



***Innovative Health Impacts:  
Result Based Financing to Promote  
Clean Cookstoves***

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# Presentation Overview

- HAP & Health
- Measuring disease burden from home energy
- Why DALYs?

# Household Air Pollution (HAP) & Impacts on Health



## Diseases attributable HAP exposure:

- Childhood pneumonia (< 5yro)
- Chronic obstructive pulmonary disease
- Cerebrovascular disease (i.e. stroke)
- Ischaemic heart disease
- Lung cancer
- Cataract (DALYs only)

# Burden of disease: how to measure?

*Need of summary measure of population health that combines:*

**Mortality + Disability**

**And which allows to address the following questions:**

- How does a death at age 20 compare with a death at age 70?
- How do 200 respiratory infections compare to 300 cases of infectious diarrhoea?

# DISABILITY-ADJUSTED LIFE YEAR (DALY)

## WHO Definition:

The disability-adjusted life year (DALY) extends the concept of potential years of life lost due to premature death to include equivalent years of "healthy" life lost by virtue of being in states of poor health or disability (3). One DALY can be thought of as one lost year of "healthy" life, and the burden of disease can be thought of as a measurement of the gap between current health status and an ideal situation where everyone lives into old age, free of disease and disability.

# Summary measure of population health: DALY

## *Disability-Adjusted Life Year*

$$DALY = YLL + YLD$$

*years of life lost because of premature death (YLLs)*

*years of life lived with disability (YLDs)*

$$Burden = Mortality + Disability$$

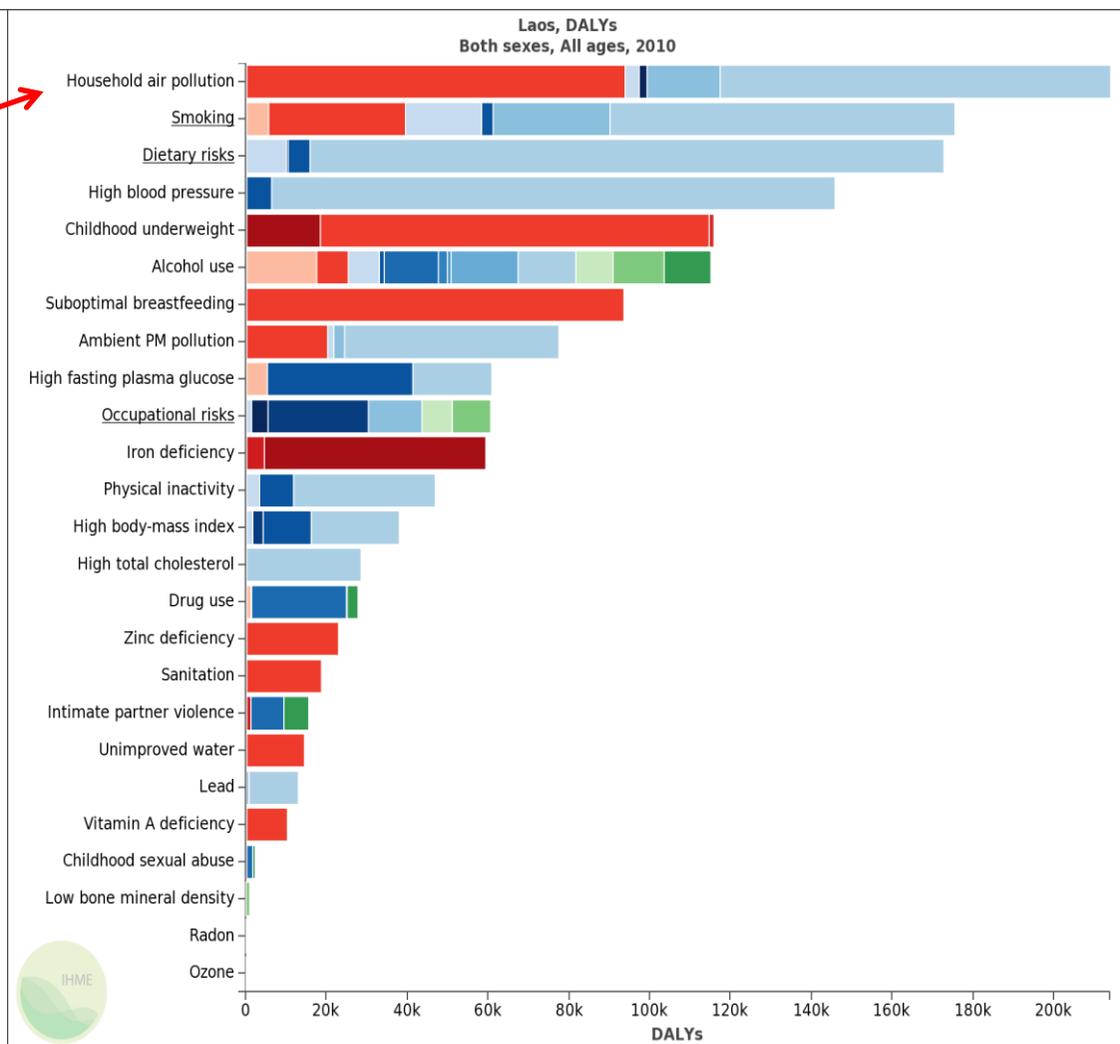
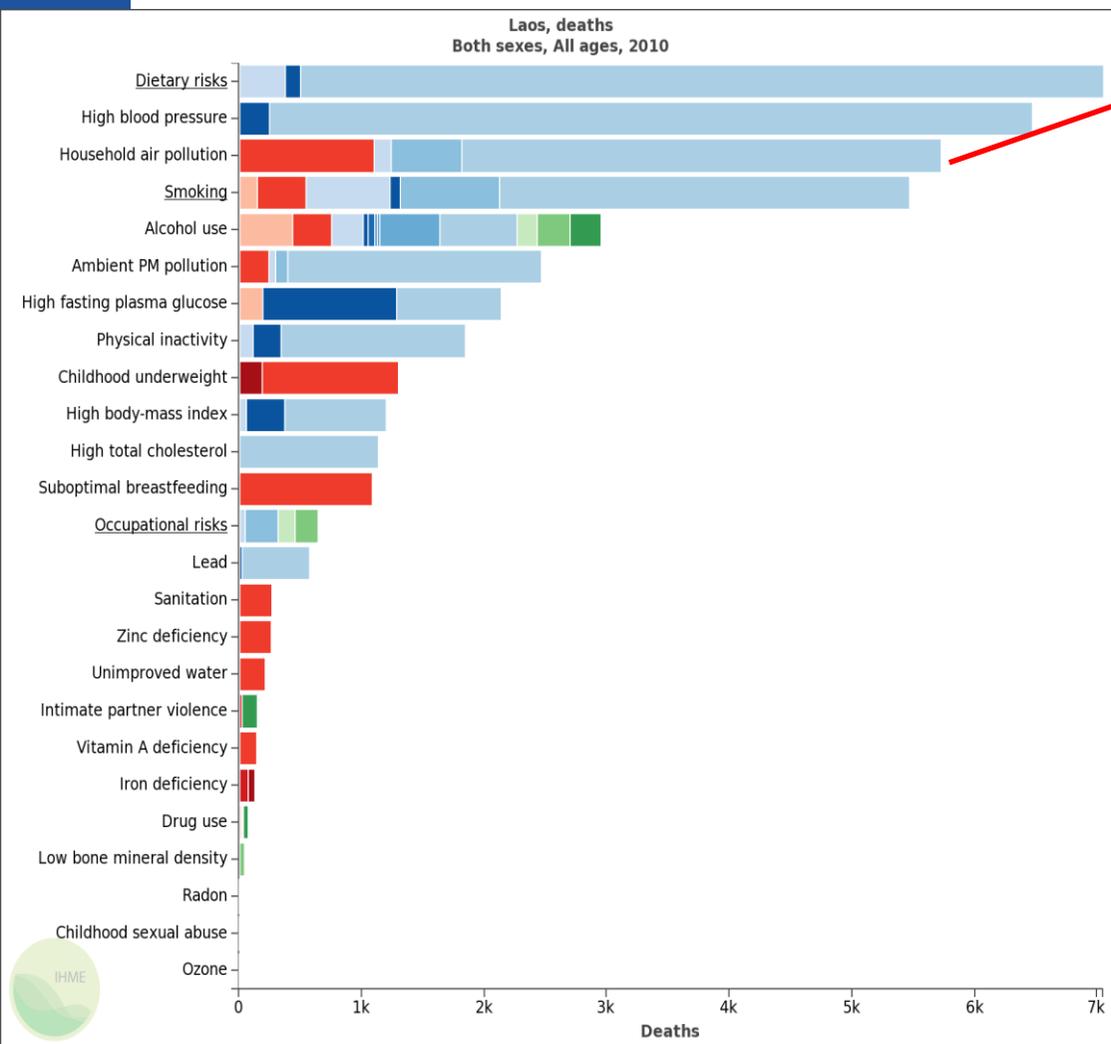
*one DALY = one lost year of healthy life*

*Death at age 50 = 30 DALYs*

*Mild mental retardation due to lead at birth = 30 DALYs*



# Deaths vs. DALYs in Laos



# Why use DALYs?

- More inclusive measure of population health that includes both mortality & morbidity
- Quantifiable & reflects epidemiological shifts in disease
- Comparability: useful for assessing & prioritizing public health policy and intervention options
- Some examples of being used previously to assess/prioritize public health interventions (e.g. water quality in both developed & developing countries)

# Things to consider moving forward...

- Standardized measurements for estimating DALYs from a HAP intervention
- Verification/certification of DALY credits.
- Buy-in from other sectors and stakeholders
- Availability/feasibility of local interventions to meet maximum health benefits
- Others...

# THANK YOU AND ANY QUESTIONS?

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