



**Asia-Pacific  
Economic Cooperation**

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## **Measuring the Returns to Public Investment in Health**

Purpose: Information  
Submitted by: World Bank Group



**Seventh High Level Meeting on Health and  
Economy  
Ho Chi Minh City, Viet Nam  
23-24 August 2017**

# Measuring the returns to public investment in health

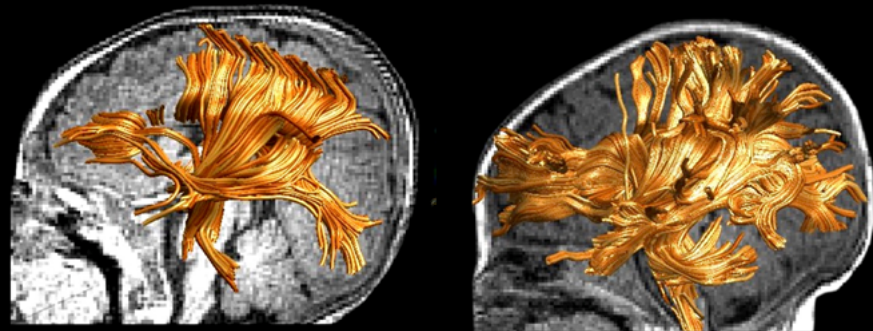
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APEC 2017 Health and the Economy meeting, Ho Chi Minh City

23 August 2017

The returns to investing in health  
go well beyond health



# Undernutrition

Impact is beyond physical => cognitive development => schooling outcomes

Reduced physical productivity and cognitive capacity impacts on individual – and societal – productivity and income

**Wages and poverty:** In Guatemala, adults who were stunted as children (age 3) had wages that were 51% lower (men) and household income (per capita consumption) that was 66% lower than those who were not stunted (Hoddinott et al. 2011)

**Economy-wide:** 3% of GDP in poor countries , or even up to 12% GDP (World Bank 2006; Copenhagen Consensus 2011)

# Smoking



## Health

- Smokers are 2-4 times more likely to get coronary heart **disease**; 2 to 4 times more likely to have a stroke; and about 25 times to get lung cancer (CDC 2014)
- On average, smokers lose a decade of their **life** compared to non-smokers (Jha et al.2013)
- Globally, smoking causes close to 6 million **deaths** per year (National Cancer Institute and WHO 2017)

## Broader economic

**Health care expenditure** of US\$422 billion annually representing 6% of global spending on health

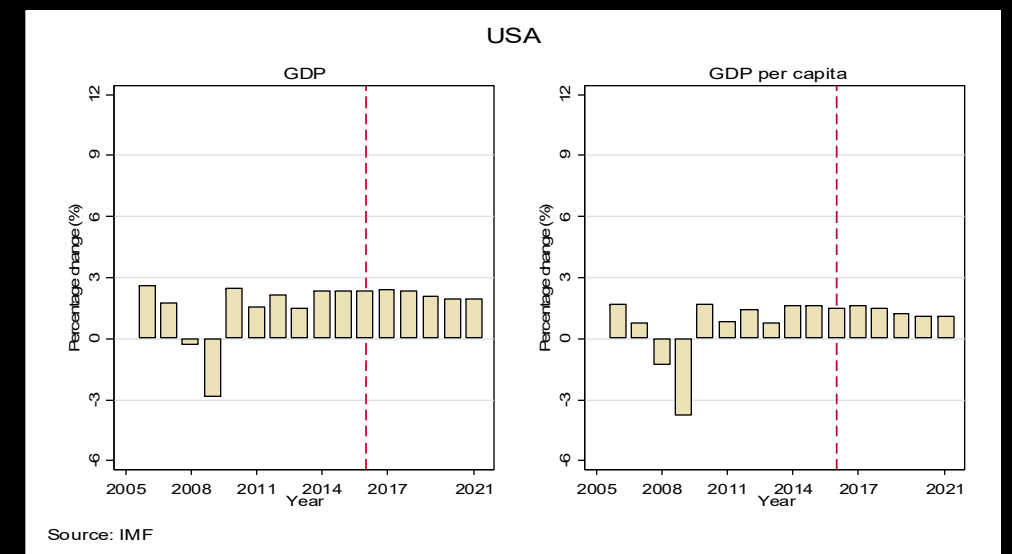
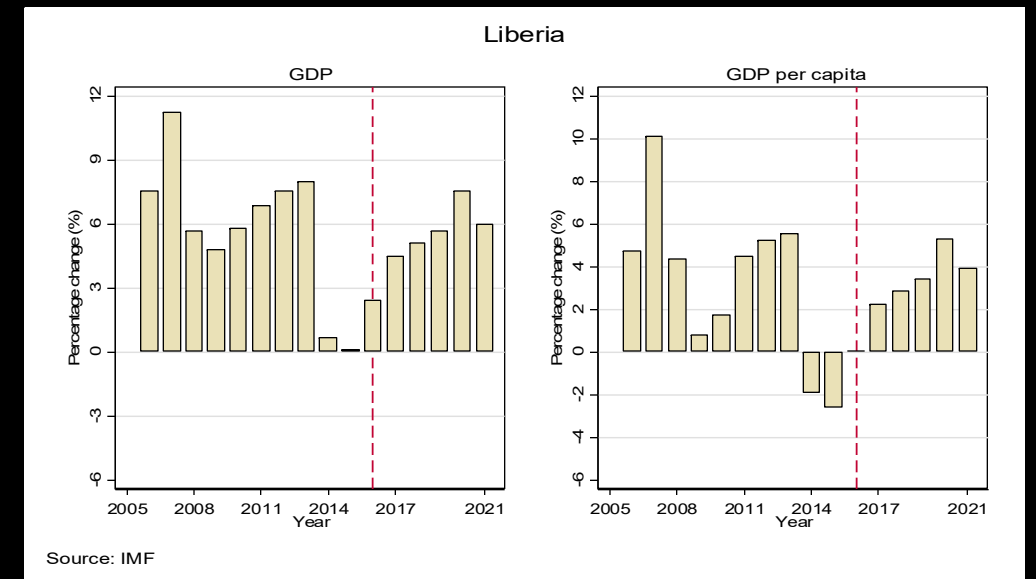
**Add the plus productivity losses** from death and disability amounts to more than US\$ 1.4 trillion per year – equivalent to around 1.8% of global annual GDP

( National Cancer Institute and WHO, 2017)



# Pandemic preparedness

- Recent Ebola outbreak infected 0.2% of the population of Liberia, 0.25% of the population of Sierra Leone, and less than 0.05% of the population of Guinea, **with 11,287 total deaths.**
- The overall economic impact of the Ebola crisis on Guinea, Liberia, and Sierra Leone has been estimated at **\$2.8 billion** (\$600 million for Guinea, \$300 million for Liberia, and \$1.9 billion for Sierra Leone (World Bank 2016)



We know what works and the costs of these interventions can be estimated to find the most cost-effective options

# Estimates of taking nutrition “best-buy” interventions to scale in Kenya

Intervention	Unit cost (US\$)
1. Promotion of good infant and young child nutrition and hygiene practices	\$6.90
2. Vitamin A supplementation	\$0.44
3. Therapeutic zinc supplementation with ORS	\$1.34
5. Deworming	\$0.33
6. Iron-folic acid supplementation for pregnant women	\$2.26
9. Public provision of complementary food for prevention of moderate acute malnutrition	\$47.99
10. Treatment of severe acute malnutrition	\$83.32

Scale-up scenario	Annual additional investment (US\$, millions)	Lives saved	DALYs averted	Cost per DALY averted (US\$) <sup>a</sup>
<b>Scenario:</b>				
Scale up 10 cost-effective interventions nationwide	61	4,283	375,076	181
<b>Alternative scenario:</b>				
Scale up 10 cost-effective interventions in 37 high burden counties	48	3,368	294,966	179



# Combating smoking in the USA and China



According to the **USA's** CDC (June, 2017), what works is:

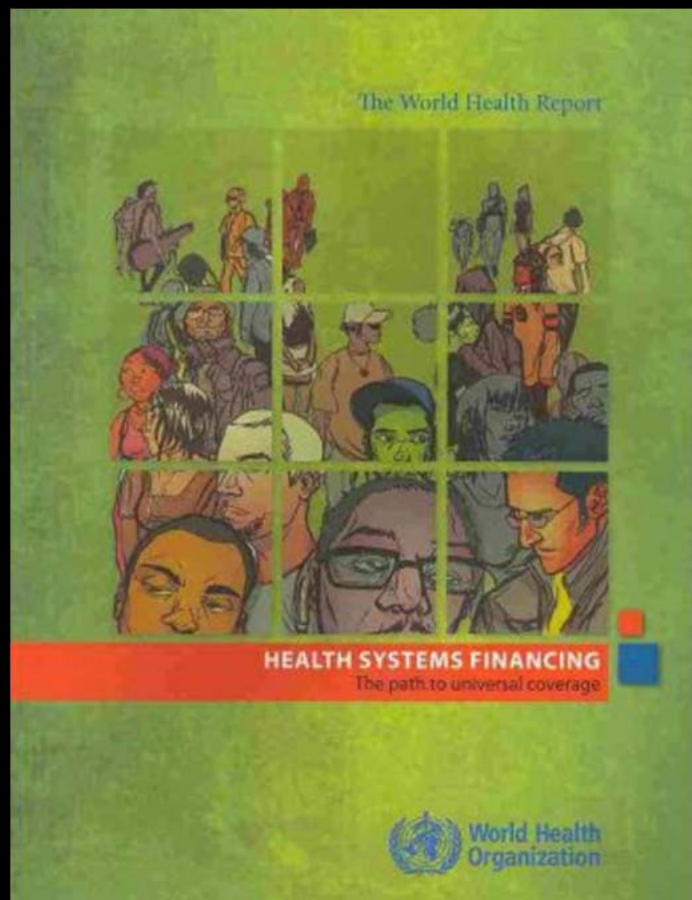
1. Mass media campaigns : US\$213 per life year saved
2. **Increasing the price of tobacco by 20%:** US\$0.14 - \$90.02 per person per year in health care cost savings
3. Smoke-free policies: Nationwide smoke-free policies would cost US\$ \$700 - \$1,297 per person current not covered

## 50% rise in tobacco price from tax increases in China

- prevents 20 million deaths + generates extra \$20 billion/y in next 50 y
- additional tax revenue would fall over time **but** would be higher than current levels even after 50 y
- largest share of life-years gained is in bottom income quintile

Not all investments generate  
good returns

# Efficiency: getting more value-for-money out of health spending



A lot of health spending is being wasted, we have a fair idea what the sources of inefficiency are, and the magnitudes can be measured

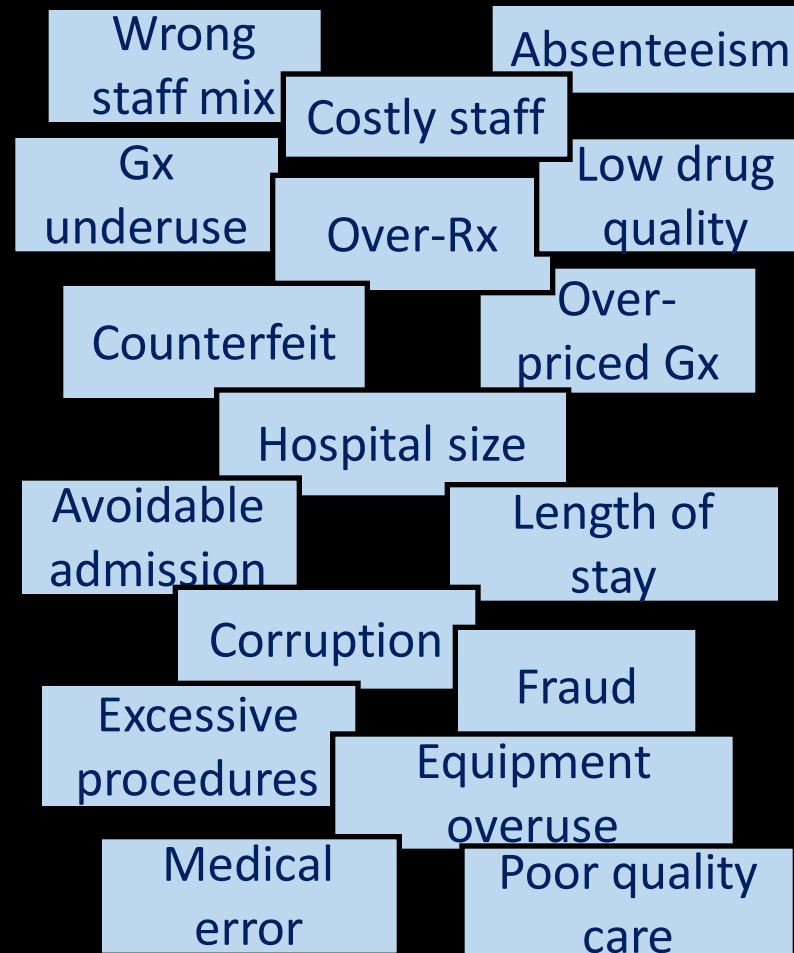
**Total health spending**

■ Share of waste

20-40%

60-80%

**Sources of inefficiency**



**Potential value – LICs and LMICs<sup>1</sup>, USD**

<b>Human resources</b>	\$ 20 – 38 Bn
<b>Medicine</b>	\$ 7 – 13 Bn
<b>Hospitals</b>	\$ 12 – 27 Bn
<b>Leakages</b>	\$ 13 – 27 Bn

SOURCE: “Tackling Wasteful Spending on Health” OECD 2017, “Improving health system efficiency as a means of moving towards universal coverage” World Health Report 2010

1. Approximated using average estimates of potential efficiency savings (% of total health spending) for LICs and MICs

# Efficiency is about investing in the **right** thing

Efficiency is about:

1. **Doing the right things**, i.e. allocating resources to things that get best health outcomes (allocative efficiency)
2. **Doing things right**, i.e. achieving maximum outputs for a given level of inputs (technical efficiency)

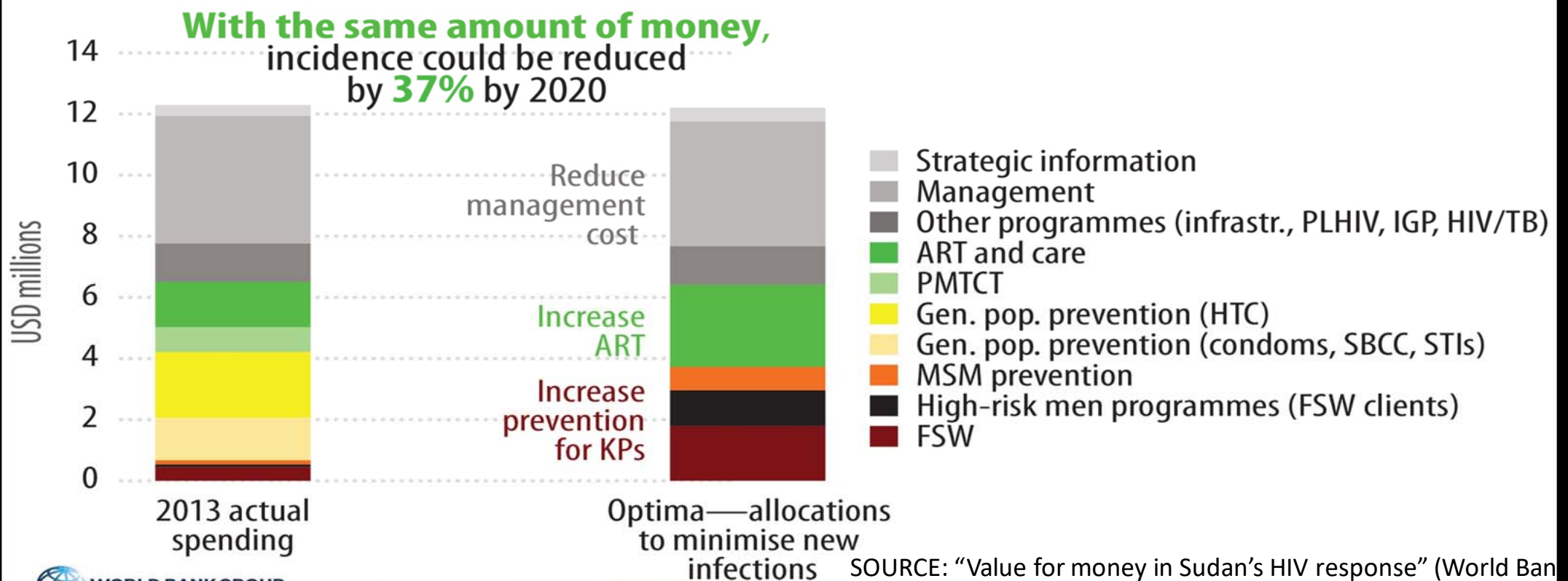
*... the “**right** interventions in the **right** mixes for the **right** people in the **right** places can transform the impact of health investments*

*Jim Kim  
World Bank president*

## Efficiency is not about **cutting budgets**

# Modelling efficiency gains through optimizing the **right mix** of interventions

Goal: optimized allocations to minimize new HIV infections between 2014 and 2020, at 2013 resource level of USD 12.3 million

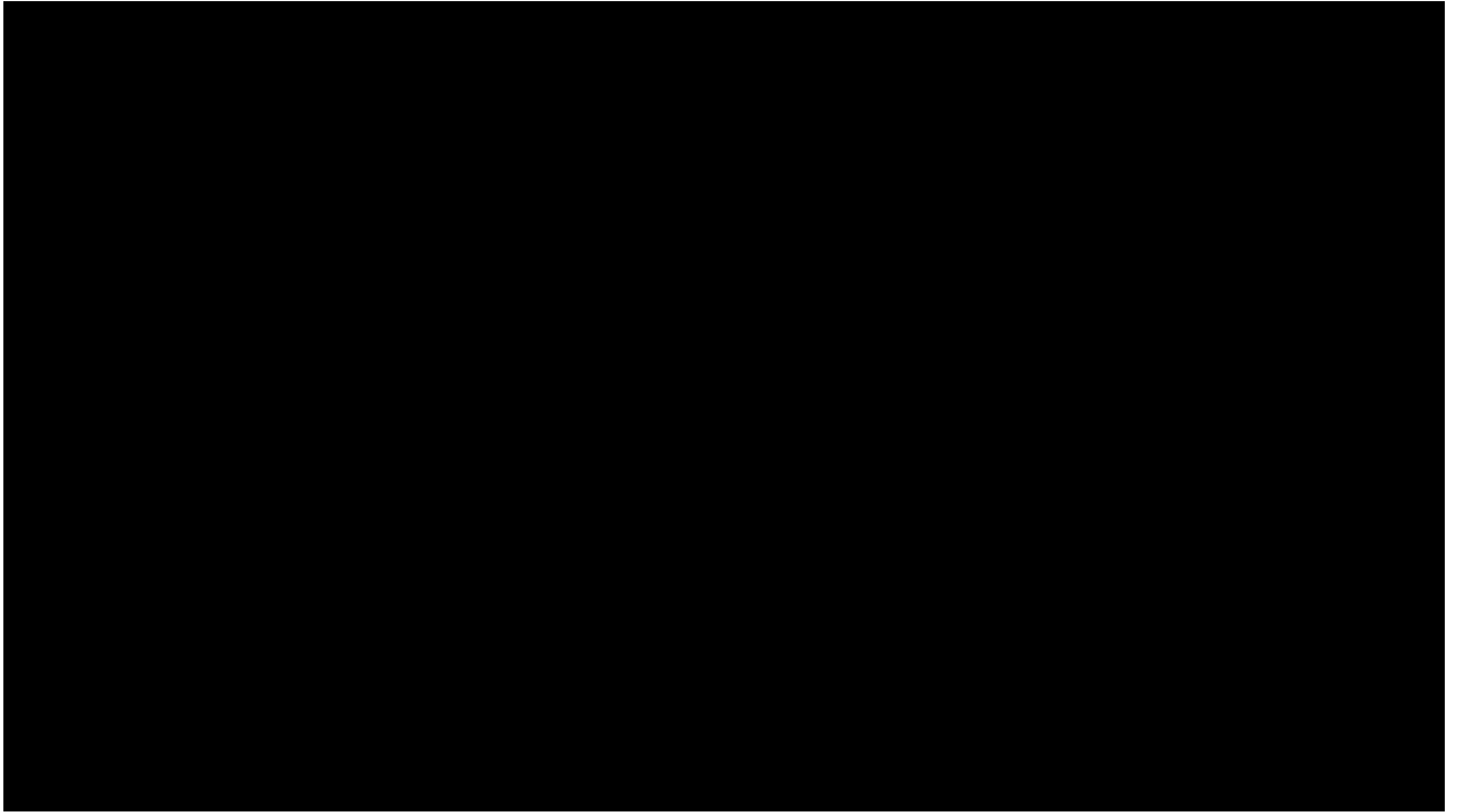


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# KEY MESSAGES

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1. FAILURE TO INVEST IN HEALTH THREATENS NOT ONLY HEALTH, BUT POVERTY REDUCTION AND ECONOMIC GROWTH
2. FOR MANY AREAS OF HEALTH, WE KNOW WHAT THE EFFECTIVE INTERVENTIONS ARE – AND CAN ESTIMATE WHAT IT WOULD COST TO SCALE THEM UP
3. PUBLIC FINANCE WILL NEED TO PLAY A CRITICAL ROLE
4. NOT ALL INVESTMENTS GENERATE GOOD (OR OPTIMAL) RETURNS – SO WE NEED TO MEASURE RETURNS AND RE-ALLOCATE TO GET THE MOST EFFICIENCY OUT OF HEALTH SECTOR INVESTMENTS



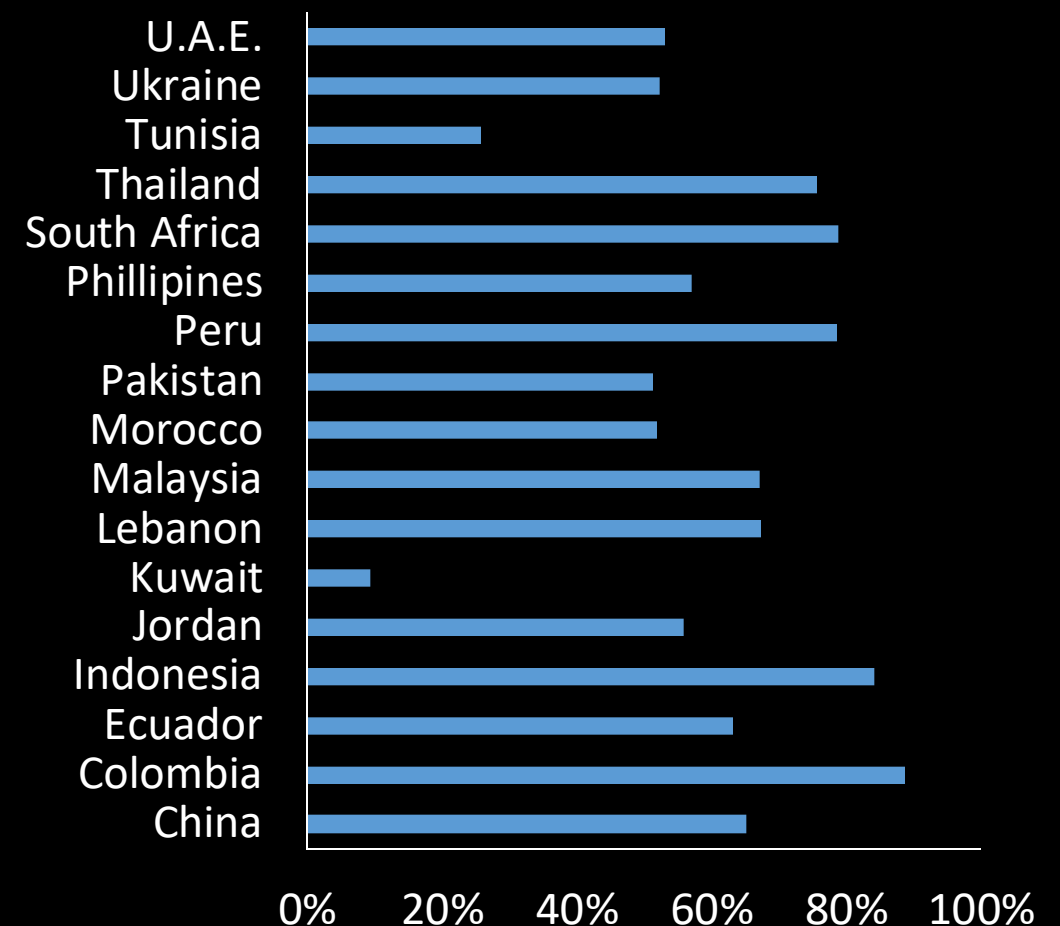
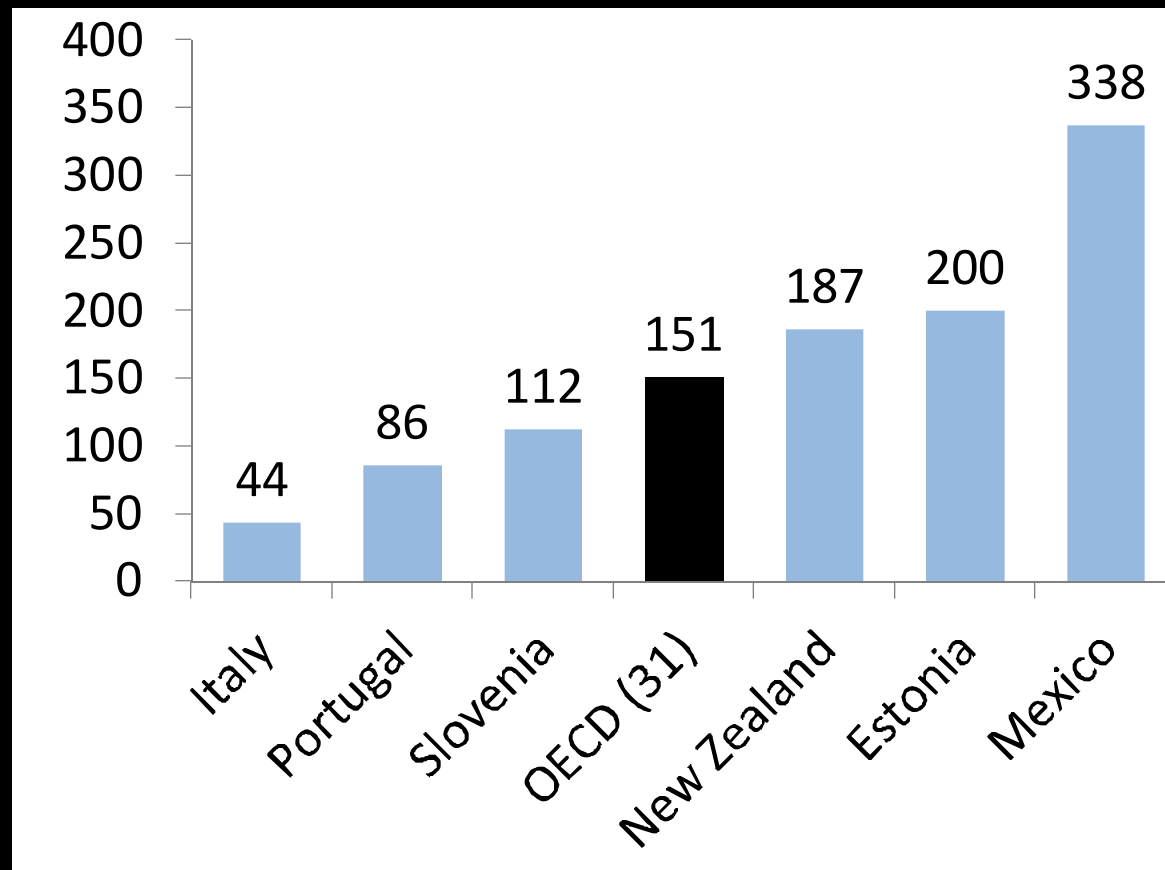


Extra slides

## Even if it cannot be modelled, simple cross-country benchmarking will do

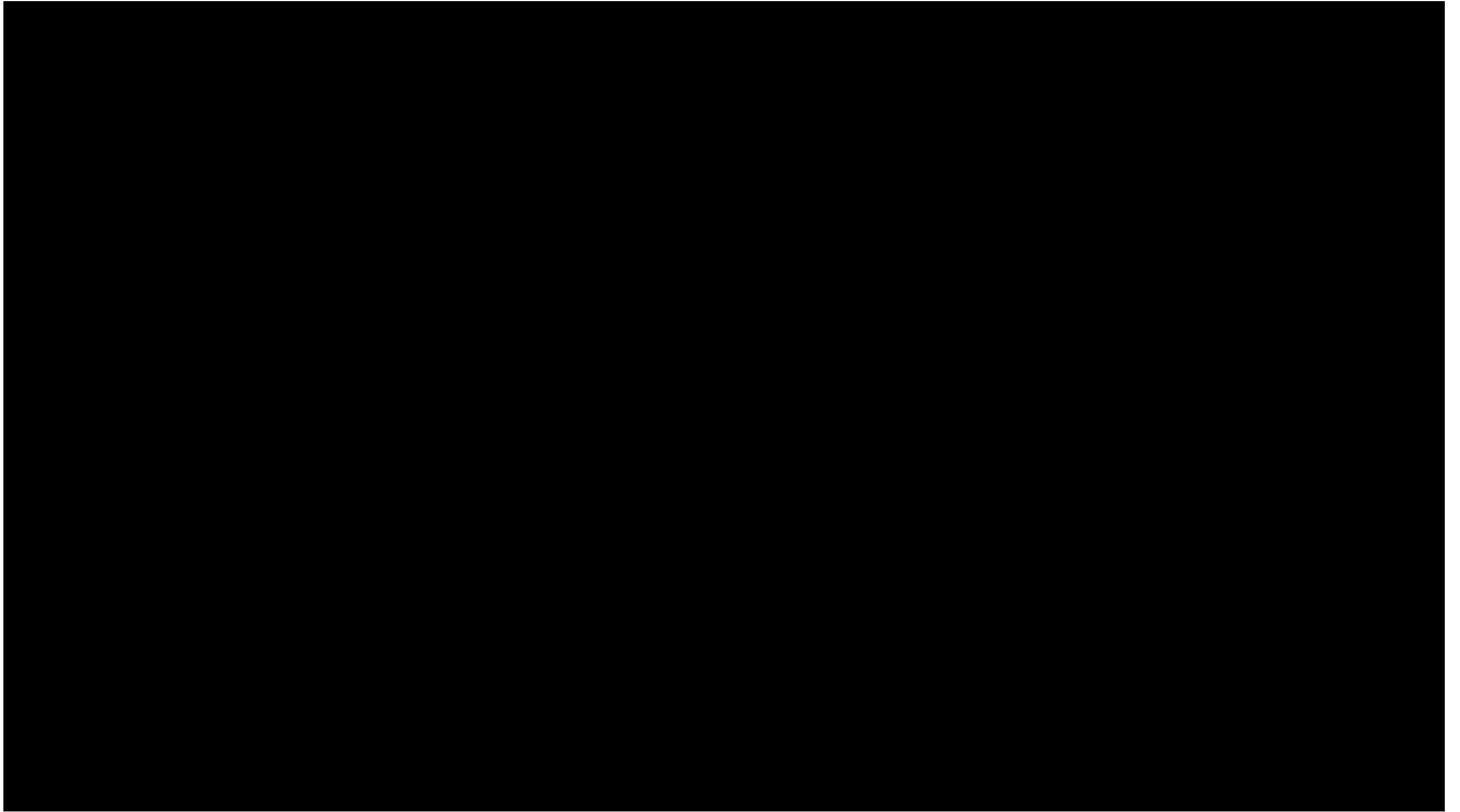
**Avoidable diabetes hospital admission in adults (2013),**  
*Age-sex standardized rate per hundred thousand population*

**Potential cost savings from switching to lowest-cost Gx**  
*for a sample of common drugs, %, 2010*

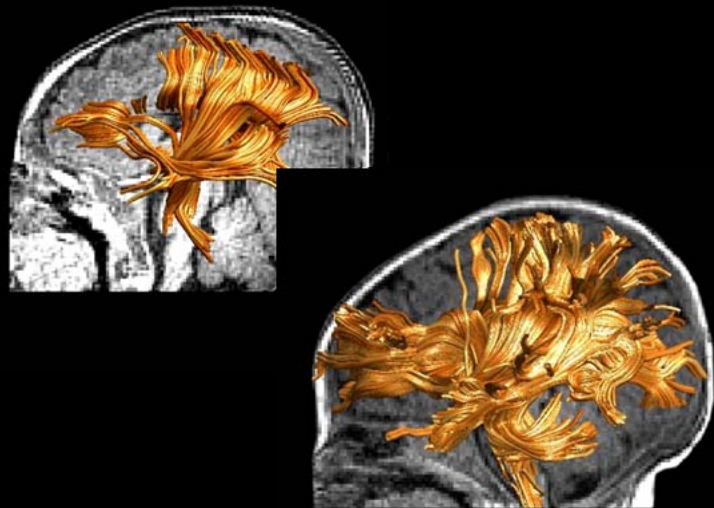


SOURCE: OECD Health Statistics, "The State of Health Care Integration in Estonia"  
 (World Bank, 2015)

SOURCE: World Health Report 2010 – background paper, 35 (WHO)

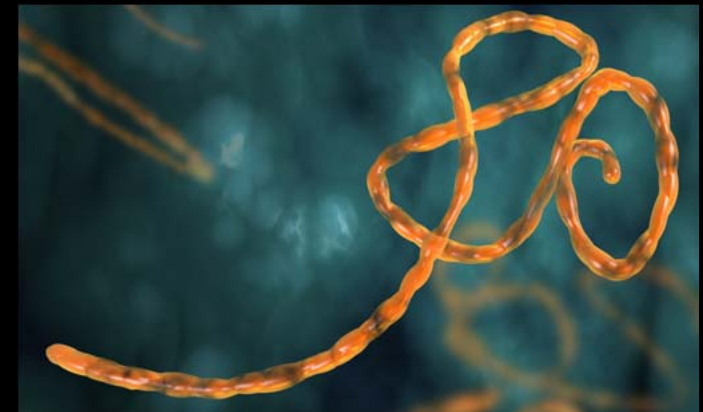


# Returns to public investment in health



## Returns

- Returns in terms of health outcomes can be measured
- Returns go beyond health outcomes – and these can also be measured



## Investments

- Investments that are cost-effective are known
- Investments are not necessarily bricks-and-mortar