National Immunisation Advisory Committee

UPDATED RECOMMENDATIONS FOR COVID-19 PRIMARY SCHEDULE VACCINATION

NIAC | 26.08.2024

About NIAC

NIAC membership includes nominees from the Royal College of Physicians in Ireland, its Faculties and Institutes, the Royal College of Surgeons in Ireland, the Irish College of General Practitioners, the National Immunisation Office, the Nursing and Midwifery Board of Ireland, the Infectious Diseases Society of Ireland, the Travel Medicine Society, the National Virus Reference Laboratory and lay members. Meetings are attended by representatives from the Department of Health and the HSE. Representatives of the Health Products Regulatory Agency attend to provide regulatory advice in relation to vaccines.

NIAC considers the evidence about vaccines and provides advice to the Chief Medical Officer and the Department of Health. The Department and the Minister for Health make policy decisions on vaccines which are implemented by the Health Service Executive.

UPDATED COVID-19 PRIMARY SCHEDULE* VACCINATION RECOMMENDATIONS

1. A primary schedule of a COVID-19 vaccine is recommended for:
    - those aged 60 years and older
    - those aged 18-59 years living in long term care facilities for older adults
    - those aged 6 months-59 years with:
        - immunocompromise associated with a suboptimal response to vaccination
        - medical conditions associated with a higher risk of COVID-19 hospitalisation, severe disease or death.
    - health and care workers
    - pregnant adolescents and adults.

2. For those aged 6 months-59 years who are healthy:
    - a primary schedule of a COVID-19 vaccine is not routinely recommended
    - access to a primary schedule of COVID-19 vaccine should be available for those who, following discussion of their reasons with a health care provider (e.g., GP, pharmacist or HSE vaccinator), request vaccination.

3. Antigenically updated COVID-19 mRNA vaccines are the preferred vaccine for use.

4. Protein subunit vaccines may be used as alternatives in those for whom an mRNA vaccine is contraindicated or declined.
    - Nuvaxovid (antigenically updated) is the preferred alternate.

5. Dosing recommendations for COVID-19 primary schedule remain unchanged and are outlined in Chapter 5a of the Immunisation Guidelines for Ireland.

Recommendations may be updated when more information becomes available.

* COVID-19 primary schedule vaccination refers to vaccination of those previously unvaccinated against SARS-CoV-2 infection (i.e., people who have never received a COVID-19 vaccine).

1. EXECUTIVE SUMMARY

- Primary schedule COVID-19 vaccination has been recommended in Ireland since July 2021 for all those aged 12 years and older, since December 2021 for those aged 5-11 years with underlying conditions (or living with someone with complex needs), and since January 2023 for those aged 6 months to 4 years with underlying medical conditions.
- Hospitalisations, ICU admissions and deaths from COVID-19 in Ireland and internationally has decreased since the acute phase of the pandemic due to increased immunity in the population from vaccination and natural infection, and reduced virulence of the virus with subsequent viral mutations.
- Evidence of natural infection of SARS-CoV-2 in the community continues to be high, including in paediatric populations.
- However, SARS-CoV-2 continues to circulate with no defined seasonality and the most vulnerable members of the population, infants, older adults, and those with underlying conditions, continue to be at increased at risk of severe disease.
- Uptake of primary schedule vaccination in Ireland is 100% in those aged 50 years and older and above 80% in those aged 20 to 49 years. Uptake in those aged 12-19 years is over 60% but much lower at less than 10% in those aged between 0-11 years.
- In 2023 and 2024 demand for primary schedule vaccination has been relatively low. In 2024, up to week 18, an average of 41 primary schedule vaccinations were administered per week in Ireland and have been primarily in those aged 60 years of age and older.
- The Netherlands, France, Spain and the UK no longer recommend COVID-19 primary schedule for healthy individuals aged under 65 years who do not have underlying health conditions or care needs. However, some countries still make vaccines available to those who wish to avail of them.

2. INTRODUCTION

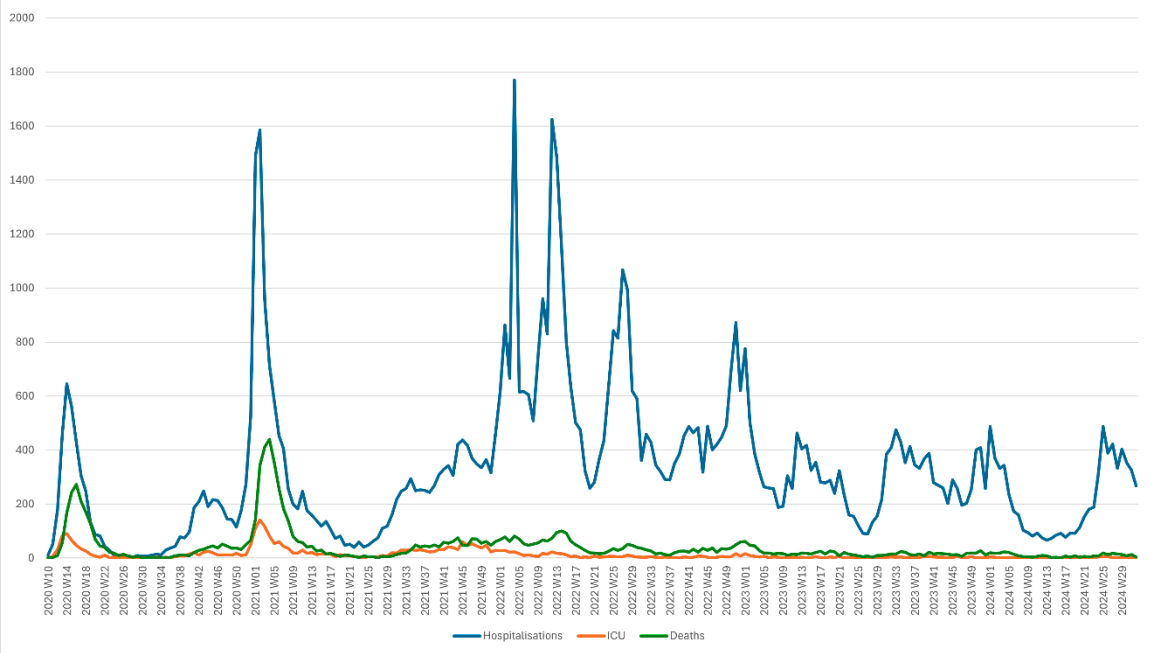
Primary schedule COVID-19 vaccination, meaning vaccination of those who have never received a COVID-19 vaccine, has been recommended in Ireland since July 2021 for all those aged 12 years and older, since December 2021 for those aged 5-11 years with underlying conditions (or living with someone with complex needs), and since January 2023 for those aged 6 months-4 years with underlying medical conditions. Due to high initial uptake of the COVID-19 vaccine program in Ireland, most adults in Ireland have completed a COVID-19 vaccine primary schedule. The landscape of COVID-19 has changed significantly since primary schedule recommendations were first issued in 2021. Due to changes in the virus and protection provided by vaccination and natural infection there are now fewer COVID-19 related hospitalisations, ICU admissions and deaths. However, SARS-CoV-2 continues to circulate with no defined seasonality in Ireland and continues to cause hospitalisations, ICU admissions and deaths in high-risk groups. These updated

recommendations for COVID-19 primary schedule outline which population subgroups are recommended to receive COVID-19 vaccination if they have not previously been vaccinated.

3. EPIDEMIOLOGY IN IRELAND

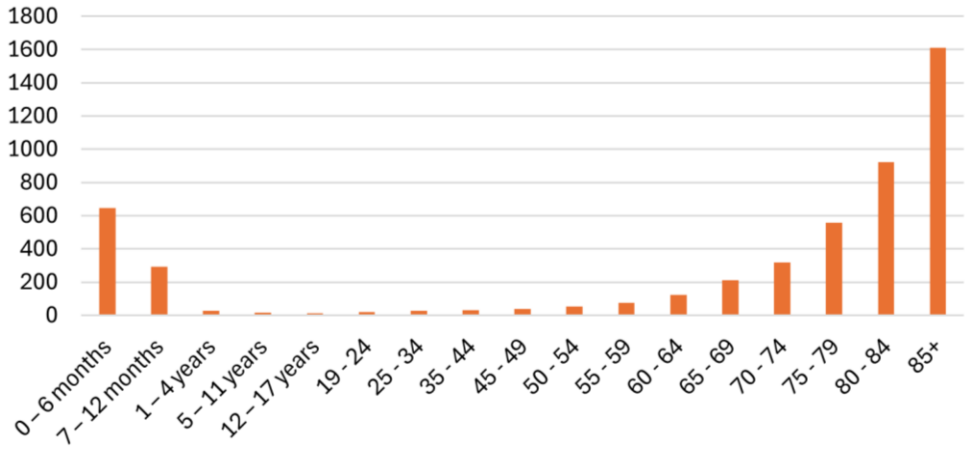
SARS-CoV-2 associated hospitalisations have been reducing each year since the beginning of the pandemic and despite continued surges in COVID-19 cases and hospitalisations in 2023 and 2024, ICU admissions and deaths have remained low. (Figure 1)[1]

Figure 1. COVID-19 associated hospitalisations, ICU admissions and deaths (week 10 2020 to week 32 2024). Source: HPSC Respiratory Virus Notification Data Hub, data extracted from CIDR.[1]



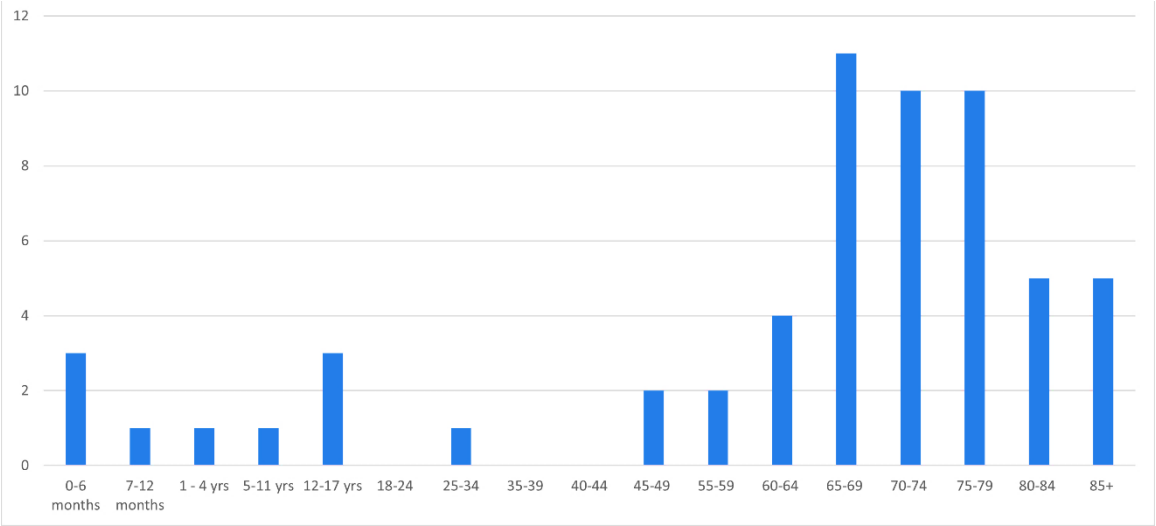
The greatest burden of disease continues to be among the most vulnerable members of the population. In the 2023/2024 winter season hospitalisation rates were greatest among infants aged under 12 months and older adults aged 60 years and older. (Figure 2)[2]

Figure 2. Age specific rate of COVID-19 associated hospitalisations per 100,000 population, winter season 2023/2024 (week 40 2023 to week 17 2024). Source: Provided directly to NIAC by HPSC.[2]



ICU admissions were greatest among older adults aged 60 years and older. (Figure 3)[3]

Figure 3. Age specific number of COVID-19 associated ICU admissions, winter season 2023/2024 (week 40 2023 to week 17 2024). Source: Provided directly to NIAC by HPSC.[3]



The seroprevalence of SARS-CoV-2 antibodies in the community is high, including in paediatric populations. Preliminary estimates of the seroprevalence of SARS-CoV-2 antibodies among children (3-17 years old) in Ireland, using residual serum samples sourced through the laboratory Surveillance Network (LSN) between 01 February 2024 and 19 June 2024 show that at least 93% of all children sampled tested positive for nucleocapsid protein-specific IgG antibodies (N+) indicating evidence of natural infection. Spike protein antibodies (S+) which indicate evidence of

either vaccination or natural infection were detected in 94% of children sampled. Over 97% of children tested positive for either S+ or N+ antibodies. Although there was a slightly lower percentage of children in the youngest age group aged 3 to 4 years who had evidence of IgG antibodies than compared with the 5 to 11 year old, and 12 to 17 year old groups, the number was still high at 93%. A total of 4.6% of samples indicated evidence of vaccination but no infection and 2.4% of samples indicated no serological evidence of any past exposure. (Table 1)[4] No seroprevalence data are available in children aged < 3 years old.

Table 1. Demographic data and unadjusted SARS-CoV-2 IgG seroprevalence estimates among children in Ireland, 1st Feb - 19th June 2024. Data are preliminary. Source: Lab Surveillance Network. Source: Provided directly to NIAC by the Seroepidemiology Unit.[4]

Sample	Age-group (years)	N	Sample %	S+ prev (%)	N+ prev (%)	S+/N+ prev (%)
All		2,709	100	94.6	93.0	97.6
Female		1,462	54.0	95.7	93.3	97.9
Male		1,247	46.0	93.3	92.7	97.4
	3-4	287	10.6	86.1	86.4	93.0
	5-11	872	32.2	91.7	91.2	96.7
	12-17	1,550	57.2	97.8	95.3	99.0

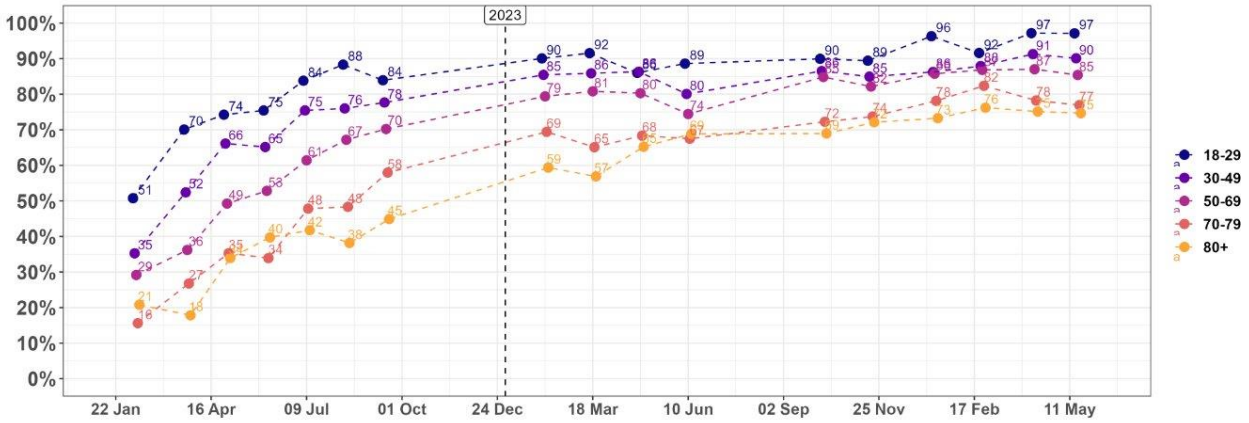
S+ = any sample that tests positive for spike protein-specific IgG.

N+ = any sample that tests positive for nucleocapsid protein-specific IgG.

S+/N+ = any sample that tests positive for spike OR nucleocapsid protein-specific IgG.

The percentage of the adult population with evidence of protection against SARS-CoV-2 from either natural infection or vaccination has been increasing since the Winter 2023/24 surge and ranged between 75% in the oldest adult age group (80 years old and over) and 97% in the youngest adult age group (18-29 years old) in May 20. (Figure 4)[5]

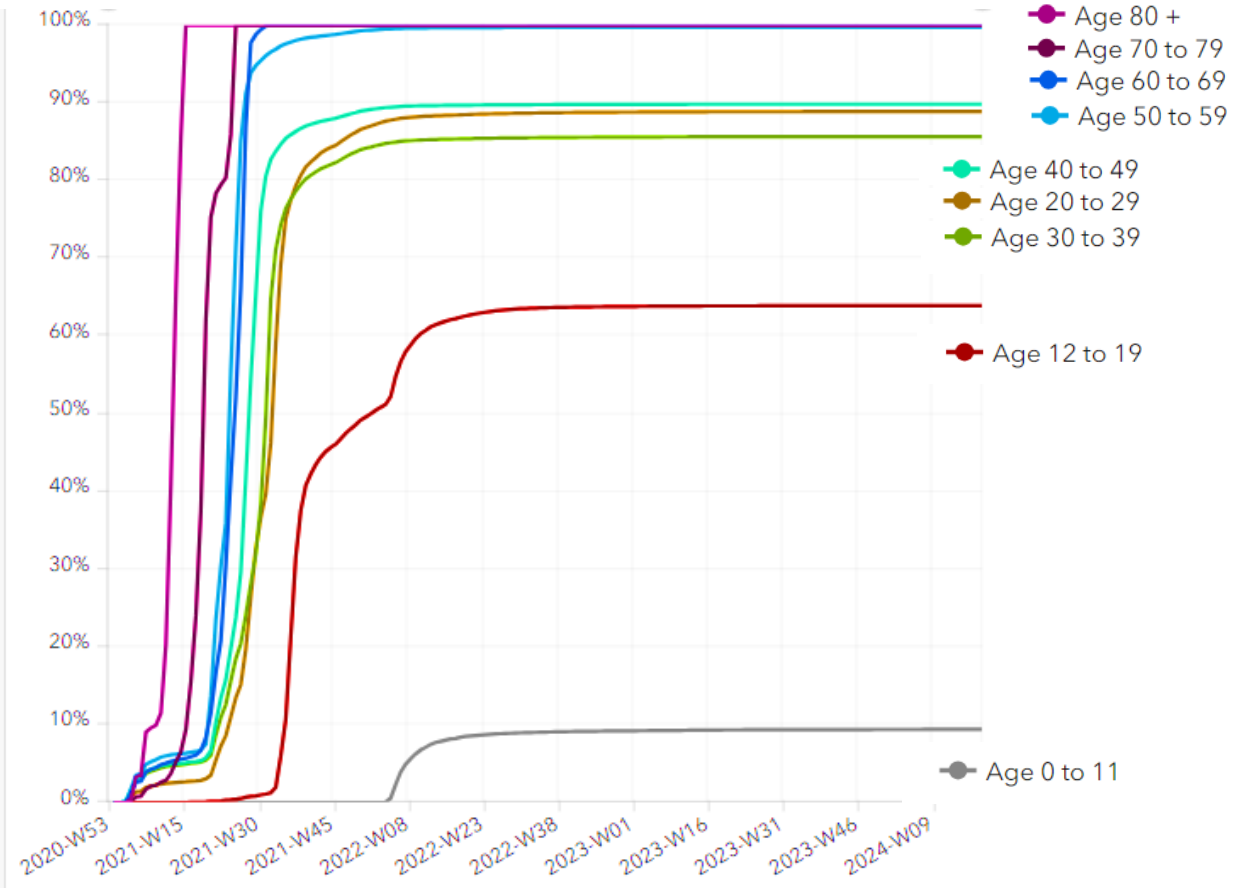
Figure 4. Percentage of adults with SARS-CoV-2 Immunoglobulin G (IgG) antibodies from either natural infection or vaccination (S+ N+), Jan 2023 to May 2024. Source: Lab Surveillance Network. Source: Provided directly to NIAC by the Seroepidemiology Unit.[5]



4. VACCINE UPTAKE

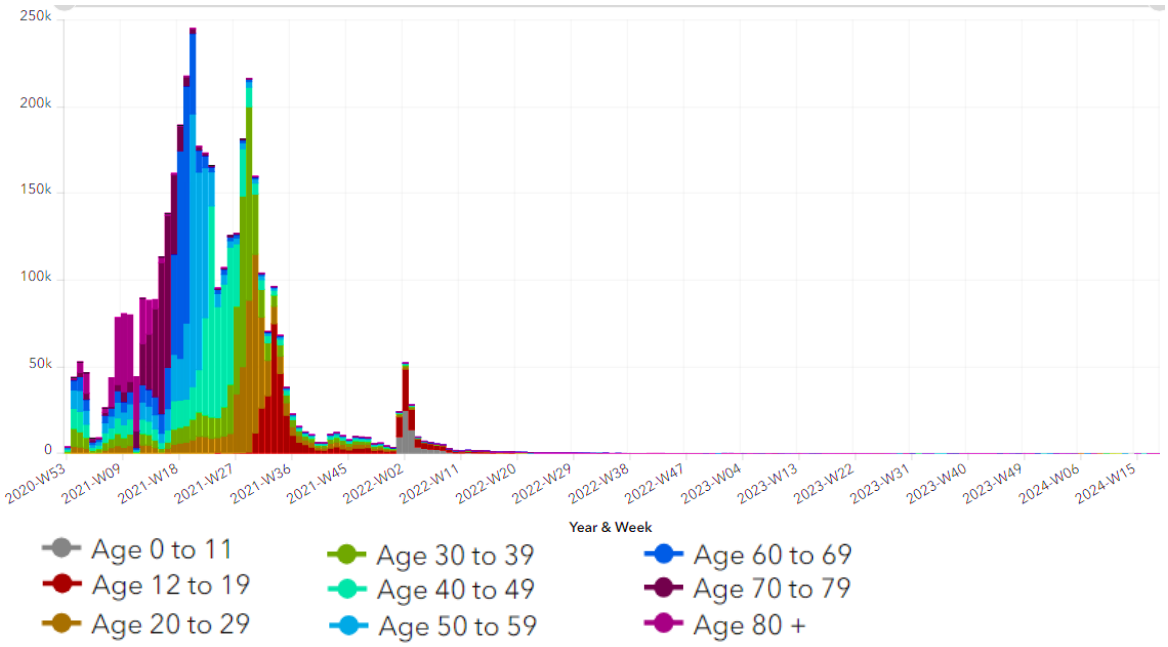
The uptake of primary schedule COVID-19 vaccination in Ireland is 100% in those aged 50 years of age and older and above 80% in those aged 20-49 years. Uptake in those aged 12-19 years is over 60% and less than 10% in those aged 0-11 years. (Figure 5)[6]

Figure 5. Percentage of the population vaccinated with COVID-19 primary schedule by age group updated May 13, 2024. Source: Ireland's COVID-19 Data Hub.[6]



The majority of COVID-19 primary schedule vaccination was administered in 2021 and the beginning of 2022. In 2024, weekly numbers of primary schedule vaccinations administered in Ireland have been between 3 and 188, and primarily in those aged 60 years of age and older. (Figure 6)[7]

Figure 6. Uptake of at least one dose of COVID-19 primary schedule vaccination per week, week 53 2020 to week 18 2024. Source: Ireland's COVID-19 Data Hub.[7]



5. VACCINE SAFETY

The safety profile of COVID-19 vaccines continues to be closely monitored and no new safety concerns have emerged with continued administration of vaccines and with updated variant specific formulations. New safety studies were reviewed as part of NIAC recommendations regarding Spring 2024 COVID-19 vaccination and subsequent NIAC updated 2024 recommendations for COVID-19 vaccination.

6. VACCINE EFFECTIVENESS

Recommended COVID-19 vaccinations continue to be effective in reducing the severity of SARS-CoV-2 related disease for up to 12 months. New evidence on vaccine effectiveness was reviewed as part of NIAC recommendations regarding Spring 2024 COVID-19 vaccination and subsequent NIAC updated 2024 recommendations for COVID-19 vaccination.

7. INTERNATIONAL POSITIONS

Several countries have adjusted their COVID-19 vaccination recommendations, particularly in relation to the primary vaccination schedule, as the pandemic has evolved. The Netherlands, France, Spain, and the UK no longer recommend COVID-19 primary schedule for healthy individuals aged under 65 years who do not have underlying health conditions or care needs, although many countries still make vaccines available to those who wish to avail of them. (Table 2) Focus has largely shifted to seasonal annual or biannual vaccinations and updated vaccines tailored to current variants, especially for vulnerable populations.

Table 2. International recommendations with regard to COVID-19 primary schedule vaccination as of July 2024.

Country	Primary schedule recommendations
France	No longer recommended for general population. The French National Authority for Health (HAS) stresses that it is essential to continue efforts to vaccinate people at risk who have not been vaccinated. Healthcare workers are not specifically mentioned however HAS continues to highlight that COVID-19 vaccines should be available to all free of charge.[8]
Germany	Recommended for all healthy ≥18 year olds, high-risk <18 years, healthcare workers and close contacts of individuals not likely to develop a protective immune response from vaccination.[9]
Spain	Primary schedule not referred to. COVID-19 seasonal vaccination recommended to high-risk populations from 6 months old and healthcare workers.[10]
Netherlands	Primary schedule not referred to. Seasonal vaccination offered to high-risk groups and healthcare workers. Statement: population no longer needs COVID-19 vaccination due to high levels of exposure, only high-risk individuals i.e., groups who are offered flu vaccines are offered COVID-19 vaccination.[11]
Sweden	Recommended to adults ≥18 years.[12]
UK	Eligibility for primary and booster doses has been aligned since Autumn 2023 and should be provided during seasonal campaigns only to those ≥6 months of age in clinical risk groups and frontline health and social care workers.[13]
Australia	Recommended to all adults ≥18 years old and to high-risk groups aged 6 months-18 years.[14]
Canada	All aged ≥5 years **should** get primary schedule. Those age 6 months-4 years who are healthy **may consider** vaccination and those who are high risk **should** be vaccinated.[15]
US	All aged ≥6 months recommended age-appropriate vaccination.[16]

8. DISCUSSION

The landscape of COVID-19 epidemiology continues to evolve. Due to the changes in the virulence of the virus, and protection provided by vaccination and natural infection there are now fewer COVID-19 related hospitalisations, ICU admissions and deaths. However, despite this trend, certain vulnerable groups continue to face severe outcomes from COVID-19 infection.

Primary schedule refers to vaccination in those who have never received a COVID-19 vaccine. The initial uptake of the COVID-19 vaccine program in Ireland was excellent. However, the decline in vaccine uptake with every subsequent vaccine offered necessitates a renewed focus on ensuring vaccination of those who remain at high risk of severe COVID-19 infection and death. It is timely to review the recommendations for primary schedule COVID-19 vaccination in this context.

The seroprevalence data collected by the HPSC Seroepidemiology Unit (SEU) recently expanded to include COVID-19 data in children. The SEU data continues to inform NIAC recommendations and is critical when considering COVID-19 primary schedule vaccination. The data shared with NIAC confirms high levels of protection due to either natural infection or vaccination in children and adults in Ireland. Over 90% of children aged 3-17 years were found to have evidence of protection against SARS-CoV-2 from either natural infection or vaccination, with highest rates of protection (>99%) seen in those aged 12-17 years. NIAC has not routinely recommended COVID-19 vaccination in children aged under 12 years without additional risk factors, and thus rates of primary schedule vaccination are low (<10%) in this age group. The high seroprevalence in this age group is primarily due to natural infection. Notably, hospitalisation and ICU rates in children aged 12 months and older remain low despite low vaccination rates. Hospitalisation and ICU admissions remain low in adults aged 18-59 years where seroprevalence is at least 85% and is higher in younger age groups reaching 97% in those aged 18-29 years.

As the landscape of COVID-19 changes it is important that recommendations adapt accordingly. In these updated recommendations for primary schedule COVID-19 vaccination, a primary schedule is recommended in the following groups who are at higher risk of severe outcomes from COVID-19 infection: Those aged 60 years and older, those aged 18-59 years living in long term care facilities for older adults, those aged 6 months-59 years with immunocompromise associated with a suboptimal response to vaccination, those aged 6 months-59 years with medical conditions associated with a higher risk of COVID-19 hospitalisation, severe disease or death, health and care workers and pregnant adolescents and adults.

Risk groups in whom primary schedule COVID-19 vaccination are recommended now align with those in whom booster doses are indicated as set out in the 2024 Autumn COVID-19 vaccine recommendations. For persons aged ≥6 months who do not fall within one of these risk groups, access to a primary schedule of COVID-19 vaccine should continue to be available, if following discussion of their reasons with a health care provider (e.g., GP, pharmacist or HSE vaccinator)

they request vaccination. NIAC continues to monitor and review emerging evidence, and recommendations may be updated accordingly.

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REFERENCES

1. Health Protection Surveillance Centre. COVID-19 associated hospitalisations, ICU admissions and deaths (week 10 2020 to week 32 2024). Respiratory Virus Notification Data Hub, data extracted from CIDR. 2024 [Available from: https://respiratoryvirus.hpsc.ie/ accessed August 2024 2024.
2. Health Protection Surveillance Centre. Age specific rate of COVID-19 associated hospitalisations per 100,000 population, winter season 2023/2024 (week 40 2023 to week 17 2024). Provided directly to NIAC by HPSC 2024 [
3. Health Protection Surveillance Centre. Age specific number of COVID-19 associated ICU admissions, winter season 2023/2024 (week 40 2023 to week 17 2024). Provided directly to NIAC by HPSC 2024
4. Health Protection Surveillance Centre. Demographic data and unadjusted SARS-CoV-2 IgG seroprevalence estimates among children aged 3 to 17 years old in Ireland, 1st Feb - 19th June 2024. Data are preliminary. Collected through Lab Surveillance Network. Provided directly to NIAC by the Seroepidemiology Unit, HPSC 2024
5. Health Protection Surveillance Centre. Percentage of adults with SARS-CoV-2 Immunoglobulin G (IgG) antibodies from either natural infection or vaccination (S+ N+), Jan 2023 to May 2024. Collected through Lab Surveillance Network. Provided directly to NIAC by the Seroepidemiology Unit, HPSC 2024
6. Government of Ireland. Percentage of the population vaccinated with COVID-19 primary schedule by age group updated May 13, 2024. Ireland's COVID-19 Data Hub 2024 [Available from: https://covid19ireland-geohive.hub.arcgis.com/ accessed August 2024.
7. Government of Ireland. Uptake of at least one dose of COVID-19 primary schedule vaccination per week, week 53 2020 to week 18 2024. Ireland's COVID-19 Data Hub. 2024 [Available from: https://covid19ireland-geohive.hub.arcgis.com/ accessed August 2024.
8. Haute Autorite de sante. Covid-19 vaccination strategy: anticipation of vaccination campaigns in 2023 2023 [Available from: https://www.has-sante.fr/jcms/p_3417245/fr/strategie-de-vaccination-contre-la-covid-19-anticipation-des-campagnes-de-vaccination-en-2023 accessed August 2024.
9. Standing Committee on Vaccination (STIKO). STIKO Immunisation Schedule 2024 [Available from:

https://www.rki.de/EN/Content/infections/Vaccination/recommandations/recommendations_node.html accessed August 2024.

10. Ministerio De Sanidad España. Recomendaciones de vacunación frente a gripe y COVID-19 en la temporada 2024-2025 en España 2024 [Available from: https://www.sanidad.gob.es/areas/promocionPrevencion/vacunaciones/gripe_covid19/docs/RecomendacionesVacunacion_Gripe-Covid19.pdf accessed August 2024.
11. Government of the Netherlands. Coronavirus vaccination 2024 [Available from: https://www.government.nl/topics/coronavirus-covid-19/dutch-vaccination-programme/covid-19-vaccination-campaign accessed August 2024.
12. Folkhalsomyndigheten Public Health Agency of Sweden. Recommendations for vaccination against COVID-19 in spring 2024 2024 [Available from: https://www.folkhalsomyndigheten.se/the-public-health-agency-of-sweden/communicable-disease-control/covid-19/recommendations-for-vaccination-against-covid-19-in-spring-2024/ accessed August 2024.
13. UK Health Security Agency. COVID-19 Greenbook Chapter 14a 2024 [Available from: https://assets.publishing.service.gov.uk/media/66223409252f0d71cf757d88/Greenbook-chapter-14a-20240418.pdf accessed August 2024.
14. Government of Australia. COVID-19 vaccine advice and recommendations for 2024 2024 [Available from: https://www.health.gov.au/our-work/covid-19-vaccines/getting-your-vaccination#your-primary-course-of-vaccination accessed August 2024.
15. Government of Canada. COVID-19 vaccines: Canadian Immunization Guide 2024 [Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-part-4-active-vaccines/page-26-covid-19-vaccine.html#a5.4 accessed August 2024.
16. Center for Disease Control and Prevention. Updated (2023–2024 Formula) COVID-19 Vaccine Interim 2023-2024 COVID-19 Immunization Schedule for Persons 6 Months of Age and Older 2024 [Available from: https://www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf accessed August 2024.