Estimated Burden of the 2017–2018 Influenza Season

Melissa Rolfes, PhD MPH
Epidemiologist
Influenza Division, Centers for Disease Control and Prevention

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Burden of Influenza in the United States

- Rates and percentages from flu surveillance do not quantify the extent and burden of disease
- CDC developed mathematical model to translate surveillance rates into national numbers of illnesses and hospitalizations
- Estimates generated after each influenza season
- Posted online: [https://www.cdc.gov/flu/about/disease/burden.htm](https://www.cdc.gov/flu/about/disease/burden.htm)
Methods

1. Correct for under-detection

Reported rate of hospitalization \(\rightarrow\) Adjusted rate of hospitalization

2. Extrapolate to U.S. population

Adjusted rate of hospitalization \(\rightarrow\) Hospitalizations

3. Calculate deaths = multiply by ratio deaths:hospitalizations

Hospitalizations \(\rightarrow\) Deaths

4. Calculate illnesses = multiply by ratio cases:hospitalizations

Deaths \(\rightarrow\) Medical visits

5. Calculate medical visits = multiply by fraction seeking care

Medical visits \(\rightarrow\) Illnesses

Illnesses
Burden of Influenza

2010–2011 to 2016—2017

- Deaths: 12,000–51,000
- Hospitalizations: 140,000–590,000
- Medical visits: 4.3–16 million
- Symptomatic illness: 9.3–34 million
Burden of Influenza

**2010–2011 to 2016–2017**

- Symptomatic illness: 140,000 – 590,000
- Medical visits: 4.3 – 16 million
- Hospitalizations: 12,000 – 51,000
- Deaths: 12,000 – 51,000

**2017–2018**

- Symptomatic illness: 9.3 – 34 million
- Medical visits: 23 million
- Hospitalizations: 960,000
- Deaths: 80,000
the burden of flu disease 2017 - 2018

The estimated number of flu *illnesses* during the 2017-2018 season: **49 million**

More than the combined populations of Texas, and Florida

The estimated number of flu *hospitalizations* during the 2017-2018 season: **960,000**

More than the number of staffed hospital beds in the U.S.

The estimated number of flu *deaths* during the 2017-2018 season: **79,000**

More than the average number of people who attend the Super Bowl each year


get vaccinated
www.cdc.gov/flu
### Rates of influenza by age group

<table>
<thead>
<tr>
<th>Age group</th>
<th>Hospitalization rate, per 100,000</th>
<th>Mortality rate, per 100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4 yrs</td>
<td>139.3 (120.3, 164.5)</td>
<td>0.6 (0.0, 1.5)</td>
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<tr>
<td>5-17 yrs</td>
<td>38.3 (33.1, 45.3)</td>
<td>0.9 (0.4, 1.8)</td>
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<tr>
<td>18-49 yrs</td>
<td>58.8 (53.0, 66.1)</td>
<td>2.1 (1.4, 3.2)</td>
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<tr>
<td>50-64 yrs</td>
<td>260.7 (228.8, 304.4)</td>
<td>11.8 (8.8, 16.9)</td>
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<tr>
<td>≥65 yrs</td>
<td>1,306.5 (1,137.6, 1,547.5)</td>
<td>134.6 (113.0, 170.5)</td>
</tr>
</tbody>
</table>
What we have learned from burden estimates

- Millions of people get ill, hundreds of thousands are hospitalized, and tens of thousands die from flu each season.
- Influenza vaccination is one of the first and most important ways to prevent influenza and its complications.
Thank you!

Melissa Rolfes, PhD, MPH
mrolfes1@cdc.gov

For more information, contact CDC
1-800-CDC-INFO (232-4636)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.