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

Martin I. Meltzer, Nancy J. Cox, and Keiji Fukuda

Centers for Disease Control and Prevention, Atlanta, Georgia, USA


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:

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

outcomes death, hospitalization, outpatient, ill, no medical care

\[ \text{(Number with outcome before intervention) \times compliance \times vaccine effectiveness \times $value of outcome prevented)} \]

\[ x \text{ age, risk outcomes death, } \]

\[ = x \text{ age, risk outcomes death, hospitalization, outpatient, ill, no medical care} \]

\[ x \text{ age, risk outcomes death, no medical care} \]

\[ x \text{ age, risk outcomes death, no medical care} \]
Table. High and low levels of assumed vaccine effectiveness

<table>
<thead>
<tr>
<th>Disease outcomes</th>
<th>High(^a)</th>
<th>Low(^b)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-19 yrs</td>
<td>20-64 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>

\(^a\)Vaccine effectiveness is defined as the reduction in the number of cases in each of the age and disease categories.

\(^b\)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.

\(^c\)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.