

Putting NICE guidance into practice

Resource impact report: Flu vaccination: increasing uptake (NG103)

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Summary

This report focuses on the recommendations from NICE's guideline on [flu vaccination: increasing uptake](#).

This guideline supports and promotes existing national policies and therefore the costs to health and social care organisations are not all as a direct result of the guideline recommendations.

The recommendations that may have a resource impact are:

- offer the flu vaccination to people in eligible groups (recommendation 1.3.1 and 1.4.1)
- provide flu vaccination to all front-line health and social care staff who have direct contact with patients or clients (recommendation 1.7.1).

The estimated annual cost of implementing this guideline for the population of England, based on the resource impact assumptions is shown in table 1.

Table 1 Estimated annual cost of implementing the guideline

	2018/19	2019/20	2020/21	2021/22	2022/23
Increasing the number of flu vaccinations in eligible groups (£000's)	440	880	1,320	1,750	2,200
Increasing the number of flu vaccinations in social care staff (£000's)	180	350	530	710	880
Increasing the number of flu vaccinations in healthcare staff (£000s)	390	780	1,170	1,570	1,960
Total resource impact (£000's)	1,010	2,010	3,020	4,030	5,040

Implementing NICE's guideline may result in the following benefits and savings:

- reduced visits to GPs, hospitalisations and flu related mortalities

- reduced absence of health and social care staff because of flu.

This report is supported by a [resource impact template](#) which may be used to calculate the resource impact of implementing the guideline by amending the variables at a local level.

The influenza programme is commissioned by NHS England and provided by a range of organisations including primary care, NHS hospitals, social care providers and pharmacies.

1 Introduction

- 1.1 The guideline offers best practice advice on increasing the uptake of flu vaccination in England.
- 1.2 This report discusses the resource impact of implementing our guideline on flu vaccination: increasing uptake in England. It aims to help organisations plan for the financial implications of implementing this NICE guideline.
- 1.3 A resource impact template accompanies this report to help with assessing the resource impact at a local level in England, Wales or Northern Ireland.
- 1.4 We have considered direct costs and savings to the NHS and not those for the individual, the private sector or the not-for-profit sector. Any cost savings arising from a change in practice have been offset against the cost of implementing the change.
- 1.5 The influenza programme is commissioned by NHS England and provided by a range of organisations including primary care, NHS hospitals and pharmacies.

2 Background

- 2.1 Each winter, hundreds of thousands of people see their GP and tens of thousands are hospitalised because of flu. Deaths attributable to flu are estimated to range from around 4,000 to 14,000 per year, with an average of around 8,000 per year ([Public Health England and the NHS prepare for unpredictable flu season](#) Public Health England).
- 2.2 Currently, everyone aged 65 and over, those who are the main carer of an older adult or person with a disability, pregnant women, and anyone aged 6 months to 64 years in an eligible group who are at a higher than average risk of illness and death linked to flu, are

offered a free vaccination as part of the Public Health England and NHS England national programme.

- 2.3 In addition to the groups already mentioned, the [Health and Safety at Work Act \(1974\)](#) makes employers responsible for offering flu vaccination to health and social care staff who have direct care responsibilities.

3 Significant resource impact recommendations

3.1 Offering Vaccination

The guideline recommends:

- Use every opportunity throughout the flu vaccination season to identify people in eligible groups and offer them flu vaccination **(recommendation 1.3.1)**.
- Inform and invite children and adults in eligible groups for flu vaccination during face-to-face interactions, whenever the opportunity arises **(recommendation 1.4.1)**.

Background

- 3.1.1 Many potential opportunities are being missed to offer eligible people a free flu vaccination during contacts with health, social care and other statutory and voluntary services. There is evidence that using existing systems to offer flu vaccination and extending the way services are provided can encourage more people to be vaccinated ([NICE Full Guideline](#)).
- 3.1.2 Using every opportunity to offer and provide flu vaccination will increase uptake among people who need it because they are particularly vulnerable to the complications of flu. It will also help prevent spreading flu to other people.

Assumptions made

- 3.1.3 It is assumed that coverage (people offered the vaccination) for this group of people is already close to 100%.
- 3.1.4 In 2017/18 the uptake of flu vaccinations for people in eligible groups was 49% ([Seasonal influenza vaccine uptake in GP patients: winter season 2017 to 2018](#)). We have assumed this is the number of people who are currently receiving a flu vaccination in the resource impact template.
- 3.1.5 It is assumed that uptake will increase by 2% a year over the next 5 years, on the current number of people vaccinated in each setting. This is shown in table 2.

Table 2 The increase in uptake of vaccines in eligible groups

	Current number of people	Increase per year (for 5 years)	Future number of people
Number of flu vaccinations at GP surgeries	2,897,000	58,000	3,186,500
Number of flu vaccinations at community pharmacies	274,000	5,500	301,500
Number of flu vaccinations at other healthcare settings	174,000	3,400	191,000

- 3.1.6 This is an overall increase of 10% in vaccinations for people in eligible groups in all settings after 5 years.
- 3.1.7 We have assumed that for every extra 1,000 people vaccinated, hospitalisations will be reduced by 1 flu related admission ([Health economics report](#)).
- 3.1.8 In the resource impact template we have assumed that the type of flu vaccinations that are offered to people in eligible groups is the quadrivalent influenza vaccine (QIV) as per [NHS England vaccine ordering for 2018-19 influenza season](#).

Costs

3.1.9 Increasing the uptake of flu vaccination in people in eligible groups who have previously not taken up the offer, will result in additional costs. These costs are summarised in table 3.

3.1.10 There may also be additional administration costs relating to the increase in uptake of flu vaccination. We expect these costs to be managed within existing resources and therefore are not accounted for in the resource impact template.

3.1.11 The tariff for providing QIV for people in eligible groups is unchanged and therefore there is no additional cost for commissioners but providers may need to assess the impact locally.

Table 3 Indicative annual numbers of people and costs of increased uptake of flu vaccination in people in eligible groups at year 5

Increase in uptake of flu vaccinations in eligible groups in different vaccine settings	Unit cost (£)	Additional number of people in year 5 2022/23	Resource impact in year 5 2022/23 (£)
Costs			
2% increase in uptake per year at GP surgeries	9.8	289,800	2,840,000
2% increase in uptake per year at community pharmacy's	9.14	27,400	250,000
2% increase in uptake per year at other healthcare settings (OHS)	9.8	17,400	171,000
Total costs			3,261,000
Savings			
Reduction in hospitalisations (resulting from the increase in vaccinations)	3,043	350	1,065,000
Total savings			1,065,000
Total resource impact			2,196,000

Benefits and savings

3.1.12 Increasing the uptake of flu vaccination among eligible groups may lead to a reduction in the number of people visiting their GPs with
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symptoms of flu and decrease the number of flu-associated hospitalisations.

- 3.1.13 Increasing uptake among pregnant women can reduce the risk of flu in their baby.
- 3.1.14 The number of secondary cases of flu may also reduce if the uptake of vaccinations increase.
- 3.1.15 Increasing the uptake of flu vaccination among eligible groups may lead to a reduction in flu related mortalities.

3.2 ***Employers of health and social care staff***

- 3.2.1 The guideline recommends:
 - Provide flu vaccination to all front-line health and social care staff who have direct contact with patients or clients. This includes employees who provide community-based care services to people in their own homes, or who care for people in residential care homes or other long-stay care facilities
(recommendation 1.7.1)

Background

- 3.2.2 The annual flu letter, quality and outcomes framework (QOF) and commissioning for quality and innovation (CQUIN) set flu vaccination uptake at 75% for 2018/19 for healthcare staff. There is currently no national data available for the uptake of flu vaccinations in social care staff.
- 3.2.3 62% of providers were offering social care staff a flu vaccination in 2017/18 as per the [Public Health England report for the South West of England](#).
- 3.2.4 The uptake of flu vaccination among social care staff is estimated to be lower than in healthcare staff which has an uptake of 68.7%

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according to the [Public Health England report, Seasonal influenza vaccine uptake in healthcare workers.](#)

Assumptions made

- 3.2.5 We have assumed that the coverage of flu vaccination is 62% in front-line social care staff. This assumes that the offer of flu vaccination to social care staff in the South West of England is representative of the whole of England.
- 3.2.6 Expert clinical opinion is that uptake of flu vaccination by front-line social care staff is around 40%. Therefore, in the resource impact template, we have assumed that the current number of people receiving flu vaccination among front-line social care staff is around 25% nationally. This is shown in table 4.

Table 4 The current estimated uptake of flu vaccination among front-line social care staff

Flu vaccinations for front-line social care staff	Proportion (%)	Number of front-line social care staff
Front-line social care staff		1,290,000
Offer (coverage) of flu vaccination	62	799,800
Acceptance (uptake) of flu vaccination	40	319,900
Total number of flu vaccination among front-line social care staff	25	319,900

- 3.2.7 We have assumed that the provision of flu vaccination by offer type (for example through employer, flu voucher or community pharmacy) in the South West report, is representative of the national offering for front-line social care staff in the resource impact template.
- 3.2.8 We have also assumed that the provision of non-employer flu vaccinations is equally split between flu vouchers and reimbursements from vaccinations provided at community pharmacies.

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3.2.9 We have assumed that there will be an increase of 5% a year over the next 5 years in the number of people receiving flu vaccinations among front-line social care staff, in each setting. This is a result of an increase in both coverage and uptake of flu vaccination. This is shown in table 5.

Table 5 The increase in people receiving flu vaccination in front-line social care staff

	Current number of people	Increase per year (for 5 years)	Total Increase over 5 years	Future number of people
Number of flu vaccinations through employers	102,000	5,100	25,400	127,000
Number of flu vaccinations through flu vouchers	109,000	5,500	27,300	136,000
Number of flu vaccinations at other healthcare settings	109,000	5,500	27,300	136,000

3.2.10 We have assumed that there is already national coverage with the vaccine already being offered to all front-line healthcare staff as a result of CQUIN, QOF and other mechanisms.

3.2.11 We have assumed that the current uptake of flu vaccination for healthcare staff is 69% and that this will increase to 75% by year 5. This is line with the expected uptake of flu vaccination set by QOF and CQUIN for 2018/19.

3.2.12 We have assumed that the in-house vaccines offered to health and social care staff is the quadrivalent vaccine (QIV) as per [NHS England vaccine ordering 2018-2019](#).

3.2.13 We have also assumed that flu vaccination for health and social care staff is administered in-house and uses existing resources.

Costs

- 3.2.14 Increasing the uptake of flu vaccination in front-line health and social care staff who have previously not taken up the offer, will result in additional costs. These costs are summarised in table 6.
- 3.2.15 Since the 2017/18 flu season, NHS England has advised that health and social care front-line staff are vaccinated with the QIV.
- 3.2.16 The difference in cost between the QIV and the trivalent vaccine is an increase of around £2 per vaccine. This results in a resource impact of around £1.8m if all front-line health and social care staff who receive flu vaccination through their employer, receive this more expensive vaccine.
- 3.2.17 Costs are further analysed in the sensitivity analysis in appendix A.

Table 6 Indicative annual numbers of people and costs of increased uptake of flu vaccination in front-line health and social care staff at year 5

Increase in flu vaccinations in front-line health and social care staff	Unit cost (£)	Additional number of people in year 5 (2022/23)	Resource impact in year 5 (2022/23) (£)
5% increase per year in employer provided flu vaccinations, for front-line social care staff.	8.00	25,400	411,000
5% increase per year in flu vaccinations through a flu voucher provided by an employer, for front-line social care staff.	7.95	27,300	217,000
5% increase per year in flu vaccinations at a community pharmacy, cost reimbursed by employer, for front-line social care staff.	9.4	27,300	256,000
6% increase in uptake of vaccines for front-line healthcare staff.	8.00	64,600	1,957,000
Total resource impact			2,841,000

Benefits and savings

- 3.2.18 Increasing the uptake of flu vaccinations may result in a reduction in sickness absence in the workplace and a potential saving because of reduced agency and bank costs.

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3.2.19 There may also be a reduction in transmission of flu to people that health or social care staff come into contact with.

3.2.20 Healthcare providers will need to assess locally any relevant performance schemes such as [CQUIN](#) and [QOF](#) to calculate any payments that may arise from meeting the annual uptake targets.

4 Resource impact over time

4.1 The estimated annual cost of implementing this guideline for the population of England based on the uptake in the resource impact assumptions is shown in table 7. The cost from year 5 is equivalent to around £8,100 per 100,000 population.

Table 7 Resource impact of implementing the guideline using NICE assumptions

	2018/19	2019/20	2020/21	2021/22	2022/23
Increasing the number of flu vaccinations in eligible groups (as defined in 2.2) (£000's)	440	880	1,320	1,750	2,200
Increasing the number of flu vaccinations in social care staff (£000's)	180	350	530	710	880
Increasing the number of flu vaccinations in healthcare staff (£000s)	390	780	1,170	1,570	1,960
Total resource impact (£000's)	1,010	2,010	3,020	4,030	5,040

5 Implications for commissioners and health and social care providers

5.1 The cost of implementation for health and social care is not covered by tariff and is part of an organisation's duty under the Health and Safety at Work Act (1974).

6 Assumptions made

The resource impact template makes the following assumptions:

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- The unit cost of a [trivalent vaccination is £5.96](#).
- The unit cost of a flu vaccination at a GP surgery or in other healthcare settings is £9.80 for people in eligible groups ([NHS England Vaccination and immunisation list 2018/19](#)).
- The unit cost of a flu vaccination at a community pharmacy is £9.14 for people in eligible groups ([Community pharmacy seasonal influenza vaccine service 2017-2018](#)).
- The unit cost of a QIV provided to staff by an employer is £8.00 according to [BNF](#). This assumes the vaccine is delivered by existing staff in a healthcare provider setting.
- The unit cost of a flu voucher issued to staff is £7.95 ([Flu Voucher National Website](#)).
- The unit cost of a flu vaccination at a community pharmacy which is reimbursed is £9.40. This cost is based on the average over-the-counter cost of a flu vaccination in November 2017, ([Lloyds Pharmacy](#), [Boots](#), [Superdrug](#), [Tesco](#) and [Asda](#)).
- We have assumed that the average cost of a flu hospitalisation is around £3,000 ([2018/19 national tariff](#) for healthcare resource group DZ11 Lobar, Atypical or Viral Pneumonia), using the mix of non-elective activity data from [NHS reference costs 16/17](#).

7 Other considerations

- 7.1 This guideline supports and promotes existing national policies and therefore the costs to health and social care organisations are not all as a direct result of the guideline recommendations.
- 7.2 NHS England have recommended that people in eligible groups and front-line health and social care staff should receive QIV from 2018/19 onwards. The resource impact template only reflects a change in payment for the vaccines provided to front-line health and social care staff when the vaccine is provided by their employer. This is because the tariff for the vaccine in other settings was unchanged at the time of publication of the guideline.

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- 7.3 The cost of providing QIV in other settings will need to be assessed locally.
- 7.4 The tariff for providing QIV for people in eligible groups is unchanged and therefore there is no additional cost for commissioners but providers may need to assess the impact locally.
- 7.5 In 2017/18 around 9,000 community pharmacies were offering flu vaccination compared with around 7,000 in 2015/2016 ([Pharmaceutical Services Negotiating Committee](#)). Because many GP practices also already offer weekend flu vaccination clinics, increasing this service may only have an impact at a local level. Costs for providing evening and weekend services in primary care have therefore not been included in the resource impact template.

8 Sensitivity analysis

- 8.1 There are some assumptions in the model for which no empirical evidence exists, so we cannot be as certain about them. Appropriate minimum and maximum values of variables are used in the sensitivity analysis to assess which variables have the biggest impact on the net saving. This enables users to identify the significant cost drivers.

Appendix A is a table listing all variables modified. The key conclusions are discussed below.

- 8.2 Varying the number of people receiving flu vaccinations in eligible groups at GP surgeries from 45% to 49% leads to a resource impact from between £4.1m and £5.9m.
- 8.3 Varying the number of people receiving flu vaccinations in front-line health care staff through their employer from 28% to 50% leads to a resource impact from between £4.7m and £7.1m.

- 8.4 Varying the number of people receiving flu vaccinations in front-line health care staff through their employer from 70% to 80% leads to a resource impact from between £4.6m and £5.4m.
- 8.5 Varying the cost of QIV for front-line health and social care staff from £6 to £10 leads to a resource impact from between £3.2m and £6.8m.

Appendix A. Results of sensitivity analysis

Individual variable sensitivity	Recurrent resource impact							
	Baseline value	Minimum value	Maximum value	Baseline resource impact (£000's)	Minimum resource impact (£000's)	Maximum resource impact (£000's)	Change (£000's)	Sensitivity ratio
Change in the percentage of uptake of flu vaccinations in eligible groups at a GP surgery	46.61%	44.61%	48.61%	5,038	4,133	5,942	1,809	1.00
Change in the percentage of people receiving flu vaccinations in social care staff	31%	28%	50%	5,038	4,711	7,112	2,401	0.16
Change in the percentage of uptake of flu vaccinations in healthcare staff	75%	70%	80%	5,038	4,626	5,449	823	0.29
Change in the cost of QIV vaccine for health and social care staff (£)	8	6	10	5,038	3,242	6,833	3,591	0.34

About this resource impact report

This resource impact report accompanies the NICE guideline on [Flu Vaccination: increasing uptake](#) and should be read in conjunction with it. See [terms and conditions](#) on the NICE website.

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