Prevention and Control of Noncommunicable Diseases and Care for Mental Health Conditions

Evaluating the return on investment of selected interventions on tobacco, alcohol, diabetes, cardiovascular disease, depression, anxiety, and psychosis in Jamaica.
REFERENCES

This brochure was developed by the Pan American Health Organization and is based on the two reports:


ACKNOWLEDGMENT

The Pan American Health Organization, the United Nations Development Programme, and the UN Interagency Task Force on Noncommunicable Diseases recognize with appreciation the contributions of the Ministry of Health and Wellness of Jamaica and RTI International.
Noncommunicable Diseases (NCDs) and Mental Health (MH) conditions are major drivers of morbidity and mortality in Jamaica. Beyond the toll on health, they also impose a significant burden on the national economy since treatment for NCDs leads to high expenditures and individuals with NCDs or MH conditions are more likely to exit the labor force, miss days of work, and/or work at a reduced capacity. In addition, MH conditions generate high social costs as MH is critical to personal well-being, interpersonal relationships, and successful contributions to society.

These two investment cases were developed to help strengthen Jamaica’s capacity to generate and use economic evidence on NCDs and MH in order to support the development, financing, and implementation of national multisectoral prevention and control strategies. They estimate the return on investment (ROI), over the next 15-year period, from implementing priority policy interventions for tobacco and alcohol control, clinical interventions to reduce cardiovascular diseases and diabetes, and scaling up treatment for depression, anxiety, and psychosis.

Though NCDs and MH conditions pose a significant health and economic burden, the results from these two investment cases show that Jamaica can significantly reduce this burden by investing in recommended interventions designed to improve NCDs and MH.
Over the next 15-year period, implementing the selected package of interventions to prevent and control tobacco use, harmful use of alcohol, diabetes, and cardiovascular diseases, and scaling up treatment for depression, anxiety, and psychosis would:

- **Save 5,700 lives**
- **Restore 143,000 healthy life years**
- **Avert 229,000 cases of depression and anxiety**
Jamaica could prevent J$ 137.1 billion (7.6% of GDP 2017) in direct treatment costs, productivity losses and social costs related to NCDs and MH over the next 15 years.

**NCDs**
- J$ 77.1 billion (4.3% GDP 2017) averted productivity losses and medical costs
- Overall ROI 2.1
  - Implementing interventions
  - J$ 1 invested → J$ 2.1 return

**MH**
- J$ 60 billion (3.3% GDP 2017) averted productivity losses and social costs
- Overall ROI 4.2
  - Scaling up treatment
  - J$ 1 invested → J$ 4.2 return
HEALTH IMPACT of NCDs in Jamaica

Nearly 80% of all deaths are caused by Noncommunicable Diseases (NCDs)

- More than 15,000 deaths annually
- More than 41 persons per day
of Jamaicans have smoked tobacco within the previous month

7% of Jamaicans are daily users

of Jamaicans report being current drinkers

15% are at medium to high risk of alcohol dependence

of all deaths are caused by cardiovascular diseases

of Jamaicans aged 24 years and older have hypertension

of males aged 25 or older have diabetes

of females aged 25 or older have diabetes

A 30-year-old has a 17% chance of dying prematurely – before reaching his or her 70th birthday – from any of the four main NCDs

(cardiovascular disease, diabetes, chronic respiratory disease, and cancer)
Visits to public health facilities for Mental Health (MH) treatment increased by about 20% per year between 2014 and 2016.

2014: 90,000 visits • 2015: 108,000 visits • 2016: 132,000 visits
Noncommunicable Diseases and Care for Mental Health Conditions in Jamaica

**DEPRESSION**

- **3%** of Jamaicans have a depressive disorder
- **5%** among people aged 60 years and older

**ANXIETY**

- **4.1%** of Jamaicans have an anxiety disorder
- **5.5%** among people 35-59 years old

**PSYCHOSIS**

- **106,674** visits to public health clinics for mental illness in 2016

**Psychosis** was responsible for 80% of mental-illness-related public clinic visits nationwide.
According to the investment cases results, Jamaica could prevent J$ 137.1 billion (7.6% of GDP 2017) in direct treatment costs, productivity losses and social costs over the next 15-year period by implementing the recommended NCD and MH packages of interventions.
in labor productivity losses due to premature mortality and exit from the labor force, absenteeism, and presenteeism could be avoided

in social costs from healthy life years lost could be avoided

in direct medical costs to treat NCDs could be avoided

in labor productivity losses due to premature mortality and exit from the labor force, absenteeism, and presenteeism could be avoided
Jamaica could reduce the health and economic losses due to NCDs by implementing these selected WHO “best-buy” interventions to prevent and control NCDs.
### TOBACCO CONTROL
- Increase taxes and prices on tobacco products
- Ban on tobacco advertising, promotion, and sponsorship
- Eliminate exposure to tobacco smoke in all indoor workplaces, public places, public transport (raise enforcement)
- Implement effective mass media campaigns that educate the public about the harms of smoking/tobacco use and exposure to tobacco smoke
- Implement plain packaging

### REDUCTION OF HARMFUL ALCOHOL USE
- Increase excise taxes on alcoholic beverages
- Enact and enforce bans or comprehensive restrictions on exposure to alcohol advertising (across multiple types of media)
- Enact and enforce restrictions on the physical availability of retailed alcohol

### CARDIOVASCULAR DISEASES
- Multidrug therapy to treat established stroke and ischemic heart disease (IHD)
- Treatment for individual with high blood pressure, cholesterol, or CVD risk
- Treat new cases of acute myocardial infarction with aspirin

### DIABETES
- Standard/Intensive glycemic control
- Screening and treatment for sight-threatening retinopathy

Jamaica has made significant progress on its NCD response, both in health service provision and multisectoral action for population prevention. **Intensifying existing policies and implementing additional interventions can help reduce the epidemiological and economic burden of NCDs.**
Implementing selected WHO mhGAP MH interventions

Jamaica could reduce the social costs and productivity losses due to MH conditions by implementing these selected WHO MH Gap Action Programme (mhGAP) interventions to prevent and control MH conditions.
Although funding for mental health services remains a significant challenge, mental health is of growing concern in Jamaica. The Jamaica Task Force on Mental Health and Homelessness and the National Council on Drug Abuse are engaged and issue recommendations to improve mental health policies. **Intensifying existing policies and implementing additional interventions can help reduce the epidemiological and economic burden of MH conditions in Jamaica.**
METHODOLOGY of the Investment Case studies

Methodological steps of the economic analysis

1. SELECT INTERVENTIONS
   In collaboration with Ministry of Health, select WHO-recommended clinical and policy interventions for analysis, identify baseline coverage, and determine scale-up targets.

2. ASSESS COST
   Assess the cost (using local data) of scaling up or implementing the selected interventions over a 15-year period.
3. **Estimate Health Gains**

Provide estimates for what health gains are achievable from implementing or scaling up selected interventions.

4. **Monetize Health Gains**

Monetize the health gains to assess the amount of labor productivity that can be gained and the treatment and/or social costs that can be avoided by implementing the set of clinical and policy interventions.

5. **Return on Investment**

Calculate the financial gain per dollar spent (return on investment) from scaling up or implementing clinical and policy interventions using results from steps 2 and 4.
HEALTH BENEFITS, RECOVERED ECONOMIC OUTPUT, AND RETURN ON INVESTMENT
from implementing the NCD package of interventions

**Estimated health benefits over a 15-year time horizon, by intervention package**

<table>
<thead>
<tr>
<th></th>
<th>Strokes averted</th>
<th>IHD events averted</th>
<th>Blindness averted</th>
<th>Amputations averted</th>
<th>Averted deaths</th>
<th>Healthy life years gained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco</td>
<td>1,176</td>
<td>967</td>
<td>--</td>
<td>--</td>
<td>597</td>
<td>7,355</td>
</tr>
<tr>
<td>Alcohol*</td>
<td>--*</td>
<td>--*</td>
<td>--*</td>
<td>--*</td>
<td>518</td>
<td>23,292</td>
</tr>
<tr>
<td>Cardiovascular disease</td>
<td>6,068</td>
<td>4,346</td>
<td>--</td>
<td>--</td>
<td>4,358</td>
<td>30,456</td>
</tr>
<tr>
<td>Diabetes</td>
<td>--</td>
<td>--</td>
<td>4,812</td>
<td>297</td>
<td>262</td>
<td>6,359</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>5,735</strong></td>
<td><strong>67,462</strong></td>
</tr>
</tbody>
</table>

*Alcohol interventions’ impact is estimated across multiple diseases (e.g. pancreatitis, road injuries, liver cirrhosis, poisonings, falls, drownings, unintentional injuries, larynx cancer, liver cancer and intrapersonal violence) therefore expressed only as deaths averted and healthy life-years gained as opposed to other interventions whose impact is expressed in terms of strokes averted, IHD events averted, blindness averted, and amputations averted.

**Recovered economic output from implementing tobacco, alcohol, diabetes, and CVD interventions in billion J$**

```
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0

Mortality or exit from the workforce (Indirect benefit)
Presenteeism (Indirect benefit)
Absenteeism (Indirect benefit)
Direct costs of treatment averted
Total economic benefits

43.3
2.1
1.9
29.8
77.1
```
Return on investment (ROI), by NCD package

<table>
<thead>
<tr>
<th>NCD prevention and control interventions</th>
<th>5-year ROI</th>
<th>15-year ROI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco</td>
<td>0.81</td>
<td>5.37</td>
</tr>
<tr>
<td>Raise taxes</td>
<td>2.1</td>
<td>16.0</td>
</tr>
<tr>
<td>Ban on tobacco advertising, promotion, and sponsorship</td>
<td>2.5</td>
<td>14.5</td>
</tr>
<tr>
<td>Protect people from tobacco smoke (raise enforcement)</td>
<td>0.2</td>
<td>2.8</td>
</tr>
<tr>
<td>Warn about danger: Mass media campaign</td>
<td>0.6</td>
<td>2.6</td>
</tr>
<tr>
<td>Plain packaging</td>
<td>0.1</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Diabetes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.30</td>
<td>2.10</td>
</tr>
<tr>
<td>Standard glycemic control</td>
<td>1.5</td>
<td>2.8</td>
</tr>
<tr>
<td>Screening and treatment for sight-threatening retinopathy</td>
<td>1.2</td>
<td>1.5</td>
</tr>
<tr>
<td>Intensive glycemic control</td>
<td>0.8</td>
<td>1.4</td>
</tr>
<tr>
<td><strong>CVD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.97</td>
<td>1.90</td>
</tr>
<tr>
<td>Treat new cases of acute myocardial infarction with aspirin</td>
<td>10.5</td>
<td>13.9</td>
</tr>
<tr>
<td>Treatment for high cholesterol ($\geq 6.2$ mmol/L), but low absolute CVD risk &lt;20%</td>
<td>1.5</td>
<td>3.6</td>
</tr>
<tr>
<td>Treatment for individuals with high CVD risk ($\geq 20%$)</td>
<td>1.3</td>
<td>2.9</td>
</tr>
<tr>
<td>Multidrug therapy to treat established IHD</td>
<td>1.9</td>
<td>2.2</td>
</tr>
<tr>
<td>Treatment for high blood pressure ($\geq 140$ mmHg), but low absolute CVD risk &lt;20%</td>
<td>0.9</td>
<td>2.1</td>
</tr>
<tr>
<td>Multidrug therapy to treat established stroke</td>
<td>1.3</td>
<td>1.4</td>
</tr>
<tr>
<td>Alcohol*</td>
<td>0.46</td>
<td>1.86</td>
</tr>
<tr>
<td>Raise taxes</td>
<td>1.6</td>
<td>8.1</td>
</tr>
<tr>
<td>Restrict alcohol advertising</td>
<td>0.5</td>
<td>1.6</td>
</tr>
<tr>
<td>Restrict availability of retailed alcohol</td>
<td>0.2</td>
<td>0.7</td>
</tr>
<tr>
<td><strong>All packages</strong></td>
<td>1.00</td>
<td>2.10</td>
</tr>
</tbody>
</table>

*Alcohol: the labor productivity gains due to reduced presenteeism and absenteeism are not taken into account.
Estimated health benefits over a 15-year time horizon, by intervention package

**DEPRESSION**
- 51,328 Healthy life years gained
- 120,259 Cases averted

**ANXIETY**
- 22,671 Healthy life years gained
- 108,968 Cases averted

**PSYCHOSIS**
- 1,884 Healthy life years gained

Breakdown of total gains from scaled up depression and anxiety treatment

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Billions J$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality averted</td>
<td>3.1</td>
</tr>
<tr>
<td>Reduced presenteeism</td>
<td>15.2</td>
</tr>
<tr>
<td>Reduced absenteeism</td>
<td>7.6</td>
</tr>
<tr>
<td>Restored employment</td>
<td>11.9</td>
</tr>
<tr>
<td>Social value of health gains</td>
<td>20.6</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>58.4</strong></td>
</tr>
</tbody>
</table>

*For psychosis treatment, the economic gains could not be broken down because there is currently no consensus on the impact of psychosis on mortality, presenteeism, absenteeism, and employment. Therefore, the results (Psychosis: J$ 1.1 billion economic gains & J$ 0.5 billion in social value) are not added to the graph. The total would then be J$ 60 billion.*
The costs of “all packages” is not the sum of the costs of the depression, anxiety, and psychosis packages. In addition to medical costs, the package accounts for the cost to 1) train mental health professionals; 2) operate five mobile “outreach teams” that provide emergency response and transportation to health facilities, and conduct home visits; 3) promote awareness and knowledge of mental health conditions through public education and a social media campaign, and; 4) provide for program management and administration costs of the Ministry of Health Mental Health and Substance Abuse Unit (including human resources, supplies and equipment, and surveys)—additional costs 5 years: J$ 0.62 billion; 15 years: J$ 1.7 billion.

**In billion J$.**
METHODOLOGICAL LIMITATIONS

Interventions on some diseases and risk factors, and the labor productivity impact of some particular interventions could not be modeled at the time of the study. Therefore, there is potential for future studies to find an even higher ROI from implementing WHO “best-buy” and mhGAP interventions.
Only interventions on depression, anxiety, and psychosis (which together accounted for 93% of all mental health related visits to public health centers in Jamaica in 2016) were modeled in the MH investment case out the full range of recommendations for increasing coverage of care for mental, neurological, and substance use (MNS) conditions provided by the WHO Mental Health Gap Action Programme (mhGAP).

Since there was no consensus in the literature on the impact of psychosis on mortality, presenteeism, absenteeism and employment at the time of the study, the economic value of health gains from psychosis interventions was solely estimated from healthy life years gained.
Prevention and Control of Noncommunicable Diseases and Care for Mental Health Conditions in Jamaica: The investment case

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