Inappropriate antibiotic prescribing in doctors’ offices and other outpatient settings in the U.S. is a widespread problem that accelerates the spread of antibiotic-resistant bacteria.

Among privately-insured patients diagnosed with ...

**Common bacterial infections**

- 31-36% of children
- 43-56% of adults

... received an inappropriate type of antibiotic. (i.e., not the recommended, or first-line, antibiotics based on medical guidelines).

**Common viral infections**

- 4-70% of children received unnecessary antibiotics.
- 7-66% of adults received unnecessary antibiotics.

<table>
<thead>
<tr>
<th>Children</th>
<th>Viral Infection</th>
<th>Adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>70%</td>
<td>Bronchitis</td>
<td>66%</td>
</tr>
<tr>
<td>48%</td>
<td>Nonsuppurative middle ear infection</td>
<td>52%</td>
</tr>
<tr>
<td>12%</td>
<td>Viral upper respiratory infection</td>
<td>32%</td>
</tr>
<tr>
<td>9%</td>
<td>Bronchiolitis</td>
<td>N/A</td>
</tr>
<tr>
<td>4%</td>
<td>Influenza</td>
<td>7%</td>
</tr>
</tbody>
</table>
Inappropriate prescribing of these drugs also has measurable costs, both in terms of health care dollars and patient safety.

### Increased annual health care costs

In 2017, inappropriate prescribing of antibiotics for patients with common infections resulted in:

<table>
<thead>
<tr>
<th>Infection Type</th>
<th>Pediatric Patients</th>
<th>Adult Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suppurative middle ear infections</td>
<td>$25.3 million</td>
<td>$49.6 million</td>
</tr>
<tr>
<td>Pharyngitis (sore throat)</td>
<td>$21.3 million</td>
<td>$19.1 million</td>
</tr>
<tr>
<td>Sinusitis (sinus infections)</td>
<td>$7.1 million</td>
<td>$19.1 million</td>
</tr>
<tr>
<td>Viral upper respiratory infections</td>
<td>$74 million</td>
<td>Nearly $69 million</td>
</tr>
<tr>
<td>(the common cold)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inappropriate antibiotic prescriptions for common infections are major drivers of avoidable health care costs.
Patients who received inappropriate antibiotics for pharyngitis (sore throat) were significantly more likely to get a *Clostridioides difficile* infection:  

The Centers for Disease Control and Prevention classifies *C. difficile* as one of the top five most urgent pathogens.

Patients who received inappropriate antibiotics for pharyngitis (sore throat) were significantly more likely to get a *C. difficile* infection:

- **8x** higher risk (children)
- **3x** higher risk (adults)

Other adverse events that can increase with inappropriate antibiotics include:  

- Anaphylaxis
- Diarrhea
- General allergic reaction
- Nausea/vomiting/abdominal pain

Solutions

Health care organizations, including payers and health systems, have a key role to play in increasing antibiotic stewardship efforts and improving prescribing practices in outpatient settings, which research shows will protect patients and save money. Stakeholders can:

- **Leverage** data to assess antibiotic prescribing practices and share personalized feedback with providers.
- **Incentivize** prioritization and expansion of antibiotic stewardship efforts by incorporating stewardship into health care quality improvement efforts.
- **Educate** patients and providers on antibiotic resistance and the need for antibiotic stewardship.
Sources


For further information, please visit:
pewtrusts.org/antibiotic-resistance-project

The Pew Charitable Trusts

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Email: hcable@pewtrusts.org
Project website: pewtrusts.org/antibiotic-resistance-project

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