Measuring the Returns to Public Investment in Health

Purpose: Information
Submitted by: World Bank Group
Measuring the returns to public investment in health

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The returns to investing in health go well beyond health.
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

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

<table>
<thead>
<tr>
<th>Scale-up scenario</th>
<th>Annual additional investment (US$, millions)</th>
<th>Lives saved</th>
<th>DALYs averted</th>
<th>Cost per DALY averted (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario:</td>
<td>Scale up 10 cost-effective interventions</td>
<td>61</td>
<td>4,283</td>
<td>375,0 76</td>
</tr>
<tr>
<td>Alternative scenario:</td>
<td>Scale up 10 cost-effective interventions in 37 high burden counties</td>
<td>48</td>
<td>3,368</td>
<td>294,9 66</td>
</tr>
</tbody>
</table>
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

"Defining the right care and understanding the forces that work against it constitute a crucial pathway to real affordability. Failing to do so will leave universal access to high-quality, cost-effective, and compassionate care an ever-receding mirage."

A Series by The Lancet
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

**Sources of inefficiency**

- Wrong staff mix
- Gx underuse
- Counterfeit
- Hospital size
- Avoidable admission
- Excessive procedures
- Medical error

**Absenteism**

**Costly staff**

**Low drug quality**

**Over-priced Gx**

**Hospital size**

**Length of stay**

**Corruption**

**Fraud**

**Equipment overuse**

**Poor-quality care**

**Potential value – LICs and LMICs**, USD

- **Human resources**: $20 – 38 Bn
- **Medicine**: $7 – 13 Bn
- **Hospitals**: $12 – 27 Bn
- **Leakages**: $13 – 27 Bn

**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**


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

With the same amount of money, incidence could be reduced by 37% by 2020

SOURCE: “Value for money in Sudan’s HIV response” (World Bank, Optima, 2015)
KEY MESSAGES

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