National Immunisation Advisory Committee
An Coiste Comhairleach Náisiúnta um Imdhíonadh

Health Information and Quality Authority
An tÚdarás Um Fhaisnéis agus Cáilíocht Sláinte

Updated recommendations for vaccination against respiratory syncytial virus in older adults

Advice provided to the Minister for Health

Issued: 02 October 2025

About the National Immunisation Advisory Committee

The National Immunisation Advisory Committee (NIAC) is Ireland's National Immunisation Technical Advisory Group (NITAG). NIAC provides independent evidence-based recommendations and advice to the Minister for Health on immunisation and related health matters to inform health policy in Ireland.

First established in 1998, NIAC has been hosted by HIQA as a statutory function under Section 8(1)(g) of the Health Act 2007 (as amended) since 31 March 2025.

NIAC membership is voluntary, and includes nominees from the Royal College of Physicians of Ireland, its Faculties and Institutes, the Royal College of Surgeons in Ireland, the Irish College of General Practitioners, the Nursing and Midwifery Board of Ireland, the Infectious Diseases Society of Ireland, the Travel Medicine Society, the National Virus Reference Laboratory, as well as members with expertise in gerontology and inclusion health, and lay members. Meetings are attended by representatives from the Department of Health and the Health Service Executive (HSE) including the HSE's National Immunisation Office. Representatives of the Health Products Regulatory Authority attend to provide regulatory advice in relation to vaccines.

The NIAC Secretariat team, situated within the Health Technology Assessment (HTA) Directorate in HIQA, provides clinical, evidence synthesis, and administrative support to NIAC.

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RECOMMENDATIONS

1. NIAC recommends respiratory syncytial virus (RSV) vaccination with either RSVPreF3 (Arexvy®), RSVpreF (Abrysvo®) or mRNA-1345 (mRESVIA®) for those:
    a. aged 75 years and older
    b. aged 60 to 74 years with any additional risk factors for severe RSV disease*
    c. aged 60 years and older living in long-term care facilities for older adults.
2. A single dose is recommended; the need for booster doses has not yet been established.
3. RSV vaccines may be given at any time of the year, but vaccination will have the most individual benefit if administered just before the RSV season. The impact of any vaccination programme will depend on uptake and thus implementation factors should also be considered in determining the optimal RSV vaccination strategy for adults.
4. RSV vaccines may be given at the same time as other vaccines, such as COVID-19, influenza, zoster and pneumococcal vaccines. However, co-administration studies on RSV and influenza vaccines have shown slightly lower immune responses to certain strains of influenza compared with when these vaccines are administered separately. The clinical significance of these decreased immune responses is uncertain. The benefits of giving the RSV and influenza vaccines at the same time, where there is an opportunity to do so, may outweigh such concerns.

*Risk factors for severe RSV disease may include, but are not limited to, chronic cardiovascular disease (for example, congestive heart failure, coronary artery disease), chronic respiratory conditions (for example, chronic obstructive pulmonary disease, asthma), chronic metabolic disorders (for example, diabetes mellitus), immunocompromising conditions, chronic kidney disease, chronic liver disease, chronic neurological conditions, or obesity.

Recommendations may be updated when more information becomes available.

Contents

List of abbreviations used in this report

ACIP	Advisory Committee on Immunization Practices (US)
ATAGI	Australian Technical Advisory Group on Immunisation
CHMP	Committee for Medicinal Products for Human Use
CNS	central nervous system
COPD	chronic obstructive pulmonary disease
ECDC	European Centre for Disease Prevention and Control
EMA	European Medicines Agency
EtR	Evidence to Recommendation
FDA	Food and Drug Administration (US)
GBS	Guillain-Barré syndrome
HAS	Haute Autorité de Santé (France)
HIQA	Health Information and Quality Authority
HSE	Health Service Executive
HTA	health technology assessment
ICU	intensive care unit
IRR	incidence rate ratio
JCVI	Joint Committee on Vaccination and Immunisation (UK)
MHRA	Medicines and Healthcare Products Regulatory Agency (UK)
mRNA	messenger ribonucleic acid
NACI	National Advisory Committee on Immunization (Canada)
NIAC	National Immunisation Advisory Committee
NITAG	National Immunisation Technical Advisory Group
RCT	randomised controlled trial
RSV	respiratory syncytial virus
SAE	serious adverse event

STIKO	Ständige Impfkommission (Standing Committee on Vaccination, Germany)
VAERS	Vaccine Adverse Event Reporting System (US)
VE	vaccine efficacy
WG	Working Group

Executive Summary

- In October 2023, NIAC recommended respiratory syncytial virus (RSV) vaccination for those aged 65 years with either of the two vaccines authorised by the European Medicines Agency (EMA) at that time: bivalent RSVpreF (Abrysvo®) or adjuvanted RSVPreF3 (Arexvy®). Since then, a third vaccine using mRNA technology, mRNA-1345 (mRESVIA®), has been authorised by the European Medicines Agency (EMA).
- To inform updated recommendations, NIAC reviewed current RSV epidemiology, post-marketing data for RSVpreF (Abrysvo®) and RSVPreF3 (Arexvy®), and clinical trial data for mRNA-1345 (mRESVIA®).

Epidemiology

- While RSV primarily affects young children, it is also a significant cause of respiratory illness and associated hospitalisations in older adults along with influenza and COVID-19.
- The burden of RSV disease in adults increases with increasing age and is highest in those 75 years of age and older. In winter 2024/25 there were over 90 RSV-associated hospitalisations per 100,000 population in those aged 75 to 79 years and over 185 per 100,000 population in those aged 80 years and older.
- Numbers of RSV-associated outcomes reported in Ireland, such as cases and hospitalisations, have been increasing in recent years. These figures reflect increased RSV testing introduced after the COVID-19 pandemic. However, continued underreporting of RSV illness in Ireland may still be an issue.
- RSV was a primary cause of 28 deaths in winter 2024/25 and 38 deaths in winter 2023/24, with these deaths predominantly occurring in those aged 75 years and older. Among the 29 documented intensive care unit (ICU) admissions from both seasons, underlying risk factors were present in all individuals aged 60 to 74 years old and the majority of individuals aged 75 years and older.
- Outbreaks of RSV are common in adult long-term care facilities such as nursing homes, residential institutions and community hospitals.
- In adults 60 years of age and older, risk factors for moderate to severe RSV infection include underlying vascular, pulmonary, renal and endocrine conditions as well as immunosuppressive treatments and conditions.

Safety

- All three authorised RSV vaccines have been well tolerated in clinical trials and during post-marketing surveillance in terms of adverse events.
- Potential signals were noted for rare, serious adverse events. An early potential safety signal for atrial fibrillation was not borne out for RSVpreF (Abrysvo®) and RSVPreF3 (Arexvy®) in clinical trials. The European Medicines Agency (EMA) and the US Food and Drug Administration (FDA) have required further monitoring of this potential signal.
- Early post-marketing data in the US suggest that Guillain-Barré Syndrome (GBS) may occur more often than expected after RSVpreF (Abrysvo®) or RSVPreF3 (Arexvy®) vaccination and that the estimated risk may be higher for RSVpreF (Abrysvo®) than RSVPreF3 (Arexvy®). Although these events are very rare, both the EMA and FDA have acknowledged a possible link, and ongoing studies are monitoring the risk. As of July 2025, the product information for RSVpreF (Abrysvo®) had been updated to list GBS as a very rare (<1/10,000) side effect.
- UK regulators have issued a safety update noting a small increased risk of GBS with RSVpreF (Abrysvo®) vaccination, especially in older adults, but conclude that the benefits of vaccination outweigh the risks. Preliminary unpublished post-marketing data from UK estimate 15 to 25 excess GBS cases per million doses administered in adults aged 75-79 years.
- Further risk-benefit analyses by STIKO (Germany's National Immunisation Technical Advisory Group) and the Advisory Committee on Immunisation Practices (ACIP) in the US estimated that RSV vaccination in older adults was associated with a small potential risk of GBS, ranging from 3 to 25 cases per million doses administered. However, they estimated that vaccination could prevent considerable numbers of RSV-associated hospitalisations, ICU admissions and deaths, particularly in adults aged 75 years and older, with both concluding that in those aged 75 years and older the benefits of vaccination outweigh the risks.
- For the new mRNA vaccine, mRNA-1345 (mRESVIA®), the EMA determined that facial paralysis, including Bell's palsy, should be added to the product information as a rare potential side effect of the vaccine based on clinical trial results. Additionally, although no heart inflammation cases were noted in clinical trials, the EMA required monitoring for potential cases of myocarditis and pericarditis, as these are very rare

adverse events associated with other mRNA vaccines (that is, COVID-19 mRNA vaccines).

Effectiveness

- In clinical trials, all three authorised vaccines were shown to be highly effective in preventing illness over one season, including in older adults and in those with underlying risk factors for RSV illness.
- Additionally, as of July 2025, clinical trial data demonstrate RSV vaccine efficacy over two (RSVpreF, Abrysvo®; RSVPreF3, Arexvy®) and three (RSVPreF3, Arexvy®) seasons, although protection declines over time. Efficacy data for mRNA-1345 (mRESVIA®) are limited to one season.
- Real world studies from a single RSV season (2023/24) in the US estimated that RSVPreF3 (Arexvy®) and RSVpreF (Abrysvo®) resulted in an approximately 75-80% reduction in RSV infection and RSV-associated emergency visits and hospitalisations in adults aged 60 years and older. Effectiveness remained high in those over 75 years old and was only slightly lower in people with weakened immune systems, including transplant recipients. Data on RSV-associated ICU admissions and deaths were limited due to the low numbers of such cases.
- In terms of the need for a booster, one trial looked at giving a second dose of RSVPreF3 (Arexvy®) before a second RSV season. It was safe and well tolerated, but did not improve protection compared with a single dose before the first RSV season. More research on the potential value of and approach to revaccination is ongoing.
- Clinical trial data indicate similar safety and immune responses for all three RSV vaccines irrespective of whether given on the same day as other adult vaccines (specifically, COVID-19, influenza and shingles vaccines), or on separate days. However, it is noted that while statistically non inferior, co-administration of RSVpreF (Abrysvo®) with influenza vaccines resulted in a lower immune response, especially for the influenza A(H3N2) strain.

Acceptability, Values and Preferences

- As yet there are no data available on how many older adults in Ireland have received the RSV vaccine, but uptake of other vaccines such as COVID-19 and flu suggests potential demand. In the UK, following introduction of a national programme, vaccine uptake ranged from 38% to almost 69% in the first season,

depending on the region and how the vaccine was made available. RSV vaccine uptake among older adults ranged from 38% to almost 69% depending on the region and how the vaccine was made available.

International Recommendations

- Internationally, National Immunisation Technical Advisory Groups (NITAGs) in many countries such as Germany, France, the UK, Canada, Australia and the US now recommend RSV adult vaccination based on age for those aged 75 years and older, and additionally for those with risk factors from 60 or 65 to 74 years of age. The Australian and Canadian NITAGs also state that vaccination for those without risk factors aged 60-74 and 50-74 years old, respectively, may be considered.
- mRNA-1345 (mRESVIA®) has been recommended by many countries since its authorisation including France, Germany, the UK and Canada. No preferential recommendation has been made for any of the three RSV adult vaccines and no country has issued a recommendation for revaccination.

NIAC Considerations

- Informed by the review of the above evidence and the input of the RSV Working Group (WG) and according to NIAC's Evidence to Recommendation (EtR) framework, NIAC agreed revised recommendations for RSV vaccination in older adults.
- NIAC concluded that RSV is a public health concern, despite uncertainties in current surveillance data both in Ireland and globally. While RSV poses a lower disease burden in older adults compared to infants, this may be underestimated due to evolving testing and reporting practices. The role of RSV in hospitalisations among older adults observed in clinical practice in Ireland was emphasised, and it was agreed that RSV is particularly significant for the oldest adults and those with risk factors for moderate to severe infection.
- NIAC concluded that RSV vaccines are effective and generally safe for adults aged 60 years and older. The greatest benefits are expected in the oldest adults and those with risk factors, due to their higher disease burden. For younger adults within this age group, especially those without risk factors, the benefits are less clear. Although vaccine effectiveness appears consistent across age groups, its impact is greatest where disease burden is highest.

- NIAC considered the vaccines to be generally well tolerated, with some uncertainty over potential serious adverse events like Guillain-Barré Syndrome, although it was noted that these events remain rare. Ongoing monitoring is in place. Uncertainty around how long protection lasts supports vaccinating individuals just in advance of the age of highest likely risk. Co-administration with other vaccines is generally acceptable, though a slight reduction in immune response to one influenza strain was observed when RSVpreF (Abrysvo®) was co-administered with influenza vaccines.
- Overall, the balance of benefits and harms favours vaccination in older age groups (≥75 years old) and those with risk factors for severe RSV disease.
- NIAC considered the availability and uptake rates of vaccines against respiratory infections for older adult populations in Ireland and the uptake of RSV vaccines in the UK as an indication of likely demand for RSV adult vaccination in Ireland.
- NIAC discussed the potential size of the population of adults aged 60-74 years with risk factors for RSV disease. It was noted that within a particular diagnosis, there may be differences in risk depending on the severity of the comorbidity (for instance stage of chronic kidney disease). In case of resource and or feasibility constraints, it was considered important to target or prioritise individuals at greatest risk of severe RSV disease.
- NIAC considered the potential impact of a change in RSV recommendations on heath equity. It was acknowledged that risk-based recommendations can increase health inequities, as comorbidities may be underdiagnosed or under-recognised in more vulnerable populations who have more barriers accessing healthcare and health information.
- NIAC noted Ireland's experience with adult vaccination programmes and suggested that while seasonal delivery may offer benefits in terms of efficacy and efficiencies, it also poses logistical challenges; year-round or earlier seasonal administration were noted as potentially feasible alternatives.
- NIAC considered that RSV vaccination should be recommended for those in whom the burden of disease is highest, that is, older age groups (≥75 years old), those in long-term care facilities and those aged 60 years and older with risk factors for severe RSV-related disease. NIAC will keep emerging literature under review, and recommendations may be updated if new information becomes available.

1 Introduction

In October 2023, the National Immunisation Advisory Committee (NIAC) published recommendations for passive immunisation and vaccination against respiratory syncytial virus (RSV) in infants, children, and older adults.[1] For older adults (aged 65 years and older), those recommendations were made in the context of two RSV vaccines being authorised by the European Medicines Agency (EMA) for use in adults aged 60 years and older, RSVpreF (Abrysvo®, Pfizer) and RSVPreF3 (Arexvy®, GSK), with both vaccines supported by published clinical trial data regarding their safety and efficacy.[2, 3]

In the time since those recommendations were made, a third RSV vaccine has been authorised by the EMA for adults aged 60 years and older, mRNA-1345 (mRESVIA®, Moderna), with supporting clinical trial data published.[4] Post-marketing safety and effectiveness data relating to RSVpreF (Abrysvo®) and RSVPreF3 (Arexvy®) have also been published in the intervening period. In addition, several international National Immunisation Technical Advisory Groups (NITAGs) have made new or updated recommendations regarding RSV vaccination of this age group.

In this context, NIAC considered the new information available regarding RSV vaccines for adults aged 60 years and older, and developed updated recommendations for this population in Ireland. This report outlines the evidence summarised by the NIAC Secretariat to inform the Committee's recommendations and the considerations of the Committee and the RSV Working Group (WG), presented with respect to the Evidence to Recommendation (EtR) framework used by NIAC.[5]

2 Methods

The methods used by the NIAC Secretariat to identify and summarise the evidence that informed the Committee's and WG's considerations are described in the protocol, *Vaccination against respiratory syncytial virus in older adults: Protocol for an evidence summary to inform updated recommendations*, available at www.hiqa.ie. Details regarding the methods of an update to a systematic review of the efficacy, effectiveness and safety of RSV vaccines conducted by HIQA, used to inform Domain 2: Benefits and Harms, are provided in Appendix 1.

The evidence summary was presented to NIAC's RSV WG on 24 June 2025, and the RSV WG's considerations were documented. The evidence summary and WG considerations were subsequently presented to NIAC at a full Committee meeting on 21

July 2025. NIAC considered the information presented and developed its recommendations in line with its Terms of Reference and Standard Operating Procedures.[6]

3 RSV Vaccines for Adults

There are three RSV vaccines authorised by the EMA for use in adults:

- RSVPreF3 (Arexvy®, GSK), a recombinant RSV pre-fusion F protein vaccine, adjuvanted with AS01E. It was first authorised by the EMA in June 2023. As of July 2025, it is indicated for active immunisation for the prevention of lower respiratory tract disease (LRTD) caused by RSV in adults aged 60 years and older, and adults aged 50-59 years who are at increased risk for RSV disease.[7]
- RSVpreF (Abrysvo®, Pfizer), a non-adjuvanted, bivalent, recombinant RSV vaccine. It was first authorised by the EMA in August 2023. As of July 2025, it is indicated for active immunisation of individuals aged 18 years and older for the prevention of LRTD caused by RSV. It is also indicated for passive protection of infants from RSV-related LRTD by maternal vaccination during pregnancy.[8]
- mRNA-1345 (mRESVIA®, Moderna), a single-stranded 5' capped mRNA encoding the RSV glycoprotein F stabilised in the prefusion conformation. It was first authorised by the EMA in August 2024. As of July 2025, it is indicated for active immunisation for the prevention of LRTD caused by RSV in adults aged 60 years and older.[9]

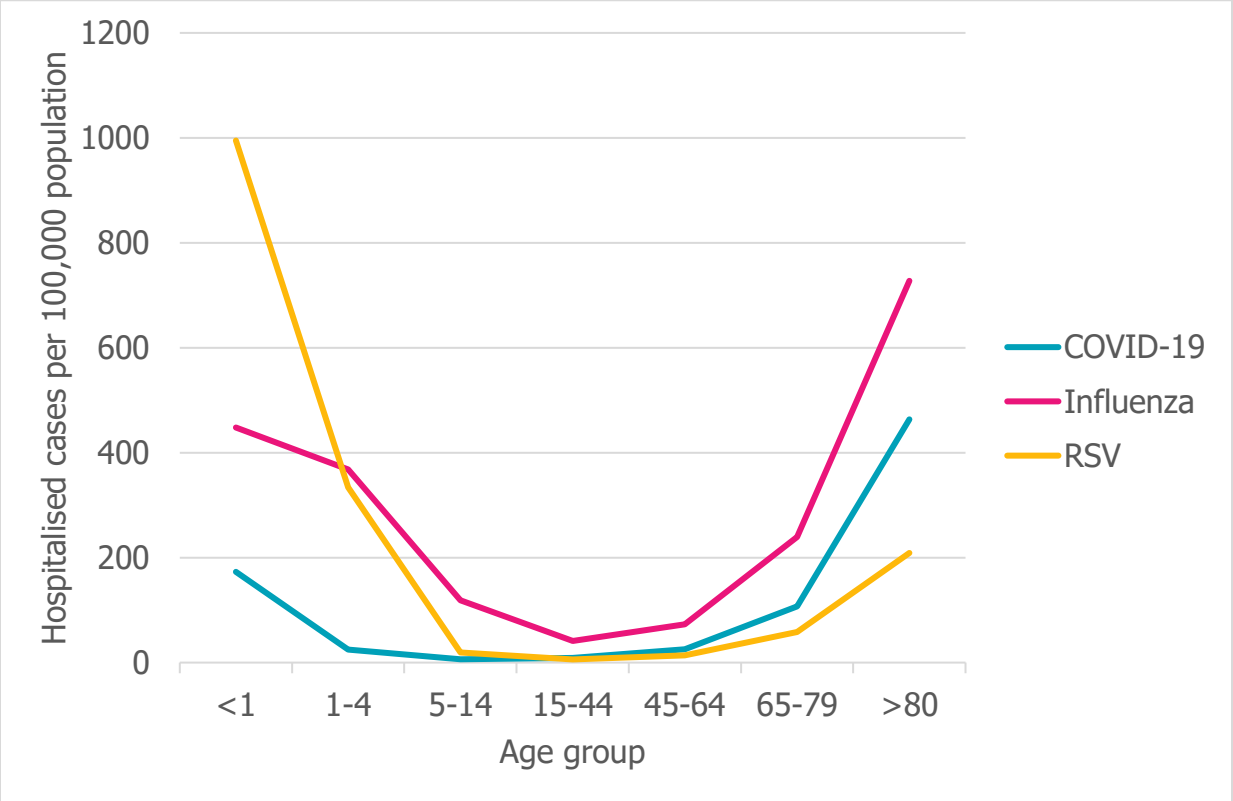
4 Evidence to Recommendation Framework

4.1 Domain 1: The Problem

4.1.1 Epidemiology

Although the greatest burden of RSV disease experienced in Ireland is among infants aged under one year, RSV is one of the leading causes of respiratory illness among older adults in Ireland, along with influenza and COVID-19 (Figure 4.1).

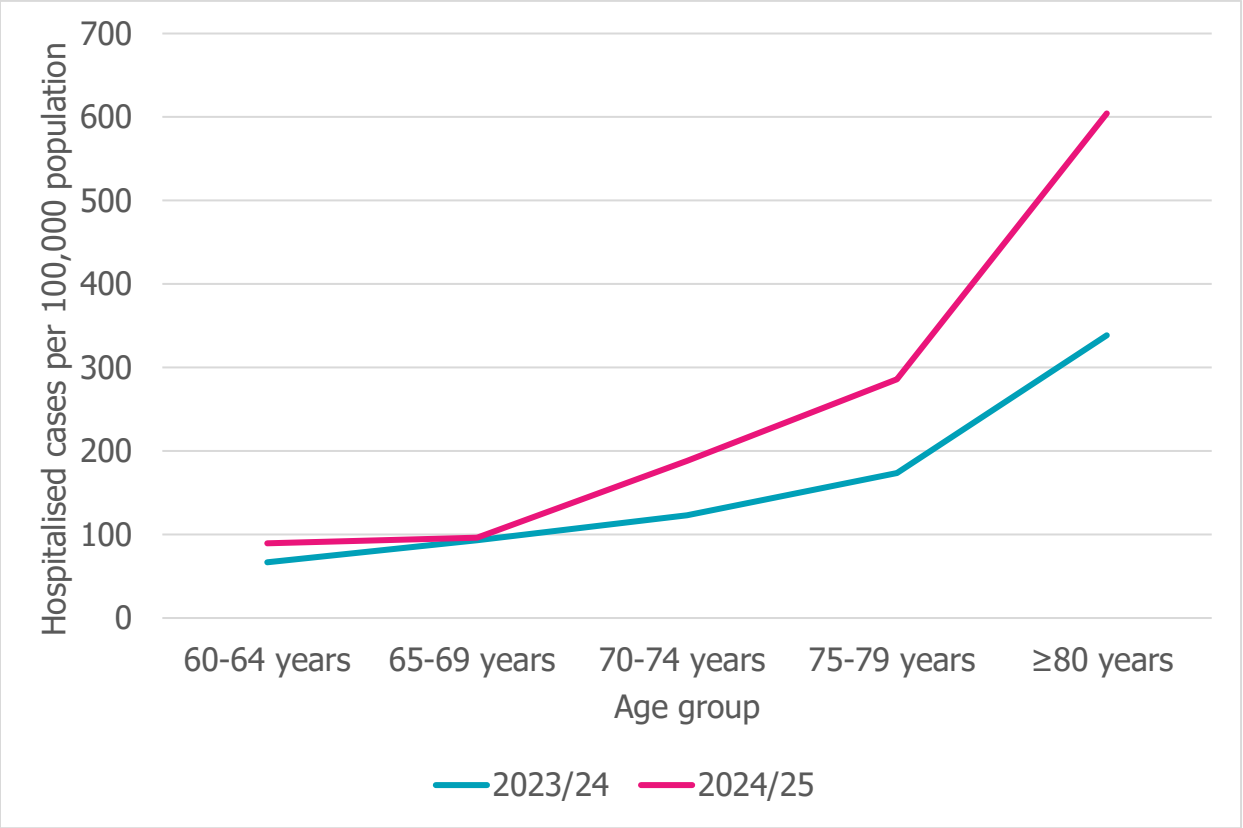
Figure 4.1 Incidence of hospitalised cases of laboratory-confirmed COVID-19, influenza and RSV, by age group from week 40 2023 to week 4 2025



Source: Computerised Infectious Disease Reporting System.

Among older adults in Ireland, rates of RSV infection and hospitalisation increase with increasing age, and are highest in older age groups, particularly those aged 70 years and older (Figure 4.2). Rates of hospitalisation among notified RSV cases for which RSV was a primary or secondary diagnosis in the 2023/24 RSV season were 49.8, 70.7 and 138.7 per 100,000 population for those aged 70-74 years, 75-79 years and ≥80 years old, respectively. In the 2024/25 RSV season, rates of hospitalisation were 58.7, 90.8 and 186.2 per 100,000 population for those aged 70-74 years, 75-79 years and ≥80 years old, respectively.

Figure 4.2 Notified RSV-related hospitalisations per 100,000 population, by age and RSV season for adults aged 60 years and older, 2023/24 and 2024/25 RSV seasons



Source: Health Protection Surveillance Centre.[10]
Note: RSV season — week 40 to week 20 inclusive.

With respect to intensive care unit (ICU) admissions and death, in total for the 2023/24 and 2024/25 RSV seasons there were 29 ICU admissions in adults aged 60 years and older. Among adults aged 60-74 years, 100% of those admitted to an ICU with RSV-related illness in 2023/24 (n=6) and 2024/25 (n=12) had at least one underlying condition. The most common underlying conditions noted among these individuals included chronic obstructive pulmonary disease (COPD), cancer, chronic heart disease, chronic respiratory disease, immunodeficiency, and chronic liver and renal diseases.

Among adults aged 60 years and older in Ireland, there were 38 notified RSV-related deaths in the 2023/24 season and 28 such deaths in the 2024/25 season. Those aged 75 years and older constituted 84% and 71% of the total reported RSV-related deaths in each season, respectively.

Outbreaks of RSV are common in long-term care settings for adults. A total of 97 outbreaks were reported in adult healthcare facilities in the 2024/25 RSV season (51 in nursing homes, 13 in residential institutions and four in community hospitals or long-stay units).[10] These numbers were an increase from the numbers of healthcare facility outbreaks reported in the 2023/24 RSV season in which a total of 37 outbreaks were reported.

Hospitalisations and outbreaks due to RSV may be underreported due to testing practices. However, current data should be interpreted in the context of increased RSV testing. Testing practices in acute hospitals in Ireland with respect to RSV have changed following the COVID-19 pandemic, with an almost three-fold increase in onsite laboratory multiplex reverse transcription polymerase chain reaction testing capacity for RSV reported from 2016 to 2023.[11] Since December 2024, guidance issued under the Health Services Executive's (HSE) Laboratory Services Reform Programme has advised testing for RSV as part of the panel for acute respiratory viruses, along with influenza A and B, and SARS-CoV-2.[12]

In adults aged 60 years and older, risk factors for moderate to severe RSV infection include underlying vascular, pulmonary, renal and endocrine conditions and immunosuppressive treatments and conditions.[13-15] A review of published systematic reviews was undertaken as outlined in the protocol. The incidence rate ratio (IRR) of RSV hospitalisation or medically-attended RSV illness per 100,000 population with or without specific underlying conditions for older adult age groups are summarised in Table 4.1. Some of the highest IRRs identified in the review were in those aged 65 years and older with COPD, whose risk of RSV-associated hospitalisation was 8.7 times higher than those without COPD, and in those aged 60-79 years with congestive heart failure, who had 7.1 times the risk of RSV-associated hospitalisation than those without the condition.

Table 4.1 Overview of findings from selected reviews regarding the relative incidence of moderate to severe RSV-related outcomes for older adults with and without chronic medical conditions

Outcome	Study	Chronic condition	Age group	Rate per 100,000 with condition	Rate per 100,000 without condition	IRR
RSV-associated hospitalisation	Branche 2021[16]	**COPD**	50–64	207	33	**6.3**
			≥65	900	103	**8.7**
		Asthma	50–64	97	36	**2.7**
			≥65	297	123	**2.4**
		Diabetes	50–64	116	34	**3.4**
			≥65	444	97	**4.6**
		Obesity	50–64	49	40	**1.2**
			≥65	158	127	**1.2**
		Coronary artery disease	50–64	159	40	**3.9**
			≥65	529	102	**5.2**
		Congestive Heart Failure	60–79	630	89	**7.1**
			≥80	1131	254	**4.5**
Medically attended RSV	Belongia 2018[15]	**Cardiopulmonary**	≥60	196	103	**1.9**
RSV-associated hospitalisation	Matias 2017[17]	**One or more of: COPD, diabetes, immunosuppression, stroke, or disorders of cardiovascular system, CNS, kidney, or liver**	50–64	52	5	**9.8**
			≥65	242	42	**5.7**

Key: CNS – central nervous system; COPD – chronic obstructive pulmonary disease; IRR – incidence rate ratio.

4.1.2 Working Group and Committee Considerations

The WG and Committee concluded that RSV is of public health importance, although with some uncertainty in the currently available surveillance data in Ireland and internationally. The Committee noted the relatively lower burden of RSV disease in older adults compared with infants, while acknowledging the likely underestimation of burden in older adults as RSV testing and reporting practices become established. However, the contribution of RSV to hospitalisations in older adults in practice in Ireland was highlighted. The WG and Committee agreed that RSV is of greater public importance in adults of most advanced age (≥75 years old) and those with one or more risk factors for severe RSV disease.

4.2 Domain 2: Benefits and harms

An updated systematic review was conducted by a HIQA Health Technology Assessment (HTA) team to inform the ongoing HTA of immunisation against RSV in Ireland.[18] Peer-reviewed literature reporting on the safety, efficacy and effectiveness of RSV vaccines in older adults identified via the HIQA review comprised:

- Six studies reporting on three phase 3 randomised controlled trials (RCTs): one RCT relating to each of RSVPreF3 (Arexvy®) (n=25,040; follow-up over three RSV seasons),[2, 19, 20] RSVpreF (Abrysvo®) (n=36,966; follow-up over two RSV seasons),[3, 21] and mRNA-1345 (mRESVIA®) (n=35,541; follow-up over one RSV season).[4]
- Three observational studies: two test-negative case-control studies[22, 23] (n=81,595 in total) and one target trial emulation (n=293,704, comprising 146,852 vaccinated individuals, plus 582,936 matched control individuals weighted to represent an equal number of controls).[24]

One additional observational study that met the eligibility criteria for the HIQA updated systematic review was published after all searches were complete. This study was not included in pooled analyses, but was summarised narratively and presented to the WG and Committee:

- A test-negative case-control study (n=787,822), that included additional safety analyses based on a self-controlled case series design (n=4,746,518).[25]

All studies included adults aged 60 years and older. RCTs included participants with stable chronic medical conditions only. Observational studies included participants who received RSVPreF3 (Arexvy®) or RSVpreF (Abrysvo®); no observational studies relating to mRNA-1345 (mRESVIA®) were identified. No head-to-head trials were identified.

Brief outlines of the findings of the included studies — including pooled findings, where relevant, are reported in the following sections. An overview of pooled safety, efficacy and effectiveness outcomes, and certainty of evidence assessments, as conducted by the HIQA HTA team, is provided in the GRADE summary of findings table in Appendix 1.

4.2.1 Safety

Overall, favourable safety profiles were reported for all three RSV vaccines. Solicited safety outcomes for mRNA-1345 (mRESVIA®) were in line with those reported for RSVPreF3 (Arexvy®) and RSVpreF (Abrysvo®),[2, 3] with local and systemic reactions reported more frequently by participants who received mRNA-1345 (mRESVIA®) than

placebo (local: 58.7% versus 16.2%; systemic: 47.7% versus 33.0%).[4] Similar to RSVPreF3 (Arexvy®) and RSVpreF (Abrysvo®), the most frequently reported reactions to mRNA-1345 (mRESVIA®) were injection site pain, fatigue, headache and myalgia, the majority of which were mild to moderate in severity and resolved within two days of onset.[4]

In terms of serious adverse events (SAEs) related to the intervention over one season, no statistically significant difference between vaccine and placebo groups was observed, based on pooled data from all three RCTs (Appendix 1, Table A1.1). The certainty of evidence for this outcome was low, due to the very small numbers of such events reported in both groups (vaccine: 17 out of 47,416 participants; placebo: 10 out of 47,247 participants).

Atrial fibrillation

In season one of the pivotal phase 3 RCT, a higher number of RSVPreF3 (Arexvy®) recipients than placebo recipients experienced atrial fibrillation within 30 days of injection (11 participants (0.09%) versus 4 participants (0.03%)).[2] Follow-up data over three RSV seasons indicated that no such imbalance was noted within six months of injection (vaccine: 15 participants (0.12%); placebo: 16 participants (0.13%)). No cases of atrial fibrillation reported as a SAE were deemed to be related to vaccination by the investigator.[19] The EMA's Committee for Medicinal Products for Human Use (CHMP) assessment noted that, of the events reported within 30 days of injection, all but one were observed in participants with pre-existing events of arrhythmias or with other risk factors or medical conditions.[26] In the US, post-marketing requirements specified by the Food and Drug Administration (FDA) included a study evaluating atrial fibrillation among adults aged 50 years and older.[27]

For RSVpreF (Abrysvo®), within one month of injection, atrial fibrillation was reported as an adverse event by a higher number of vaccine recipients (11 participants, <0.1%) than placebo recipients (3 participants, <0.1%). None of these cases were assessed as being related to the intervention by the investigator. The US FDA has also required a post-marketing study of atrial fibrillation following vaccination with RSVpreF (Abrysvo®) to be conducted.[28]

No cases of atrial fibrillation have been reported in mRNA-1345 (mRESVIA®) recipients in published phase 3 RCT data.[4]

Inflammatory neurologic events

In the placebo-controlled phase 3 RCT with follow-up over two seasons, inflammatory neurologic events were reported in two participants following RSVpreF (Abrysvo®) vaccination: one participant diagnosed with chronic inflammatory demyelinated polyneuropathy eight days post-vaccination, and one participant diagnosed with Miller Fisher syndrome (a variant of Guillain-Barré syndrome (GBS)) nine days post-vaccination.[21] No cases of GBS or acute disseminated encephalomyelitis were reported in vaccine recipients in phase 3 trials of RSVPreF3 (Arexvy®) (over three seasons) or mRNA-1345 (mRESVIA®) (over one season).[4, 19]

An analysis of early post-marketing vaccine surveillance system data in the US, gathered from May 2023 to April 2024, indicated that reporting rates of GBS in adults aged 60 years and older following vaccination with RSVpreF (Abrysvo®) or RSVPreF3 (Arexvy®) were higher than expected in a vaccinated older adult population.[29] Specifically, the Vaccine Adverse Event Reporting System (VAERS) recorded 4.4 reports of GBS per million doses of RSVpreF (Abrysvo®) administered, and 1.8 reports per million doses of RSVPreF3 (Arexvy®) administered. In comparison, VAERS reporting rates for GBS were approximately 0.5 per million doses among adults aged 65 years and older who received COVID-19 vaccines. VAERS reports include adverse event reports from the general public, as well as mandatory reports from healthcare providers and vaccine manufacturers.

Electronic healthcare record data relating to 4,746,518 participants aged 60 years and older who received either RSVpreF (Abrysvo®) or RSVPreF3 (Arexvy®) between July 2023 and June 2024 in the US also noted an increased risk of GBS following vaccination.[25] In this self-controlled case series, the risk of GBS was significantly higher in the first 42 days post-vaccination compared with a control period from 43 to 90 days post-vaccination (IRR: 2.1 (95% CI: 7.2 to 14.1)). This corresponded to an estimated excess 11.2 (95% CI: 7.2 to 14.1) cases of GBS per million doses administered. When analysed for each vaccine separately, the number of estimated excess cases was significantly higher among those who received RSVpreF (Abrysvo®) (18.2 cases (95% CI: 9.8 to 23.3)) but not statistically significant among those who received RSVPreF3 (Arexvy®) (5.2 cases (95% CI: -0.9 to 9.2)).

The EMA's Risk Management Plan for RSVpreF (Abrysvo®) noted that a causal relationship between the vaccine and GBS is at least a reasonable possibility. However, due to the rarity of GBS, the overall benefit-risk profile of RSVpreF (Abrysvo®) remained favourable.[30] GBS is listed as a very rare (<1/10,000) adverse reaction in the Summary of Product Characteristics (SmPC) for RSVpreF (Abrysvo®).[8] As of 15 July

2025, GBS is not noted in the SmPC for RSVPreF3 (Arexvy®).[7] However, the CMHP assessment for RSVPreF3 (Arexvy®) noted that monitoring for potential immune-mediated diseases, including GBS, should be included in periodic safety updates.[26] In the US, prescribing information for both RSVpreF (Abrysvo®) and RSVPreF3 (Arexvy®) was updated in January 2025 to advise of a suggested increased risk of GBS in the 42 days post-vaccination.[31, 32] In the UK, the Medicines and Healthcare Products Regulatory Agency (MHRA) issued a drug safety update in July 2025 advising of a small increase in the risk of GBS following vaccination with RSVpreF (Abrysvo®) or RSVPreF3 (Arexvy®) in adults aged 60 years and older.[33] This update noted that estimates based on preliminary unpublished post-marketing data from England and Scotland suggested 15-25 excess cases of GBS per million doses of RSVpreF (Abrysvo®) administered among adults aged 75 to 79 years. However, due to the rarity of GBS, the MHRA concluded that the benefits of the vaccine outweighed the risk of GBS for this population. Post-marketing surveillance studies evaluating the risk of GBS among older adults vaccinated with RSVpreF (Abrysvo®) or RSVPreF3 (Arexvy®) [34] were reported to be ongoing as of July 2025.

Risk/benefit analysis in terms of potential GBS cases per million doses of RSV vaccine administered versus estimated RSV hospitalisations, ICU admissions and deaths averted per million doses administered were conducted by STIKO, the German NITAG, for adults aged 75 years and older[35] and by the Advisory Committee on Immunization Practices (ACIP) for adults aged 60 to 74 years and adults aged 75 years and older.[36] STIKO considered the GBS risk in adults aged 60 years and older as estimated in the preliminary analysis reported by the FDA to ACIP at their February 2024 meeting.[37] In adults aged 75 years and older, with the numbers adjusted for underreporting of a factor of eight, STIKO estimated 2,206 hospitalisations, 350 ICU admissions and 162 deaths could be averted per million doses in one RSV season. This was considered in the context of a potential risk of 10 GBS cases per million doses of RSVPreF3 (Arexvy®) and 25 GBS cases per million doses of RSVpreF (Abrysvo®) (Table 4.2).[35]

Table 4.2 Risk-benefit assessment of RSV vaccination in older adults presented relative to the estimated risk of Guillain-Barré syndrome

Benefits of RSV vaccination		Risks of RSV vaccination	
Severe RSV-related illness outcome	**Estimated number of cases prevented per 1 million vaccinations in individuals aged ≥75 years**	**Estimated number of cases of GBS per 1 million vaccinations in individuals aged ≥60 years**	
	Without correction for underreporting	**RSVPreF3 (Arexvy®)**	**RSVpreF (Abrysvo®)**
Hospitalisation	292	10.0 (95% CI: 1.7-18.3)	25.1 (95% CI: 6.7-43.3)
Intensive care cases	45		
Deaths	20		
	Corrected for underreporting (factor of 8)		
Hospitalisation	2,206		
Intensive care cases	350		
Deaths	162		

Key: GBS – Guillain-Barré syndrome; RSV – respiratory syncytial virus.
Source: Adapted from Falman et al.[35]

ACIP performed their analysis at a later date and considered the GBS risk in adults aged 60 years and older as estimated in the self-controlled case series reported by the FDA to ACIP at their June 2024 meeting.[38] They estimated RSV outcomes averted over two RSV seasons based on effectiveness studies for season one, and extrapolated from waning in efficacy against symptomatic illness observed in clinical trials for season two. In adults aged 60 to 74 years, without certain specified underlying conditions*, ACIP estimated that 406 to 456 hospitalisations, 64 to 72 ICU admissions and 35 to 39 deaths could be averted per million doses over two RSV seasons through RSV adult vaccination. In adults aged 75 years and older (with and without underlying conditions), ACIP estimated that 3,817 to 4,283 hospitalisations, 561 to 630 ICU admissions and 539 to 605 deaths could be averted per million doses over two RSV seasons. This was considered in the context of a potential risk of three (95% CI: 0 to 10) GBS cases per million doses of RSVPreF3 (Arexvy®) and 16 (95% CI: 3 to 29) GBS cases per million doses of RSVpreF (Abrysvo®) in those aged 60 years and older.[36]

* COPD, asthma, coronary artery disease, chronic kidney disease, diabetes mellitus and severe obesity (BMI ≥40).

Additional safety considerations — mRNA-1345 (mRESVIA®)

Two additional safety considerations in relation to mRNA-1345 (mRESVIA®) were noted by the EMA's CHMP. Peripheral facial nerve paralysis was included in the SmPC as a rare adverse reaction to mRNA-1345 (mRESVIA®).[9] This was based on phase 3 RCT data, in which Bell's palsy/facial paralysis was reported in two participants in each of the vaccine and placebo groups within 42 days of administration. One of these events was deemed to be related to the vaccine. The duration of each event was longer in vaccine recipients than placebo recipients (median duration of facial paralysis: 114 versus 2.5 days; median duration of Bell's palsy: 52 versus 8 days).[39]

Myocarditis or pericarditis were noted as important potential risks in the Risk Management Plan for mRNA-1345 (mRESVIA®), to be followed up through routine pharmacovigilance activities. No related cases of either myocarditis or pericarditis have been reported in vaccine or placebo recipients in clinical trials, however, the CHMP noted that such risks were only discovered following widespread use of other mRNA vaccines.[39]

4.2.2 Efficacy and effectiveness

Efficacy

RSV-related lower respiratory tract disease (LRTD) with two or more symptoms was the primary outcome for which data were pooled across all three RCTs. Pooling of data for this outcome was deemed to be appropriate, despite minor differences in the case definitions adopted in each trial. There was high-certainty evidence that RSV vaccination was protective against RSV-related LRTD over one season, with pooled vaccine efficacy (VE) of 78% (95% CI: 67 to 85) (Appendix 1, Table A1.1). VE against RSV-related LRTD for mRNA-1345 (mRESVIA®) was 84% (95% CI: 67 to 94).[4] Pooled VE against RSV-related acute respiratory illness (a less severe outcome, with one or more symptoms) over one season was 67% (95% CI: 59 to 74), also with high certainty evidence (Appendix 1, Table A1.1).

VE against RSV-related LRTD over one season was demonstrated for subgroups of adults aged 60 to 69 years and 70 to 79 years with VE for RSVPreF3 (Arexvy®) estimated as 81% (95% CI: 44 to 95) and 94% (95% CI: 60 to 100), respectively; for mRNA-1345 (mRESVIA®), VE was estimated as 76% (95% CI: 48 to 89) and 95% (95% CI: 66 to 99), respectively.[2, 4] VE against the same outcome was also demonstrated for those with and without one or more pre-specified comorbidities, with VE for RSVPreF3 (Arexvy®) estimated as 95% (95% CI: 66 to 100) and 73% (95% CI:

30 to 91), respectively, and for RSVpreF (Abrysvo®), VE was estimated as 64% (95% CI: 15 to 86) and 67% (95% CI: 19 to 88), respectively.[2, 40]

Limited RCT data were reported regarding more severe RSV-related outcomes, including RSV-related hospitalisation. This was likely a reflection of the relatively low-risk profile of RCT participants; less than 9% of participants in each RCT were aged 80 years and older, the included participants had stable chronic conditions only, and large proportions of all participants in each RCT had no pre-existing high-risk conditions (RSVpreF (Abrysvo®): 48%; RSVPreF3 (Arexvy®): 60%; mRNA-135: 71%).[4, 19, 21] RSV-related hospitalisations were reported in one RCT only (RSVPreF3 (Arexvy®)). Eight events in total were reported across three seasons (vaccine: n=2; placebo: n=6), and VE was not statistically significant (52% (95% CI: -138 to 90)).[19] RSV-related ICU admissions were not reported in any of the included RCTs. RSV-related mortality was not reported in two RCTs[4, 21] and, where reported in one RCT, no RSV-related deaths were observed over the first RSV season.[2]

Effectiveness

Two test-negative case-control studies included a total of 37,398 adults aged 60 years and older vaccinated with RSVPreF3 (Arexvy®) or RSVpreF (Abrysvo®) in the US during the 2023/2024 RSV season.[22, 23] Pooled vaccine effectiveness against RSV-related hospitalisation was 77% (95% CI: 69 to 83), with moderate certainty of evidence (Appendix 1, Table A1.1).

The effectiveness of RSVPreF3 (Arexvy®) or RSVpreF (Abrysvo®) against RSV-related hospitalisation was supported by the findings of two further non-randomised studies of interventions. One target trial emulation,[24] not pooled due to its differing study design, reported effectiveness against RSV-associated hospitalisation of 80.3% (95% CI: 65.8 to 90.1). The study authors reported similar levels of effectiveness against RSV-related emergency department (ED) or urgent care visits (78.7% (95% CI: 72.2 to 84.8)) and RSV infection (78.1% (95% CI: 72.6 to 83.5)). Effectiveness against RSV infection was similar among those who received RSVpreF (Abrysvo®) or RSVPreF3 (Arexvy®) (77.4% and 76.7%, respectively). The study authors did not calculate vaccine effectiveness against RSV-related ICU admission and RSV-related mortality outcomes due to the low incidence of such events. A further test-negative case-control study,[25] not pooled as it was published after the searches for the HIQA systematic review update were completed, reported similar levels of effectiveness of RSVPreF3 (Arexvy®) or RSVpreF (Abrysvo®) against RSV-related hospitalisation (75.5% (95% CI: 73.1 to 77.6)), ED or urgent care visits (75.8% (95% CI: 73.2 to 78.1)), and acute respiratory illness (75.1% (95% CI: 73.6 to 76.4)).

Estimates of vaccine effectiveness in specific older adult subgroups were reported in three of the four identified effectiveness studies. Among adults aged 75 years and older, effectiveness against RSV-related hospitalisation was reported in the two test-negative case-control studies as 76.1% (95% CI: 73.2 to 78.7)[25] and 79% (95% CI: 68 to 86).[23] For adults aged 80 years and older, who comprised 24.4% of participants in the target trial emulation, vaccine effectiveness against RSV infection was 72.3% (95% CI: 57.9 to 84.6).[24]

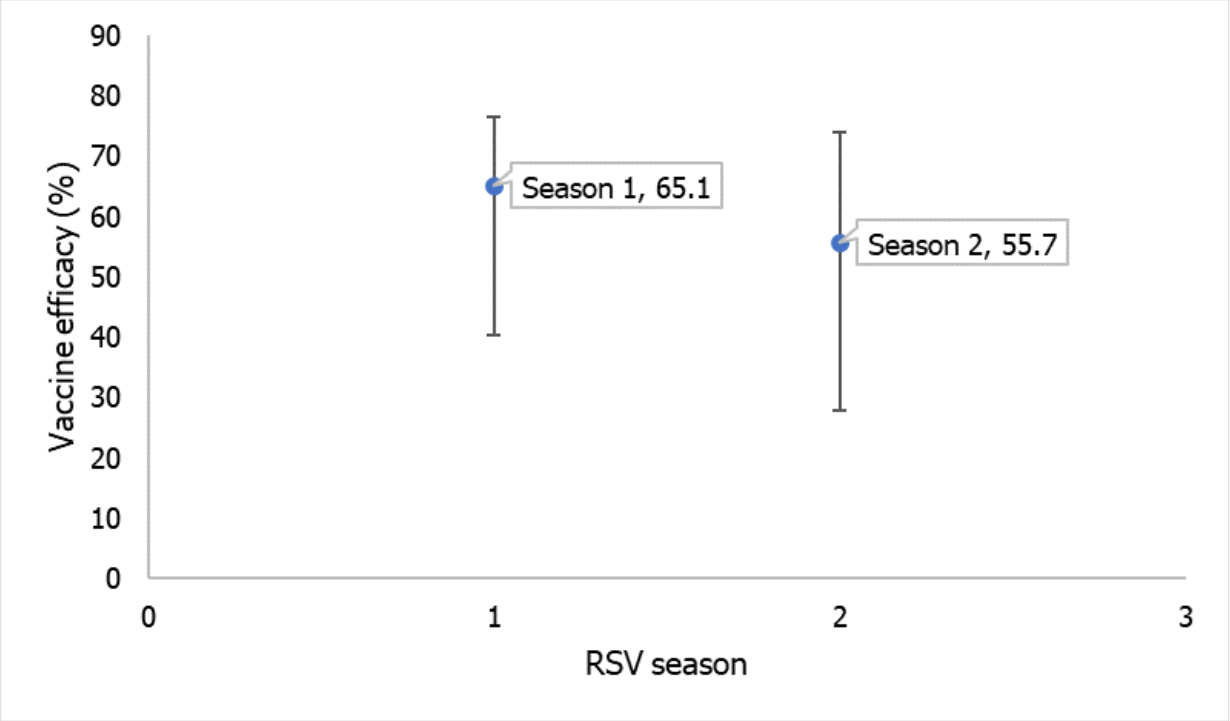
Two of the four studies reported on subgroups with immunocompromise. Vaccine effectiveness was slightly lower among older adults who were categorised as immunocompromised than among those who were not (RSV infection: 71.6% and 78.7%,[24] respectively; RSV-related hospitalisation: 73% and 80%,[23] respectively, and 69.5% and 75.5%,[25] respectively). Vaccine effectiveness was lower among transplant recipients, including both solid organ and haematopoietic stem cell transplant recipients, with effectiveness against hospitalisation reported to be 55.9% (95% CI: 40.0 to 67.5) and 58.4% (95% CI: 37.4 to 72.3) against ED or urgent care visits, respectively.[25]

4.2.3 Duration of protection

When NIAC considered the available evidence in advance of issuing its October 2023 recommendations, VE data relating to RSVPreF3 (Arexvy®) and RSVpreF (Abrysvo®) were available for two RSV seasons and a partial second season, respectively.[1] In 2024 and 2025, RCT data were published regarding VE of a single dose of RSV vaccine through two full RSV seasons (RSVPreF3 (Arexvy®) and RSVpreF (Abrysvo®))[20, 21] and three seasons (RSVPreF3 (Arexvy®)).[19] As of July 2025, published data regarding VE of mRNA-1345 (mRESVIA®) related to one RSV season only.[4]

For RSVpreF (Abrysvo®), cumulative VE against RSV-related LRTD over two seasons was 58.8% (95% CI: 43.0 to 70.6). Some evidence of waning protection through the second RSV season was reported; VE within season one was 65.1% (95% CI: 35.9 to 82.0) and within season two was 55.7% (95% CI: 34.7 to 70.4) (Figure 4.3).[21]

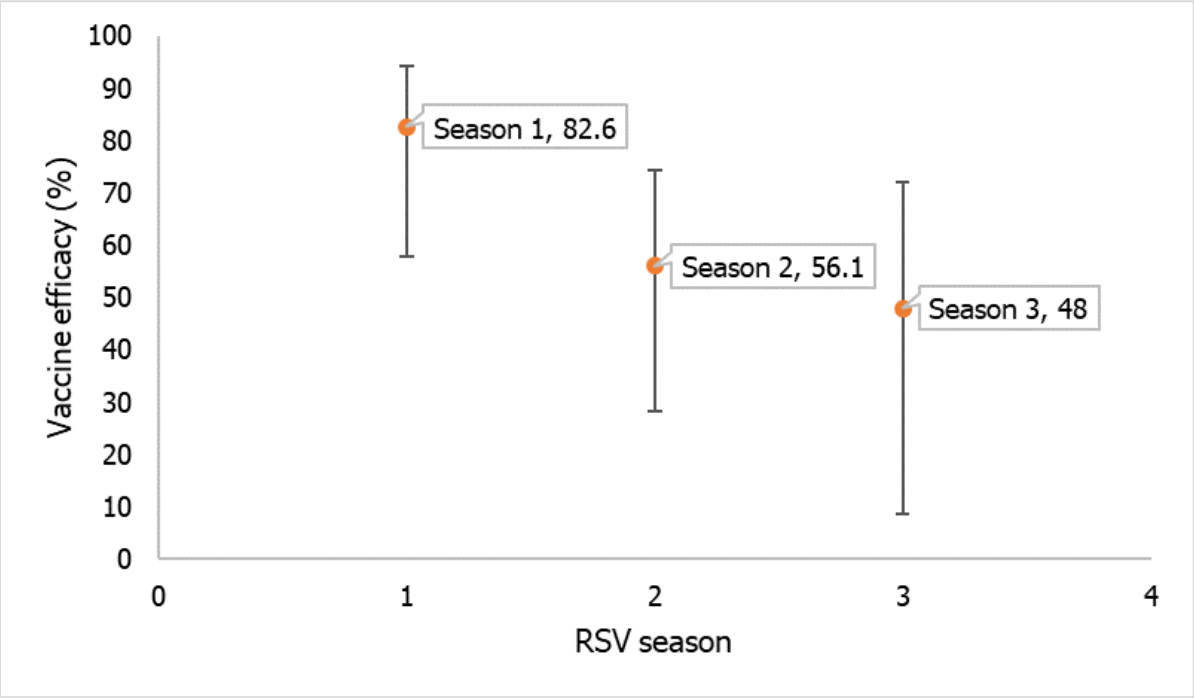
Figure 4.3 Vaccine efficacy of RSVpreF (Abrysvo®) against RSV-related lower respiratory tract disease with two or more symptoms, by season



Key: RSV – respiratory syncytial virus.
Source: Adapted from Walsh et al. 2025.[21]

Cumulative VE of a single dose of RSVPreF3 (Arexvy®) against RSV-related LRTD was 67.2% (97.5% CI: 48.2 to 80.0) over two seasons,[20] and 69.1% (95% CI: 55.8 to 78.9) over three seasons.[19] Reported VE by season decreased following season one; VE within season one was 82.6% (96.95% CI: 57.9 to 94.1), 56.1% (95% CI: 28.2 to 74.4) within season two and 48.0% (95% CI: 8.7 to 72.0) within season three (Figure 4.4).

Figure 4.4 Vaccine efficacy of RSVPreF3 (Arexvy®) against RSV-related lower respiratory tract disease with two or more symptoms by season



Key: RSV – respiratory syncytial virus.
Source: Adapted from Ison et al. 2024[20] and 2025.[19]

As of July 2025, published data regarding RSV vaccine effectiveness relate to a single RSV season only.

4.2.4 Revaccination

Data on revaccination were reported in one RCT only (RSVPreF3 (Arexvy®)).[19, 20] In this trial, participants randomised to receive a single dose of RSVPreF3 (Arexvy®) prior to season one were further randomised 1:1 to receive either a second dose of RSVPreF3 (Arexvy®) or a placebo dose prior to season two.

The overall safety profile was similar for revaccination as for a single dose of RSVPreF3 (Arexvy®). Reactogenicity was reported to be comparable following revaccination to that seen following the initial dose in season one, with a greater proportion of revaccination group participants reporting solicited adverse events (63.6%) than placebo recipients in season two (single dose group: 26.4%; placebo group: 22.0%). Similar to the initial dose, the most commonly reported reactions were injection site pain and fatigue. Most reactions were mild to moderate in severity and resolved within 2-3 days.

Reported rates of SAEs within six months of administration were similar across all three groups in season two (revaccination: 4.2%; single dose: 4.4%; placebo: 4.6%) and season three (revaccination: 5.2%; single dose: 5.1%; placebo: 6.2%). SAEs considered to be related to the trial intervention were reported in less than 1% of participants in each group, from dose one until the end of the trial (revaccination: n=8; single dose: n=12; placebo: n=12), as were related potential immune-mediated diseases (revaccination: n=5; single dose: n=7; placebo: n=9).

No additional efficacy benefit was reported with revaccination. Cumulative vaccine efficacy against RSV-related LRTD over two seasons was reported to be 67.1% (95% CI: 48.1 to 80.0) for the revaccinated group, and 67.2% (95% CI: 48.2 to 80.0) for those who received a single dose prior to season one only. Efficacy against RSV-related LRTD within season two only was also similar in both groups (revaccination: 55.9% (95% CI: 27.9 to 74.3); single dose 56.1% (95% CI: 28.2 to 74.4)).[20] As a result, the trial protocol was amended to remove the planned third dose of RSVPreF3 (Arexvy®) that was due to be administered prior to season three.[19]

Based on available evidence, neither the need for revaccination nor the optimal timing of additional doses have been established. Further trials in relation to revaccination with RSVPreF3 (Arexvy®) and RSVpreF (Abrysvo®) are reported to be in progress.[41, 42]

4.2.5 Co-administration with other vaccines

RSV adult vaccines have been safely co-administered with a number of other adult vaccines and have met pre-specified non-inferiority criteria for efficacy. The co-administration of RSVpreF (Abrysvo®) with COVID-19 vaccine (bivalent BA.4/BA.5-adapted BNT162b2)[43] and, in two further studies, with influenza vaccine (SIIV)[44, 45] was well tolerated and elicited a non-inferior immunogenic response to separate administration according to study definitions of non-inferiority. While non-inferiority was met, the immune response to the RSV and SIIV vaccines was reduced when co-administered, with the most pronounced reduction for influenza strain A(H3N2).[44] The clinical significance of any such reduced response is unknown.

Safety and immunogenicity data support the co-administration of RSVPreF3 (Arexvy®) with influenza vaccines (FLU-QIV,[46] Flu-aQIV,[47] FLU-QIV-HD,[48] Vaxigrip Tetra[49]) and with the herpes zoster vaccine Shingrix.[41] Data from one trial also support co-administration of mRNA-1345 (mRESVIA®) with influenza (FLU-QIV) and COVID-19 (SARS-CoV-2-mRNA) vaccines.[50]

4.2.6 Working Group and Committee Considerations

Overall, both the WG and Committee noted that the available evidence demonstrated vaccine efficacy and effectiveness in adults aged 60 years and older.

The WG considered the desirable anticipated benefits of RSV vaccination to be large for the total cohort aged 60 years and older, but the greatest benefits relate to those in older age groups (≥75 years old) and those with additional risk factors, for whom the burden of disease is greatest.

The WG considered the desirable anticipated benefits to be uncertain for younger adults within the cohort aged 60 years and older due to the lower burden of RSV-related disease in this cohort, particularly those without risk factors for severe RSV-related disease.

The WG noted that while data indicate that vaccine effectiveness is similar across older adult age groups, impact is likely to be greatest in the oldest age groups for whom disease burden is greatest.

The WG and Committee considered that RSV vaccines are generally safe and well tolerated, however some uncertainty was noted around the incidence of certain serious adverse events related to vaccination — in particular Guillain-Barré Syndrome — although these events remain very rare.

The WG considered that uncertainty regarding duration of protection and need for revaccination supported a focus on vaccination for those at greatest risk.

Overall, NIAC considered that the balance of benefits and harms depends on age and the presence or absence of additional risk factors. NIAC considered that the balance between benefits and harms favours the intervention for those in whom the burden of disease is highest, that is, older age groups (≥75 years old), and those aged 60 years and older with risk factors for severe RSV-related disease.

4.3 Domains 3 and 4: Values, Preferences and Acceptability

Data are not available on numbers of RSV vaccines administered to older adults in Ireland to date. However, uptake data from other respiratory virus vaccines and other similar countries such as the UK and Scotland may indicate demand. In Ireland, in winter 2024/25, the uptake of COVID-19 vaccination was 27.6% in those aged 60-69 years, 47% in those aged 70-79 years, 62.2% in those aged 80 years and older and 62.9% in those living in long-term care facilities.[51] In winter 2023/24, the uptake of

influenza vaccination was 60.1% in those aged 65-69 years, 73.3% in those aged 70-74 years, and 88.4% in those aged 75 years and older.[52]

In England, Scotland and Wales national RSV adult vaccination programmes have been implemented for those turning 75 years old (routine cohort) and all up to age 79 years old (catch-up cohort). Uptake in England, where vaccines are being administered by GPs and participating pharmacies, was 60.3% for the catch-up cohort as of the end of March.[53] In Wales, where vaccines are being administered by GPs and in community vaccine centres, uptake as of April 2025 was 38% for the routine cohort and 44% for the catch-up cohort.[54] In Scotland, where vaccination is provided by local NHS immunisation teams who initiate contact with eligible individuals, uptake for the overall cohort of adults aged 57 to 79 years was 68.6% as of November 2024.[55]

4.3.1 Working Group and Committee Considerations

The Committee considered the availability and uptake rates of vaccines against respiratory infections for older adult populations in Ireland and the uptake of RSV vaccines in the UK and their indication of likely demand for RSV adult vaccination in Ireland.

4.4 Domain 5: Resource Use

Vaccination resource use is largely determined by the eligible population of individuals to be vaccinated and the uptake within that population. As part of HIQA's 2024 rapid HTA on RSV immunisation in Ireland, the potential impact of vaccinating different adult populations was estimated.[56] Two general older adult populations were considered: all those aged 65 years and older (n=840,830) and all those aged 75 years and older (n=381,856) with estimated uptake rates of 76% and 87%, respectively (based on average influenza uptakes in the 2022/23 and 2023/24 influenza seasons).

In the reported model, when considering the potential RSV outcomes averted (such as hospitalisations, ICU admissions and deaths) over one season by implementing RSV adult vaccination, the strategy targeting those aged 65 years and older resulted in the greatest number of health benefits overall (Table 4.3). However, if vaccination was limited to the cohort of individuals aged 75 years and older, the benefit per number of individuals vaccinated was greater. For example, for a strategy based on RSVpreF (Abrysvo®), there would be approximately 60% fewer individuals vaccinated (considering the size of the eligible population (381,856 versus 840,830) and differences in the expected uptake rate (87% vs 76%)), but the strategy would still accrue approximately 80% of the mean number of hospital discharges avoided (88

(95% CI: 55 to 115) versus 108 (95% CI: 70 to 138)) and 92% of the RSV-related bed days avoided (985 (95% CI: 523 to 1,532) versus 1,071 (95% CI:651 to 1,508)).

Table 4.3 Summary of health outcomes that could be avoided in older adults associated with two RSV vaccination strategies, adapted from HIQA[56]

	Adults ≥65 years		Adults ≥75 years	
Vaccine	**RSVpreF**	**RSVPreF3**	**RSVpreF**	**RSVPreF3**
Eligible population (n)	840,830	840,830	381,856	381,856
Uptake	76%		87%	
Mean number of notified RSV cases avoided (n) (95% CI)	1,074 (726 to 1,303)	997 (696 to 1,227)	859 (561 to 1,020)	797 (564 to 960)
Mean number of RSV-related (n):				
Hospital discharges avoided (95% CI)	108 (70 to 138)	100 (68 to 129)	88 (55 to 115)	82 (55 to 107)
Hospital discharges which include an intensive care unit stay avoided (95% CI)	8 (3 to 14)	7 (3 to 13)	7 (2 to 13)	6 (2 to 12)
Deaths avoided (95% CI)	1 (0 to 1)	1 (0 to 1)	1 (0 to 1)	0 (0 to 1)
Hospital bed days avoided (95% CI)	1,071 (651 to 1,508)	993 (627 to 1,400)	985 (523 to 1,532)	910 (504 to 1,414)
Hospital bed days which included an intensive care unit stay avoided (95% CI)	143 (58 to 267)	134 (55 to 251)	118 (39 to 240)	109 (38 to 222)
Mean RSV-related hospital costs avoided (95% CI) (€ million)	1.18 (0.70 to 1.71)	1.10 (0.67 to 1.61)	0.97 (0.55 to 1.42)	0.90 (0.54 to 1.34)

Key: CI – confidence interval; RSV – respiratory syncytial virus.

To estimate the size of the population of adults aged 60 years and older in Ireland with any additional risk factors for severe RSV disease, data regarding the HSE's Chronic Disease Management Treatment Programme can be considered.[57] The programme is open to all adults who have a General Medical Services (GMS) or GP Visit Card and who are registered with a GP that accepts these cards. It includes adults who have been

diagnosed with one or more of the following specific chronic conditions: type 2 diabetes mellitus, ischaemic heart disease, atrial fibrillation, heart failure, cerebrovascular accident, transient ischaemic attack, chronic obstructive pulmonary disease, and or asthma. The estimated number of adults aged 60 years and older in this cohort is between 335,000 and 390,000. Considering the specificity of the eligibility criteria for the programme, this likely represents an underestimate of the total population of adults aged 60 years and older with risk factors for severe RSV disease.

4.4.1 Working Group and Committee Considerations

The Committee discussed the potential size of the population of adults aged 60-74 years with risk factors for RSV disease, noting that it will vary depending on the specific risk factors included. It was noted that within a particular diagnosis, there may be differences in risk depending on the severity of the comorbidity (for instance stage of chronic kidney disease), but that it would be challenging for NIAC to give very specific guidance given available data reflects broader disease categories. In case of resource and or feasibility constraints, it was considered important to target or prioritise individuals at greatest risk of severe RSV disease.

4.5 Domain 6: Equity

4.5.1 Working Group and Committee Considerations

Whether a particular recommendation will impact health equities and any additional ethical aspects of proposed advice are considered by NIAC as part of the Committee's deliberations. It was highlighted that risk-based recommendations can increase health inequities, as comorbidities may be underdiagnosed or under-recognised in more vulnerable populations who have more barriers accessing health care and health information. However, the Committee noted that risk-based recommendations are in place for influenza and COVID-19 and there would be significant overlap in the risk groups, which may help with public health messaging.

4.6 Domain 7: Feasibility

4.6.1 Working Group and Committee Considerations

The WG noted that there is prior experience in Ireland of implementing vaccination programmes for older adult and risk-based target populations, for example, seasonal influenza vaccination and COVID-19 vaccination programmes.

The WG also noted that feasibility was a factor in determining NIAC's prior recommendation for RSV vaccination in those aged 65 years and older, chosen in part to align with pneumococcal vaccine recommendations.

The Committee discussed considerations relating to the potential timing of RSV vaccine administration, whether on a year-round or seasonal basis. The Committee acknowledged that seasonal administration in autumn/winter may present some opportunities for efficiency, particularly in primary care settings, due to existing vaccine programmes for older adults offered at that time of year. However, it may also present challenges with respect to minimising co-administration of vaccines and or the need for multiple healthcare visits, and enabling RSV vaccines to be offered prior to the start of the RSV season. While vaccinating just prior to the RSV season would result in the greatest individual benefit, given the available evidence regarding duration of protection, offering RSV vaccines earlier in the year (for example, in spring) or on a year-round basis may be feasible alternatives to consider.

5 International Positions

A summary of recommendations issued by selected international NITAGs regarding RSV vaccination for older adults, as of 21 July 2025, is provided in Table 5.1. Each of the selected NITAGs recommend a single dose of RSV vaccination for adults aged 75 years and older. RSV vaccines are additionally recommended for adults aged 60-74 years with risk factors for severe RSV-related disease in most of the selected countries, except France, where such recommendations relate to those aged 65 years or older. In the UK, RSV vaccination is also recommended for all residents of care homes for older adults, regardless of age.[58] In addition, recommendations in Australia (for those aged 60-74 years) and Canada (for those aged 50-74 years) noted that RSV vaccination may be considered for individuals without risk factors for severe disease.[59, 60]

Table 5.1 Recommendations of selected international NITAGs regarding RSV vaccination for adults aged 60 years and older

Country *Month, year issued*	60-74 years	≥75 years	Vaccine(s) recommended
Australia (ATAGI)[59] *January 2025*	**Recommended:** All adults aged ≥60 years with risk factors for severe RSV disease*, and all Aboriginal and Torres Strait Islander adults aged ≥60 years. **May consider:** Adults aged 60-74 years without risk factors for severe RSV disease.	**Recommended:** All adults aged ≥75 years.	RSVPreF3 or RSVpreF.
Belgium (Superior Health Council)[61] *December 2024*	**Recommended:** Adults aged ≥60 years with at least one risk factor for severe RSV disease≠, with immunocompromise, and or living in a nursing home.	**Recommended:** All adults aged ≥75 years.	RSVPreF3 or RSVpreF.
Canada (NACI)[60] *March 2025*	**Recommended:** Adults aged ≥60 years who are residents of nursing homes and other chronic care facilities (strong recommendation). **May consider:** Adults aged 50-74 years, as an individual decision with their healthcare provider (discretionary recommendation).	**Recommended:** Adults aged ≥75 years, particularly those at increased risk of severe RSV disease (strong recommendation).	For adults aged ≥60 years: RSVPreF3, RSVpreF or mRNA-1345.
France (HAS)[62, 63] *July and October 2024*	**Recommended:** Adults aged ≥65 years with chronic respiratory or cardiac conditions (particularly COPD or heart failure) likely to decompensate during RSV infection.	**Recommended:** Adults aged ≥75 years.	RSVpreF, RSVPreF3 or mRNA-1345.
Germany (STIKO)[64] *April 2025*	**Recommended:** People aged 60-74 years with severe forms of certain conditions†, and residents of nursing facilities aged 60-74 years.	**Recommended:** Adults aged ≥75 years.	RSVpreF, RSVPreF3 or mRNA-1345.

UK (JCVI)[58, 65] *September 2023 and July 2025*	No age-based recommendation. **Recommended:** All residents of care homes for older adults (no age limits specified).	**Recommended:** Adults aged ≥75 years, with an initial one-off campaign covering several age cohorts and then a routine programme for those turning 75 years old.	RSVpreF, RSVPreF3or mRNA-1345.
USA (ACIP)[66] *June 2024*	**Recommended:** Adults aged 60-74 years who are at increased risk for severe RSV disease.	**Recommended:** Adults aged ≥75 years.	For adults aged ≥60 years: RSVPreF3, RSVpreF or mRNA-1345.

Key: ACIP – Advisory Committee on Immunization Practices; ATAGI – Australian Technical Advisory Group on Immunisation; COPD – chronic obstructive pulmonary disease; HAS – Haute Autorité de Santé; JCVI – Joint Committee on Vaccination and Immunisation; NACI – National Advisory Committee on Immunization; RSV – respiratory syncytial virus; STIKO – Ständige Impfkommission (Standing Committee on Vaccination).
Notes: *Including cardiac disease, chronic respiratory conditions, immunocompromising conditions, chronic metabolic disorders, chronic kidney disease, chronic neurological conditions, chronic liver disease, and obesity.
≠Including immunodeficient patients, chronic kidney disease, severe obesity (BMI ≥40km/m^2), chronic respiratory diseases, current smokers, chronic heart failure, coronary artery disease, diabetes, and stroke.
†Severe forms of chronic respiratory diseases, chronic cardiovascular and renal diseases, haematologic and oncological diseases, diabetes mellitus (with complications), a chronic neurological or neuromuscular disease, or a severe congenital or acquired immunodeficiency.

Each country with risk-based recommendations noted chronic cardiovascular and respiratory conditions as risk factors for severe RSV-related disease. Other identified risk factors varied, with those frequently identified as being at risk of severe disease including people with immunocompromise, chronic kidney disease, diabetes, chronic neurological conditions, and residents of long-term care facilities.

No preference for a specific vaccine type or brand was expressed by NITAGs in any of the selected countries. While mRNA-1345 (mRESVIA®) was not cited as a recommended vaccine in two of the selected countries (Australia and Belgium), it is noted that at the time those recommendations were made, mRNA-1345 (mRESVIA®) was either not yet approved by the relevant regulatory body (Australia)[67] or not marketed in that country (Belgium).[61]

Recommendations in several of the selected countries state that RSV vaccines may be co-administered with other vaccines,[60, 66] for example, influenza,[59, 61, 64, 68] COVID-19,[59, 61, 68, 69] pneumococcal, and recombinant zoster vaccines.[59, 69] A number of countries' recommendations noted some evidence of slightly lower immune responses

when RSV vaccines and seasonal influenza vaccines are co-administered, but that the clinical significance of this is unknown.[59, 61, 66, 69] None of the selected NITAGs have recommended revaccination against RSV.

In New Zealand, the Advisory Committee on Immunisation deferred making a recommendation regarding RSVPreF3 (Arexvy®) for adults aged 60 years or older in both March and September 2024.[70] Reasons for deferral included insufficient evidence regarding the epidemiology of RSV in older people in New Zealand, uncertainty regarding vaccine efficacy for people aged 80 years and over or those with certain medical conditions, and uncertainty regarding the vaccine's duration of protection and requirement for revaccination.

6 Conclusion

RSV is an important cause of lower respiratory tract disease in older adults, particularly those with comorbidities. There are now three effective RSV vaccines available in Europe. These vaccines have favourable safety profiles although there are some very rare adverse events that will continue to undergo scrutiny through established pharmacovigilance systems. Safety and effectiveness data continue to emerge from real world use of these vaccines, and as yet, it is uncertain if and when revaccination may be required. Given the potential for very rare adverse events and the uncertainty about duration of protection and effect of revaccination, NIAC considered that RSV vaccination should be recommended for those in whom the burden of disease is highest, that is, older age groups (≥75 years old), those in long-term care facilities and those aged 60 years and older with risk factors for severe RSV-related disease. NIAC will keep emerging literature under review, and recommendations may be updated if new information becomes available.

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Declarations of Interest

These recommendations have been developed by NIAC (list of Committee members), with support provided by the RSV Working Group (list of members) and the NIAC Secretariat (list of members).

Declarations of Interest were reviewed by the NIAC Chair and by the Director of HTA as per NIAC's Terms of Reference and Standard Operating Procedures.

Dr Cathal O'Broin has received educational grants and a consultancy/speaking fee from GSK, one episode of which pertained to RSV vaccination. Dr O'Broin did not take part in the Working Group or Committee deliberations on these recommendations, nor was he present for any discussion or vote on the recommendations.

Dr Ruth O'Riordan received a travel bursary from Pfizer to cover registration fees, travel, and accommodation to attend Infectious Disease Week in 2023.

Dr Bridget Freyne received a research stipend from Pfizer.

It is noted that general practices may derive a small portion of their income from administration of vaccines.

No other conflicts of interest were identified.

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Appendix 1. HIQA systematic review update — overview and GRADE summary of findings table

Background

HIQA conducted an update to a systematic review of the efficacy, effectiveness and safety of RSV vaccines as part of a HTA of immunisation against RSV in Ireland. This was an update to a living systematic review of RSV vaccines commissioned by the European Centre for Disease Prevention and Control (ECDC), a draft of which was provided to HIQA on a confidential basis.[71] The most recent search date for the ECDC review was 8 April 2024, therefore, in light of the rapidly changing evidence base on RSV vaccines, HIQA made a decision to update the review. HIQA shared the draft outputs of this updated review with NIAC in June and July 2025, prior to publication of the HTA on Immunisation against RSV in Ireland.

Scope

The scope of the ECDC review included all human populations and all RSV vaccines, both authorised and unauthorised. The scope of the HIQA update was limited to RSV vaccines (including the dosages and dosing schedules) authorised by the EMA as of April 2025. The populations included in the HIQA update included infants, pregnant women, and adults aged 65 years and older, in line with the target populations of the HTA. Only aspects of the HIQA update relating to older adults were included in evidence summaries presented to NIAC and its RSV Working Group.

Searches, study selection, data extraction and risk of bias assessment

The final search date for the HIQA update was 25 April 2025, with forward and backward citation searching conducted on 25 April and 2 May 2025. Title and abstract screening, and full text review, were conducted by two reviewers independently according to pre-specified inclusion and exclusion criteria. Data extraction was conducted by two reviewers independently using a standardised, piloted electronic data extraction form. Risk of bias of included studies was assessed by two reviewers independently using the revised Cochrane risk-of-bias tool for randomized trials (RoB 2) and the Risk of Bias in Non-randomized Studies of Interventions (ROBINS-I) tool (version 2), as appropriate. Any disagreements were resolved through discussion and with third party arbitration, as required.

Data synthesis and analysis

Where studies were sufficiently homogenous in terms of participants, interventions and outcomes, meta-analysis was used to generate a combined effect estimate. For binary outcomes, risk ratios (RR), odds ratios (OR) or incidence rate ratios (IRR) were calculated, as appropriate. These effect ratios were then converted to vaccine efficacy or effectiveness, expressed as a percentage, which was defined as 1 minus the effect ratio multiplied by 100.

Meta-analysis was conducted using the *meta* package in R version 4.4.2. Fixed or random effects models were used, as appropriate. The *metabin* function was used for binary outcomes, and the *metacont* function was used for continuous outcomes. The *metainc* function was used for the analysis of incidence rate ratios.

The certainty of evidence of the primary outcomes were assessed following the GRADE (Grading of Recommendations, Assessment, Development and Evaluation) approach.[72]

Results

Out of a total of 1,339 records identified through databases and citation searching, nine studies relating to RSV vaccines in older adults were assessed as being eligible for inclusion. Although the specific population of interest in the HIQA update was adults aged 65 years and older, all included studies related to adults aged 60 years and older, therefore the included evidence base was considered to be applicable to the NIAC policy questions.

An overview of the included studies and their findings is presented in Section 5.2. The GRADE summary of findings table, including pooled findings for relevant efficacy, effectiveness and safety outcomes, is presented in Table A2.1.

Table A1.1 GRADE summary of findings table — efficacy, effectiveness and safety of authorised RSV vaccines in older adults

Population:	Older adults (aged ≥60 years)
Setting:	Any
Intervention:	Authorised RSV vaccines (RSVPreF3, RSVpreF, mRNA-1345)
Comparison:	Placebo or no vaccination

No of participants/ person years (studies) RSV season	Number of participants		Effect			
	RSV vaccination	Placebo/ no vaccination	Relative (95% CI)	Absolute (95% CI)	Certainty of evidence	What does this mean?
	Events/person year					
RSV-related acute respiratory illness over one season						
47,426 person years (3 RCTs) 2021-2022 RSV season	90/23,738 (0.4%)	275/23,688 (1.2%)	IRR 0.33 (0.26 to 0.41)	8 fewer per 1,000 person years (from 9 fewer to 7 fewer)	⊕⊕⊕⊕ High[a]	Authorised RSV vaccines reduce RSV-related acute respiratory illness in older adults over one season
RSV-related lower respiratory tract disease over one season						
47,459 person years (3 RCTs) 2021-2022 RSV season	31/23,748 (0.1%)	138/23,711 (0.6%)	IRR 0.22 (0.15 to 0.33)	5 fewer per 1,000 person years (from 5 fewer to 4 fewer)	⊕⊕⊕⊕ High[a]	Authorised RSV vaccines reduce RSV-related lower respiratory tract disease in older adults over one season
RSV-related hospitalisation over one season						
37,398 participants (2 test-negative case-control studies) 2023-2024 RSV season	2,226 cases	35,172 controls	OR 0.23 (0.17 to 0.31)		⊕⊕⊕◯ Moderate[a,b]	Authorised RSV vaccines probably reduce RSV-related hospitalisations in older adults over one season

RSV-related ICU admissions						
-	-	-	-	-	-	-
RSV-related mortality over one season						
-	-	-	-	-	-	-
Serious adverse events related to the study intervention over one season						
94,663 (3 RCTs) 2021-2022 RSV season	17/47,416 (0.04%)	10/47,247 (0.02%)	RR 1.67 (0.78 to 3.58)	0 fewer per 1,000 (from 0 fewer to 1 more)	⊕⊕◯◯ Low[c]	While rare, due to the low certainty of evidence, it is unclear if authorised vaccines are associated with serious adverse events over one RSV season
Serious adverse events related to the study intervention in the second RSV season						
15,024 (1 RCT) 2022-2023 RSV season	2/4,991(0.0%)	4/10,033 (0.0%)	RR 1.01 (0.18 to 5.49)	0 fewer per 1,000 (from 0 fewer to 2 fewer)-	⊕⊕◯◯ Low[c]	While rare, due to the low certainty of evidence, it is unclear if authorised vaccines are associated with serious adverse events in the second RSV season

[a] Strong association – large effect (RR<0.5) warranted upgrading of evidence by 1 level

[b] Risk of bias – GRADE assessment started at low certainty of evidence due to ROBINS-I assessment (serious-to-moderate risk of bias)

[c] Imprecision – very small number of events and wide confidence intervals crossing null effect warranted downgrading by 2 levels

Key: CI – confidence interval; IRR – incidence rate ratio; OR – odds ratio; RCT – randomised controlled trial; RSV – respiratory syncytial virus.

Appendix 2. Results of supplementary scoping searches

Summaries of the results of supplementary scoping searches are shown in Tables A1.1 to A1.4. Sample search strategies for each topic for a single database (Embase via Ovid) are provided in the protocol, *Vaccination against respiratory syncytial virus in older adults: Protocol for an evidence summary to inform updated recommendations*, available at www.hiqa.ie. Full line-by-line search strategies for each database are available on request to info@hiqa.ie.

Table A2.1 Results of scoping searches in relation to risk factors for severe RSV disease in adults

Databases	Number of results	Date searched
Medline Complete via Ebscohost	263	07/05/2025
Embase via Ovid	400	07/05/2025
Total	663	
Total after duplicates removed in Endnote and Covidence	**434**	

Table A2.2 Results of scoping searches in relation to immunogenicity of RSV vaccines

Databases	Number of results	Date searched
Medline Complete via EBSCO	187	12/05/2025
Embase via Ovid	259	12/05/2025
The Cochrane Library	176	12/05/2025
Total	622	
Total after duplicates removed in Endnote and Covidence	**396**	

Table A2.3 Results of scoping searches in relation to co-administration of RSV vaccines with other vaccines in adults

Databases	Number of results	Date searched
Medline Complete via Ebsco	139	12/05/2025
Embase via Ovid	174	12/05/2025
The Cochrane Library	40	12/05/2025
Total	353	
Total after duplicates removed in Endnote and Covidence	**210**	

Table A2.4 Results of scoping searches in relation to revaccination with RSV vaccines in adults

Databases	Number of results	Date searched
Medline Complete via Ebsco	4	12/05/2025
Embase via Ovid	3	12/05/2025
The Cochrane Library	2	12/05/2025
Total	9	
Total after duplicates removed in Endnote and Covidence	**7**	

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