

- Preventable immunisation errors can contribute to adverse events following vaccination and may affect vaccine confidence¹⁻³
- The National Immunisation Office (NIO) provides support to clinicians administering vaccines recommended by the National Immunisation Advisory Committee (NIAC) and provided as part of public national vaccination programmes in line with Department of Health policy
- This support is provided through an email clinical advice service for clinicians and through the development of education and training materials
- Reporting of vaccination errors is not mandatory in Ireland however, vaccination errors may be reported to the NIO from clinicians seeking clinical advice
- Adjuvant quadrivalent influenza vaccine (aQIV) was introduced for those aged 65 years and older for the first time in the 2021/22 seasonal influenza (flu) programme in Ireland, and was the recommended flu vaccine in this age group⁴
- The quadrivalent influenza vaccine (QIV) was recommended for those aged under 65 years at high risk of flu complications and the Live Attenuated Influenza Vaccine (LAIV) was recommended for all children aged 2-17 years

Aims

- To review and characterise flu vaccine errors reported to the NIO email advice service for clinicians
- To use the results to inform clinical education and training for vaccinators to improve the quality of flu vaccine administration nationally

Methods

- The flu vaccine deliveries commenced on 19th September 2021. Clinical vaccine queries from 19th September to 30th November 2021 were reviewed
- Flu vaccine errors were analysed and categorised by:
 - Month of notification
 - Clinical setting of notification
 - Type of vaccine error
- Errors were cross-referenced against the information in the Frequently Asked Questions (FAQs) for influenza vaccination developed for healthcare professionals available on the NIO website (www.immunisation.ie)
- If the information related to the error was included in the FAQs, the exact section in the document was identified and recorded

Frequently asked questions Seasonal influenza vaccination programme 2021/2022



Results

- From September to November 2021 there were 33 flu vaccination errors notified to the NIO (Table 1)
 - 1.7% of the total vaccine queries to the NIO
 - 44.6% of all vaccine error queries

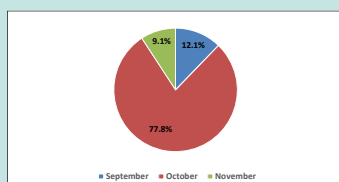
Table 1 Vaccination error queries to NIO (N=1,935)

Query type	N	%
All vaccination errors	74/1,935	3.8%
Flu vaccination errors	33/1,935	1.7%
Flu vaccination errors of total vaccine errors	33/74	44.6%

Timing of flu vaccination errors

- The majority (77.8%) of flu vaccination errors were notified in October 2021 (Figure 1)

Figure 1 Timing of flu vaccination errors notified to the NIO (N=33)



Flu vaccine errors following introduction of the adjuvant flu vaccine during the 2021/2022 flu season

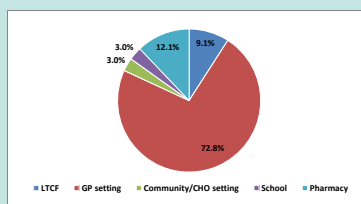
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Clinical setting of flu vaccination errors

- The majority (72.8%) of flu vaccination errors reported to the NIO occurred in a General Practice (GP) setting (Figure 2)

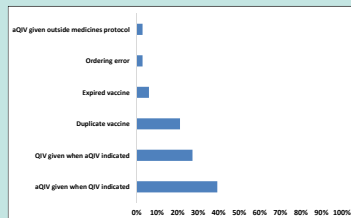
Figure 2 Setting of flu vaccine error (N=33)



Type of error notified to the NIO

- Two-thirds (66.7%, 22/33) of flu vaccine errors related to the incorrect administration of aQIV (Figure 3)
 - 39.4% (13/33) occurred when aQIV was given to a person aged under 65 years when Quadrivalent Influenza Vaccine (QIV) was indicated
 - 27.3% (9/33) occurred when QIV was given when aQIV was indicated
- No adverse events were reported

Figure 3 Type of vaccine error (N=33)



FAQs

- Information relating to the errors was included in the FAQs for 96.7% (32/33) of the errors reported to the NIO
- The one error where the information was not included in the FAQs occurred during peer vaccination

Discussion

- The introduction of the aQIV resulted in vaccine errors being reported to the NIO
- The majority of errors occurred in a GP setting reflecting the proportion of vaccines administered in this setting⁵
- Discussion between the NIO and the Health Products Regulatory Authority (HPRA) confirmed that the number of flu vaccination errors and the pattern of these errors was consistent from September to November 2021
- In Ireland reporting of vaccination errors within primary care is not mandatory either to the NIO or the HPRA
- Clinicians are encouraged to report errors where there is an adverse event to the HPRA, however this is not mandatory
- The National Incident Management System (NIMS) does not currently routinely capture vaccination errors that occur in the community where the majority of flu vaccinations are administered

Limitations

- As vaccine error reporting is not mandatory it is likely that there were additional flu vaccination errors not captured by this study
- Within each vaccination error notified to the NIO there may have been one or multiple flu vaccination errors therefore it is not possible to state the exact number of individual vaccine errors

Public Health Implications

- This study provides key learnings in relation to the rollout of a new vaccination programme
- As the majority of flu vaccinations are administered in the community, it is important that vaccination errors in these settings are reported, collated and analysed
- Currently no national vaccine error reporting system exists
- This study has shown that relevant information materials were available to clinicians in the FAQs however, information may not have been accessed or referred to prior to vaccination
- This emphasises the importance of ensuring that education and training is provided nationally for clinicians prior to the arrival of flu vaccines in practice for the 2022/2023 flu season
- Understanding the nature of vaccination errors will allow for further development of education and training materials to reduce errors and improve quality of vaccine administration

Recommendations

- The findings of this study should inform the content and the timing of the delivery of education and training for clinicians for the 2022/2023 season
- The findings of this study have been presented at the National Flu Steering Committee and should be disseminated nationally to the representative bodies of those providing flu vaccination in the community
- Consideration should be given to developing a national vaccine error reporting system to collate and analyse vaccination errors
- This study should be repeated during the 2022/2023 flu season to quantify and characterise flu vaccination errors and inform the further development of training and education materials



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