The Economic Impact of Pandemic Influenza in the United States: Priorities for Intervention

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Appendix I

For the equation in the main text defining net returns due to vaccinations, savings from outcomes averted and the costs of vaccination are calculated as follows:

\[
\text{Savings from outcomes averted} = \sum (\text{Number with outcome before intervention}) \times \text{compliance} \times \text{vaccine effectiveness} \times \$\text{value of outcome prevented})
\]

\[
\text{Outcomes} \quad \text{death, hospitalization, outpatient, ill, no medical care}
\]

\[
\text{age, risk group}
\]
group hospitalization, outpatient, ill, no medical care

and;

Cost of vaccination = $\text{cost/vaccinee} \times \text{population} \times \text{compliance age, risk group age, risk group age, risk group}

Table. High and low levels of assumed vaccine effectiveness

<table>
<thead>
<tr>
<th>Vaccine effectiveness in preventing disease outcomes</th>
<th>High&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Low&lt;sup&gt;c&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-19 yrs</td>
<td>20-64 yrs</td>
<td>65 + yrs</td>
</tr>
<tr>
<td>Death</td>
<td>0.70</td>
<td>0.70</td>
</tr>
<tr>
<td>Hospitalization</td>
<td>0.55</td>
<td>0.55</td>
</tr>
<tr>
<td>Outpatient visits</td>
<td>0.40</td>
<td>0.40</td>
</tr>
<tr>
<td>Ill, no medical care sought</td>
<td>0.40</td>
<td>0.40</td>
</tr>
</tbody>
</table>

<sup>a</sup>Vaccine effectiveness is defined as the reduction in the number of cases in each of the age and disease categories.

<sup>b</sup>Within a defined age group, it was assumed that there was no difference in vaccine effectiveness between subgroups at high risk and not at high risk.

<sup>c</sup>The terms high and low level of effectiveness are subjective and reflect only a judgment of the levels of effectiveness in the two scenarios relative to each other.

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