Health Information and Quality Authority

An tÚdarás Um Fhaisnéis agus Cáilíocht Sláinte

Extension of the influenza vaccination programme to include those aged 50 to 64 years (general population)

Protocol for a Rapid Health Technology Assessment

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Contents

About the Health Information and Quality Authority

The Health Information and Quality Authority (HIQA) is an independent statutory authority established to promote safety and quality in the provision of health and social care services for the benefit of the health and welfare of the public.

HIQA's mandate to date extends across a wide range of public, private and voluntary sector services. Reporting to the Minister for Health and engaging with the Minister for Children, Equality, Disability, Integration and Youth, HIQA has responsibility for the following:

- **Setting standards for health and social care services** — Developing person-centred standards and guidance, based on evidence and international best practice, for health and social care services in Ireland.
- **Regulating social care services** — The Chief Inspector within HIQA is responsible for registering and inspecting residential services for older people and people with a disability, and children's special care units.
- **Regulating health services —** Regulating medical exposure to ionising radiation.
- **Monitoring services** — Monitoring the safety and quality of health services and children's social services, and investigating as necessary serious concerns about the health and welfare of people who use these services.
- **Health technology assessment** — Evaluating the clinical and cost-effectiveness of health programmes, policies, medicines, medical equipment, diagnostic and surgical techniques, health promotion and protection activities, and providing advice to enable the best use of resources and the best outcomes for people who use our health service.
- **Health information** — Advising on the efficient and secure collection and sharing of health information, setting standards, evaluating information resources and publishing information on the delivery and performance of Ireland's health and social care services.
- **National Care Experience Programme** — Carrying out national service-user experience surveys across a range of health services, in conjunction with the Department of Health and the HSE.

1. Introduction

1.1 Background

Seasonal influenza[1] is an acute respiratory infection caused by influenza ribonucleic acid (RNA) viruses from the Orthomyxoviridae family.[2] Also known as just 'influenza', hereafter both terms are used interchangeably to refer to the same infectious disease.

There are four types of influenza viruses. Influenza A and B circulate globally; in the Northern hemisphere, the period of circulation is typically November to April and in the Southern hemisphere it is June to October.[2] Influenza C is less common and responsible for only mild infections,[3] while influenza D is predominantly found in cattle. As such, influenza A and influenza B are the main focus in the context of seasonal influenza. Influenza A viruses are further categorized into subtypes, according to the combination of glycoproteins (hemagglutinin (HA) and neuraminidase (NA)) present on the surface of the virus. Currently, there are 18 HA (H1-H18) and 11 NA (N1-N11) subtypes, with influenza A(H1N1) and A(H3N2) most commonly circulating, causing annual seasonal influenza cases.[3] Influenza B viruses do not have sub-types but instead have two antigenically distinct lineages; Victoria and Yamagata.[2]

Seasonal influenza is characterised by respiratory and systemic symptoms including fever, malaise, myalgia, headache, sore throat and nasal congestion.[4] Gastrointestinal symptoms such as nausea, vomiting and diarrhoea are also common. Diagnosis of influenza typically occurs in the community when the virus is known to be circulating. In most healthy individuals, seasonal influenza is self-limiting and symptoms typically resolve in three to seven days. Treatment for these individuals consists of antipyretics, adequate fluid intake and rest. However, certain individuals have an increased risk of severe disease and may require hospitalisation.[4] These high-risk groups include those with underlying medical conditions (such as chronic respiratory disease, chronic heart disease and diabetes), infants and young children, pregnant women and those aged 65 years or older.[5]

Seasonal influenza places a considerable burden on the healthcare system and society, in terms of morbidity, mortality, hospitalisations and absenteeism from school and work. The World Health Organization (WHO) estimates that seasonal influenza can affect up to 20% of the population annually, with severe influenza illness accounting for approximately three to five million cases annually, and up to 650,000 respiratory deaths.[1] Seasonal influenza is a preventable infectious disease and getting an annual influenza vaccination is the most effective preventative

measure. Other preventative measures to compliment annual vaccination include personal measures such as avoiding close contact with infected individuals and good hand hygiene.[6]

Annual influenza vaccination programmes internationally aim to reduce the burden of seasonal influenza typically through the selective vaccination of those at highest risk of severe disease.[7] In Ireland, anyone can pay for an annual influenza vaccination. However, for the 2022-2023 influenza season, population groups eligible for a free annual influenza vaccination through a national immunisation programme were those:

- aged 65 years and older
- aged 2 to 17 years
- healthcare workers
- who are pregnant
- living in a nursing home or other long-term care facility
- in regular contact with pigs, poultry or waterfowl
- with a health condition that puts them at higher risk of flu
- living with someone who has a health condition that puts them at higher risk of flu
- caring for someone who has a health condition that puts them at higher risk of flu.[5]

Groups eligible for a free influenza vaccination in the 2023-2024 influenza season have not yet been published. There are two types of influenza vaccines, inactivated influenza vaccines (IIVs), which are administered intramuscularly and intranasal live attenuated influenza vaccine (LAIVs). LAIVs are only licensed for prophylaxis of influenza in children and adolescents from 24 months to less than 18 years of age.[8] Previously, IIVs contained three strains of influenza virus (two A strains and one B strain), these are referred to as trivalent vaccines. However, these have been largely superseded by quadrivalent vaccines (QIVs),[9] which are IIVs containing four strains of influenza virus (two A strains and two B strains). Each year, the WHO issue recommendations to vaccine manufacturers relating to vaccination content and the specific viral subtyping that should be contained within. These recommendations are

based on global surveillance data and are critical to the effectiveness of influenza vaccines.[10] However, due to ongoing evolution of the influenza virus, antigenic mismatch between the virus strains contained in the vaccine and those in circulation can occur. As such, vaccine effectiveness can be suboptimal.[11] In an attempt to improve vaccine effectiveness, newer and enhanced vaccines have been developed, through the use of adjuvants and higher doses of HA per vaccine strain.[12]

In Ireland, guidance from the National Immunisation Advisory Committee (NIAC) in Ireland recommends a QIV for those aged 50 to 64 years.[13] However, this age group is not routinely included as an at-risk group for reimbursement of vaccination as part of the influenza vaccination programme in Ireland. As a temporary measure for the 2021-2022 season only, reimbursement of vaccination for this age group was authorised by the Minister for Health, to minimise the overall burden associated with viral respiratory infections, given the widespread circulation of SARS-COV-2 in the community at that time.[14] In order to inform a decision as to whether this group should be included again as a temporary measure for the 2023-2024 season, the Department of Health requested that HIQA complete a rapid health technology assessment (HTA) on the inclusion of the 50 to 64 year age group in the influenza vaccination programme in Ireland.

Given the short timeline in which the information needs to be provided, reviews of clinical effectiveness and safety will not be undertaken as this evidence base has been established in principle. Similarly, given that this will inform an interim decision rather than a permanent change to the programme, a review of the cost effectiveness literature, which relates to multi-annual vaccination, will not be undertaken. Where possible, data will be disaggregated into five-year subgroups, that is, 50 to 54 years, 55 to 59 years and 60 to 64 years.

This protocol aims to present the methods for estimating the burden of disease associated with influenza and assessing the costing implications associated with an expansion of the influenza vaccination programme to include those aged 50 to 64 years old in the general population for the season 2023-2024.

1.2 Aims and objectives

The overarching aim of this rapid HTA is to describe standard QIVs (that is, excluding enhanced and high dose QIVs) and international practice relating to influenza vaccination programmes for those aged 50 to 64 years old in the general population (that is, excluding specific subgroups at high-risk or very high-risk of serious complications). The objectives (that is, terms of reference) for this assessment are to:

- Describe the standard QIVs available on the Irish market.
- Summarise international influenza vaccination programmes for those aged 50 to 64 years old.
- Describe the epidemiology and burden of disease associated with influenza in those aged 50 to 64 years (general population) in Ireland.
- Describe the uptake of influenza vaccination in those aged 50 to 64 years (general population) in Ireland.
- Provide an indication of the likely additional costs associated with the expansion of the influenza vaccination programme in Ireland.
- Based on the evidence in this assessment, provide advice to the Department of Health on expanding the influenza vaccination programme in Ireland to include reimbursement of vaccination for those aged 50 to 64 years old.

1.3 Establishment of the Expert Advisory Group

An appropriately represented Expert Advisory Group (EAG) will be convened as a source of expertise to inform the interpretation of the evidence and development of the advice to the HSE. This group will comprise nominees from a range of stakeholder organisations, including patient representation, healthcare providers, and clinical and public health experts.

2. Description of technology and international practice

A description of the QIVs currently available for immunisation against influenza and an overview of international practice (to include Europe and the UK) with respect to influenza vaccination for those aged 50 to 64 years old will be provided.[15]

A review will be undertaken to identify QIVs that are authorised by the Health Products Regulatory Authority in Ireland for immunisation against influenza and which are marketed or distributed in Ireland. A high-level comparison of the characteristics of these vaccines will be provided.

A review of influenza vaccination programmes, in Europe and the UK, for those aged 50 to 64 years in the general population (that is, excluding specific subgroups at high-risk or very high-risk of serious complications) will be undertaken to identify, where possible, how such programmes are structured with respect to the:

- age and population groups for whom vaccination is reimbursed

- type of influenza vaccine(s) reimbursed (that is, trivalent or quadrivalent)
- interval between influenza vaccines where a two-dose schedule is in place
- setting in which vaccine is administered and or available for administration.

3. Epidemiology and burden of disease

A comprehensive description of the epidemiology of influenza and burden of disease associated with influenza in the target population will be provided. This section will be informed by a review of national and international literature and databases.

In Ireland, the Health Protection Surveillance Centre (HPSC) in partnership with the Irish College of General Practitioners (ICGP) and the National Virus Reference Laboratory (NVRL) has established a network of 60 computerised general sentinel practices who report on a weekly basis the number of patients seen with influenza-like illness.[16] The HPSC also report seasonal influenza vaccination uptake in Ireland.[17] These data are limited to the reimbursement of influenza vaccination through HSE programmes, and exclude data relating to for example, private occupational programmes. Moreover, it should be noted that influenza vaccination uptake data may be skewed as there has been increased uptake in recent years in light of the COVID-19 pandemic. Data from the Hospitalised In-Patient Enquiry (HIPE) system will also be used to understand the nature of influenza hospitalisations (for example, complications of the disease and length of stay).[18] Cross-sectional analyses of nationally representative datasets and individual studies will be used if deemed appropriate. In the absence of Irish data, the best available estimates will be derived from the international literature.

The incidence of influenza and complications and hospitalisation associated with influenza will be used to determine the burden of the disease on both the Irish healthcare system and wider society. The review of epidemiological sources will also be used to inform the inputs to the costing analysis (described in section 4) and the estimated resources required (that is, vaccine administration) to expand the influenza vaccination programme in Ireland.

3.1 Estimation of the eligible population

Data on the total number of adults aged 50 to 64 years in the general population will be sought from the Central Statistics Office (CSO). Estimates of the number of individuals routinely included in an at-risk group (that is, for whom vaccination is reimbursed as part of the influenza vaccination programme in Ireland) will be estimated from influenza vaccine uptake data for this cohort as reported by the

HPSC and or collected by the Primary Care Reimbursement Service (PCRS). These estimates will be subtracted from the CSO estimate to calculate the total number of adults aged 50 to 64 years in the general population in Ireland in 2022, to which the expanded programme would apply.

4. Costing analysis

The costing analysis will provide information for policymakers regarding the potential affordability of expanding the influenza immunisation programme to include those aged 50 to 64 years in the general population. It will estimate the potential cost to the HSE associated with implementing the vaccination programme as a temporary measure for the 2023/2024 flu season. In addition to the cost of the vaccines and their administration, potential costs relating to the expansion of the programme (for example, information and promotional material) or required changes to organisational processes, if any, will be identified and considered as part of the costing analysis.

5. Conclusion

As a temporary measure for the 2021/2022 season, the Minister for Health authorised the reimbursement of influenza vaccination for those aged 50 to 64 years in the general population, in an effort to minimise the overall burden associated with viral respiratory infections, given the wide circulation of COVID-19 in the community at that time. The aim of this rapid HTA is to provide evidence to the Department of Health and inform a decision regarding the inclusion of this group in the influenza vaccination programme in Ireland again as a temporary measure for the 2023/2024 season.

References

1. World Health Organisation. Influenza (Seasonal) 2023 [updated 12 January 2023]. Available from: https://www.who.int/en/news-room/fact-sheets/detail/influenza-(seasonal)
2. European Centre for Disease Prevention and Control (ECDC). Factsheet about seasonal influenza 2022 [updated 12 April 2022]. Available from: https://www.ecdc.europa.eu/en/seasonal-influenza/facts/factsheet
3. Petrova VN, Russell CA. The evolution of seasonal influenza viruses. Nature Reviews Microbiology. 2018;16(1):47-60.
4. Ghebrehewet S, MacPherson P, Ho A. Influenza. BMJ. 2016;355:i6258.
5. Health Service Executive (HSE). Getting the flu vaccine 2022 [updated 3 October 2022]. Available from: https://www2.hse.ie/conditions/flu/getting-the-vaccine/
6. European Centre for Disease Prevention and Control (ECDC). Seasonal influenza vaccines 2023. Available from: https://www.ecdc.europa.eu/en/seasonal-influenza/prevention-and-control/seasonal-influenza-vaccines
7. Carrillo-Santisteve P, Ciancio BC, Nicoll A, Luigi Lopalco P. The importance of influenza prevention for public health. Human Vaccines & Immunotherapeutics. 2012;8(1):89-95.
8. European Medicines Agency (EMA). Fluenz Tetra 2022 [updated 1 August 2022]. Available from: https://www.ema.europa.eu/en/medicines/human/EPAR/fluenz-tetra#authorisation-details-section
9. Machado MAdA, Moura CS, Abrahamowicz M, Ward BJ, Pilote L, Bernatsky S. Relative effectiveness of influenza vaccines in elderly persons in the United States, 2012/2013-2017/2018 seasons. npj Vaccines. 2021;6(1):108.
10. Paules CI, Sullivan SG, Subbarao K, Fauci AS. Chasing Seasonal Influenza — The Need for a Universal Influenza Vaccine. New England Journal of Medicine. 2017;378(1):7-9.
11. Tregoning JS, Russell RF, Kinnear E. Adjuvanted influenza vaccines. Human Vaccines & Immunotherapeutics. 2018;14(3):550-64.
12. European Centre for Disease Prevention and Control (ECDC). Systematic review of the efficacy, effectiveness and safety of newer and enhanced seasonal influenza vaccines 2020 [updated 1 October 2020]. Available from: https://www.ecdc.europa.eu/en/publications-data/seasonal-influenza-systematic-review-efficacy-vaccines
13. Royal College of Physicians of Ireland. National Immunisation Advisory Committee (NIAC). NIAC Immunisation Guidelines. Chapter 11. Influenza 2022 [updated 23 September 2023]. Available from: https://rcpi.access.preservica.com/uncategorized/IO_cd88ef19-73ea-4630-8e0c-b269c3034fa9/

14. Department of Health (Ireland). Press release: Minister for Health announces free flu vaccine to be extended for those aged 50-64 2023 [updated 13 December 2021]. Available from: https://www.gov.ie/en/press-release/f270e-minister-for-health-announces-free-flu-vaccine-to-be-extended-for-those-aged-50-64/
15. European Centre for Disease Prevention and Control (ECDC). Influenza: Recommended vaccinations 2023. Available from: https://vaccine-schedule.ecdc.europa.eu/Scheduler/ByDisease?SelectedDiseaseId=15&SelectedCountryIdByDisease=-1
16. Health Protection Surveillance Centre (HPSC). Influenza Surveillance Reports 2023. Available from: https://www.hpsc.ie/a-z/respiratory/influenza/seasonalinfluenza/surveillance/influenzasurveillancereports/
17. Health Protection Surveillance Centre (HPSC). Seasonal Influenza Vaccine Uptake 2023. Available from: https://www.hpsc.ie/a-z/respiratory/influenza/seasonalinfluenza/vaccination/
18. Health Service Executive (HSE). Hospital Inpatient Enquiry (HIPE) Department 2023. Available from: https://www.hse.ie/eng/services/list/3/acutehospitals/hospitals/portiuncula/hospital-inpatient-enquiry-hipe-department-.html

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