

# European Pneumococcal Vaccination

A Progress Report



Health and care

Community

Prevention

International

Inequalities

Life expectancy

Economy

Diseases and Conditions

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## Executive summary

Across Europe, vaccination against pneumococcal disease remains low. Despite clear and rigorous recommendations for children, recommendations for older adults and those living with clinical conditions are lacking – with a subsequent lack of coverage and uptake. When collating the existing data for three different groups – children, people in clinical risk groups, and older adults – we find that:

- Coverage data suggest that there are disparities in pneumococcal vaccination across the life course – the average coverage figures are 17.95% for people from clinical risk groups and 24.20% for older adults while coverage figures for children stand at 88.30%
- Data availability varies considerably – across the 42 countries surveyed in this report, 98% officially reported on childhood pneumococcal vaccination, while only 26% collected some form of data for people from clinical risk groups and older adults (for the purposes of this report, we took data from a mixture of official government sources, research organisations, and survey findings)
- Recommendations differ across Europe, with clear discrepancies between Eastern and Western Europe – just 60% of countries recommend that all three groups receive the pneumococcal vaccination
- Many Europeans have to pay for pneumococcal vaccination – only 15 countries in this report (36%) reimburse or cover the cost for all three groups through their national healthcare systems

If we are to improve pneumococcal vaccination coverage overall, we must focus more on people from clinical risk groups and older adults. We need countries to make vaccination recommendations for these groups and improve data collection to ensure more accurate and consistent reporting on national vaccination programmes.

In this report, we recommend that:



National governments adopt a life course approach to pneumococcal vaccination by recommending it for all three groups and adopting a national pneumococcal immunisation programme



National immunisation programmes for pneumococcal disease should be fully funded by national healthcare systems; patients should be reimbursed for any costs



The European Centre for Disease Prevention and Control (ECDC) should require all EU/EEA member countries to report on pneumococcal vaccination across different groups every year; countries that are members of the WHO/Europe region should also collect and report on this data

## About this report and the Pneumococcal Vaccination Atlas

This report evaluates the current state of pneumococcal vaccination coverage, recommendations, and funding across 42<sup>a</sup> European countries.

Data has been collated from various sources, including:

- World Health Organization (WHO)
- European Centre for Disease Prevention and Control (ECDC)
- International Vaccine Access Center (IVAC)
- Ipsos PneumoVUE® study
- Our World in Data
- National health bodies

Until now, there has been little research into pneumococcal vaccination across the life course. This report aims to present a better understanding of what coverage and recommendations look like for different European countries, as well as the state of pneumococcal infections and mortality across Europe.

Part of the reason for there being such variation in approach from country to country is the nature of pneumococcal vaccination. For full protection against pneumococcal diseases, individuals require more than one dose, with regimens varying depending on age, risk of pneumococcal disease, vaccination history, and immune status. Expert opinions on the optimum nature of this regimen also vary.

Most countries recommend that children aged two and under receive vaccination at three different stages, with recommendations varying more widely for people from clinical risk groups and older adults.

While the exact details may diverge, our main aim in this report is that all European countries make recommendations for each of these groups, to cover the entire life course, and that they back these

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<sup>a</sup>This figure assumes that the United Kingdom is made up of England, Northern Ireland, Scotland, and Wales, as health is a devolved policy. Some graphs may show the UK as a whole and therefore refer to 39 countries.

with fully-funded national immunisation programmes to maximise coverage.

The findings in this report have been taken from the Pneumococcal Vaccination Atlas created by the Coalition for Life Course Immunisation and International Longevity Centre UK, which illustrates the current state of pneumococcal vaccination in Europe in an online interactive atlas.<sup>1</sup>

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# Pneumococcal disease and vaccination in Europe

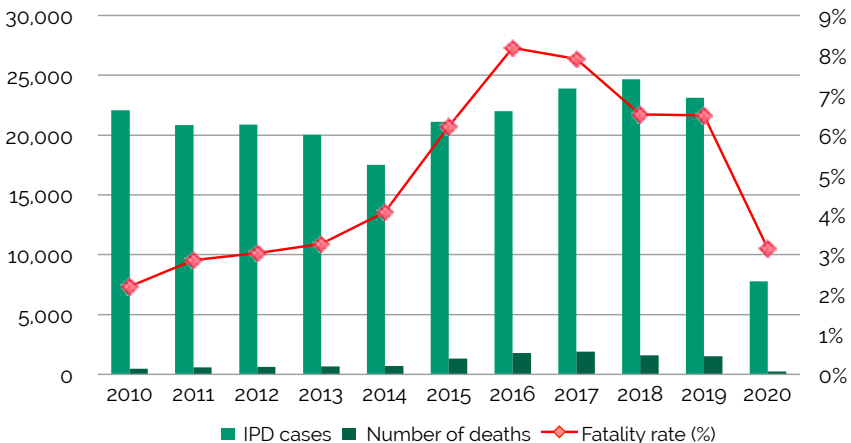
## What is pneumococcal disease?

- The ECDC defines pneumococcal disease as symptomatic infections caused by the bacterium *Streptococcus pneumoniae* (*S. pneumoniae*), commonly referred to as pneumococci.
- The ECDC uses the term invasive pneumococcal disease (IPD) for more severe and invasive pneumococcal infections, such as bacteraemia, sepsis, and meningitis.
- *S. pneumoniae* is the most common cause of community-acquired bacterial pneumonia. Pneumococcal pneumonia is frequently preceded by a viral respiratory tract infection and typically results in chills and high fever, often followed by a cough and chest pains.
- Pneumococcal infections and IPDs are major causes of severe disease and mortality in Europe. The highest burden of disease is often found in young children and older adults.<sup>2</sup>

## IPD cases and deaths

Between 2010 and 2020, there was an average of 20,353 IPD cases and 1,041 deaths from IPD across the EU/EEA per year.<sup>3</sup> Cases and deaths fell in 2020 due to the impact of COVID-19 lockdowns.

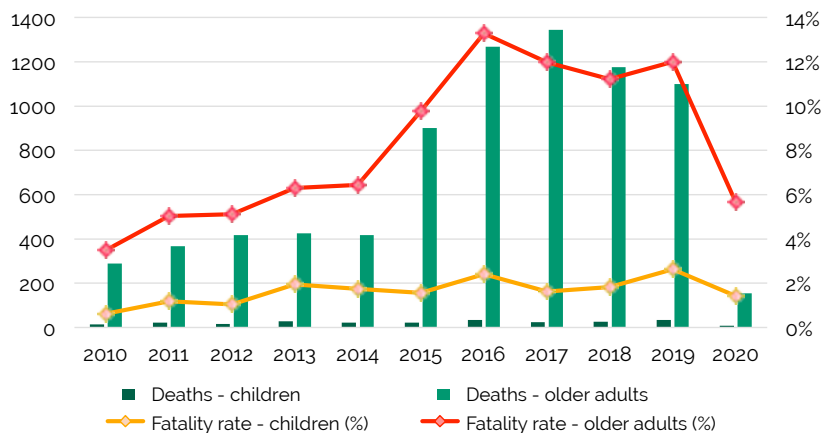
**Figure 1: IPD cases and deaths in the EU/EEA, 2010-2020**



Source: ECDC<sup>4</sup>

IPD cases and deaths are higher among older adults but still prevalent in younger populations. The average yearly IPD fatality rate in children is 1.64%, while the average rate in older adults is 6.57%.<sup>5</sup>

**Figure 2: IPD deaths and fatality rate in children and older adults in the EU/EEA, 2010-2020**



Source: ECDC<sup>6</sup>

## Vaccination coverage and recommendations

A large proportion of IPD is vaccine preventable.<sup>7</sup> While vaccination is generally recommended throughout people's lives to offer better protection against pneumococcal infections, specific recommendations vary from country to country.

European figures for pneumococcal vaccination coverage are relatively low, except for in the UK, which has relatively high cumulative coverage for each group. In other European countries, childhood vaccination coverage is high, but remains low in other recommended groups. This is despite people aged 65 years and older being at higher risk,<sup>8</sup> and adults with specific health conditions (such as diabetes, chronic heart disease and chronic lung disease) having the risk of IPD increased 3- to 6-fold compared with healthy adults.<sup>9</sup>

Pneumococcal vaccination is recommended for children in all countries across the EU/EEA except Estonia.<sup>10</sup> Recommendations for people from clinical risk groups (those with underlying health conditions which put them at great risk of disease), and older adults (aged 50 and over) varies by country. Recommendations and coverage are scarcer across non-EU Eastern European countries.



**Table 1: Pneumococcal vaccination recommendations in Europe**

Country	Children	At-risk groups	Older adults
Albania	✓	✗	✗
Austria	✓	✓	✓
Belgium	✓	✓	✓
Bosnia and Herzegovina	✗	✗	✗
Bulgaria	✓	✓	✓
Croatia	✓	✓	✓
Cyprus	✓	✓	✗
Czechia	✓	✓	✓
Denmark	✓	✓	✓
Estonia	✗	✓	✓
Finland	✓	✓	✗
France	✓	✓	✗
Germany	✓	✓	✓
Greece	✓	✓	✓
Hungary	✓	✓	✓
Iceland	✓	✗	✓
Ireland	✓	✓	✓
Italy	✓	✓	✓
Latvia	✓	✗	✗
Liechtenstein	✓	✗	✗
Lithuania	✓	✓	✗
Luxembourg	✓	✓	✓
Malta	✓	✗	✗
Moldova	✓	✗	✗
Montenegro	✗	✗	✗
Netherlands	✓	✓	✓
North Macedonia	✓	✓	✗
Norway	✓	✓	✓

Poland	✓	✓	✓
Portugal	✓	✓	✓
Romania	✓	x	x
Serbia	✓	✓	✓
Slovakia	✓	x	✓
Slovenia	✓	✓	✓
Spain	✓	✓	✓
Sweden	✓	✓	✓
Switzerland	✓	✓	x
Türkiye (Turkey)	✓	✓	✓
United Kingdom	✓	✓	✓

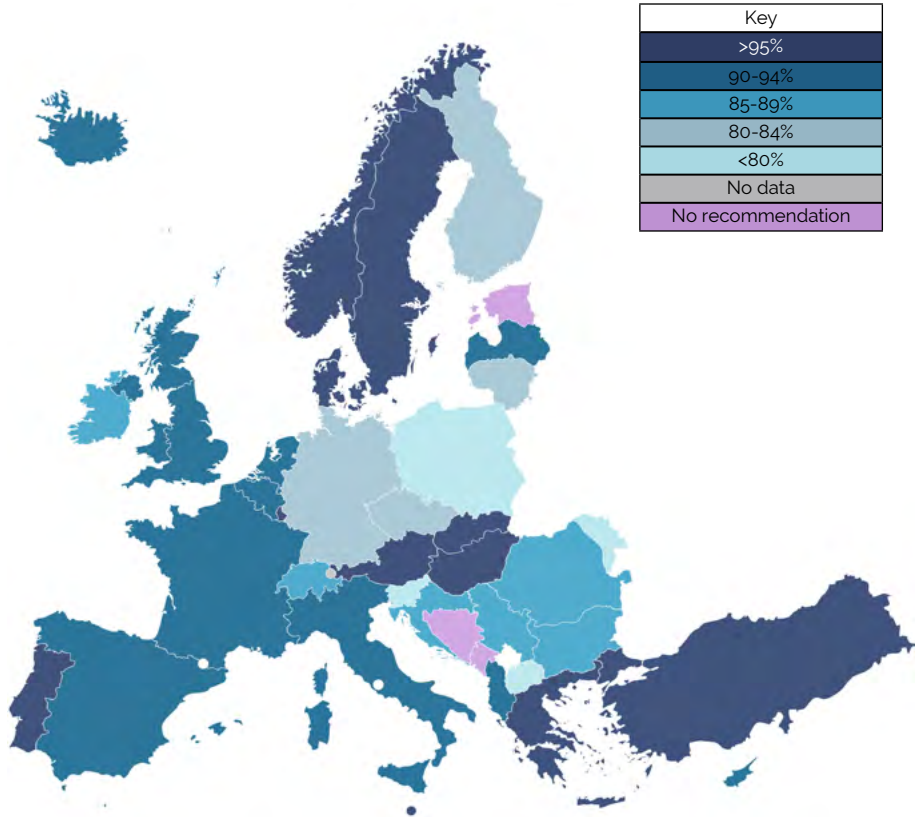
Source: Pneumococcal Vaccination Atlas<sup>11</sup>

# Coverage across the life course

## Children

Most European countries recommend that children receive the pneumococcal vaccination and record coverage data rigorously. Childhood coverage ranges from 53.40%<sup>12</sup> to 99.76%<sup>13</sup> across Europe.

**Figure 3: Childhood pneumococcal vaccination coverage across Europe**

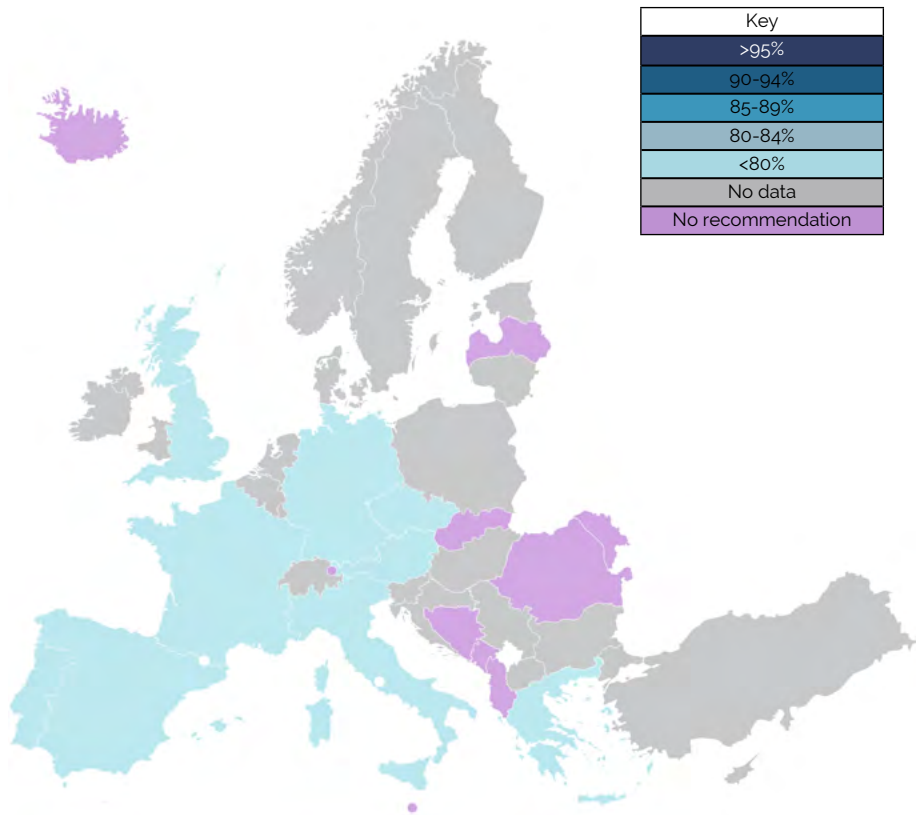


Sources: WHO Immunization Data Portal,<sup>14</sup> IVAC VIEW-hub<sup>15</sup>  
Lichtenstein = No data

## Clinical risk groups

Coverage differs for people from clinical risk groups, as recommendations vary by country as to which underlying health conditions and age groups are covered. This makes it much harder to produce a concise image of coverage. This is particularly true for data on coverage in clinical risk groups, which we have mainly sourced from an Ipsos Healthcare survey.<sup>16</sup>

**Figure 4: Clinical risk group pneumococcal vaccination coverage across Europe**

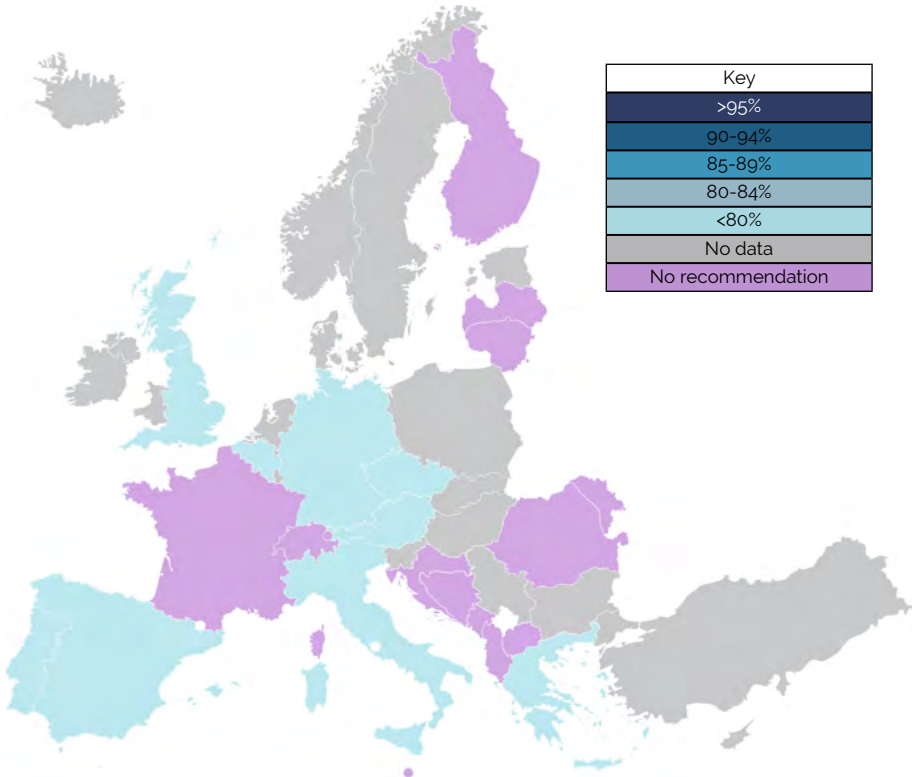


Sources: UK Health Security Agency,<sup>17</sup> Public Health Scotland,<sup>18</sup> Ipsos PneumoVUE@<sup>19</sup>

### Older adults

Data on older adult pneumococcal vaccination is also limited: the Ipsos PneumoVUE® survey acts as a benchmark for the current level of coverage data available.<sup>20</sup> As fewer countries make national vaccination recommendations for this group, fewer countries are likely to record and report coverage data.

**Figure 5: Pneumococcal vaccination coverage in older adults<sup>b</sup> across Europe**



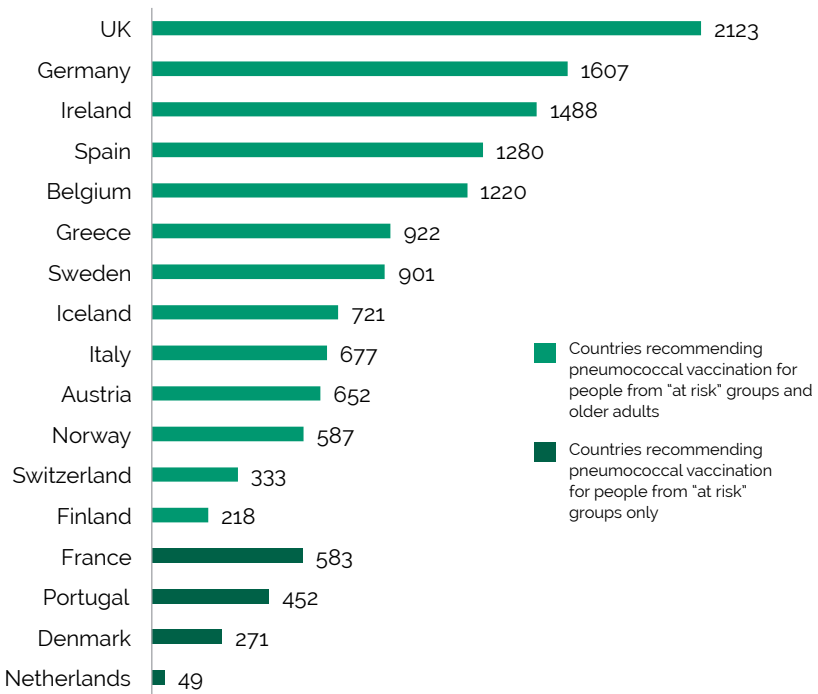
Sources: UK Health Security Agency,<sup>21</sup> Public Health Scotland,<sup>22</sup> Belgian Health Care Knowledge Centre,<sup>23</sup> Ipsos PneumoVUE®<sup>24</sup>

<sup>b</sup>Most European countries recommend that people over the age of 65 receive pneumococcal vaccination, but age recommendations vary between countries. Poland alone recommends vaccination for people aged 50 and over, while a handful of countries recommend it for people aged 60 and over.

## Other coverage data

While there's limited data on pneumococcal vaccination in people from clinical risk groups and older adults, one study suggests that coverage ranges between 20% and 30% across most European countries.<sup>25</sup> The same study also highlighted the cumulative number of doses of pneumococcal polysaccharide vaccine (PPV) distributed in different European countries:

**Figure 6: Cumulative PPV doses distributed per 10,000 persons in European countries, 2001–2010**

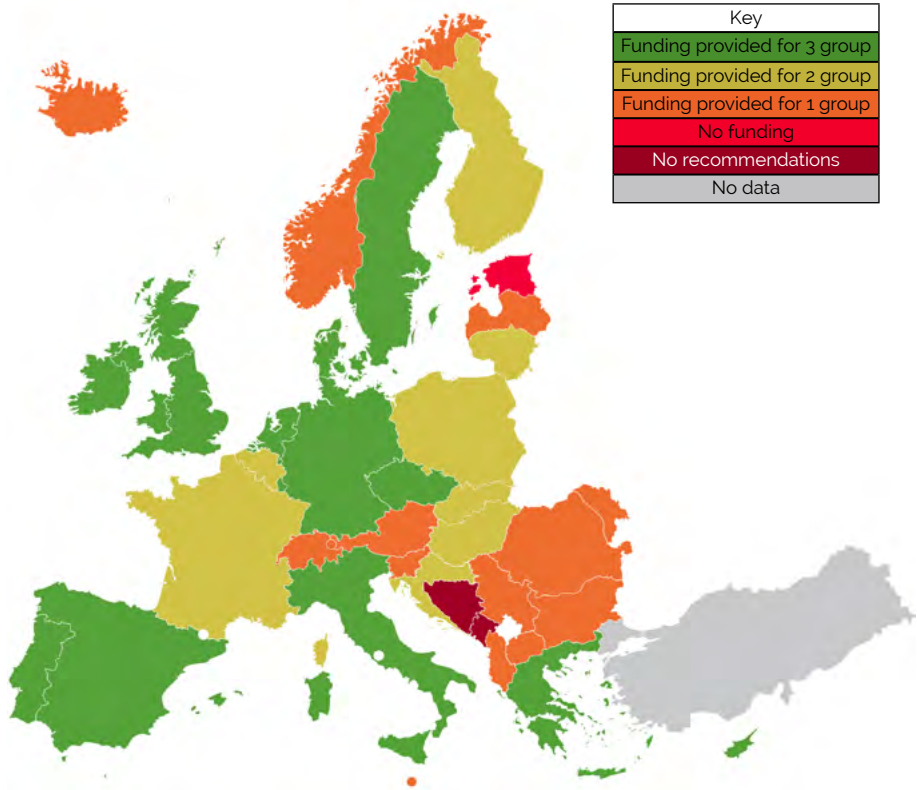


Source: Fedson, D.S. et al. 2011<sup>26</sup>

# Funding for pneumococcal vaccination programmes

Across Europe, approaches to funding pneumococcal vaccination vary. Only 15 of the 41 countries for which we found data provide funding for all three groups through their national healthcare systems:

**Figure 7: Funding for pneumococcal vaccination programmes across the life course in Europe**



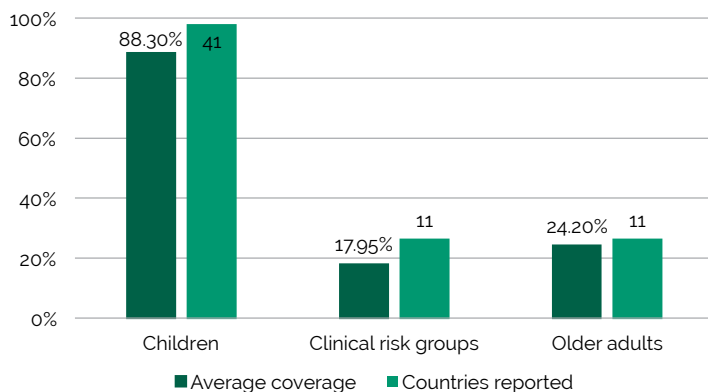
Sources: ECDC,<sup>27</sup> other<sup>28</sup>

A lack of core funding for pneumococcal vaccination programmes could explain why uptake is lower in some populations across some countries, especially if patients are obliged to cover costs. All countries that recommend pneumococcal vaccination for children provide funding for it, with relatively high coverage rates among children across Europe as a result.

## The overall picture of European pneumococcal vaccination coverage

We estimate that pneumococcal vaccination coverage across the life course ranges between 18% and 88% across different groups.

**Figure 8: Average coverage figures for different groups in Europe (where data is available)**



Sources: WHO Immunization Data Portal,<sup>29</sup> IVAC VIEW-hub,<sup>30</sup> UK Health Security Agency,<sup>31</sup> Public Health Scotland,<sup>32</sup> Belgian Health Care Knowledge Centre,<sup>33</sup> Ipsos PneumoVUE®<sup>34</sup>

Evidently, pneumococcal vaccination coverage remains suboptimal among people from clinical risk groups and older adult populations but high among children across Europe.

As childhood vaccination is recommended more consistently, and childhood vaccination programmes are more often publicly funded, it's no surprise that pneumococcal vaccination remains lower for other groups.

As this report recommends, applying the same commitment towards pneumococcal vaccination programmes for clinical risk groups and older adults should become a focus for national governments and healthcare services.



## Recommendations

Pneumococcal vaccination coverage in Europe is suboptimal, especially among people from clinical risk groups and older adults. To ensure better coverage of pneumococcal vaccination, we recommend that:



### **National governments adopt a life course approach**

National European governments should adopt a life course approach by recommending pneumococcal vaccination for all three groups mentioned in this report, and adopting a national pneumococcal immunisation programme. This should include implementing a national schedule for everyone to receive pneumococcal vaccination at various stages and ages of their lives.



### **Fully funded national immunisation programmes**

National pneumococcal immunisation programmes should be fully funded by national healthcare systems. Patients should be reimbursed for vaccination costs. National governments should increase spending on immunisation as a proportion of their healthcare budgets.



### **Consistent data reporting**

The ECDC should require all EU/EEA member countries to report on pneumococcal vaccination across different groups every year; countries that are part of the WHO/Europe region should also collect and report on this data. This will allow a better understanding of pneumococcal vaccination coverage across Europe, enabling the EU and WHO to identify and address vaccination gaps.

## Conclusion

Despite the threat posed by IPD and pneumococcal pneumonia, disparities in recommendations and coverage between different countries mean that many Europeans remain at risk. While there has been a clear drive to vaccinate children, gaps remain for other groups.

Countries across Europe should recommend pneumococcal vaccination for people from clinical risk groups and older adults to increase immunity and protection against pneumococcal disease, helping to foster healthy ageing and longer lives.

There is a clear opportunity for the EU and national governments across Europe to adopt a life course approach to pneumococcal vaccination by broadening existing national programmes or launching new ones. It's also vital to make pneumococcal vaccination free of charge. Finally, we need more complete reporting on pneumococcal vaccination coverage to give healthcare professionals a better understanding of coverage and highlight gaps in uptake.

These measures will help to create much stronger and more consistent pneumococcal vaccination programmes. As the COVID-19 pandemic has demonstrated, precise and well-coordinated vaccination programmes can help to prevent severe disease and mortality. Pneumococcal disease is no exception: vaccination is critical to help keep Europeans healthy and living longer.

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- <sup>5</sup>Ibid.
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NB: The 18% figure is an average of European coverage figures; individual coverage figures have been ascertained directly from Ipsos. For more information, please email: [PatrickSwain@ilcuk.org.uk](mailto:PatrickSwain@ilcuk.org.uk) or [research@cl-ci.org](mailto:research@cl-ci.org)
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## About ILC

The International Longevity Centre UK (ILC) is the UK's specialist think tank on the impact of longevity on society. The ILC was established in 1997, as one of the founder members of the International Longevity Centre Global Alliance, an international network on longevity. We have unrivalled expertise in demographic change, ageing and longevity. We use this expertise to highlight the impact of ageing on society, working with experts, policy makers and practitioners to provoke conversations and pioneer solutions for a society where everyone can thrive, regardless of age.

This report and the Pneumococcal Vaccination Atlas initiative has been developed with the support of MSD and was produced in partnership with the Coalition for Life Course Immunisation.

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