TECHNICAL BRIEFING

TOBACCO INTERVENTIONS FOR THE APPENDIX 3 OF THE GLOBAL ACTION PLAN FOR NON COMMUNICABLE DISEASE

IDENTIFICATION OF INTERVENTIONS

The interventions considered are based on the MPOWER demand reduction measures in line with the WHO Framework Convention on Tobacco Control (WHO FCTC). The MPOWER measures are:

- Monitor tobacco use and prevention policies
- Protect people from tobacco smoke
- Offer help to quit tobacco use
- Warn about the dangers of tobacco
- Enforce bans on tobacco advertising, promotion and sponsorship
- Raise taxes on tobacco

Monitoring does not have an independent impact size so did not have an economic evaluation performed. The other five interventions were evaluated in addition to other interventions.

METHODOLOGICAL ASSUMPTIONS

- WHO-CHOICE tobacco modelling has been previously published. For this version of analysis, the platform has changed but the approach remains the same.
- Smoking prevalence is taken from WHO’s Global Health Observatory country specific data on tobacco smoking in people aged 15+
- Current status of MPOWER measures is taken from the WHO Report on the Global Tobacco Epidemic 2015 appendix 1
- Tobacco use impacts a range of diseases. Our modelling platform allows only a subset of these representing approximately 50% of the attributable burden. This creates an under-calculation of the health impact associated with tobacco interventions, thus more conservative cost-effectiveness ratios
- Reductions in tobacco use prevalence are expected to impact either disease incidence directly, or for vascular diseases via the risk prediction equation, following appropriate lag times
- Tobacco use is associated with incidence of major non-communicable diseases using the relative risks in table 1

Table 1

<table>
<thead>
<tr>
<th>Disease</th>
<th>Relative Risk - Male</th>
<th>Relative Risk - Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ischemic Heart disease</td>
<td>1.44 – 5.51 age dependent</td>
<td>1.68 - 3.78 age dependent</td>
</tr>
<tr>
<td>Stroke</td>
<td>1.39 - 3.12 age dependent</td>
<td>1.95 - 4.61 age dependent</td>
</tr>
<tr>
<td>Cervical Cancer</td>
<td></td>
<td>1.50</td>
</tr>
<tr>
<td>Asthma</td>
<td>1.90</td>
<td>2.0</td>
</tr>
<tr>
<td>COPD</td>
<td>10.80</td>
<td>12.30</td>
</tr>
</tbody>
</table>

1 Ortegón Mónica, Lim Stephen, Chisholm Dan, Mendis Shanthi. Cost effectiveness of strategies to combat cardiovascular disease, diabetes, and tobacco use in sub-Saharan Africa and South East Asia: mathematical modelling study BMJ 2012;344 :e607
2 http://www.who.int/gho/tobacco/use/en/
3 http://www.who.int/tobacco/global_report/2015/appendix1.pdf?ua=1
**TABLE 2. IMPACT SIZES USED IN WHO CHOICE ANALYSIS**

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Effect Size on tobacco prevalence</th>
<th>Comments on evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase excise taxes and prices on tobacco products</td>
<td>Elasticity is -0.2 to -0.5&lt;sup&gt;6&lt;/sup&gt;</td>
<td>Based on an assumed tax increase that increases the retail price of cigarettes by 25%.</td>
</tr>
<tr>
<td>Enact and enforce comprehensive bans on tobacco advertising, promotion and sponsorship</td>
<td>Reduction in prevalence of 10% if implemented at the highest intensity level&lt;sup&gt;7&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Implement large graphic health warnings on all tobacco packages</td>
<td>Reduction in prevalence of 4% if graphic health warnings implemented at the highest intensity level&lt;sup&gt;9&lt;/sup&gt;</td>
<td>These illustrative figures are used solely for economic modelling purposes and do not constitute a WHO estimate of the impact of plain packaging on prevalence of tobacco use.</td>
</tr>
<tr>
<td>Additionally, implement plain/standardized packaging</td>
<td>Reduction in prevalence of 0.5% - 3.8% attributable to plain packaging, when implemented as part of a comprehensive approach to tobacco control, including graphic health warnings implemented at the highest intensity level. &lt;sup&gt;10&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Eliminate exposure to second-hand tobacco smoke in all indoor workplaces, public places, public transport</td>
<td>Reduction in prevalence of 4% if implemented at the highest intensity level&lt;sup&gt;9&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Implement effective mass media campaigns that educate the public about the harms of smoking/tobacco use and second hand smoke</td>
<td>Reduction in prevalence of 3.8% if implemented at the highest intensity level&lt;sup&gt;9&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Provide cost-covered, effective and population-wide support (including brief advice and national toll-free quit line services) for tobacco cessation to all those who want to quit</td>
<td>Reduction in prevalence of 5.5% - 11% if implemented at the highest intensity level&lt;sup&gt;11&lt;/sup&gt;</td>
<td></td>
</tr>
</tbody>
</table>


<sup>7</sup> Not included in the model creating an under-counting of associated health impact

<sup>8</sup> IARC HANDBOOKS OF CANCER PREVENTION Tobacco Control

<sup>9</sup> Levy et al. The Impact of Implementing Tobacco Control Policies: An Update and Extension of the Tobacco Control Scorecard. Forthcoming


<sup>11</sup> Levy et al. The Impact of Implementing Tobacco Control Policies: An Update and Extension of the Tobacco Control Scorecard. Forthcoming
### TABLE 3. COSTING ASSUMPTIONS USED IN WHO CHOICE ANALYSIS

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Major costing assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase excise taxes and prices on tobacco products</td>
<td>Taxation is considered a legislative intervention. Assumptions on human resource requirements are previously published(^\text{12})</td>
</tr>
<tr>
<td>Enact and enforce comprehensive bans on tobacco advertising, promotion and sponsorship</td>
<td>This is considered a legislative intervention. Assumptions on human resource requirements are previously published(^\text{12})</td>
</tr>
<tr>
<td>Implement large graphic health warnings on all tobacco packages</td>
<td>This is considered a legislative intervention. Assumptions on human resource requirements are previously published(^\text{12}). It is assumed that plain packaging would require additional legislation to large graphic health warnings.</td>
</tr>
<tr>
<td>Additionally, implement plain/standardized packaging</td>
<td></td>
</tr>
<tr>
<td>Eliminate exposure to second-hand tobacco smoke in all indoor workplaces, public places, public transport</td>
<td>This is considered a legislative intervention. Assumptions on human resource requirements are previously published(^\text{12})</td>
</tr>
<tr>
<td>Implement effective mass media campaigns that educate the public about the harms of smoking/tobacco use and second hand smoke</td>
<td>Generic advocacy/awareness campaigns are included as part of all health care interventions, with assumptions relying on information from the marketing literature.(^\text{13}) We estimated that 10 times the intensity would be required to enact behaviour change in line with previous costing estimates(^\text{12})</td>
</tr>
<tr>
<td>Provide cost-covered, effective and population-wide support (including brief advice and national toll-free quit line services) for tobacco cessation to all those who want to quit</td>
<td>Assumes that 50% of the population will see a GP each year, and that this will be equally representative of the proportion of the population who are tobacco users. For each individual the full cost of a GP visit is allocated to the brief intervention provided. This is likely an overestimate, thus the most conservative assumption.</td>
</tr>
</tbody>
</table>

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\(^{12}\) World Health Organization. Scaling up action against NCDs: How much will it cost?

\(^{13}\) Bertram et al. Disease control programme support costs: An update of WHO-CHOICE methodology, price databases and quantity assumptions. Cost Effectiveness and Resource Allocation. Forthcoming