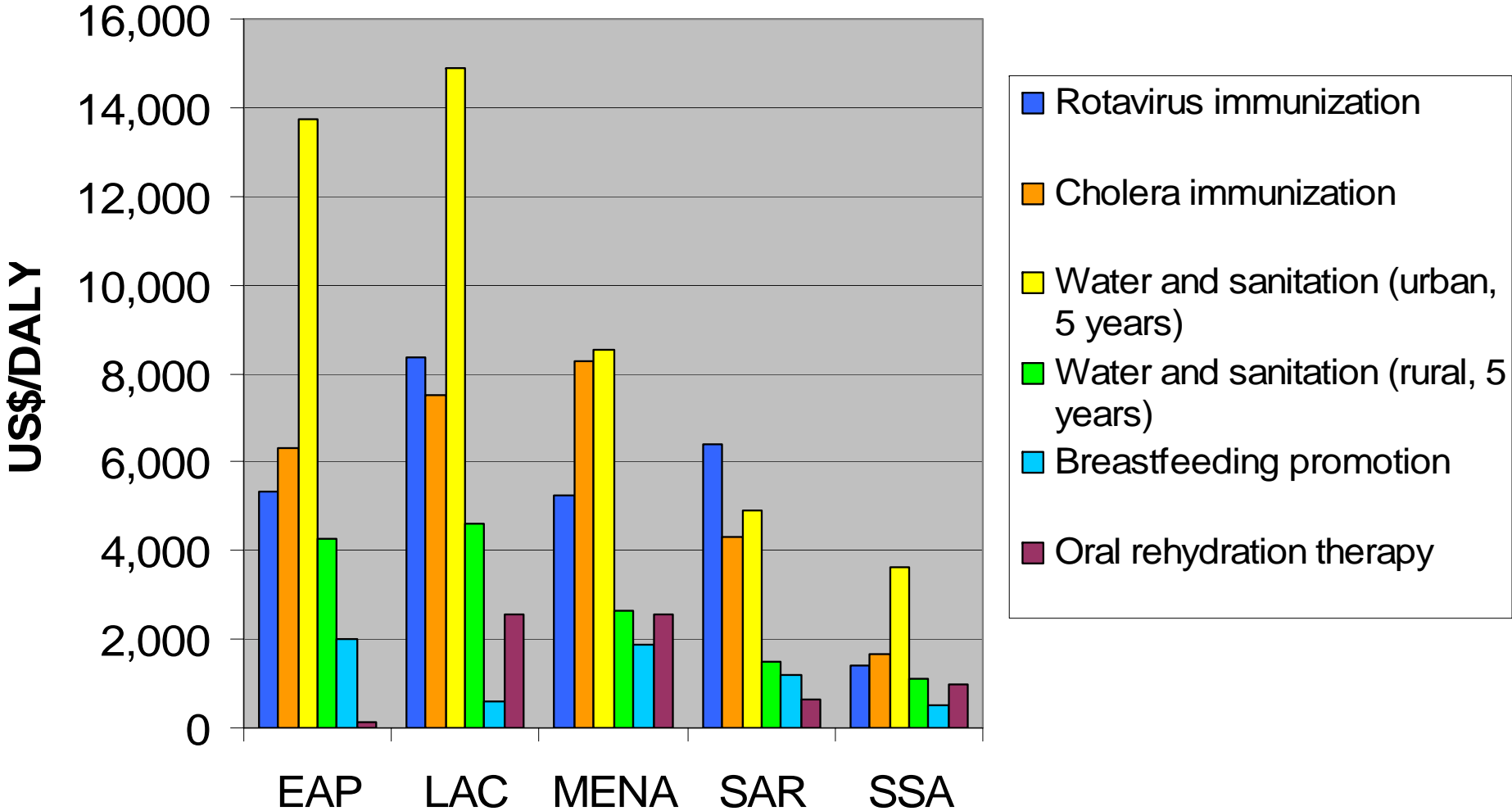


# Ensure Healthier Children

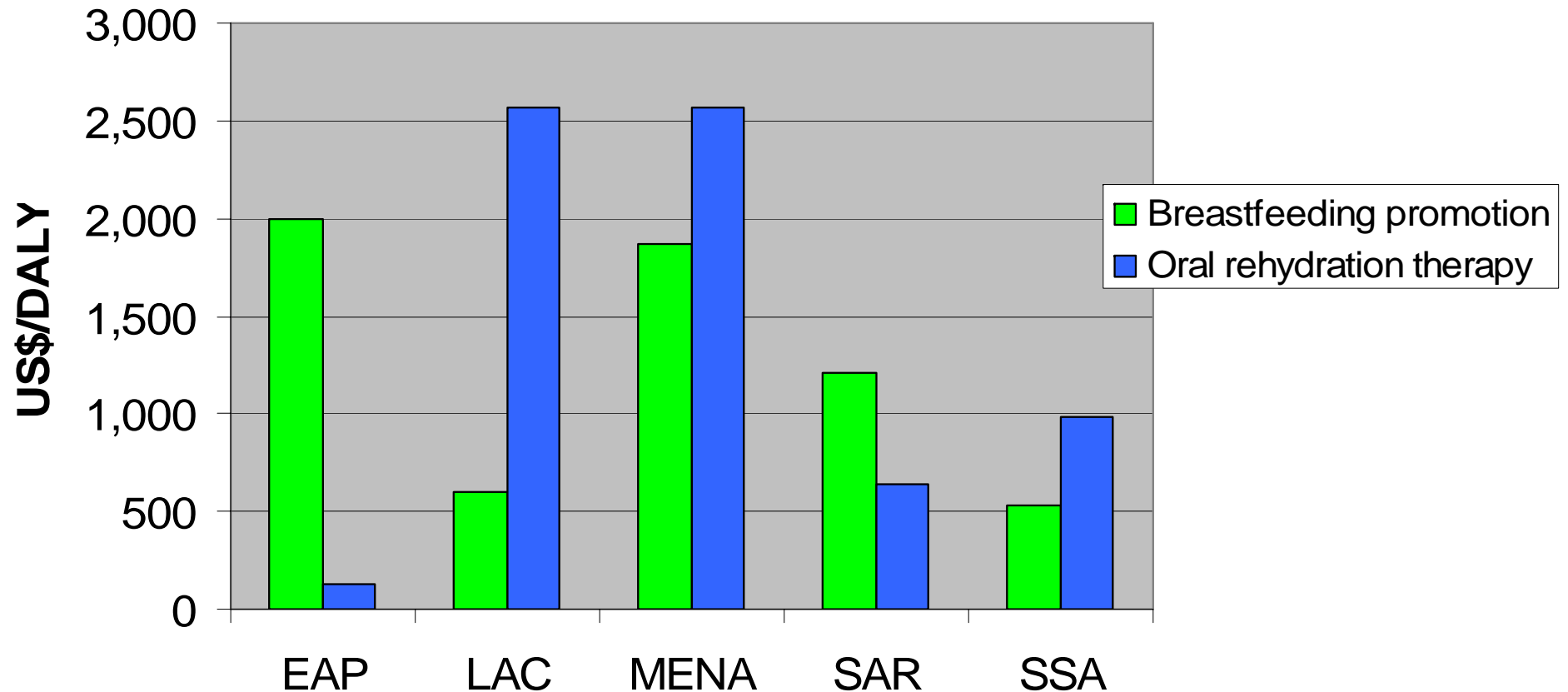
*More than 13 million children (including stillbirths) die each year in developing countries.*

- Keep newborns dry, warm and clean.
- Vaccinate children against major childhood killers.
- Monitor children's health to prevent and treat childhood pneumonia, diarrhea, and malaria.

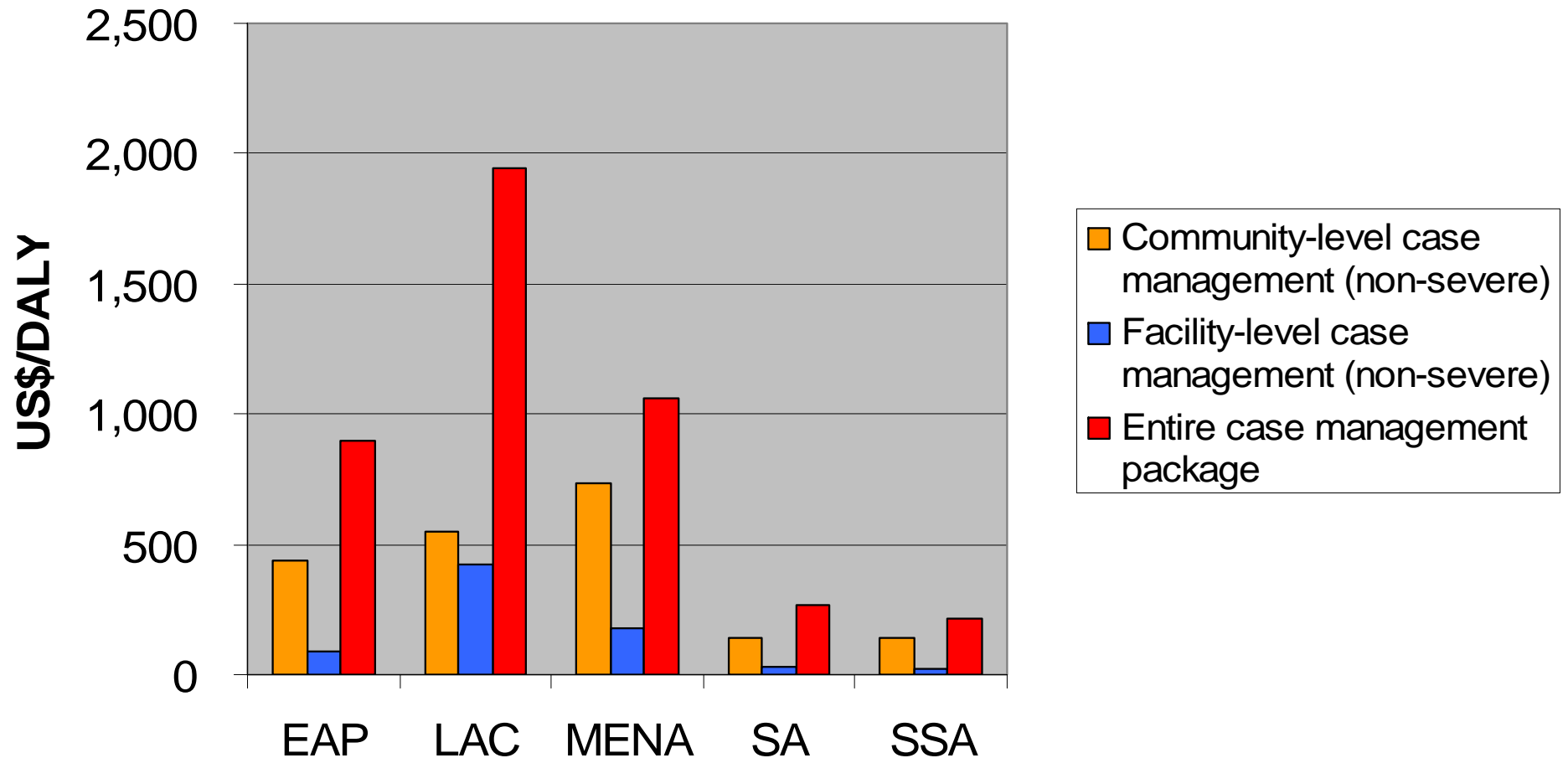
# Diarrheal Disease



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



# Childhood Illness: Interventions for Acute Respiratory Infections



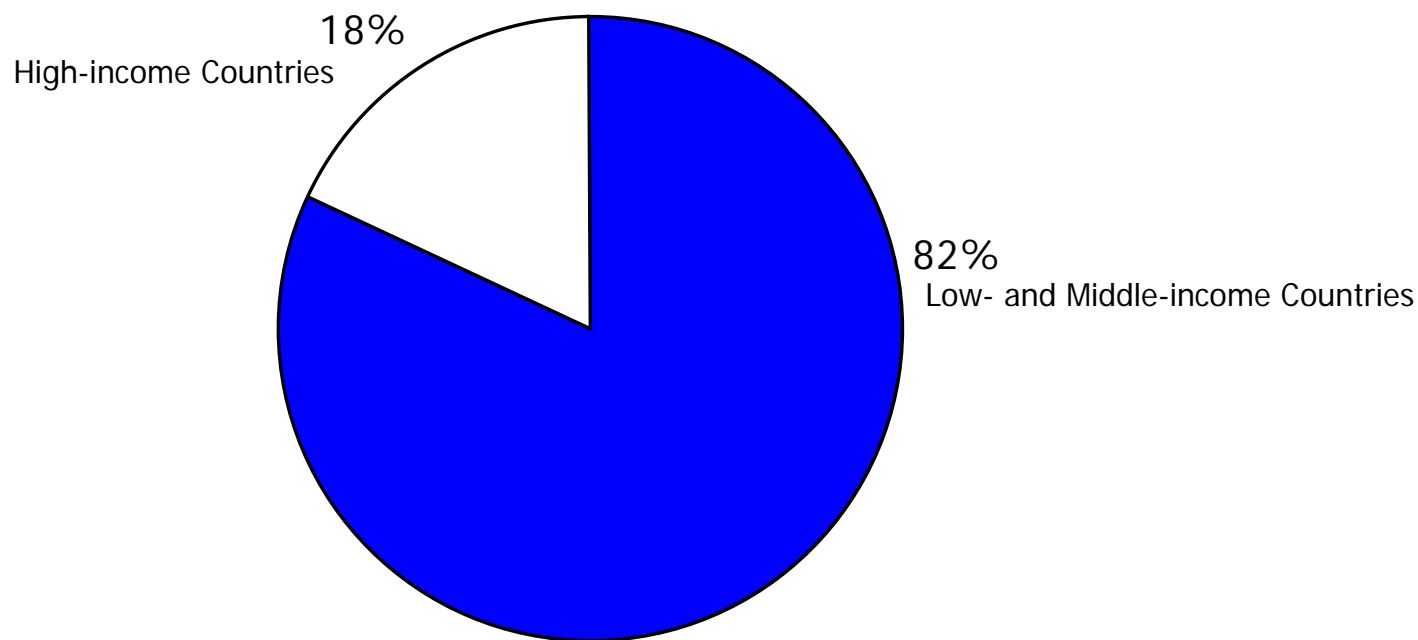
# Combat Tobacco Use

*Tobacco-related diseases are the fastest-growing cause of disease and disability in developing countries.*

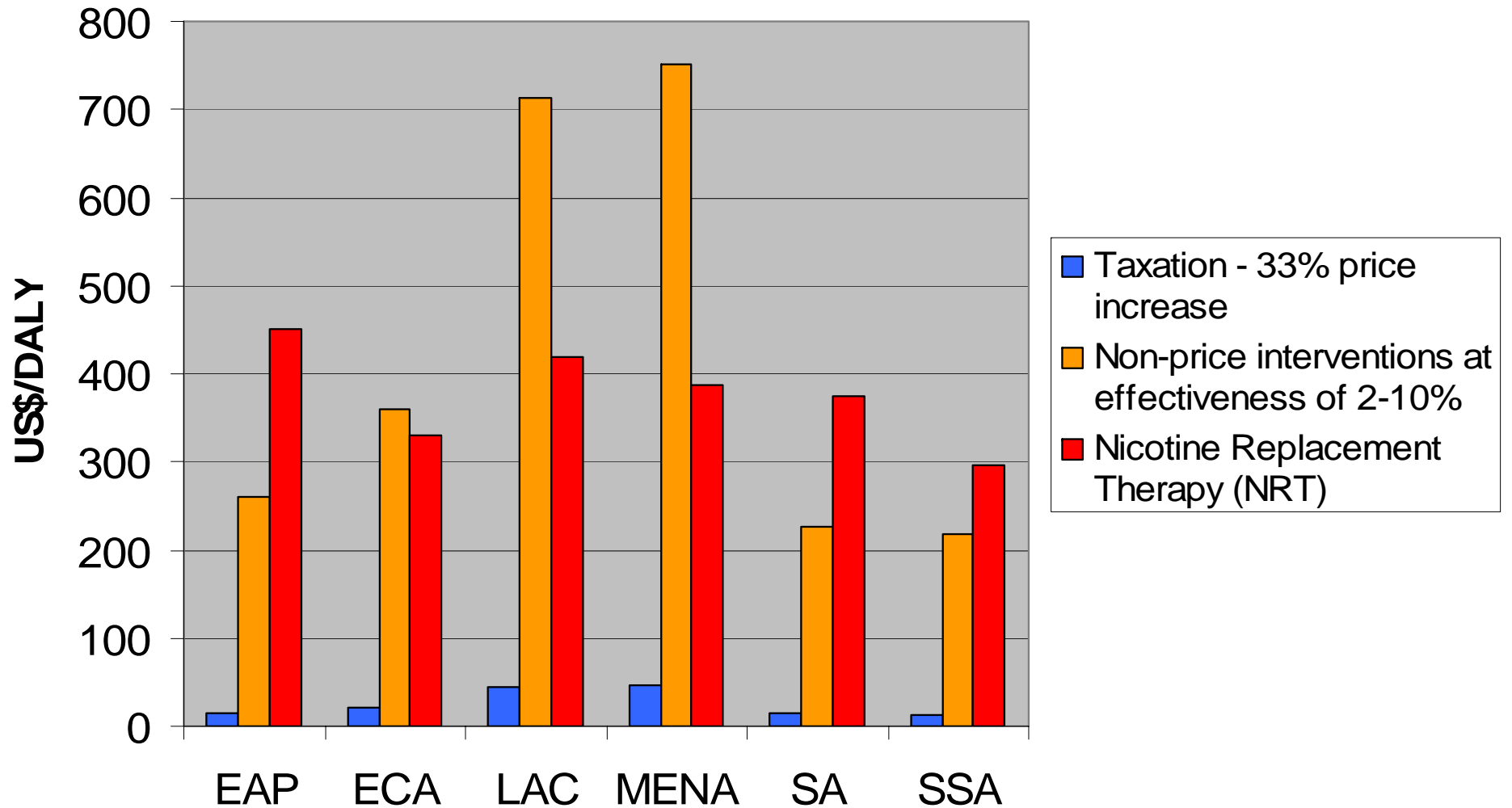
- Tax tobacco products to increase consumers' costs by at least 33% to curb smoking.
- Restrict smoking in public places and workplaces.
- Provide nicotine replacement therapy and other cessation tools.
- Ban tobacco advertising.

Most smokers now live in low- and middle-income countries.

Where Smokers Live



# Tobacco Use and Addiction



# How Much Health Will a Million Dollars Buy?

## Preventing and Treating Non-Communicable Disease

### Service or Intervention

### DALYs Averted (\$ per DALY)

- |   |                           |
|---|---------------------------|
| • Taxation of tobacco products  | 24,000-330,000 (\$3-50)   |
| • Treatment of MI or heart attacks with an inexpensive set of drugs             | 40,000-100,000 (\$10-25)  |
| • Treatment of MI with inexpensive drugs plus streptokinase                     | 1,300-1,600 (\$600-750)   |
| • Lifelong treatment of heart attack and stroke survivors with daily 'polypill' | 1,000-1,400 (\$700-1,000) |
| • Coronary artery bypass grafting in specific identifiable high risk cases      | <40 (>\$25,000)           |
| • Bypass surgery for less severe coronary artery disease                        | Very small (Very high)    |

## To get the best results:

- Choose interventions with low cost and high impact
- Strengthen health systems
- Engage global partners and donors
- Accelerate research and development

## “Pearls” for Your Consideration

- You don't have to be rich to be healthy
- Policymakers can vastly improve quality of health spending by targeting interventions that are proven to be cost-effective
- Other?



# Disease Control Priorities in Developing Countries

SECOND EDITION

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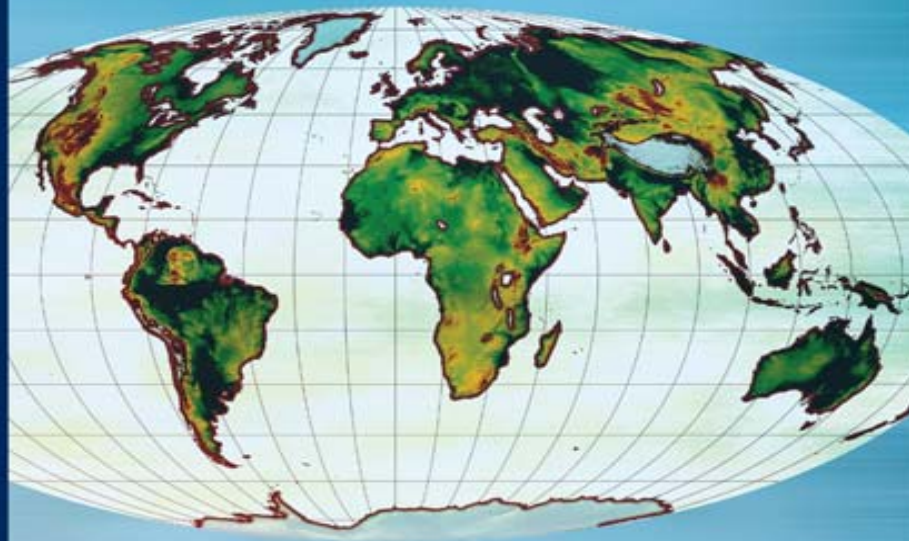
Published April  
2006, Oxford  
University Press.



# Global Burden of Disease and Risk Factors

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# Priorities in Health



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