Invasive pneumococcal disease

Figure 6. Distribution of confirmed cases of invasive pneumococcal disease: most common serotypes in 2014 (n=12,980), 2013 (n=14,811) and 2012 (n=14,811) (6.3% of all cases, 6.7% of all cases, and 7.8% of all cases, respectively).

These results must be interpreted with caution. The true case fatality is expected to be considerably lower.

Sources:


Among cases aged 5–64 years, 9% were caused by a PCV7 serotype, 14% by a PCV10non7 serotype, and 15% by a PCV13non10 serotype. The proportion of cases caused by non-PCV serotypes (all remaining serotypes) was 66% (62% in 2012, 68% in 2013). The proportion of cases caused by PCV7 serotypes has decreased and the proportion of cases caused by non-PCV serotypes has increased with differences due to a proportional increase in serotypes 9N and 24F, and a proportional decrease in serotypes 14 and 6C.

Among cases aged 65 years and over, 67% were caused by a PPV23 serotype, and 33% were caused by a PCV13 serotype. The proportion of cases caused by PCV13serotypes has decreased since 2011. In 2014, 68% of cases <5 years and 67% of cases 65 years and over were caused by a PPV23 serotype, and 32% of cases <5 years and 33% of cases 65 years and over were caused by a PCV13 serotype.

The clinical presentation was known for 10,353 (59%) of all cases. Bacteraemia was reported in 5,943 cases (57%), bacteraemia and pneumonia in 2,417 cases (23%), meningitis in 1,684 cases (15%), and other invasive disease in 909 cases (8%). The proportion of cases caused by serotypes 6A, 6B, 9V, 14, and 18C has decreased since 2011.

Invasive pneumococcal disease

Table 1. Reported confirmed cases of invasive pneumococcal disease cases: number and rate per 100,000 population, EU/EEA, 2010–2014

<table>
<thead>
<tr>
<th>Country</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>5,117</td>
<td>5,037</td>
<td>4,430</td>
<td>3,687</td>
<td>3,744</td>
</tr>
<tr>
<td>Norway</td>
<td>746</td>
<td>791</td>
<td>747</td>
<td>725</td>
<td>725</td>
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<tr>
<td>Spain</td>
<td>1,470</td>
<td>1,392</td>
<td>1,437</td>
<td>1,437</td>
<td>1,447</td>
</tr>
<tr>
<td>Sweden</td>
<td>1,456</td>
<td>1,361</td>
<td>1,387</td>
<td>1,316</td>
<td>1,357</td>
</tr>
<tr>
<td>EU/EEA</td>
<td>22,071</td>
<td>20,828</td>
<td>20,876</td>
<td>20,014</td>
<td>19,933</td>
</tr>
</tbody>
</table>

Figure 5. Trend and number of reported confirmed cases of invasive pneumococcal disease, EU/EEA, 2010–2014

The proportion of cases caused by PCV10non7 and PCV13non7 serotypes has decreased since 2011. In 2014, 68% of cases <5 years and 67% of cases 65 years and over were caused by a PPV23 serotype, and 32% of cases <5 years and 33% of cases 65 years and over were caused by a PCV13 serotype.
Contribute to the system by uploading their infectious disease surveillance data at regular intervals.

* The European Surveillance System (TESSy) is a system for the collection, analysis and dissemination of data on communicable diseases. EU Member States and EEA countries are encouraged to report data on surveillance systems, and the 2014 ECDC surveillance report on invasive bacterial diseases in Europe is also available for download.

## Additional information

**Infectious Disease Epidemiology – ESCAIDE**

**Invasive pneumococcal disease, surveillance systems overview, 2014**

**Annex 2010.pdf**

**ECDC**

**ECDC**

**ECDC**

**Epidemiol Prev**

**PLoS Med**

**PLoS Med**

**PLoS Med**

**PLoS Med**
- Tocheva AS, Jefferies JM, Rubery H, Bennett J, Afimeke G, Garland J, et al. Declining serotype coverage of new pneumococcal conjugate vaccines relating to the carriage of serotypes four and two – which belong to the five most common serotypes in infants and children aged 1–4 years – are not included in any of the currently licensed pneumococcal conjugate vaccines. Both serotypes could be potential targets for future higher valency vaccines.

**PLoS Med**

**PLoS Med**
- Andrews NJ, Neil A, Liau C, Beigi S, Andrews P, Andrews P, et al. The decision to introduce a vaccine to the routine national immunisation programme depends on context-specific factors in each country, such as the disease and serotype burden, cost-effectiveness, and feasibility. It is essential to continue to monitor circulating serotypes and antimicrobial resistance in Europe in order to assess interventions such as vaccination.

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- Additional information

Public health conclusions

Invasive pneumococcal disease (IPD) remains a major cause of morbidity and mortality in children and adults, especially in the elderly. The introduction of pneumococcal vaccines has resulted in herd protection by reducing nasopharyngeal carriage and transmission of the bacterium, contributing to a decrease in morbidity and mortality among the elderly and infants. Studies have shown that PCV13 vaccination in the elderly can induce an immune response against vaccine serotypes that is non-inferior or better than PPV23. The vaccine is safe and effective in preventing non-invasive pneumococcal pneumonia and invasive pneumococcal disease. However, decreases in PCV13 notification rates between countries may be due to better case ascertainment and the implementation of enhanced surveillance systems in some countries. The elderly and infants continue to be the most affected age groups.

In 2014, the notification rate of confirmed IPD was lower than in previous years and varied by country, ranging from 0.2 to 13.4 cases per 100,000 population. The variation in notification rates is likely due to differences in clinical and laboratory case ascertainment and the implementation of enhanced surveillance systems in some countries. In the elderly population, PCV13 vaccination is strongly recommended, and PPV23 is considered for persons 50 years and over, and/or for risk-groups in certain age groups. Fifteen Member States offer PPV23 and nine offer PCV13 vaccination for the elderly. Further monitoring of IPD serotype trends in the elderly and post-marketing impact studies in adults are essential. Twenty Member States offer different vaccines than PPV23. The vaccine is safe and effective in preventing non-invasive pneumococcal pneumonia and invasive pneumococcal disease. However, decreases in PCV13 notification rates between countries may be due to better case ascertainment and the implementation of enhanced surveillance systems in some countries. The elderly and infants continue to be the most affected age groups.