Joint Committee on Vaccination and Immunisation

Advice on influenza vaccines for 2023/24

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Prepared by the Joint Committee on Vaccination and Immunisation scientific secretariat

Contents

JCVI advice on influenza vaccines for the 2023/2024 influenza season

JCVI has reviewed the latest evidence on influenza vaccines. The advice below represents the JCVI's scientific view on the use of influenza vaccines in the UK for the 2023/2024 influenza season.

Adults 65 years of age and over

For vaccination of those aged 65 years and over JCVI advises the use of the following vaccines:

- Adjuvanted quadrivalent inactivated influenza vaccine (aQIV)
- High-dose quadrivalent inactivated influenza vaccine (QIV-HD)
- Quadrivalent Recombinant Influenza Vaccine (QIVr)

Considerations

The available evidence indicates additional benefit from the use of aQIV or QIV-HD in those aged 65 years and over, compared with standard dose egg-culture inactivated trivalent and quadrivalent vaccines (TIVe/QIVe).

When considering a preference between QIV-HD and aQIV, the available data comparing these are few, somewhat inconsistent, are not available over multiple seasons, are at risk of bias, and are limited by the use of non-laboratory confirmed influenza endpoints. The level of uncertainty in the available evidence is considered too great to allow for a preferential recommendation between the vaccines.

The Committee is also of the view that there is enough supporting evidence for QIVr to be considered as equivalent to aQIV and QIV HD for use in those aged 65 years and older. This evidence includes that QIVr has a higher antigen content (45 µg) than QIVc (15 µg) and standard egg based quadrivalent vaccines (15 µg), as well as immunogenicity, efficacy and effectiveness data in favour of its use in the elderly alongside aQIV and QIV HD.

If aQIV, QIV-HD or QIVr are not available, the quadrivalent influenza cell-culture vaccine (QIVc) is considered an acceptable alternative and is suitable for use in this age group. QIVc is preferable to the standard egg-culture influenza vaccines (TIVe/QIVe) in this age group. The JCVI does not advise the use of standard egg-culture influenza vaccines in the elderly.

At-risk adults (including pregnant women) aged less than 65 years of age*

For vaccination of adults aged 18 to less than 65 years of age in an at-risk group JCVI advises the use of the influenza vaccines below:

- Quadrivalent influenza cell-culture vaccine (QIVc)
- Quadrivalent Recombinant Influenza Vaccine (QIVr)

The Quadrivalent influenza egg-culture vaccine (QIVe) can also be considered for use in this age group if other options are not available subject to the considerations below.

Considerations

There is a potential advantage to using influenza vaccines which do not use eggs in the manufacturing process (cell-culture or recombinant) compared with egg-cultured influenza vaccines, due to the possible impact of "egg-adaptation" on the effectiveness of influenza vaccines, particularly against A(H3N2) strains. The evidence on additional benefit is available for only very few seasons but the issue of egg adaptation remains a real concern particularly for the AH3N2 virus which is the more virulent influenza subtype in terms of morbidity and mortality.

There is limited but good evidence that the recombinant vaccine QIVr, which also is not affected by egg adaptation, is more effective than QIVe in adults under 65 years age. Therefore, QIVr is also preferred over QIVe in adults under 65 years old.

Based on the available evidence the Committee supports a clear preference for QIVc and QIVr over QIVe and these are the vaccines of choice for this vulnerable group. The quadrivalent egg-culture inactivated vaccine (QIVe) can also be considered for use in this group, if other options are not available, because any impact of egg adaptation will likely be limited to seasons in which the influenza season is dominated by well- matched H3N2 strains.

* This advice also applies to adults aged 50 to 64 years old who are not in a clinical risk group if the temporary enhanced influenza programme continues in 2023/24

Children aged two to less than 18 years of age in an at-risk group

The live attenuated Influenza vaccine (LAIV) is the vaccine of choice for the childhood influenza programme. Therefore, children aged two years to less than 18 years in clinical risk groups should be offered LAIV unless it is medically contraindicated or otherwise unsuitable. In those for whom LAIV is not suitable, JCVI advises the use of QIVc. JCVI therefore advises the influenza vaccines below in the following order of preference:

1. live attenuated Influenza vaccine (LAIV)
2. Quadrivalent influenza cell-culture vaccine (QIVc)[1]

The Quadrivalent influenza egg-culture vaccine (QIVe) can also be considered for use in this age group if other options are not available.

Children aged less two years old

For vaccination of at-risk children aged less than 2 years of age in an at-risk group JCVI advises the use of the following vaccine:

- Quadrivalent influenza cell-culture vaccine (QIVc)

This is an off-label recommendation which is supported by unpublished data which shows non inferiority immunogenicity and a very similar safety profile for QIVc compared with QIVe in children less than two years old.

The Quadrivalent influenza egg-culture vaccine (QIVe) can also be considered for use in this age group if other options are not available.

Generating real world evidence in the UK

Further comparative data are required, preferably from the same country over multiple seasons and with laboratory confirmed influenza endpoints, to support consideration of the relative effectiveness of the influenza vaccines available in the UK across the different age and risk groups in which they are licensed. The Committee would like to see high quality comparative data generated in the UK. Most of these data can potentially be generated from the monitoring and surveillance of vaccine effectiveness (VE) in primary and secondary care for those influenza vaccines delivered through the influenza vaccination programme.

The COVID-19 pandemic has provided much greater insight into the importance of virologically confirmed VE studies for hospitalisation and death, the use of NHS data to drive this, and how a hospital admission clinical endpoint may give very divergent results

[1] The Quadrivalent influenza cell-culture vaccine (QIVc) is egg free and egg allergic individuals can be safely vaccinated in any setting with this vaccine, including those who have required admission to intensive care for a previous severe anaphylaxis to egg

from community-based VE testing. COVID19 has also shown the potential of real time data being available through improvements in NHS data linkage, which now need to be applied to influenza. Therefore, the Committee would like to see the existing influenza surveillance system for generating influenza VE enhanced to generate adequately powered data to inform future JCVI decisions and advice which will benefit public health in the longer term. The Committee agrees that enhancing the existing surveillance system is critical to ensure the UK population receives the best possible clinical benefit from the available influenza vaccines. This should form part of the longer-term planning for a first class influenza programmes as a whole alongside other research initiatives.

Other research initiatives could also contribute to improving evaluation of influenza vaccines in the UK and the Committee notes the close working of industry, regulators, government and public funded research behind the rapid introduction and real-time evaluation of COVID-19 vaccines and would support similar initiatives applied to evaluating Influenza vaccines.

The Committee would like to see all the available vaccines which it has advised in preference to standard egg-based vaccines used in the UK so they can be properly evaluated through the programme but understands that this is subject to NHS negotiations (see below). There might be important differences in the products which could lead to a differential impact on winter pressures, and it would be difficult to evaluate the significance of this for the NHS unless all the advised products are available in the programme.

Operational considerations

The Committee is mindful that factors other than purely scientific and clinical advice need to be considered from an operational perspective, including availability of supply and affordability, and which will contribute to the decisions on which vaccines are purchased for the 2023/24 season. JCVI's advice outlines the preferred vaccines that should be made available for the individual being vaccinated, subject to vaccine availability. The aim of this advice is to provide a framework from which NHS England and UKHSA can plan the ordering of vaccines and delivery of the Influenza programme in 2023/24 and communicate this clearly to providers and the public. A well-planned and orchestrated programme that results in the timely delivery of vaccination is important to ensure the eligible population is protected as early as possible before influenza activity starts to increase in the winter months.

Summary table influenza vaccines for 2023/24

Programme	Age/Risk group	Preference	If the preferred vaccine is not available
Routine	≥65 years	aQIV, QIVr, QIV-HD	QIVc
	18-64 years in risk groups	QIVc or QIVr	QIVe
	2-17 years	LAIV	
	2-17 years in risk groups but unable to have LAIV†	QIVc	QIVe
	6 months-2 years in risk groups	QIVc (off label)	QIVe
Enhanced‡	50-64 years	QIVc or QIVr	QIVe

† LAIV the vaccine of choice for the children's programme 2-17 year olds

‡ Advised as a temporary cohort during the COVID -19 pandemic influenza 2020/21, 2021/22 and 2022/23 seasons. Policy for 2023/24 to be confirmed.

Vaccination of low-risk adults aged 50 to 64 years old in 2023/24

JCVI's advice is aimed at maximising the health benefits from vaccination on the basis of the cost effectiveness of vaccination and this underpins the statutory basis for JCVI recommendations. This ensures that the NHS can make the best use of its resources, aiming to deliver the maximum health benefit to the population, in a fair, consistent and justifiable way.

In 2011, the Secretary of State for Health asked JCVI to consider and make recommendations on possible extensions to the influenza vaccination programme to include the routine vaccination of a range of age groups of the healthy population. In 2012 JCVI recommended extending influenza vaccination to low-risk children aged two to less than 17 which was the most cost-effective option evaluated. JCVI did not recommend extending vaccination to age groups of low-risk adults aged under 65 years as this was unlikely to be cost effective (JCVI, 2012).

During the COVID-19 pandemic JCVI was supportive of the temporary expansion of the influenza programme to extend eligibility to all adults aged between 50 and 64 years of age to protect the population from the potential threat of cocirculation of COVID-19 and influenza and alleviate pressure on the NHS. This has been the policy for the 2020/21, 2021/22, and 2022/23 influenza seasons.

The advice for the 2022/23 season (JCVI, December 2021) was also made in the context of the additional threat of a potentially more intense influenza season due to the low influenza activity of the last two years and the end of COVID-19 social distancing measures and legal restrictions. The Committee agreed that it would be acceptable to vaccinate low risk 50-64 year olds for the 2022/23 season if funding was available, but this group remained the lowest priority due to the previous borderline cost-effectiveness (Baguelin et al., 2015). Furthermore, no cost-effectiveness analysis had been done for the influenza vaccine since the SARS-CoV-2 pandemic.

At the influenza subcommittee in September 2022, it was noted that influenza transmission and activity in the coming season might be mitigated by reductions in mixing rates in the adult population because of persisting behaviour changes in response to the SARS-CoV2 pandemic and as a large proportion of the population that has been vaccinated over the last two years. On the other hand, the very low influenza activity of the past two seasons means the population may be more susceptible to infection and morbidity.

For JCVI to formally revisit the question of whether to routinely vaccinate the low risk 50-64 year old age group an up-to-date impact and cost effectiveness analysis would be required. However, there is currently too much uncertainty regarding the impacts of COVID-19, influenza, and behaviour changes within the population for a robust cost

effectiveness analysis in the short term. Therefore, a pragmatic decision will be required as to whether to continue to vaccinate low risk 50-64 year olds in the 2023/24 season, if funding is available, in the context of the uncertainty of a potentially more intense influenza season, and continued COVID-19 circulation, as well as operational considerations.

JCVI is of the view that whilst there would be a clear health benefit in vaccinating low risk 50-64 year olds, it is uncertain whether this would be cost effective. As in recent years, JCVI supports vaccination in this group in principle if funding is available but remains concerned that it might not meet strict cost-effectiveness requirements and could divert from more cost-effective interventions. The overall priority should be to extend the childhood programme in secondary schools as this would be more cost effective and likely to have a greater impact on morbidity and mortality compared with vaccinating 50-64 year olds.

Background

The considerations of JCVI with regards to use of influenza vaccines are published in the minutes of JCVI and the Influenza sub-committee

The advice of JCVI is based on discussions at JCVI and the Influenza sub-committee:

1. adjuvanted influenza vaccines were discussed in the June and October 2017 JCVI meetings, and the September 2019 Influenza sub-committee;
2. high dose influenza vaccines were discussed in the June 2018 JCVI meeting, the September 2018 Influenza sub-committee, and the September 2019 Influenza sub-committee;
3. cell-culture vaccines were discussed in the September 2018 Influenza sub-committee meeting, the October 2018 JCVI meeting, and the September 2019 Influenza sub-committee;
4. advice for the 2021/22 season was discussed via teleconference with the JCVI and invited experts from influenza subcommittee on 27 October 2020. The minutes of this meeting were published on the 8 December 2020.
5. Advice for the 2022/23 season was discussed via teleconference with the JCVI Influenza subcommittee on 3 September 2021 and subsequently ratified by the main JCVI Committee via correspondence. The minutes of the subcommittee were published on the 10 February 2022.
6. Advice for the 2023/24 season was discussed via teleconference with the JCV Influenza subcommittee on 14 September 2022 and subsequently ratified by the main JCVI Committee via correspondence. The minutes of the subcommittee will be published within six weeks of the next routine JCVI meeting.

The minutes of JCVI and influenza sub-committee meetings are available through the JCVI webpage at https://www.gov.uk/government/groups/joint-committee-on-vaccination-and- immunisation

Glossary

aQIV - Adjuvanted egg-cultured quadrivalent inactivated influenza vaccine

LAIV - Live attenuated egg-cultured intranasal influenza vaccine

QIVc - Cell-cultured quadrivalent inactivated influenza vaccine

QIVe - Egg-cultured quadrivalent inactivated influenza vaccine

QIVr – Recombinant quadrivalent inactivated influenza vaccine

TIVe - Egg-cultured trivalent inactivated influenza vaccine

QIV-HD - High-dose egg-cultured quadrivalent inactivated influenza vaccine

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