The Silver Book®: Infectious Diseases and Prevention through Vaccination
### The Silver Book: Infectious Diseases and Prevention through Vaccination

Older Americans are more likely to get an infectious disease, be hospitalized for it, suffer complications, and die. Despite the tremendous value vaccines hold in preventing these diseases, barriers in infrastructure, cost, education, tracking, and research cause vaccination rates in seniors to fall short of targets set by the Centers for Disease Control and Prevention (CDC).

### Prevalence & Incidence

**APPROXIMATE NEW CASES IN AMERICANS EACH YEAR:**

<table>
<thead>
<tr>
<th>Disease</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumonia</td>
<td>5 to 10 million</td>
</tr>
<tr>
<td>Influenza (“FLU”)</td>
<td>35 to 50 million</td>
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<td>Herpes Zoster (“SHINGLES”)</td>
<td>1 million</td>
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</table>


**5-20% of the U.S. Population gets the flu each year**

(CDC 2011)

- Hospital-acquired pneumonia (HAP) is the 2nd most frequent cause of hospital-acquired infection. (McEachern 1998)

### The Economic Burden

The annual direct & indirect medical cost of INFECTIOUS DISEASES:

- **$120 BILLION**

15% of all U.S. healthcare expenditures (NIAD 2000)

- **$1 BILLION**

Shingles patients lose an average 129 hours of work per episode. (Pellegrin 2007, Ortega-Sanchez 2006)

- Medicare beneficiaries hospitalized for pneumonia have higher expenses than those without the infection. (Thomas 2012)

THE ANNUAL DIRECT AND INDIRECT COST OF FLU in the U.S. is:

**OVER $87 BILLION**

(Molinari 2007)

- During flu season, in working adults 50 to 64 years old, flu-like illness is responsible for 45% of workdays lost (Nichol 1999)

- Hospitalized pneumonia patients have 49% of low productivity days

**Approximate new cases in Americans each year:**

- **Pneumonia**: 5 to 10 million
- **Influenza (“FLU”)**: 35 to 50 million
- **Herpes Zoster (“SHINGLES”)**: 1 million


- **1 in 2** who live to be 85 will get shingles

(Schmader 2001)

- **1 in 4** physician visits are due to infectious diseases

(NIAD 1991)
The Human Burden

Vaccine-preventable diseases or their complications account for 50,000 to 90,000 adult deaths in the U.S. each year. (Reid 1999)

| CASES LEADING TO HOSPITALIZATION EVERY YEAR: |
|----------------|----------------|----------------|
| PNEUMONIA      | SHINGLES       | FLU            |
| >1.1 MILLION   | 50 TO 60 THOUSAND | 55 TO 431 THOUSAND |


PNEUMONIA is the 5th most frequent cause of hospitalization in the U.S. (NCHS 2010)

Community-acquired pneumonia is the #6 cause of death and the #1 cause of death from infection in the U.S. (Mortensen 2003)

FLU EPIDEMICS in the U.S. lead to approximately:

- 600,000 life years lost
- 3,000,000 days of hospitalization
- 30,000,000 outpatient visits
- ≥48,000 deaths

(Molinari 2007) (CDC 2010)

COMPLICATIONS, including postherpetic neuralgia (PHN), occur in ~50% of older persons with shingles (Oxman 2005)
**The Human Value**
- PPSV23 pneumonia vaccine is 60% to 80% effective in immunocompetent adults age >65. (Immunization Action Coalition 2012)
- The flu vaccine can reduce risk of illness in the U.S. population by ~60%. (CDC 2013)
- Over 6 years the flu vaccine prevented ~13 million flu cases, >110,000 hospitalizations and >5.8 million medical visits. (Kostova 2013)
- Varicella-zoster virus shingles vaccine reduces
  - Incidence by 51.3%
  - PHN by 61.1%
  - Death by 33% (Mahamud 2013, Okman 2005)

**The Economic Value**
- Every $ spent on immunization saves $6.30 in direct medical costs—total savings of $10.5 billion. (Rappaport 2003)
- Most vaccines cost <$50 per healthy life year saved. Treating hypertension costs $4,340 to $87,940 per healthy life year saved. (Ehreth 2003)
- The flu vaccine could save $60 to $4,000 per case prevented. (Pearson 2006)
- Use of the shingles vaccine in immunocompetent adults ≥60 could save $82 to $103 million in healthcare costs. (Pellesier 2007)
References


The Alliance for Aging Research is the leading non-profit organization dedicated to accelerating the pace of scientific discoveries and their application in order to vastly improve the universal human experience of aging and health.