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MONITORING

# Survey report on national seasonal influenza vaccination recommendations and coverage rates in EU/EEA countries

## Data from the 2024 ECDC influenza survey, 2021–22 to 2023–24 influenza seasons

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The following experts reported data on influenza vaccination coverage and contributed to the interpretation of the level and trend in vaccination coverage observed in their countries:

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*Errata*

*On 26 November 2024, the following changes were made to this document:*
*On page 5, line 10, 'Belgium' was deleted, and 'Latvia' was added. On line 20 of the same page, 'Belgium' was added. On page 5, line 19, 'Romania' was deleted and 'Italy' was added.*
*In Table 1, 'R' was deleted for the Belgium row, and details about the risk groups were added. 'R' was also deleted from the Lithuania row for the column '24 months to 7 years'.*
*On page 14, line 23, 'Belgium' was deleted.*
*On page 15, line 11, the following sentence was deleted: 'Portugal, which was one of two countries with the highest reported VCRs (along with Denmark) in 2023–24, saw a notable decline of 10 percentage points.' The following sentence was added: 'Portugal (where there was a change in the age-based recommendation in 2023–24).'*
*In Figure 2, the following footnote was added: 'For Portugal, note that 2023–24 coverage data is for those aged 60 years and above, following changes in the recommendation.'*

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# Abbreviations

| | |
|---|---|
| EEA | European Economic Area |
| EU | European Union |
| HCWs | Healthcare workers |
| NITAG | National Immunisation Technical Advisory Group |
| ILI | Influenza-like illness |
| VENICE | Vaccine European New Integrated Collaboration Effort |
| VCR | Vaccination coverage rates |
| WHO | World Health Organization |

# Executive summary

The 2024 ECDC influenza survey on national vaccination recommendations and coverage used and adapted the previous ECDC-funded survey conducted by the Vaccine European New Integrated Collaboration Effort (VENICE) project [1, 2]. The aim of the survey was to describe the evolution of seasonal influenza vaccine recommendations in European Union/European Economic Area (EU/EEA) countries during the 2023–24 influenza season, and to describe trends in national influenza vaccination coverage rates (VCRs) during the 2021–22, 2022–23 and 2023–24 influenza seasons.

Out of the 30 EU/EEA countries invited to participate in the survey, 29 completed the questionnaire (97% response rate). For the country that did not participate in the survey, we performed a desk review of its national public health agency website to collect the relevant recommendations.

**Vaccination in children and adolescents** – Twenty EU/EEA countries reported age-based recommendations for children and/or adolescents, regardless of underlying medical conditions, for the 2023–24 season. This is a notable increase from the 2020–21 season, when only 14 countries had recommendations [1], and a significant increase from the 2017–18 season, when only five countries had recommendations [2].

Of the 20 countries with recommendations, 13 reported VCRs during the 2023–24 season (range: 0.9%–38.9%), with Finland (38.9%), Spain (36.1%) and Denmark (16%) reporting the highest VCRs. Comparison with data collected in the previous survey [1] is not possible because different countries reported data and there was heterogeneity in the age groups reported, which at times did not reflect the age cut-off of the recommendation.

**Vaccination in older adults** – All EU/EEA countries reported recommendations for older adults for the 2023–24 season. There was some variation in the lower age limit, ranging from 50 years old to 65 years old.

Overall, vaccination coverage over the three seasons showed a relatively stable trend (<3% change), but some downward fluctuations were observed in the 2023–24 season compared with the previous two seasons (range: 3%–10% for 17 countries reporting data for the overall period). The median VCR for 2023–24 was 45.7%, compared with 59% in the 2020–21 season [1]. While data should be interpreted carefully, there is an indication that seasonal influenza vaccination programmes in older adults may be in decline following several years of stagnant uptake in the pre-COVID-19 pandemic period. Such trends must be carefully investigated and validated, as older adults are the primary target of seasonal influenza vaccination programmes.

**Vaccination in individuals with chronic medical conditions** – All EU/EEA countries had specific recommendations for adults with chronic medical conditions in the 2023–24 season. Although there were minor variations in the conditions covered, all countries recommended the vaccine for chronic pulmonary, cardiovascular, renal and metabolic conditions, as well as immunosuppression. As most countries did not have VCR data available for this group, no such data are presented in this report.

**Vaccination in pregnancy** – All EU/EEA countries except one had national recommendations for influenza vaccination during pregnancy in the 2023–24 season. Compared with the 2020–21 season [1], two countries expanded their programmes to include all pregnant women regardless of medical conditions. Of these 29 countries, eight reported VCRs (range: 1%–58%) in the 2023–24 season.

**Vaccination in healthcare workers** – Twenty-three EU/EEA countries had recommendations for all healthcare workers for the 2023–24 season. Six additional countries recommended the vaccine for specific medical staff, such as those in close contact with patients or contaminated materials.

Ten countries reported VCRs for healthcare workers (range: 5%–58%). The median VCR in the 2023–24 season was 22.1%, down from 25% in 2022–23 and 28% in 2021–22. Most countries reported a decrease in VCRs for healthcare workers compared with the 2020–21 season [1], when a median of 52% was reported.

In general, EU/EEA countries continue to recommend influenza vaccination for the primary target groups (older adults, individuals with chronic medical conditions, pregnant women and healthcare workers). Some countries have expanded recommendations for seasonal influenza vaccination in recent years in children. This signals important public health efforts to strengthen the prevention of seasonal influenza by making the vaccine more widely available to the groups that could benefit most from the programme. Nonetheless, when looking at the performance of such programmes through the reported national vaccination coverage data, it is evident that policies still fall short of meeting sufficient levels of uptake across key target groups.

VCRs varied across target groups and countries during the three seasons included in this report. A limited number of countries showed slight increases in coverage but the majority experienced a decline. Although comparison across countries and years must be done with caution, the decline since the 2020–21 season appears to be more substantial for critical target groups such as older adults and healthcare workers [1].

Most countries are still far from reaching adequate levels of protections for key target groups. Seasonal influenza vaccination remains a key public health intervention, making it essential to implement targeted strategies to increase vaccine uptake and address barriers to vaccination. Efforts to expand recommendations must be bolstered by efforts to improve implementation and increase the benefits of seasonal influenza vaccination programmes. At the same time, there is an important need to develop a new generation of equally safe yet more effective influenza vaccines, which may help fight complacent attitudes and increase trust in this fundamental vaccination programme.

# Introduction

Before the COVID-19 pandemic, seasonal influenza viruses caused an estimated 40–50 million known symptomatic infections in the European Union/European Economic Area (EU/EEA) and 15 000–70 000 European citizens died prematurely of influenza-related causes each year [3]. In this pre-pandemic period, EU/EEA countries usually observed a lower disease burden compared with other regions around the globe [4]. During the COVID-19 pandemic, between March 2019 and the 2021–22 season, seasonal influenza circulation decreased; however, the more classical influenza circulation pattern and burden have returned since the 2022–23 season.

Higher vaccination coverage could help to reduce more severe health outcomes in the target groups, as well as contribute to reducing pressure on the healthcare system during the winter season [5]. Monitoring of national seasonal influenza vaccination recommendations and coverage rates (VCRs) provides baseline information to support these efforts in the EU/EEA.

## Purpose and audience

The 2024 ECDC influenza survey on vaccination recommendations and coverage rates used and adapted the previous ECDC-funded survey conducted by the Vaccine European New Integrated Collaboration Effort (VENICE) project [1, 2]. The aim of the survey was to describe the evolution of seasonal influenza vaccine recommendations in EU/EEA countries during the 2023–24 influenza season, and to describe trends in national influenza VCRs during the 2021–22, 2022–23 and 2023–24 influenza seasons. This survey report provides information that can support national public health institutes and policy-makers with the development of seasonal influenza vaccination programmes and supporting activities.

## Background

From 2006 to 2017, the ECDC-funded VENICE project monitored influenza vaccination policies and VCRs across EU/EEA countries through national seasonal influenza vaccination surveys [2, 6, 7].

ECDC developed an adaptation of the VENICE survey for the collection of vaccination recommendations for 2021–22 and national coverage rates for the 2018–19 to 2020–21 influenza seasons [1]. One of the main findings of this survey was the increasing number of countries in the EU/EEA that adopted recommendations for children and/or adolescents during the 2020–21 season compared with the 2017–18 season [1, 2]. The survey also reported an increase in VCRs during the 2020–21 season in all target groups after a long period of stagnation or even declining trends [1], albeit with coverage still below the EU objective of 75% in most target groups in almost all EU/EEA countries [8].

Public health communication on the importance of influenza vaccination to reduce the burden of respiratory disease during the COVID-19 pandemic was likely one of the factors explaining the observed trend of higher coverage during the 2020–21 influenza season. During this period, countries leveraged the infrastructure and experience they used to deliver seasonal influenza vaccination programmes to roll out similar programmes for COVID-19 vaccination; this, in turn, strengthened overall capacity for vaccine delivery in a worrying context of possible co-circulation of SARS-CoV-2 and influenza viruses.

Several EU policy and legislative instruments guide ECDC's monitoring of vaccination coverage [8, 9, 10]. In 2009, the Recommendation by the Council of the European Union set an objective for EU Member States to achieve a 75% VCR for seasonal influenza vaccination by the 2014–15 season in key target groups such as older adults and those at risk of more severe disease [8]. The Council Recommendation also encouraged Member States to improve VCRs among healthcare workers. In its position paper from 2012 and updated in 2022, the WHO Strategic Advisory Group of Experts (SAGE) recommended that the following risk groups be targeted for seasonal influenza vaccination programmes: pregnant women, children aged 6–59 months, older adults, individuals with specific chronic medical conditions and healthcare workers [11, 12].

## Survey objectives

The primary objectives of the 2024 ECDC influenza survey were:

- To describe the national seasonal influenza vaccination recommendations for the 2023–24 season.
- To describe trends in national influenza VCRs across the 2021–22, 2022–23 and 2023–24 seasons.

More specific objectives of the survey were:

- To identify changes in policy recommendations or funding schemes for national 2023–24 seasonal influenza vaccination programmes for the target groups (children and/or adolescents, older adults, individuals with chronic medical conditions and healthcare workers) compared with the 2020–21 season.
- To describe the 2021–22, 2022–23 and 2023–24 national seasonal influenza VCRs for the target groups.
- To describe the funding schemes used for national seasonal influenza vaccination programmes and the vaccine products recommended for each target group during the 2023–24 influenza season.

# Methods

## Study design

ECDC sent a standardised survey by email to the nominated national experts for vaccine-preventable diseases in each EU/EEA country. Each country received a survey that was pre-populated with the data it reported in 2020–2021 to simplify updating the document for the 2023–24 season [13]. This survey built on those previously conducted through the ECDC-funded VENICE project [1, 2].

## Data collection

The standardised survey used predominantly closed-ended questions. It was sent to the countries on 1 June 2024 and had to be completed by 1 July 2024. This deadline was extended to 15 July due to a low response rate. Reminders were sent to the countries that had not yet responded on 15 June, 1 July and 7 July.

The data collected included information on which target groups were recommended for influenza vaccination (e.g. children and/or adolescents, older adults, adults with chronic medical conditions, pregnant women and healthcare workers) in the national influenza vaccination policy document available for each country for the 2023−24 season. National VCR estimates were collected for each target group, whether there was a recommendation in place or not.

## Non-responding countries

For non-responding countries, the most up-to date influenza vaccine recommendations and VCR data were extracted from official websites (e.g. from the national public health institute or Ministry of Health websites). Links to data sources are provided in the relevant tables in the Results section, where applicable.

## Data analysis

We carried out a descriptive analysis and summarised the total number of countries with influenza vaccine recommendations and policies in place for the previously described target groups. Trends in VCRs from the 2021−22 season to the 2023−24 season were described. When data was available for harmonised age groups across countries, median VCRs were also calculated and compared for each vaccine target group.

## Data validation

A draft report containing preliminary data was sent to the national experts who completed the survey. The experts were asked to validate their data and make changes, as necessary. Official websites of national public health institutes or Ministries of Health may have been consulted for clarification purposes; where this was the case, a link is provided in the relevant tables in the Results section.

**Table 1. Age-based recommendations for seasonal influenza vaccination in children and adolescents, funding scheme and vaccine products used, EU/EEA countries, 2023–24 influenza season**

| Country | Age group | | | | | | | | | Funding of the vaccine/administration of the vaccine | Recommended vaccine product |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ≥6–23 months | ≥6 months to 5 years | ≥6 months to 6 years | 24 months to 7 years | ≥ 6 months to 12 years | ≥6 months to 15 years | ≥6 months to <18 years | ≥24 months to <18 years | Other target groups/age groups (please specify) | | |
| Austria | | | | | | | R | | | F/F | IIV4/LAIV |
| Belgium[a] | | | | | | | | | Risk groups: 6 months to 18 years | NF/NF | IIV4 |
| Bulgaria[b] | | | | | | | R | | | NF/NF | IIV4 |
| Croatia[c] | | | | | | | | | Risk groups: 6 months to 18 years | NF/NF | |
| Cyprus[d] | | | | | | R | | | Risk groups: 6 months to 17 years | F/F | IIV4 |
| Czechia[e] | | R | | | | | | | | NF/NF* | IIV4/LAIV |
| Denmark | | | | R | | | | | | F/F | LAIV |
| Estonia[f] | | | | | | | | | All children: 6 months to 7 years | F/F | |
| Finland[g] | | | R | | | | | | | F/F | IIV4/LAIV |
| France | | | | | | | | R | | F/F | IIV4 |
| Germany[h] | | | | | | | | | | | |
| Greece[i] | | | | | | | | | Risk groups, all ages* | | |
| Hungary[j] | | | | | | | | | All children: 6–35 months | F/F | IIV4 |
| Iceland | R | | | | | | | | All children: 6–36 months | F/F | IIV4 |
| Ireland | | | | | | | | R | | F/F | LAIV |
| Italy[k] | | | R | | | | | | | F/F | LAIV/ IIV4/ cIIV4 |
| Latvia[l] | R | | | | | | | | Risk groups: 24 months to 17 years* | NA | |
| Liechtenstein[m] | | | | | | | | | Risk groups 6-36 months* | F/F | IIIV4 ** |
| Lithuania[n] | | | | | | | R | | | F/NF | IIV4 |
| Luxembourg | | | | | | | | | | | |
| Malta | | | R | | | | | | | F/F | IIV4 |
| Netherlands | | | | | | | | | | | |
| Norway | | | | | | | | | | | |
| Poland[o] | | | | | | | | R | | F/F | IIV4, LAIV |
| Portugal[p] | | | | | | | | | | | |
| Romania[q] | | | | | | | R | | | F/F | IIV4/LAIV (2-18 years) |
| Slovakia | | | | | R | | | | | F/F | IIV4/LAIV |
| Slovenia[r] | R | | | | | | | | | F/F | IIV4 |
| Spain[s] | R | R | | | | | | | | F/F | IIV4, cIIV4, LAIV |
| Sweden[t] | | | | | | | | | Risk groups: 6 months to >18 years | F/F | IIV/LAIV * |

cIIV4: cell-derived inactivated quadrivalent influenza vaccine; F: funded; F/F: funding of the vaccine/funding of the administration of the vaccine; IIV4: quadrivalent inactivated influenza vaccine; LAIV: live attenuated influenza vaccine; NF: not funded; R: recommended (defined as the existence of a written recommendation in an official policy document, stating that a particular population group should receive seasonal influenza vaccine). Grey fields indicate no recommendation in place or no data reported.

[a] ***Belgium*** *– Only recommended for children and adolescents six months to 18 years old who receive long-term aspirin therapy.*
[b] ***Bulgaria*** *– Source: 'National programme for improvement of seasonal flu vaccine prophylaxis, 2019–2022' (in Bulgarian)*
[c] ***Croatia*** *– Children and adolescents that are not at risk can get the influenza vaccine from six months old but it is not funded by Croatian Health Insurance. Parents have to pay for the vaccine and its administration.*
[d] ***Cyprus*** *– The vaccine can be given from six months to 15 years old. It is recommended in individuals six months to 17 years old with a chronic medical condition. Source: 'National vaccination program for children and adolescents, Ministry of Health, Cyprus, 2022'*
[e] ***Czechia*** *– Universal recommendation is given for all age groups but children from six months to five years old belong to the high-risk group. Source: 'Recommendation of the Czech vaccinological society ČLS JEP for vaccination against influenza' (in Czech)*
[*] *Funding is only for specified patients with risk conditions and is F/F for IIV4 and partially F/F for LAIV (as the funding is up to the price of the cheapest vaccine, which is IIV4).*
[f] ***Estonia*** *– Before 2022, the flu vaccine was recommended for all Estonian residents, especially people at risk (adults ≥65 years old and children, adolescents and adults with chronic diseases). However, people had to pay for the flu vaccine and vaccination. Since 17 September 2022, the flu vaccine is included in the Estonian immunisation schedule. Flu vaccination is free for the following groups: residents of welfare institutions, people aged 60 years and older, children aged six months to seven years old, pregnant women, children and adolescents 7–17 years old who have an increased risk of becoming seriously ill due to their health condition (heart and blood vessel diseases, oncological diseases, immunodeficiency, diabetes and obstructive lung disease). Source: Estonian Immunisation Schedule*
[g] ***Finland*** *– Source: 'Vaccination programme for children and adults'*
[h] ***Germany*** *– Source: Epidemiological Bulletin*
[i] ***Greece*** *– Greece has recommendations for children and adolescents belonging to high-risk groups. Source: 'National Child & Adolescent Immunization Program 2023' (in Greek)*
[j] ***Hungary*** *– Hungary's recommendation is for children 6–35 months old with chronic pulmonary, cardiovascular, renal or hepatic disease, metabolic disorders or immunosuppression due to disease or treatment.*
[k] ***Italy*** *– In Italy, vaccination is offered free of charge to all children from six months to six years old. From six months onwards, vaccination is offered free of charge to all people with chronic medical conditions.*
[l] ***Latvia*** *– The vaccine is recommended for children and adolescents aged 24 months to 17 years with chronic lung or cardiovascular diseases, chronic metabolic or kidney conditions or immunodeficiency, as well as those receiving immunosuppressive therapy or long-term acetylsalicylic acid therapy. Source: 'Information and advice to citizens on influenza prevention measures'*
[m] ***Liechtenstein*** *– Vaccination is not recommended for healthy children but is recommended for premature babies (born before gestational week 33 (e.g. <32 weeks and seven days of pregnancy) or with a birth weight of less than 1 500g) from the age of six months and for the first two winters after birth.*
** Children and adolescents with chronic medical conditions from the age of six months.*
*** Vaxigrip Tetra® (from the age of six months) and Fluarix Tetra® (from the age of 36 months).*
[n] ***Lithuania*** *– Universal recommendation for all age groups. Funding for risk groups: 24 months to seven years old (included in the Lithuanian immunisation schedule from 12 February 2024, starting with the 2024–2025 season) and from six months to under18 years old with chronic medical conditions.*
[o] ***Poland*** *– Influenza vaccination is recommended and financed by the Ministry of Health budget. For children and adolescents from 24 months to under 18 years the LAIV vaccine is available and financed by the Ministry of Health budget. Source: 'Influenza vaccine in the National Immunization Program'*
[p] *Portugal – Source: 'Seasonal Influenza Vaccination Campaign: Autumn-Winter 2023-2024'*
[q] ***Romania*** *– Influenza vaccines (both IIV4 and LAIV) are 100% reimbursed for children and adolescents under 19 years old.*
[r] ***Slovenia*** *– Vaccination against influenza is recommended and funded for everyone over six months and is especially recommended for the risk groups (children 6–23 months, pregnant women, individuals with chronic medical conditions, older adults and adults aged 65 years and above).*
[s] ***Spain*** *– cIIV4 in two regions and, in one of these, only in children and adolescents aged over two years.*
[t] ***Sweden*** *– Source: 'Recommendations on influenza vaccination for risk groups' (summary in English)*
** Regional funding with free vaccine and administration for all risk groups in all regions.*
*** According to Summary of Product Characteristics, specific product depending on tender.*

## Age-based recommendations for adults

During the 2023–24 influenza season, all 30 EU/EEA countries had age-based recommendations for adults. Of these, five countries (Austria, Bulgaria, Ireland, Lithuania and Poland) had recommendations for all adults over 18 years old. Seventeen countries had recommendations for adults 65 years old and above and eight countries had recommendations for slightly younger age groups, specifically those 60 years old and above. Estonia, Lithuania and Slovakia had recommendation for adults over 59 years old and Czechia, Ireland, Lithuania and Malta had recommendations for adults 50 years old and above (Table 2). Compared with the recommendations for the 2020–21 season [1], for 2023–24 three countries lowered the adult age range recommended for vaccination (Portugal: over 65 years old to over 59 years old; Poland: over 55 years old to over 18 years old; Lithuania: over 65 years old to over 18 years old). Estonia, on the other hand, changed their recommendation from over 18 years old in 2020–21 to over 59 years old in 2023–24.

Notably, Norway is the only country where neither the vaccine nor the vaccination was funded for this target group in the 2023–24 season, which is a change from the 2020–21 season [1]. Other countries reported fully or partially funding the recommendations for adults aged 65 years old or above. Sweden also reported providing enhanced vaccine products according to regional tenders, with the funding covering all risk groups in all regions. Compared with the 2020–21 season [1], Belgium raised the recommended age from 50 years old to over 65 years old and Norway changed its funding scheme. Poland changed from recommending the vaccine to adults over 50 years old to 18 years old and above. Portugal lowered the age of the recommendation from 65 years old and above to 60 years old and above.

**Table 2. Age-based recommendations for seasonal influenza vaccination in adults, EU/EEA countries, 2023–24 influenza season**

| Country | Age group | | | | | | Funding of the vaccine/administration of the vaccine | Recommended vaccine product |
|---|---|---|---|---|---|---|---|---|
| | ≥18 years | ≥50 years | ≥55 years | ≥59 years | ≥60 years | ≥65 years | | |
| Austria[a] | R | | | | | | F/F | IIV4, aIIV4, QIV-HD |
| Belgium[b] | | | | | | R | F/NF* | IIV4, QIV-HD |
| Bulgaria[c] | R | | | | | | F/F | IIV4 |
| Croatia | | | | | | R | F/F | IIV4 |
| Cyprus | | | | | | R | F/F | aIIV4 |
| Czechia[d] | | R | | | | R | F/F* | IIV4, QIV-HD |
| Denmark[e] | | | | | | R | F/F | IIV4 |
| Estonia | | | | | R | | F/F | |
| Finland[f] | | | | | | R | F/F | IIV4 |
| France[g] | | | | | | R | F/F | IIV4, QIV-HD |
| Germany[h] | | | | | R | | F/F | IIV4, QIV-HD |
| Greece[i] | | | | | R | | F/F | IIV4, QIV-HD, aIIV4 |
| Hungary | | | | | R | | F/F | aIIV3 |
| Iceland | | | | | R | | F/NF | IIV4 |
| Ireland[j] | | R | | | | R | F/F (≥65 years old in 2023–24), NF/NF (≥50–64 years old in 2023–24) | IIV4, aIIV4 |
| Italy[k] | | | | | R | | F/F | |
| Latvia[l] | | | | | R | | | |
| Liechtenstein[m] | | | | | | R | F/F | IIV4* |
| Lithuania[n] | R | | | | | R | NF/F (funded for >65 years old) | IIV4 |
| Luxembourg[o] | | | | | | R | F/F | IIV4 |
| Malta | | | R | | | | F/F | IIV4 |
| Netherlands | | | | | R | | F/F | IIV4 |
| Norway[p] | | | | | | R | NF/NF | IIV4, aIIV4 |
| Poland[q] | R | | | | | | F/F | IIV4/QIV-HD |
| Portugal[r] | | | | | R | | F/F | IIV4 |
| Romania[s] | | | | | | R | F/F | IIV4, QIV-HD* |
| Slovakia | | | | R | | | F/F | IIV4 |
| Slovenia[t] | | | | | | R | F/F | IIV4 |
| Spain | | | | | | R | F/F | IIV4, aIIV4, cIIV4, QIV-HD |
| Sweden[u] | | | | | | R | F/F* | IIV4** |

*aIIV3: adjuvanted trivalent influenza vaccine; aIIV4: adjuvanted quadrivalent influenza vaccine; cIIV4: cell-derived inactivated quadrivalent influenza vaccine; F: funded; F/F: funding of the vaccine/funding of the administration of the vaccine; IIV3: trivalent inactivated influenza vaccine; IIV4: quadrivalent inactivated influenza vaccine; NF: not funded; QIV-HD: high-dose quadrivalent influenza vaccine; R: recommended (defined as the existence of a written recommendation in an official policy document stating that a particular population should receive seasonal influenza vaccine); rIV4: recombinant quadrivalent influenza vaccine. Grey fields indicate no recommendation in place or no data reported.*

[a] ***Austria*** *– Recommended in all individuals and fully funded in those aged six months to 18 years, living in retirement homes or long-term care facilities, or exempt from prescription charges (regardless of age). All others who did not fall into the aforementioned groups had a standardised deductible of €7 for the influenza vaccination throughout Austria. Some employers offered funded influenza vaccination programmes.*

[b] ***Belgium*** *– Partially funded, except in part of the country (Flanders), for residents of nursing homes.*

[c] ***Bulgaria*** *– Free of charge for those aged 65 years and above until the 2021–22 influenza season. Source: 'National programme for improvement of seasonal flu vaccine prophylaxis, 2019-2022' (in Bulgarian)*

[d] ***Czechia*** *– The Czech Vaccine Society recommends the vaccine in all adults over 50 years old, while the Czech National Immunisation Technical Advisory Group recommends the vaccine in all adults over 65 years old. For those below 65 years old, funding is only for specified patients with risk conditions on treatment and is F/F for IIV4. QIV-HD is F/F for the whole population over 65 years old. Universal recommendation for all age groups. Source: 'Recommendation of the Czech vaccinological society ČLS JEP for vaccination against influenza' (in Czech)*

[e] ***Denmark*** *– QIV-HD recommended in adults aged ≥82 years.*

[f] ***Finland*** *– Vaccines available during the 2021–22 season. Sources: 'Vaccination programme for children and adults' and 'Influenza vaccine'*

[g] ***France*** *– QIV-HD only in those aged ≥65 years.*

[h] ***Germany*** *– Source: Epidemiological Bulletin*

[i] ***Greece*** *– QIV-HD and aIIV4 recommended in adults aged ≥65 years.*

[j] ***Ireland*** *– The National Immunisation Technical Advisory Group recommended vaccination for all people aged ≥50 years for a number of years, but the national influenza programme specified only those aged ≥65 years.*

[k] ***Italy*** *– As of the 2020–2021 season, in light of World Health Organization recommendations and an evolving epidemiological situation of acute viral respiratory diseases, vaccination has been recommended and offered free of charge to people aged 60 years and over.*

[l] ***Latvia*** *– Source: 'Information and advice to citizens on influenza prevention measures'*

[m] ***Liechtenstein*** *– Vaxigrip Tetra®, Fluarix Tetra®, Efludea® (for adults aged 75 years and above)*

[n] ***Lithuania*** *– Universal recommendation for all age groups. Funding only for those over 65 years old (included in the immunisation schedule).*

[o] ***Luxembourg*** *– Source 'Vaccination against seasonal influenza during the COVID-19 pandemic'*
[p] ***Norway*** *– Neither the vaccine nor vaccination was funded for the risk groups in the 2022–23 and 2023–24 seasons.*
[q] ***Poland*** *– The vaccine and its administration are partially funded (50%). QIV-HD in adults aged 60 years and above. Sources: 'Free flu vaccinations for adults', 'Who is eligible for free or subsidized flu vaccines?' and 'Free flu vaccinations for adults' (in Polish)*
[r] ***Portugal*** *– Source: 'Seasonal Influenza Vaccination Campaign: Autumn-Winter 2023-2024'*
[s] ***Romania*** *– For adults aged 45–65 years without chronic medical conditions, the influenza vaccines are reimbursed 50%. Those aged 65 years and above are reimbursed 100%.*
[t] ***Slovenia*** *– Vaccination against influenza is recommended and funded for everyone over six months old, but is especially recommended for the specific risk groups (children aged 6–23 months, pregnant women, those with chronic medical conditions, older adults aged 65 years and above).*
[t] ***Sweden*** *– Source: 'Recommendations on influenza vaccination for risk groups' (summary in English)*
** Regional funding with free vaccine and administration for all risk groups in all regions.*
*** According to Summary of Product Characteristics; specific product depending on tender.*

## Recommendations for individuals with chronic medical conditions

During the 2023–24 influenza season, all 30 EU/EEA countries had recommendations for individuals with chronic pulmonary diseases, cardiovascular diseases, renal diseases and metabolic disorders, as well as those who were immunosuppressed (Table 3). HIV was not an indication in Hungary and Latvia. All countries had recommendations in place for hepatic chronic diseases except for the Netherlands. The recommendation was not funded or only partially funded in Belgium, Bulgaria, Estonia, Iceland, Luxembourg and Norway, while in Austria, Croatia, Spain and Sweden the vaccine and the administration were fully funded. Portugal provided a detailed description of the chronic diseases associated with vaccine recommendations and a detailed lists of chronic diseases eligible for free vaccination.

**Table 3. Recommendations for seasonal influenza vaccination in adults with chronic medical conditions, EU/EEA countries, 2023–24 influenza season**

| Country | Chronic medical conditions | | | | | | | | | | | | Funding of the vaccine/administration of the vaccine |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pulmonary | Neurological | Cardiovascular | Renal | Hepatic | Haematological | Metabolic | Immuno-suppression | HIV/AIDS | Compromised respiratory function | Long-term aspirin use | Morbid obesity | |
| Austria[a] | R | R | R | R | R | R | R | R | R | R | R | R | F/F |
| Belgium[b] | R | R | R | R | R | R* | R | R | R* | R[1] | R | R | F/NF** |
| Bulgaria | R | | R | R | R | R | R | R | R | R | | | NF/NF |
| Croatia | R | R | R | R | R | R | R | R | R | R | R | R | F/F |
| Cyprus | R | R | R | R | R | R | R | R | R | R | R | R | F/F |
| Czechia[c] | R | R | R | R | R | | R | R | R | R | | R | F/F* |
| Denmark[d] | R | | R | R | R | R | R | R | R | R | | R* | F/F |
| Estonia | R | R | R | R | R | R | R | R | R | R | R | R | NF/NF |
| Finland[e] | R | R | R | R | R | R | R | R | R | R | R | R | F/F |
| France[f] | R | R | R | R | R | R | R | R | R | R | | R | F/F |
| Germany[g] | R | R | R | R | R | R | R | R | R | R | | | F/F |
| Greece[h] | R | R | R | R | R | R | R | R | R | R | R | R | F/F |
| Hungary | R | R | R | R | R | R | R | R | | R | R | R | F/F |
| Iceland[i] | R | R | R | R | R | R | R | R | R | R | R | R | F/NF |
| Ireland | R | R | R | R | R | R | R | R | R | R | R | R | F/F |
| Italy[j] | R | R | R | R | R | R | R | R | R | R | R | R | F/F |
| Latvia[k] | R | R | R | R | | | R | R | | R | | | |
| Liechtenstein | R | R | R | R | R | R | R | R | R | R | | R | F/F |
| Lithuania[l] | R | | R | R | R | R | R | R | R | R | | | F |
| Luxembourg[m] | R | R | R | R | | R | R | R | R | R | R | | F/NF |
| Malta | R | R | R | R | R | R | R | R | R | R | | | F/F |
| Netherlands[n] | R | R | R | R | R | R | R | R | R | R | R | R | F/F |
| Norway | R | R | R | R | R | | R | R | R | | | R | NF/NF |
| Poland[o] | R | R | R | R | R | R | R | R | R | R | R | R | F/F |
| Portugal[p] | R | R | R | R | R | R | R | R | R | R | R | R | F/F |
| Romania | R | R | R | R | R | R | R | R | R | R | | R | F/F |
| Slovakia | R | | R | R | R | R | R | R | R | R | | | F/F |
| Slovenia[q] | R | R | R | R | R | R | R | R | R | R | R* | R | F/F |
| Spain | R | R | R | R | R | R | R | R | R | R | R | R | F/F |
| Sweden[r] | R | R | R | R | R | R | R | R | R* | R | | R | F/F** |

*F: funded; F/F: funding of the vaccine/funding of the administration of the vaccine; NF: not funded; R: recommended (defined as the existence of a written recommendation in an official policy document stating that a particular population group should receive seasonal influenza vaccine). Grey fields indicate no recommendation in place or no data reported.*

[a] ***Austria*** *– Some healthcare insurers and employers may partly fund influenza vaccination programmes. Recommended in all individuals and fully funded in those aged six months to 18 years, living in retirement homes or long-term care facilities, or exempt from prescription charges (regardless of age). All others who did not fall into the aforementioned groups had a standardised deductible of €7 for the influenza vaccination throughout Austria.*
[b] ***Belgium*** *– *in case the immune state is affected*
***Partially funded*
[c] ***Czechia*** *– 'Funding (F/F) is for insured individuals diagnosed with a serious chronic pharmacologically treated cardiovascular, respiratory or renal disease or diabetes and for insured individuals placed in long-term inpatient care facilities or in homes for older adults, people with disabilities or people who require special treatment. Vaccination and reimbursement of medicines containing influenza vaccines is a covered service for insured individuals with impaired or lost spleen function (hyposplenism or asplenia) or insured individuals with an indicated or performed splenectomy, insured persons who have undergone autologous or allogeneic haemopoietic stem cell transplantation, insured persons with severe primary or secondary immunodeficiencies requiring dispensation in a specialised unit, or insured persons who have had an invasive meningococcal or invasive pneumococcal infection.' (survey response)*
[d] ***Denmark*** *– * Defined as BMI >35.*
[e] ***Finland*** *– Source: 'Vaccination programme for children and adults'*
[f] ***France*** *– Recommendations are now valid for healthcare professionals or any professional with regular and prolonged contact with at-risk persons, cruise ship and commercial aircraft personnel, and any personnel from the travel industry accompanying groups of travellers.*
[g] ***Germany*** *– Source: Epidemiological Bulletin*
[h] ***Greece*** *– Source: 'National Immunization program (NIP) for Adults'*
[i] ***Iceland*** *– Recommendation does not mean that they receive the vaccine free of charge, as the decision to charge the vaccinated person is in the hands of the healthcare provider who recommends and administers the vaccination.*
[j] ***Italy*** *– Persons at high risk of influenza-related complications or hospitalisations are recommended and offered free vaccination.*
[k] ***Latvia*** *– Source: 'Information and advice to citizens on influenza prevention measures' (in Latvian)*
[l] ***Lithuania*** *– Universal recommendation for all age groups. Funding for all with chronic medical conditions.*
[m] ***Luxembourg*** *– Source: 'Vaccination against seasonal influenza during the COVID-19 pandemic'*
[n] ***Netherlands*** *– Recommendation in children and adolescents up to 18 years of age. Source: NHG-Table 58-ICPC codes for flu selection*
[o] ***Poland*** *– Vaccine and its administration are partially funded (50%) for adults 18–64 years old, including people from risk groups. Source: Get vaccinated against the flu*
[p] ***Portugal*** *– Source: 'Seasonal Influenza Vaccination Campaign: Autumn-Winter 2023-2024'. Survey response:*
***'Chronic conditions and diseases with recommendations for vaccination, regardless of cost-free availability****: Asthma on inhaled or systemic corticosteroid therapy, Chronic obstructive pulmonary disease (COPD), cystic fibrosis, interstitial pulmonary fibrosis, pneumoconioses, bronchopulmonary dysplasia, congenital malformation with respiratory impact, respiratory sequelae of COVID-19, Congenital heart disease, Hypertensive heart disease, Chronic heart failure, Ischemic heart disease, Pulmonary hypertension, Cardiomyopathies, Chronic renal insufficiency, Nephrotic syndrome, Cirrhosis, Biliary atresia, Chronic hepatitis, Conditions with compromised respiratory function, secretion clearance, or increased risk of aspiration, Hemoglobinopathies, Immunodepression (Primary, Secondary to disease: HIV infection, Asplenia or splenic dysfunction). Secondary to therapy: Immunosuppressive chemotherapy (antineoplastic or post-transplant), Therapy with biological drugs or DMARDs (Disease Modifying Anti-Rheumatic Drugs), Current or planned treatment with systemic corticosteroids for more than 1 month with: A dose equivalent to ≥ 20 mg of prednisolone/day (any age), ≥2mg/kg/day for children weighing <20kg. Hereditary metabolic diseases, Diabetes, Trisomy 21, Alpha-1 antitrypsin deficiency on replacement therapy, Adults - BMI ≥30, Children and adolescents - BMI >120% of P97 or > 3Z-Score, Solid organ or bone marrow transplant recipients, including those who have undergone or are awaiting transplant, Children and adolescents (6 months to 18 years) on prolonged salicylate therapy (risk of developing Reye's syndrome after influenza infection)*
***Groups eligible for free vaccination****: Cardiovascular disease: heart failure, cardiomyopathy, pulmonary hypertension, symptomatic coronary artery disease, acute myocardial infarction, hemodynamically significant congenital heart disease, Renal insufficiency: chronic renal replacement therapy (dialysis), stage III and IV renal insufficiency, Chronic pulmonary disease: chronic obstructive pulmonary disease (COPD), moderate to severe bronchopulmonary dysplasia, chronic respiratory disease on long-term oxygen therapy (LTOT) or ventilation therapy, cystic fibrosis, alpha-1 antitrypsin deficiency on replacement therapy, interstitial lung disease on immunosuppressive therapy, bronchiectasis, Neuromuscular disease with impairment of respiratory function, secretion clearance, or increased risk of aspiration, Diabetes, Trisomy 21, Individuals who have undergone hematopoietic stem cell or solid organ transplants, Individuals awaiting hematopoietic stem cell or solid organ transplants, Immunodepression*
[q] ***Slovenia*** *– Recommendation for 'long-term aspirin use' mentioned only in preschool children.'*
[r] ***Sweden*** *– Source: 'Recommendations on influenza vaccination for risk groups' (summary in English)*
** Recommended if immunosuppression*
*** Regional funding with free vaccine and administration for all risk groups in all regions.*

## Recommendations for pregnant women

During the 2023–24 influenza season, 29 EU/EEA countries had national recommendations for influenza vaccination during pregnancy; Bulgaria was the only country without such a recommendation (Table 4). Twenty-six countries recommended influenza vaccination for all pregnant women, regardless of pregnancy trimester or underlying medical conditions. Some countries had specific recommendations on when to vaccinate pregnant women; for example, the Netherlands specifically mentioned that the vaccine is recommended after week 22 of pregnancy, while other countries specified the second or third trimester (Denmark and Norway).

Compared with the 2020–21 season [1], two countries expanded their vaccination programmes in pregnant women to include any pregnant woman, regardless of chronic medical conditions.

**Table 4. Recommendations for seasonal influenza vaccination in pregnant women, EU/EEA countries, 2023–24 influenza season**

| Country | For any pregnant women, regardless of chronic conditions | For pregnant women with chronic conditions | Specific timing of the recommendation (first, second and/or third trimesters) | Funding of the vaccine/administration of the vaccine |
|---|---|---|---|---|
| Austria | R | | * | F/F |
| Belgium[b] | R | R | Any trimester | F/NF* |
| Bulgaria | | | | |
| Croatia | R | | | F/F |
| Cyprus | R | | | F/F |
| Czechia[c] | R | | | NF/NF |
| Denmark | | R | Second and/or third trimester | F/F |
| Estonia | R | | | F/F |
| Finland[d] | R | | | F/F |
| France | R | | | F/F |
| Germany[e] | R | R | * | F/F |
| Greece[f] | R | | Any trimester | F/F |
| Hungary | R | | | F/F |
| Iceland | R | | Any trimester | F/F |
| Ireland | R | | | F/F |
| Italy[g] | R | | Any trimester | F/F |
| Latvia[h] | R | | | |
| Liechtenstein[i] | R | R | * | F/F |
| Lithuania | R | | | F |
| Luxembourg[j] | R | | Any trimester | F/F |
| Malta | | R | | F/F |
| Netherlands[k] | R | R | From gestational week 22 | F/F |
| Norway[l] | R | R* | Second and third trimester | NF/NF |
| Poland[m] | R | | Any trimester | F/F |
| Portugal[n] | R | | Any trimester | F/F |
| Romania | R | | | F/F |
| Slovakia[o] | R | | | F/F |
| Slovenia | R | | | F/F |
| Spain | R | | | F/F |
| Sweden[p] | R | R* | From gestational week 13* | F/F** |

*F: funded; F/F: funding of the vaccine/funding of the administration of the vaccine; NF: not funded; R: recommended (defined as the existence of a written recommendation in an official policy document stating that a particular population group should receive seasonal influenza vaccine). Grey fields indicate no recommendation in place or no data reported.*

[a] ***Austria*** *– Influenza vaccination is highly recommended in the second and third trimester but can also be administered in the first trimester if an influenza wave is expected.*

[b] ***Belgium*** *– Partially funded.*

[c] ***Czechia*** *– If the pregnant woman has a defined chronic medical condition (Table 3), the vaccine and administration are funded.*

[d] ***Finland*** *– Source: 'Vaccination programme for children and adults'*

[e] ***Germany*** *– All pregnant women from the second trimester; in the case of a chronic medical condition, from the first trimester. Source: 'Influenza vaccine recommendation'*

[f] ***Greece*** *– Source: 'National Adult Immunization Program 2023'*

[g] ***Italy*** *– Women who are in any trimester of pregnancy or in the postpartum period at the beginning of the epidemic season are recommended and offered vaccination free of charge.*

[h] ***Latvia*** *– Source: 'Information and advice to citizens on influenza prevention measures'*

[i] ***Liechtenstein*** *– Recommendation for all pregnant women before the winter season (mid-October to December). IIV4 is recommended for women who have given birth in the last four weeks.*

[j] ***Luxembourg*** *– Source 'Vaccination against seasonal influenza during the COVID-19 pandemic'*

[k] ***Netherlands*** *– A recommendation to vaccinate all pregnant women from 22 weeks of pregnancy was published in September 2021. The recommendation was implemented in 2023.*

[l] ***Norway*** *– * Pregnant women with chronic medical conditions are recommended for vaccination in any trimester.*

[m] ***Poland*** *– 'Vaccination Program in 2023' (in Polish)*

[n] ***Portugal*** *– Source: 'Seasonal Influenza Vaccination Campaign: Autumn-Winter 2023-2024'*

[o] ***Slovakia*** *– Source: 'Prenatal care for low-risk (physiological) pregnancy' (in Slovak)*

[p] ***Sweden*** *– Source: 'Recommendations on influenza vaccination for risk groups' (summary in English)*

** Vaccination is recommended for all pregnant people starting from gestational week 13. If the pregnant person is in an additional risk group, vaccination is recommended regardless of gestational week.*

*** Regional funding with free vaccine and administration for all risk groups in all regions.*

## Recommendations for healthcare workers

During the 2023–24 influenza season, 23 EU/EEA countries had recommendations for all healthcare workers (Table 5). In Estonia, Latvia, Luxembourg, Norway, Slovakia and Sweden, the recommendations only targeted specific healthcare workers such as staff in close contact with patients or contaminated materials. Compared with the 2020–21 season [2], Denmark changed from recommending vaccination for staff in contact with patients to no recommendation for healthcare workers for the 2023–24 season. All countries had full or partial funding except Bulgaria, which reported no funding. In some cases, recommendations may only be funded by employers, such as in Sweden. Portugal provided an extensive list of at-risk individuals working in the healthcare sector to be provided with cost-free vaccination.

**Table 5. Recommendations for seasonal influenza vaccination in healthcare workers, EU/EEA countries, 2023–24 influenza season**

| Country | All healthcare workers | Staff in close contacts with patients | Staff having no contact with patients, but contact with potentially contaminated materials | Staff having no close contact with patients or contaminated materials | Funding of the vaccine/administration of the vaccine |
|---|---|---|---|---|---|
| Austria[a] | R | | | | F/F |
| Belgium[b] | R | R | R | R | F/NF* |
| Bulgaria | R | | | | NF/NF |
| Croatia | R | | | | F/F |
| Cyprus | R | | | | F/F |
| Czechia | R | | | | F/F |
| Denmark | | | | | NF |
| Estonia[c] | | R* | R* | R* | NF |
| Finland | R | | | | F/F |
| France | R | | | | F/F |
| Germany[d] | R | | | | NA/F/F |
| Greece[e] | R | | | | F/F |
| Hungary | R | | | | F/F |
| Iceland[f] | R* | R* | | | F/F** |
| Ireland | R | R | R | R | F/F |
| Italy[g] | R | | | | F/F |
| Latvia[h] | | R | | | |
| Liechtenstein | R | R | | | F/F* |
| Lithuania | R | | | | F |
| Luxembourg[i] | | R | | | F/F |
| Malta | R | | | | F/F |
| Netherlands[j] | R | R | R | | F/F |
| Norway[k] | | R | R | | F/F |
| Poland[l] | R | | | | F/F |
| Portugal[m] | R | R | | | F/F |
| Romania | R | | | | F/F |
| Slovakia | | R | R | | F/F |
| Slovenia | R | | | | F/F |
| Spain | R | | | | F/F |
| Sweden[n] | | R | | | F/F* |

*F: funded; F/F: funding of the vaccine/funding of the administration of the vaccine; NF: not funded; R: recommended (defined as the existence of a written recommendation in an official policy document stating that a particular population group should receive seasonal influenza vaccine). Grey fields indicate no recommendation in place or no data reported.*

[a] ***Austria*** *– Usually funded by employers.*

[b] ***Belgium*** *– Partially funded.*

[c] ***Estonia*** *– Provides vaccination for personnel at risk. Recommended according to risk analysis and paid by employers. Source: 'Vaccination of persons at risk at work'*

[d] ***Germany*** *– Influenza vaccine recommendation in adults*

[e] ***Greece*** *– Source: 'National Adult Immunization Program 2023'*

[f] ***Iceland*** *– * 'Technically the recommendation applies to HCWs in patient contact. However, the practice is to offer the vaccine to all staff in most public settings and many private settings, and in order to decrease the circulation of influenza as much as possible in these settings, no practical distinction is made between the staff in direct patient care and others as some staff circulate between settings, having both administrative and clinical duties.' (survey response)*

*** 'There is no central funding specifically for administration of influenza vaccine to HCWs. Most institutions use their own staff, whose salaries are centrally funded. There is no reimbursement of 'visit fees' if a HCW receives the vaccine outside of their own workplace. If a workplace engages a vaccination service for hire, usually the workplace pays this service (more likely to occur in the private setting).' (survey response)*

[g] ***Italy*** *– Vaccination is recommended and offered free of charge to doctors and healthcare workers/caregivers in facilities where they might – through their work activities – transmit influenza to those at high risk of influenza complications.*

[h] ***Latvia*** *– Source: 'Information and advice to citizens on influenza prevention measures' (in Latvian)*

[i] ***Luxembourg*** *– Source 'Vaccination against seasonal influenza during the COVID-19 pandemic'*

[j] ***Netherlands*** *– Vaccine and administration are funded by employers.*

[k] ***Norway*** *– Vaccine and administration are fully funded by employers.*

[l] ***Poland*** *– Vaccine and vaccination is funded by employers. Source: 'Vaccinations recommended for healthcare workers' (in Polish)*
[m] ***Portugal*** *– Recommendations for vaccination, regardless of cost-free availability, are given for the following: healthcare service professionals (public and private) and other care providers, firefighters in direct contact with at-risk individuals, nursery staff, daycare staff and equivalent professionals and prison staff. Source: 'Seasonal Influenza Vaccination Campaign: Autumn-Winter 2023-2024' '**Groups eligible for free vaccination**: Professionals of the National Health Service (SNS), including students in clinical internships, Professionals in the following contexts: Residents in institutions, including Residential Structures for the Elderly, Support Homes, Residential Homes, and Temporary Reception Centers, Users of Home Support Services, Patients in the National Network for Integrated Continuous Care, Individuals supported at home by Home Support Services, with cooperation agreements with Social Security or Portuguese Misericórdias, Patients supported at home by the nursing teams of functional healthcare units or with home support from SNS hospitals, Patients admitted to National Health Service (SNS) health units with chronic diseases and conditions for which the vaccine is recommended (Table II), Inmates in prison establishments, Firefighters in direct contact with at-risk individuals, Prison staff.' (survey response)*
[n] ***Sweden*** *– Regional/employer funding for vaccination of relevant staff (region is often the employer).*
** Regional funding with free vaccine and administration for all risk groups in all regions.*

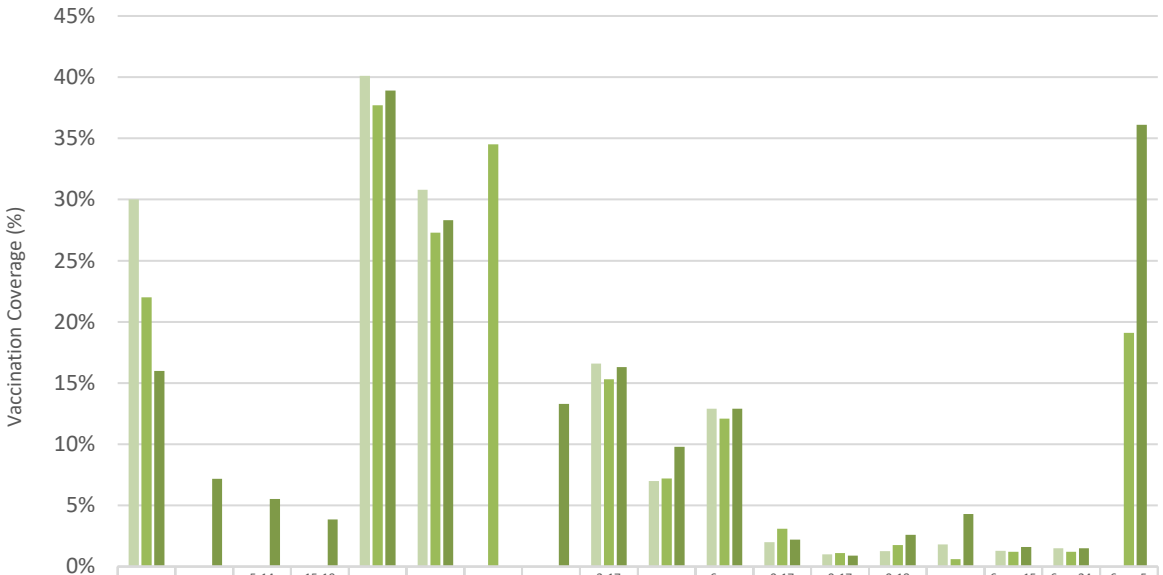
# Vaccination coverage rates

## Vaccination coverage rates for children and adolescents

Ten EU/EEA countries reported VCRs in children and adolescents for all three influenza seasons between 2021–22 and 2022–23 (Denmark, Finland, Ireland, Italy, Lithuania, Norway, Poland, Romania, Slovakia and Slovenia). Estonia, Iceland and Spain reported partial data for some of the seasons. There was heterogeneity in some of the submitted data (from Italy, Romania and Slovakia, as well as from Estonia and Iceland for the 2023–24 season), wherein data were reported for a wider or a narrower age group than the one targeted by the recommendation. No data were reported or available for the remaining countries that had recommendation in place during the 2023–24 season (Austria, Bulgaria, Cyprus, Czechia, France, Hungary, Italy, Latvia, Lithuania and Malta).

The median VCR in this target group for the 2023–24 season was 7.2%, compared with 10% in 2022–23 and 5% in 2021–22. The 2023–24 season VCR ranged from 0.9% (Norway) to 38.9% (Finland). The countries with the highest reported coverage in children and adolescents were Finland and Spain. Finland saw a slight decrease in VCR from 40.1% in 2021–22 to 38.9% in 2023–24. In Spain, there was a significant increase in VCR, from 19% in 2022–23 to 36% in 2023–24. The VCR in Denmark decreased from 30% in 2021–22 to 16% in 2023–24. The remaining countries reported lower VCRs, with no clear trend.

**Figure 1. Seasonal influenza vaccination coverage rates in children and adolescents, EU/EEA countries, influenza seasons in 2021−22, 2022−23 and 2023−24**




| | 2–6 years | 0-4 years | 5-14 years | 15-19 years | 6-36 m | 3-6 years | 6-36m | 6-48m | 2-17 years | 6-23m | 6mo-8years | 0-17 years | 0-17 years | 0-18 years | 6-59 m | 6 m – 15 years | 6 m- 24 m | 6 m - 5 years |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Denmark | Estonia | | | Finland | | Iceland (EEA) | | Ireland | Italy | | Lithuania | Norway (EAA) | Poland | Romania | Slovakia | Slovenia | Spain |
| 2021–22 | 30% | | | | 40% | 31% | | | 17% | 7% | 13% | 2% | 1% | 1% | 2% | 1% | 2% | |
| 2022–23 | 22% | | | | 38% | 27% | 35% | | 15% | 7% | 12% | 3% | 1% | 2% | 1% | 1% | 1% | 19% |
| 2023–24 | 16% | 7% | 6% | 4% | 39% | 28% | | 13% | 16% | 10% | 13% | 2% | 1% | 3% | 4% | 2% | 2% | 36% |

*Sources: 2024 ECDC influenza survey in EU/EEA countries*
*EEA: European Economic Area; m: months.*
*VCR data was collected via the electronic immunisation registry in Denmark, Estonia, Finland, Norway, Poland and Romania, and via another administrative method in Iceland, Ireland, Lithuania, Slovakia, Slovenia and Spain.*

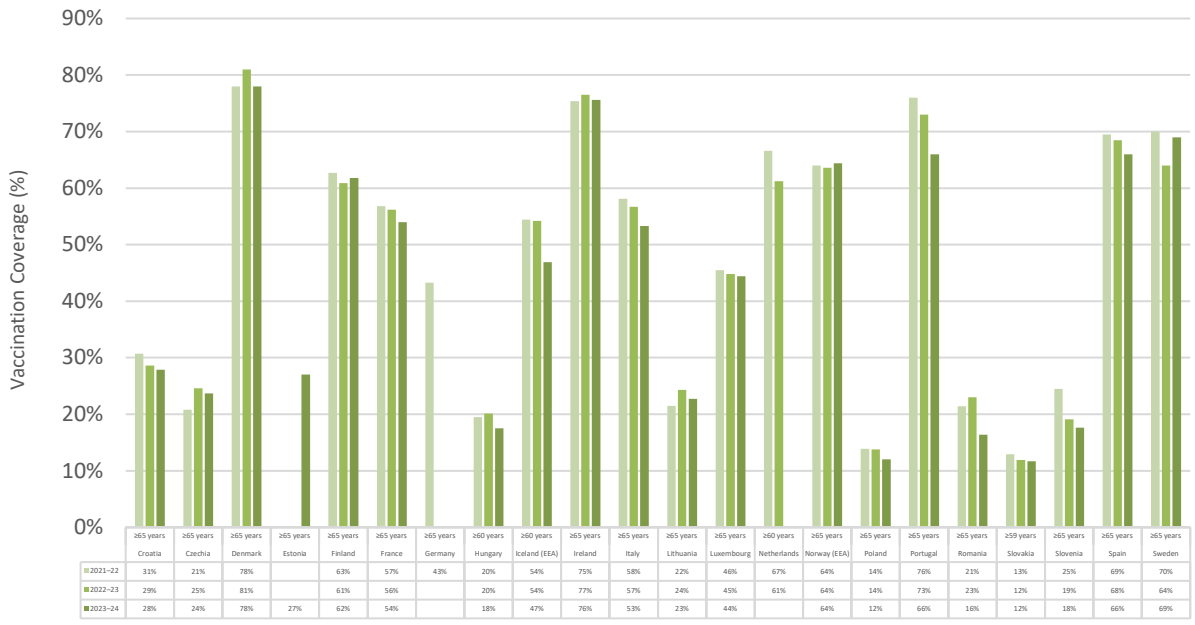
## Vaccination coverage rates for older adults

Twenty-two countries reported VCRs for adults 65 years old and above; Hungary, Iceland and the Netherlands reported VCRs for adults 60 years old and above (Figure 3). Most countries reported data for all three influenza seasons between 2021–22 and 2023–24, with the exception of Estonia, Germany and the Netherlands.

For the 2023–24 season, the median VCR in this target group was 45.7% and ranged from 12% (Slovakia) to 78% (Denmark). In comparison, the median VCR was 55.2% (range: 12% in Slovakia to 81% in Denmark) in 2022–23 and 49% (range: 13% in Slovakia to 75% in Ireland) in 2021–22. It is worth noting that only Denmark and Ireland reached the EU Council Recommendation's 75% target in all three influenza seasons [8].

Overall, the trends reported over the three seasons were relatively stable (<3% change). However, downward fluctuations were observed during the 2023–24 season in Croatia, France, Iceland, Italy, Portugal (where there was a change in the age-based recommendation in 2023-24), Romania, Slovenia and Spain.

**Figure 2. Seasonal influenza vaccination coverage rates in older adults, EU/EEA countries, influenza seasons 2021−22, 2022−23 and 2023−24**




| | ≥65 years Croatia | ≥65 years Czechia | ≥65 years Denmark | ≥65 years Estonia | ≥65 years Finland | ≥65 years France | ≥65 years Germany | ≥60 years Hungary | ≥60 years Iceland (EEA) | ≥65 years Ireland | ≥65 years Italy | ≥65 years Lithuania | ≥65 years Luxembourg | ≥60 years Netherlands | ≥65 years Norway (EEA) | ≥65 years Poland | ≥65 years Portugal | ≥65 years Romania | ≥59 years Slovakia | ≥65 years Slovenia | ≥65 years Spain | ≥65 years Sweden |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2021–22 | 31% | 21% | 78% | | 63% | 57% | 43% | 20% | 54% | 75% | 58% | 22% | 46% | 67% | 64% | 14% | 76% | 21% | 13% | 25% | 69% | 70% |
| 2022–23 | 29% | 25% | 81% | | 61% | 56% | | 20% | 54% | 77% | 57% | 24% | 45% | 61% | 64% | 14% | 73% | 23% | 12% | 19% | 68% | 64% |
| 2023–24 | 28% | 24% | 78% | 27% | 62% | 54% | | 18% | 47% | 76% | 53% | 23% | 44% | | 64% | 12% | 66% | 16% | 12% | 18% | 66% | 69% |

*Source: 2024 ECDC Influenza Survey in EU/EEA countries.*
*EEA: European Economic Area.*
*VCR data was collected via an administrative method for Croatia, Czechia, France, Hungary, Ireland, Italy, Lithuania, Luxembourg, Slovakia, Slovenia and Spain. Denmark, Iceland, Norway, Poland, Portugal and Romania used electronic immunisation registries. The Netherlands used a combination of administrative and survey methods. Germany's data came from health insurance claims. Bulgaria provided absolute numbers, not presented in the chart, and used an administrative method.*
*For Portugal, note that 2023–24 coverage data is for those aged 60 years and above, following changes in the recommendation.*

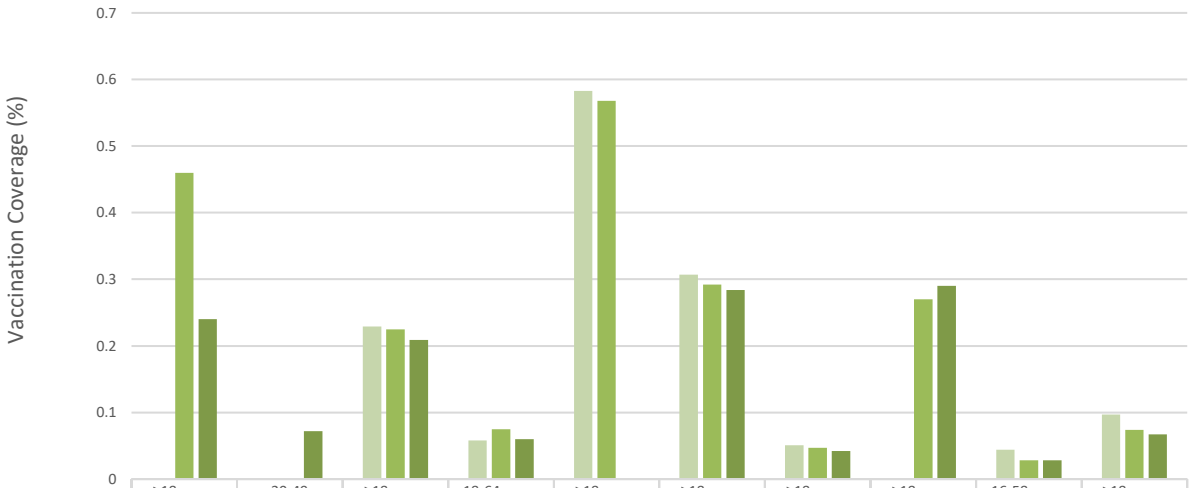
## Vaccination coverage rates for adults 18 years old and above

Ten EU/EEA countries reported VCRs in adults 18 years old and above. Of these, six countries reported data for all three seasons between 2021–22 and 2023–24 (Italy, Lithuania, Norway, Poland, Slovakia and Slovenia) and four countries provided partial data (Denmark, Estonia, the Netherlands and Portugal). Of these, only two (Poland and Lithuania) had a recommendation for all adults over 18 years old. Estonia only provided data for the 2023–24 season.

For the 2023–24 season, the median VCR in this age group was 7.5% and ranged from 3% (Slovakia) to 29% (Portugal), compared with 20% during the 2020–21 season. The VCRs showed more variation in trends across countries compared with previous seasons.

Denmark reported a significant decrease from 46% in 2022–23 to 24% in 2023–24. Similarly, but to a lesser magnitude, Norway's VCR decreased from 31% in 2021–22 to 28% in 2023–24. On the other hand, Portugal showed an increase from 27% in 2021–22 to 29% in 2023–24. Lithuania's VCR remained relatively stable at 6% in both 2021–22 and 2023–24 (VCR for adults 18–64 years old). The Netherlands maintained a high VCR of nearly 58% for the 2021–22 and 2022–23 seasons. Poland, Slovakia and Slovenia reported VCRs below 10% for all three seasons.

**Figure 3. Seasonal influenza vaccination coverage rates in adults 18 years old and above, EU/EEA countries, influenza seasons 2021–22, 2022–23and 2023–24**




| | ≥18 years Denmark | 20-49 Estonia | ≥18 years Italy | 18-64 years Lithuania | ≥18 years Netherlands | ≥18 years Norway (EEA) | ≥18 years Poland | ≥18 years Portugal | 16-58 years Slovakia | ≥18-years Slovenia |
|---|---|---|---|---|---|---|---|---|---|---|
| 2021–22 | | | 23% | 6% | 58% | 31% | 5% | | 4% | 10% |
| 2022–23 | 46% | | 23% | 8% | 57% | 29% | 5% | 27% | 3% | 7% |
| 2023–24 | 24% | 7% | 21% | 6% | | 28% | 4% | 29% | 3% | 7% |

*Source: 2024 ECDC Influenza Survey in EU/EEA countries.*
*EEA: European Economic Area.*
*VCR data was collected via an administrative method for Croatia, Czechia, France, Hungary, Ireland, Lithuania, Slovakia, Slovenia and Spain. Denmark, Iceland, Norway, Poland, Portugal and Romania used electronic immunisation registries. The Netherlands used a combination of administrative and survey methods. Germany's data came from health insurance claims. Bulgaria provided absolute numbers, not presented in the chart, and used an administrative method.*

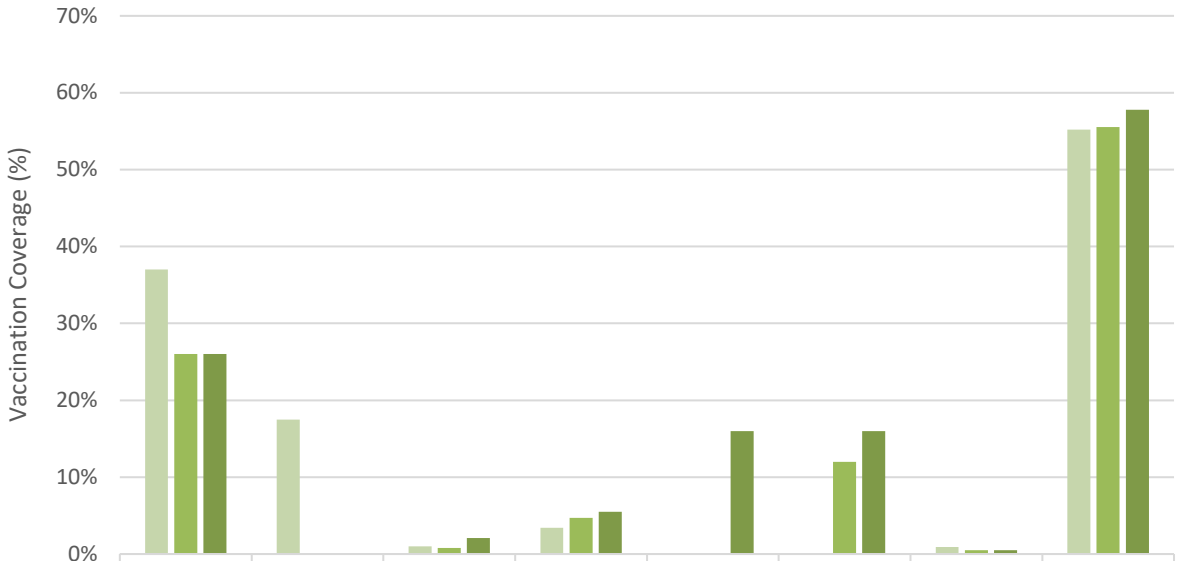
## Vaccination coverage rates for pregnant women

Eight EU/EEA countries (Denmark, Germany, Hungary, Lithuania, the Netherlands, Portugal, Slovenia and Spain) reported VCRs in pregnant women but with varied completeness depending on the season. Five countries reported data for all three seasons between 2021–22 and 2023–24.

The median VCR in this target group in 2023–24 was 16%; in 2022–23 it was 8% and in 2021–22 it was 10%. Spain reported the highest VCRs, with rates of 55%, 56% and 58% in the 2021–22, 2022–23 and 2023–24 seasons, respectively. In the other countries (Denmark, Germany, Hungary, Lithuania, the Netherlands, Portugal and Slovenia), the rate ranged from 1% to 26% for the 2023–24 season.

Denmark showed a decrease in VCR from 37% in 2021–22 to 26% in both 2022–23 and 2023–24. Germany only reported a VCR in 2021–22, which was 18%. Hungary showed a slight increase from 1% in 2021–22 and 2022–23 to 2% in 2023–24. Lithuania's VCR increased from 3% in 2021–22 to 6% in 2023–24.

**Figure 4. Seasonal influenza vaccination coverage rates among pregnant women, EU/EEA countries, influenza seasons 2021–22, 2022 –23, 2023–24**




| | Denmark | Germany | Hungary | Lithuania | Netherlands | Portugal | Slovenia | Spain |
|---|---|---|---|---|---|---|---|---|
| 2021–22 | 37% | 18% | 1% | 3% | | | 1% | 55% |
| 2022–23 | 26% | | 1% | 5% | | 12% | 1% | 56% |
| 2023–24 | 26% | | 2% | 6% | 16% | 16% | 1% | 58% |

*Source: 2024 ECDC Influenza survey in EU/EEA countries.*
*Croatia reported absolute numbers, but they are not presented in the chart. Denmark and Portugal used electronic immunization registries. Germany reported data from health insurance. Hungary, Lithuania, Slovenia and Spain reported data using administrative method.*

## Vaccination coverage rates for healthcare workers

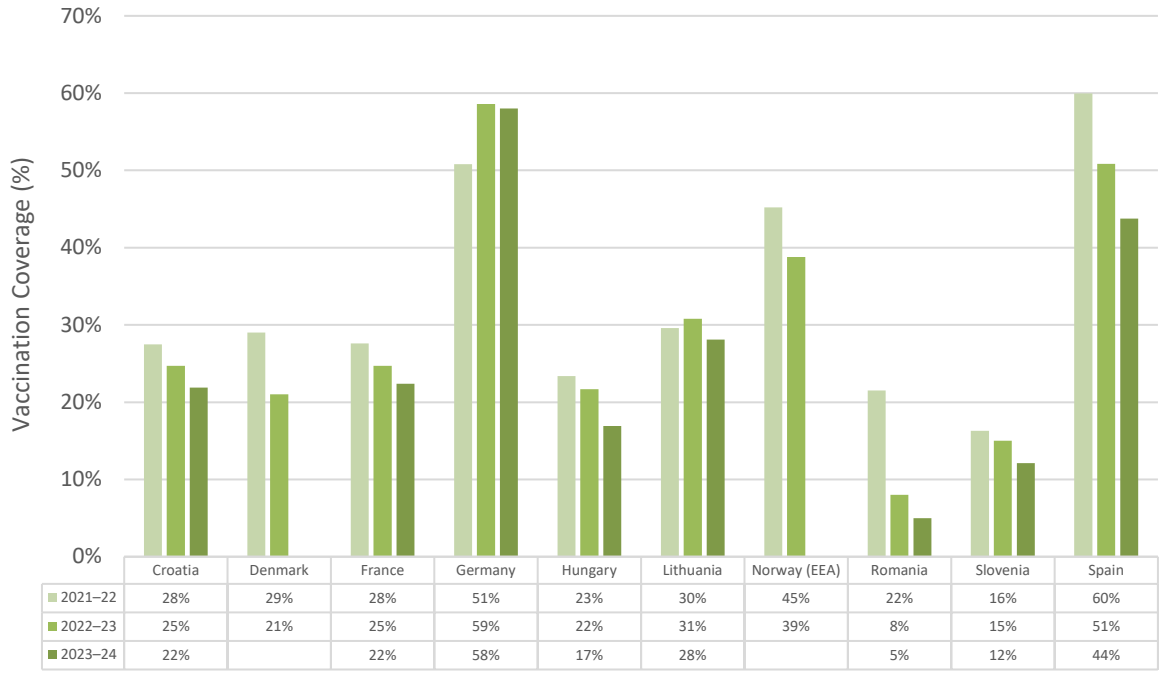
Eight EU/EEA countries reported VCRs in healthcare workers for all three seasons from 2021–22 to 2023–24 (Croatia, France, Germany, Hungary, Lithuania, Romania, Slovenia and Spain). Denmark and Norway did not have data available for the 2023–24 season.

The median VCR in this target group was 28.3% in 2021–22, 24.7% in 2022–23 and 22.1% in 2023–24. A decrease of 2–16 percentage points was observed across the three seasons in all reporting countries except Germany. Croatia's VCR decreased slightly from 27.5% in 2021–22 to 21.9% in 2023–24. Denmark and France also saw decreases to 22.4%. Germany maintained a high VCR of around 58% in 2022–23 and 2023–24. Hungary's VCR declined to 16.9% and Norway's VCR decreased from 45% in 2021–22 to 39% in 2023–24. Romania's VCR dropped significantly to 5% in 2023–24, though it was 45.9% in 2020–21. Slovenia's VCR decreased to 12.1% and Spain, despite a decrease, maintained higher coverage at 43.8% in 2023–24.

## Vaccination coverage rate for adults with chronic diseases

Three EU/EEA countries reported VCRs for adults above 65 years old with chronic diseases for the 2023–24 season: Denmark (29%), France (25%) and Norway (34%). The denominator might vary between the countries, as it was not specified in the reported data.

**Figure 5. Seasonal influenza vaccination coverage rates among healthcare workers, EU/EEA countries, influenza seasons 2021–22, 2022–23, 2023–24**




| | Croatia | Denmark | France | Germany | Hungary | Lithuania | Norway (EEA) | Romania | Slovenia | Spain |
|---|---|---|---|---|---|---|---|---|---|---|
| 2021–22 | 28% | 29% | 28% | 51% | 23% | 30% | 45% | 22% | 16% | 60% |
| 2022–23 | 25% | 21% | 25% | 59% | 22% | 31% | 39% | 8% | 15% | 51% |
| 2023–24 | 22% | | 22% | 58% | 17% | 28% | | 5% | 12% | 44% |

*Source: 2024 ECDC Influenza survey in EU/EEA countries*
*Croatia, France, Hungary, Lithuania, Slovenia and Spain collected data via administrative methods. Denmark and Romania used electronic immunisation registries. Norway reported date from the Norwegian Emergency Preparedness Registry (Beredt C19) for 2021–22 and 2022–23; however, due to uncertainty in data from the Beredt C19 registry, the VCR for healthcare workers in Norway is not presented for 2023–24. Germany reported data from its national online monitoring system on influenza vaccination coverage in German hospitals (OKaPII/KROCO).*

# Discussion

Since 2007, the ECDC-funded VENICE project has been conducting annual surveys to monitor changes and assess compliance with the 2009 Council Recommendation to achieve the EU goal of 75% vaccination coverage in older age groups and risk groups by the 2014–15 influenza season. Up until the 2017–18 influenza season, the ECDC-supported VENICE surveys were the most effective method for monitoring the implementation of the 2009 Council Recommendation, as several surveys had already been conducted prior to the Council Recommendation. National focal points for vaccine-preventable diseases received the survey, and the reported data were individually checked and validated by each of the responding countries. In the 2023–24 season, the surveys have continued to be collected and improved, providing an opportunity for comparison across years. The high response rate of 97% for the current version confirms that EU/EEA countries are interested in and see the added value of the topic.

During the 2023–24 influenza season, several EU/EEA countries expanded their influenza vaccination recommendations compared with previous seasons. Compared with the 2020–21 influenza season [1], an additional six countries adopted age-based recommendations in children and/or adolescents regardless of any chronic medical condition. Two countries lowered the age limit for immunisation of older adults, one country extended the recommendation to any adults above 18 years old, two countries expanded the programme in pregnant women to include any pregnant woman regardless of chronic medical conditions. No changes were observed in the recommendations for healthcare workers, except for one country that no longer has recommendations for that group (in previous seasons, the country had a recommendation for healthcare workers in close contacts with patients).

When available and comparable, the reported data showed a decline in the median VCR for older adults and healthcare workers compared with the previous three seasons [1]. The decline was more pronounced when compared with the 2020–21 influenza season in particular, though comparisons should be made with caution.

For older adults, the median VCR showed a relatively stable trend (<3% change) overall during the three seasons. However, downward fluctuations of 3–10 percentage points were observed for 17 countries that reported data for the overall period. In 2023–24, the median VCR was 45.7% compared with 59% in 2020–21 [1]. While data should be interpreted carefully, there is an indication that seasonal influenza vaccination programmes in older adults may be in decline following several years of stagnant uptake in the pre-COVID-19 pandemic period. Such trends must be carefully investigated and validated, as older adults are the primary target of seasonal influenza vaccination programmes.

For healthcare workers, the median VCR in the 2023–24 season was 22.1%, down from 24.7% in 2022–23 and 28.3% in 2021–22. Most countries reported a decrease in VCRs for healthcare workers compared with the 2020–21 season [1], when a median of 52% was reported.

In general, EU/EEA countries have significantly expanded recommendations for seasonal influenza vaccination in recent years. This signals important public health efforts to strengthen the prevention of seasonal influenza by making the vaccine more available to the groups that benefit most from the programme. Nonetheless, when looking at the performance of such programmes through the reported national vaccination coverage data, it is evident that policies still fall short of meeting sufficient levels of uptake across key target groups. Specifically, in all age groups (except for Denmark for older adults), the level of coverage remained far below the target of 75%.

## Limitations

Many countries were unable to report the VCR for all of the target groups that they had recommendations for. Eight countries with recommendations for children and/or adolescents were unable to report VCR data for this group; another eight countries were unable to report VCR data for older adults. VCRs for pregnant women and healthcare workers were also very poorly documented, with only five and eight countries reporting data for all three seasons, respectively. For children and adolescents, data may not always reflect the age group targeted by the recommendation.

For children and/or adolescents and pregnant women, it was not possible to make a comparison with the 2020–21 season due to different countries reporting data. Further, among countries that reported data for all seasons, data was incomparable because the age groups varied across the seasons. Assessment was also limited by the fact that the age groups of reported data did not always match the age groups of the recommendations. However, when data was reported, VCRs remained suboptimal.

A main limitation of this report was the challenge of comparing VCRs across EU/EEA countries. The differences in stratification by age groups, data collection methods (e.g. administrative, surveys or registries) and response rates can complicate year-to-year comparisons across and within countries.

Other limitations are country specific and include reported limitations in data collection due to insufficient resources or the lack of specific denominator data impeding the reporting of coverage rates. This may be particularly relevant for populations with chronic medical diseases and pregnant women. There may also be differences in how denominator data (eligibility for vaccination) and numerator data (number vaccinated) are assessed; these often rely on administrative records, registries or surveys, each of which has inherent limitations.

Further, the notable impact that the COVID-19 pandemic had on vaccination behaviour and public health priorities suggests the need for qualitative surveys to better understand fluctuations in seasonal influenza VCRs during and after a pandemic.

# Public health implications

While different factors can limit the availability of data, including the timing of data collection and lack of capacity, it should be noted that strengthening the response against influenza – and more broadly against vaccine-preventable diseases – requires having good vaccination coverage monitoring systems in place for all target groups and throughout the life course. These systems need to collect timely data as well as sufficient information (e.g. sociodemographic, geographical, vaccine history) to support tailored public health actions including increasing access to vaccination and developing information campaigns.

At the EU/EEA level, it is important to collect comparable data and for the data to reflect the vaccination coverage of the populations targeted by the programmes. Comparable data is a requirement for international benchmarking.

Practice and knowledge exchange with countries that have succeeded in achieving higher seasonal influenza immunisation rates for some of the key target groups could also be beneficial. There are many reasons why some countries may be able to achieve higher uptake rates. For example, cultural aspects may shape attitudes towards vaccination and strong primary prevention systems relying on general practitioners, pharmacists and other channels of implementation could contribute to an overall high uptake. The structure of the healthcare system – such as having provider-based payment schemes in place for the delivery of vaccination services – may also play a crucial role.

Increasing vaccination coverage, especially for seasonal influenza, is extremely challenging. Efforts to expand recommendations must be bolstered by initiatives to improve implementation of seasonal influenza vaccination programmes. The continual development of safer and more effective influenza vaccines will be critical to the success of these efforts.

The COVID-19 vaccination coverage reported in older adults and other target groups during the 2023–24 season was also low or moderately low in most EU/EEA countries [14]. In the current context, with a growing number of vaccines available to prevent respiratory diseases – often with the same target groups as the seasonal influenza programme – it is imperative to consider how to effectively approach and implement the vaccination campaigns against different vaccine-preventable respiratory diseases [15, 16]. This includes the importance of clear public health messages around the recommendation of each vaccine.

# Conclusions

While more EU/EEA countries introduced recommendations for vaccinating children and/or adolescents and some added policies and funding for pregnant women in the 2023–24 influenza season, overall VCRs in older adults and healthcare workers have declined compared with previous periods – especially in comparison with the 2020–21 season. This reduction poses a significant public health challenge, as influenza continues to place a heavy burden on both individual and public health, particularly during the autumn and winter seasons.

Efforts to bolster uptake of current seasonal influenza vaccines must be complemented by efforts to develop a new generation of safer and more effective influenza vaccines. Improving existing vaccines is critical, and dialogues should continue with manufacturers at a global level. This, in turn, may also help to increase levels of uptake and change deeply-rooted, complacent attitudes towards the seasonal influenza vaccine.

It is evident that despite the availability of communications tools and an established infrastructure for the roll-out of seasonal influenza vaccination campaigns, each year uptake remains below desirable EU targets. It is critical that targeted and context-specific strategies be put in place to increase demand for seasonal influenza vaccination. Investment should be made in evaluation efforts to inform future strategies and maximise the use of public health resources. At the same time, investments to improve access to vaccines and convenience for those being vaccinated must continue or be put in place, where necessary. By doing so, we can ensure that vulnerable populations – including older adults, individuals with chronic medical conditions, healthcare workers and pregnant women – receive the protection they need against influenza, ultimately contributing to improved public health outcomes.

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