



UK Health  
Security  
Agency

# Seasonal influenza vaccine uptake in GP patients

## Winter season 2022 to 2023

Final data for 1 September 2022 to 28 February 2023

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# Notes on the report

## Intended audience

This report is aimed at health professionals directly involved in the delivery of the influenza vaccine or those with an interest in the influenza vaccination programme in England.

## Aim of the report

This report provides an evaluation of the national influenza programme using end of season data on influenza vaccination uptake in General Practice (GP) registered patients in England. Data are stratified by clinical risk groups and age to identify groups where vaccine uptake can be improved in future seasons.

## Main points

The UK Health Security Agency (UKHSA) Influenza surveillance team has responsibility to coordinate and facilitate the national collection and reporting of influenza vaccine uptake data. This report describes the final data for GP registered patients in England from 1 September 2022 to 28 February 2023.

## Survey response

- The response rate from GP practices in England for the main GP survey was 97.1% compared with 97.1% last season
- The response rate from GP practices in England for the child GP survey was 98.4% compared with 97.1% last season

Due to a high response rate this season, only automated responses were requested for the end of February 2023 survey.

## National vaccine uptake

From 1 September 2022 to 28 February 2023 in England, cumulative influenza vaccine uptake in GP registered patients:

- aged 65 and over was 79.9 % compared with 82.3 % in 2021 to 2022
- aged 6 months to under 65 years old in one or more clinical risk group(s) was 49.1 % compared with 52.9 % in 2021 to 2022
- that were pregnant women was 35.0 % compared with 37.9 % in 2021 to 2022
- aged 2 and 3 years was 43.7 % compared with 50.1 % in 2022 to 2023
- aged 50 to 64 years and not in a clinical risk group was 40.6 % and is not comparable between seasons as this group became eligible on 15 October 2022 compared with 1 September 2021 the previous season

The [2022 to 2023 annual flu letter](#) outlines the national vaccine uptake ambitions which was to demonstrate a 100% offer and to achieve at least the uptake levels of 2021 to 2022 for each cohort, and ideally exceed them<sup>1</sup>.

No group achieved the national vaccine uptake ambitions of equivalent or higher uptake in the 2022 to 2023 season than in 2021 to 2022 season, with vaccine uptake decreasing in all groups (those aged 6 months to 65 years at risk, all pregnant women and patients aged 2 and 3 years,

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<sup>1</sup> National flu immunisation programme plan 2022 to 2023 (April 2022) (**Error! Reference source not found.**)

those aged 65 years and over; and in patients aged 50 to 64 years not in a clinical risk group) compared with the 2021 to 2022 season. In pregnant women vaccine uptake is the lowest on record since the 2011 to 2012 season and for those aged 2 and 3 years old vaccine uptake decreased for a second consecutive season. Although vaccine uptake has decreased in those aged 6 months to 65 years in at risk groups compared with the previous season, vaccine uptake remains above levels seen pre-COVID-19 pandemic (2019 to 2020 season). For a third consecutive season in those aged 65 years and over, vaccine uptake continued to exceed the World Health Organization (WHO) vaccine uptake target of 75%. In those aged 65 years and over, 86.8% (92 out of 106) sub integrated care boards (sub ICBs) achieved the WHO target vaccine uptake of at least 75% compared with 94.3% (100 out of 106) clinical commissioning groups (CCGs) last year (2021 to 2022)<sup>2</sup>. Note that ICBs and sustainability and transformation partnerships (STPs) and sub ICBs and CCGs can be directly compared.

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<sup>2</sup> For CCG variation on influenza vaccine uptake (2021 to 2022), please see the additional tables [here](#)

# Glossary

## **At-risk**

Patients with clinical risk group(s) as listed in the Green Book.

## **Child GP survey**

The flu vaccination uptake survey that collects all the child cohort data.

## **dm+d**

Dictionary of medicines and devices.

## **Green Book**

“The Green Book” is “Immunisation against infectious disease”, a UKHSA publication on vaccines, vaccine-preventable infectious diseases, and vaccination procedures. Chapter 19 refers to influenza.

## **ImmForm**

ImmForm is a website that provides a secure online platform for vaccine uptake data collection for several immunisation surveys, including the seasonal influenza vaccine uptake collection.

## **Main GP survey**

The flu vaccine uptake survey that collects data on all adult cohorts and children in clinical risk groups.

## **School-age year**

The school age year is determined by their age on the 31 August 2022. This will be correct for the majority of children.

## **SNOMED CT codes**

Systematized Nomenclature of Medicine Clinical Terminology. This is a structured clinical vocabulary for use in electronic health records.

## Background

The purpose of the seasonal influenza immunisation programme in England is to offer protection to those who are most at risk of serious illness or death should they develop influenza.

In 2012, the Joint Committee on Vaccination and Immunisation (JCVI) recommended the roll-out of a universal childhood influenza vaccine programme with live attenuated influenza vaccine (LAIV)<sup>3,4</sup>. The childhood LAIV programme, was introduced in 2013 to 2014 and progressively expanded across year groups in a phased roll-out. In the 2022 to 2023 season, LAIV was offered to all 2 and 3 year olds through primary care; and through a largely school-based programme to primary school-aged children (Reception to Year 6); and secondary school-aged children focusing on Years 7, 8 and 9. The aim of the childhood programme is to both directly protect children and reduce influenza transmission, providing indirect protection to the rest of the population, including those at increased risk of the severe consequences of influenza infection.

NHS England, through integrated care boards (ICBs) and regional public health commissioning teams, has responsibility for commissioning the influenza programme with general practices, midwives, and other healthcare professionals. Immunisation managers and co-ordinators in NHS teams play a significant role in delivery within their ICBs (and previously STP boundaries).

GP practices provide monthly coverage data between September and February, with most practices providing this through automated uploads from their electronic clinical systems. This year was the second time data was collected and published to the end of September, which is a month earlier than previous years. Automated extraction provides near-complete data, with many practices also contributing data weekly, and gives consistent data for comparisons over time. The UKHSA Influenza surveillance team has responsibility for collating the data and reporting on the progress in the uptake of the seasonal influenza vaccine. The [ImmForm website](#) enables the monitoring, tracking and reporting on provisional vaccine uptake on a weekly and monthly basis during the influenza season.

The seasonal influenza vaccine uptake survey in GP registered patients was first split into the 'Main GP Survey' and the 'Child GP survey' in the 2017 to 2018 season. Data presented in this report and accompanying tables is for the end-of-season data, up to the end of February in England.

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<sup>3</sup> [JCVI statement on the annual influenza vaccination programme – extension of the programme to school-aged children \(25 July 2012\)](#)

<sup>4</sup> [Joint Committee on Vaccination and Immunisation. Meeting minutes, 5 Oct 2011](#). London



The data counts the cumulative number of GP registered patients<sup>5</sup> who have had at least one dose of influenza vaccine from 1 September 2022 to 28 February 2023. This end-of-season report provides the final influenza vaccine uptake figures in GP registered patients. These data are collated for public health surveillance purposes only and this system is not designed to support GP practice payments.

The programme for 2022 to 2023 was announced in the annual flu letter jointly issued to the NHS by UKHSA, the Department of Health and Social Care (DHSC) and NHS England (NHSE) on 22 April 2022<sup>6</sup> (with an amendment published on 21 July 2022<sup>7</sup> outlining an expansion of the programme). In March 2022 it was recommended that influenza vaccine be offered to:

- all children aged 2 and 3 years
- all children of school age in years Reception to Year 6 (aged 4 rising to 10 years old)
- those aged 65 years and over
- those aged 6 months to under 50 years in clinical risk groups
- pregnant women
- those in long-stay residential care homes
- carers<sup>8</sup>
- close contacts of immunocompromised individuals
- frontline health and social care staff

In July 2022<sup>7</sup> it was announced that eligibility would be extended to:

- secondary school-aged children focusing on Years 7, 8 and 9 and any remaining vaccine will be offered to years 10 and 11, subject to vaccine availability
- all those aged 50 to 64 years not in clinical risk groups

The national vaccine uptake ambition for 2022 to 2023 was to demonstrate a 100% offer and to achieve at least the uptake levels of 2021 to 2022 for each cohort, and ideally exceed them<sup>7</sup>. The July 2022 amendment asked providers to order additional stock for 50 to 64 year olds based on vaccine uptake that was achieved over the previous 2 seasons.

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<sup>5</sup> People who are currently registered at the GP practice on the day of data extraction. Therefore, the survey will not include vaccinations given to patients who have since moved practice or who have died, but will include those vaccinated by another healthcare provider (provided the GP patient electronic record is updated).

<sup>6</sup> [National flu immunisation programme plan 2022 to 2023 \(annual flu letter\) \(22 April 2022\)](#)

<sup>7</sup> [Statement of amendments to annual flu letter 2022 to 2023 \(21 July 2022\)](#)

<sup>8</sup> The definition of a carer can be found in [the influenza chapter of the Green Book](#)

## Methods

Prior to the start of the seasonal data collection, the Influenza surveillance team produce a data set for the collection. The team commission PRIMIS to write an accompanying coding specification for GP System Suppliers (GPSS) to extract the data from GP practices. The PRIMIS specification provides rules for the extraction of the data from GP systems using the following clinical code terminologies; Systematized Nomenclature of Medicine Clinical Terminology (SNOMED CT<sup>9</sup>) (clinical codes).

Cumulative data on seasonal influenza vaccine uptake were collected for all GP practices in England between 1 September 2021 to 28 February 2022 using the ImmForm website. ImmForm provides a secure online platform for vaccine uptake data collection for several immunisation surveys, including the seasonal influenza vaccine uptake collection.

The data collections consist of:

- a weekly sentinel survey using an automated extraction only (XML bulk upload or a web service)
- 6-monthly surveys starting with a collection covering the 1 September 2022 up to end of September which is then refreshed each month up until the end of February 2023<sup>10</sup>

GP practice level data were submitted to the ImmForm website either via an automated extraction provided by GPSS (who extract data directly from GP practice systems<sup>11</sup>) or via manual upload, across England. Automated data extraction results in an almost zero burden on GP practices providing the data. The weekly data allows near 'real-time' monitoring of the programme at a national level from calendar week 36 (week ending 11 September 2022) to calendar week 4 (week ending 29 January 2023)<sup>12</sup>. The user guide for the survey can be found at [Seasonal influenza vaccine uptake \(GP patient survey\) data collection](#).

The vaccine uptake figures reported here are based on the practices which have supplied data. This report includes extrapolated estimates of the total eligible population and the total number vaccinated in each cohort if there was a 100% response rate to the survey.

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<sup>9</sup> [Section 11. Read codes and SNOMED CT codes, Seasonal influenza vaccine uptake \(GP patient survey\) data collection: user guide](#)

<sup>10</sup> All monthly vaccine uptake data are published at [Seasonal flu vaccine uptake in GP patients: monthly data, 2022 to 2023](#)

<sup>11</sup> The source of data is from GP practice systems only. It is assumed that vaccinations given in other settings by other healthcare providers (eg pharmacies, schools, special clinics) will be recorded onto GP systems in a timely manner. However, some vaccinations may be missed by the survey when recording onto a GP system, which may be more challenging or slow (eg vaccinations of travelling communities or homeless) or where patients are not registered.

<sup>12</sup> Weekly vaccine uptake data are published as part of the weekly [national flu and COVID-19 report](#).

The extrapolated number of vaccinations is derived by multiplying the mean number of vaccinations per practice by the total number of practices. This calculation assumes that the GP practice population is the same across all practices and that the uptake rate is the same as that seen nationally.

Median calculations are based on sub ICB level data. There were no configuration changes between CCGs and sub ICBs for 2022 to 2023 season (see [the appendix](#)).

For 2012 to 2022 and 2022 to 2023 an additional survey was added for September. February surveys were introduced as an experimental collection in 2017 to 2018, extending the data collection period by a month to allow for better inclusion of data returning from outside the practice and later in-practice vaccinations. Following evaluation, the February collection was adopted for the end of season figures. During the 2018 to 2019 season only automated extractions were expected however manual upload was added to the end of February data return from the 2019 to 2020 season.

The seasonal influenza vaccine uptake surveys in GP patients (Main and Child survey) have received full approval from the Data Alliance Partnership Board (DAPB) for the 2022 to 2023 influenza season<sup>13</sup>.

## ImmForm

Influenza vaccine uptake data are submitted via the [ImmForm website](#). Data are submitted at GP practice level and can then be aggregated as required to the different hierarchies such as sub ICB (previously CCG), ICB (previously STP) or local authority (LA). During the season, specific functions were available weekly and monthly on ImmForm to enable local management of the vaccination programme. These functions include the ability to:

- view and evaluate influenza vaccine uptake rates by cohort and age band for their area down to GP practice level
- compare GP practice level data within the sub ICB (or previously CCG) and to previous years
- validate data at point of data entry
- download 'non-responder' reports to aid local areas following up GP practices that have yet to respond to the survey

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<sup>13</sup> DAPB approval for these surveys can be [found online](#).

## Data validation

Data validations are built into the ImmForm website to validate at point of entry. Data is then further validated by the UKHSA Influenza surveillance team on a weekly and monthly basis. PRIMIS are commissioned by UKHSA to write the clinical code specification for the surveys and commissioned to conduct 2 data validation reports to check alignment with the clinical code specification.

## Data limitations

Denominator data for some localities and at-risk groups should be interpreted with caution due to data validation and data quality issues. A summary of these limitations is provided below. Further information on definitions and data limitations can be found in [the user guide](#).

## Snapshot of influenza vaccine uptake data

Influenza vaccine uptake data presented in this report is a snapshot of GP registered patients vaccinated at the time of data extraction. The annual report includes data up until the end of February to allow time for data to flow from other services to the GP record when vaccines are delivered in other settings. Patients who are vaccinated but have not had their electronic patient record updated by the time of data extraction, will be included within the denominator, but will not be included in the count of 'number vaccinated'. This data will, therefore, not include patients in the numerator or denominator who have received the vaccine but have subsequently died; or changed clinical status (for example, 'joining' or 'leaving' a clinical risk group); or patients changing carer status; and 'temporary' patients who may have received the vaccine but were not registered on the date of data extraction. The extract will also exclude the prison population unless the individuals were registered with a GP practice at the time of data extraction and their vaccination details were recorded on their primary care electronic record. Healthcare workers and social care workers will only be counted in the number vaccinated if they were vaccinated at the GP practice or their vaccination details were entered on their GP practice's electronic record.

## Transition to SNOMED CT

In the 2019 to 2020 season all GP System Suppliers (GPSS) in England moved over to SNOMED CT<sup>7</sup>. However, some GPSS are still working off older versions of SNOMED. Due to the transition, mapping errors between SNOMED CT and previous clinical terminologies are being identified and corrected across GPSS but small numbers of mapping issues may remain.

Despite these data limitations, the granular data is considered valid with a degree of caution; especially when drawing comparisons to historical data where they may be affected by the SNOMED transition.

## Clinical coding changes

It is important to note that clinical coding frequency can increase or decrease depending on the coding behaviour of GP practices and other NHS organisations; and the definitions used to extract the data. These changes in coding frequency can be driven by policies such as changes to the Quality Outcomes Framework (QOF) or the introduction of new initiatives to drive better quality of data through better coding of data. Changes to the coding can greatly affect smaller groups such as the data we collect on individual at risk groups. We monitor this each year by looking at the prevalence of each risk group within the general population and the at-risk population whilst considering any wider changes to the health system that may impact the data.

## Pregnant women: denominator variance

Determining an accurate denominator for eligible pregnant women is challenging because of the complexities in the way pregnancy is recorded and coded on local clinical systems in primary care. In addition, in recent years, flu vaccine for pregnant women has increasingly been delivered through [midwifery services and pharmacy](#) and so vaccination data need to flow back to the GP record in the appropriate format to allow capture in the ImmForm collection.

Reported influenza vaccine coverage in pregnant women is likely to be an underestimate for the following reasons:

- the dynamic nature of the denominator with women continually entering and leaving the cohort throughout the season through conception, miscarriage, abortion, or delivery
- there are multiple ways to record 'pregnancy' in the GP record with a range of SNOMED codes available that are not applied consistently
- the delay in updating the individual's electronic GP clinical record following birth or loss of pregnancy
- delay or gaps in data flows that allow capture of vaccines delivered outside the GP practice

The scale of the underestimation is not clear and could vary between GP practices and regions<sup>14</sup>.

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<sup>14</sup> For further details of pregnancy data limitations, please see [the GP survey user guide](#).

## Vaccination in other healthcare settings

The number of individuals vaccinated in a school, pharmacy and other healthcare setting was captured by the survey. It is important to note that the evaluation of vaccines delivered outside of GP practice does not come under an existing information standard therefore the quality of location recording may vary between GP practices and GP System Suppliers. In 2022 to 2023 pharmacies were commissioned to administer influenza vaccinations to:

- those aged 50 and over (from 15 October 2022)
- any patient aged 18 to under 65 years in a clinical risk group
- pregnant women
- carers
- people living in long-stay residential care homes or other long stay care facilities
- close contacts of immunocompromised individuals

They were also commissioned to administer influenza vaccinations to frontline health and social care staff employed by:

- a registered residential care or nursing home
- registered domiciliary care provider
- a voluntary managed hospice provider
- Direct Payment (personal budgets) and/or Personal Health Budgets, such as Personal Assistants

Whilst the number of vaccinations reported as given in pharmacies can be taken as correct because there is a specific clinical code associated with this, there is likely to be a lag in data being fed back into the GP record.

As expected, vaccination delivered in other healthcare settings is much higher for the pregnant cohort due to increasing administration by midwifery services. The vast majority of school-aged children are vaccinated in school and therefore in the survey vaccines recorded in these age groups are assumed to be school-delivered in the survey unless specifically coded as 'vaccinated in a pharmacy'. As data flows from school aged immunisation services (SAIS) and the Child Health Information Systems (CHIS) to the GP record are not yet well established, flu vaccination data for the school-aged cohorts in the GP survey remain experimental<sup>15</sup>. Improved data flows from other healthcare settings to the GP record are important to both reduce the administrative burden on GP practices and ensure timely and accurate vaccine coverage can be reported for all eligible cohorts.

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<sup>15</sup> Results for the LAIV programme in primary school aged children will be available in a separate report based on manual returns from Local NHS Teams. The National Childhood Influenza Vaccination programme report is available [online](#).

## Vaccine type

Vaccine type can be coded using Dictionary of medicines and devices (dm+d) codes and SNOMED CT codes. All GPSS in England have now moved over to SNOMED CT clinical terminology. Vaccine type was introduced to the GP survey in the 2018 to 2019 season and the experimental data collected thus far show that this information is not routinely recorded in the required coded format to allow extraction. The information is likely to be recorded in the GP record as free text and therefore not extractable using a clinical code specification. We expect this variable to become better recorded in the future.

## Social care workers

Vaccine uptake in social care workers was included for the first time in the 2019 to 2020 data collection. The SNOMED CT codes for this workforce were introduced on the 1 April 2018 but appear to be a poorly applied in the GP record therefore the denominator estimate in the survey is not currently reliable.

There are a range of options for employers offering the vaccine to social care workers,<sup>16</sup> which makes this cohort particularly difficult to evaluate. Only a minority will get vaccinated through their GP practice. Data flows for vaccinations delivered to social care workers outside of the GP setting are not well established, therefore, caution should be used when interpreting the data.

## Learning disability

Vaccine uptake in those with wider learning disabilities including severe learning disability as a subset of this cohort was included for the first time in the 2020 to 2021 season as an experimental cohort and continues to be included in the 2022 to 2023 season. The clinical coding specification is defined within the PRIMIS specification. The wider learning disability cohort includes all those on the [QOF learning disability register](#) and a small number of additional patients with other learning disability coding. The clinical codes related to severe learning disability are also still included within the chronic neurological disease clinical risk group and therefore comparable to previous years. Please note that those who have a wider learning disability with no other clinical risk group are not included in the overall at-risk category data.

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<sup>16</sup> [Promotional material flu immunisation social care staff](#) (leaflets and guidance, updated September 2022)



## Results

[Data tables](#) showing final influenza vaccine uptake for each of the eligible groups accompany the publication of this report and are available at NHS region, ICB and sub ICB level; as well as LA. Note for the previous season (2021 to 2022) data was presented by NHS region, STP and CCG level; as well as LA.

### GP practice response rate

GP response rate for the main GP survey was 97.1% (6,257 out of 6,447). The GP response rate for the Child GP survey was 98.4% (6,339 out of 6,442). Data represents both automated and manual uploads.

The extrapolated number of GP registered patients that were recorded as vaccinated in 2022 to 2023 season was over 21.0 million ([Table 1](#)).

### Weekly versus monthly vaccine uptake comparison (provisional data)

Weekly and monthly data were overall in good agreement, with the provisional national results from the 6 monthly returns closely matching their weekly equivalent, confirming that the weekly sentinel collection is an excellent indicator of uptake at a national level.

The weekly sentinel survey only used automated extracts, the response rate ranged between 58.8% in week 52 to 97.1% in week 42 for the GP Main survey; and from 59.2% in week 52 to 98.5% in week 50 for the GP Child survey.

### Observed and extrapolated estimate of number of patients registered with GP practices and numbers who received influenza vaccine

The total extrapolated estimate of individuals who received an influenza vaccine in 2022 to 2023 season was 21,024,208 compared with 22,508,433 in 2021 to 2022 season ([Table 1](#)). This is over 1,400,000 less than in the previous season (2021 to 2022) however, eligibility differed between seasons. This season, less individuals were eligible for the programme (in 2021 to 2022 season all school aged children from Reception to Year 11 were eligible and 50 to 64 year olds were eligible from 1 September in the previous season rather than from 15 October 2022

this season). Between April<sup>17</sup> and July<sup>18</sup> 2022 there were changes to both the eligibility of the school-aged influenza vaccination programme and 50 to 64 year olds not in clinical risk groups.

## Patients aged 65 years and over

Vaccine uptake in patients 65 years and over was 79.9% in the 2022 to 2023 season, a 2.4 percentage point decrease compared with 82.3% last season ([Table 1](#)). The extrapolated estimate of the number of patients aged 65 years and over registered at a GP practice who would have been vaccinated by end of February 2023 was 8,823,474 which is 207,737 patients less than the previous season. Although the ambition of equivalent or higher uptake than 2021 to 2022 season was not reached, the end of season uptake for this cohort did reach the WHO target of at least 75% for the fourth time since the 2005 to 2006 season ([Figure 1](#)). Note the 2005 to 2006 season is not shown in figure 1, but this group saw an uptake of 75.3% in that season. See the [2017 to 2018](#) GP annual report (figure 4) for data from 2000 to 2001 onwards for this cohort.

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<sup>17</sup> [National flu immunisation programme plan 2022 to 2023 \(annual flu letter\) \(22 April 2022\)](#)

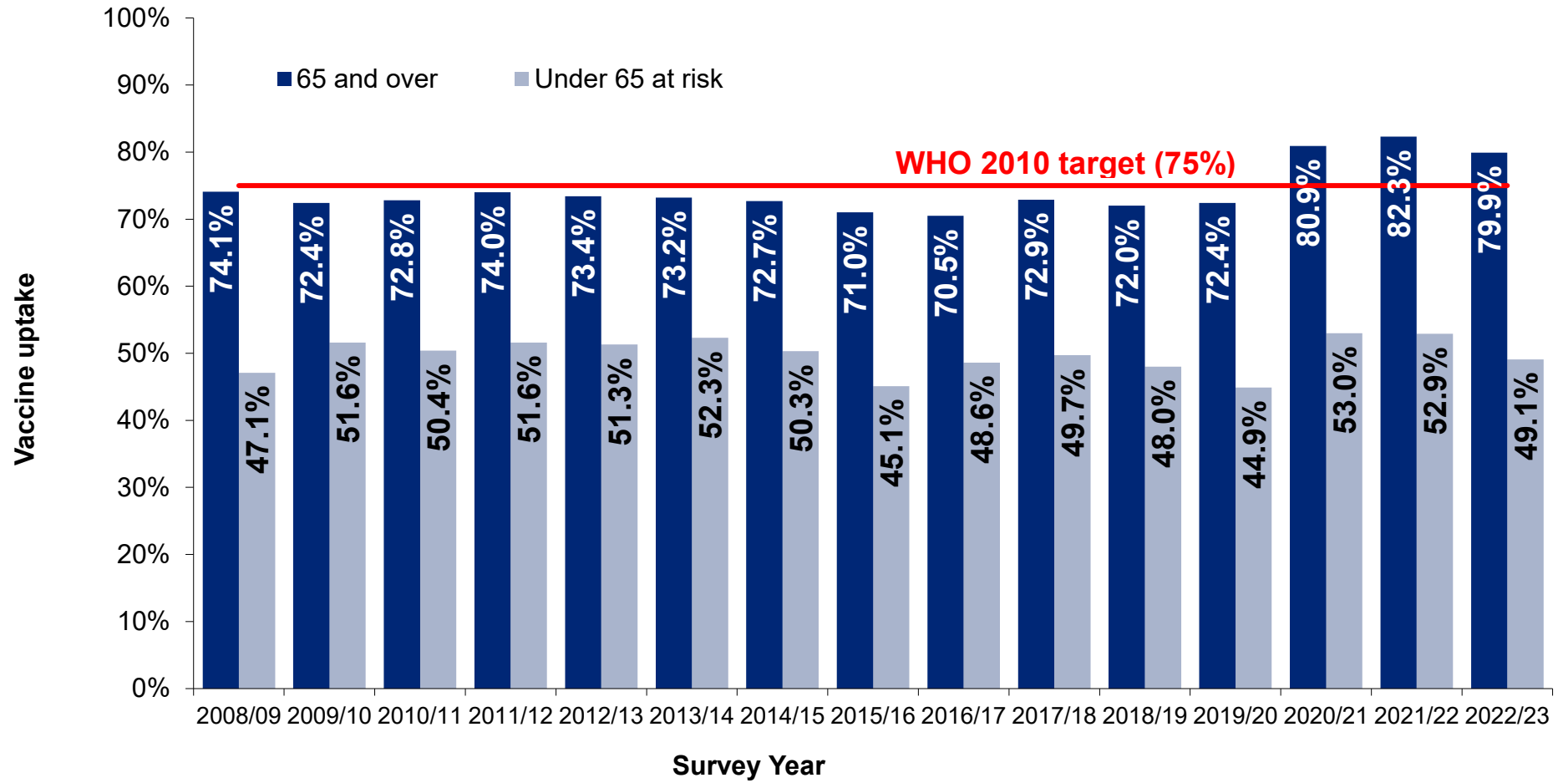
<sup>18</sup> [Statement-of-amendments-to-annual-flu-letter 2022 to 2023 \(21 July 2022\)](#)

**Table 1. Observed and extrapolated estimate of number of patients registered with GP practices and numbers who received influenza vaccine in 2022 to 2023 compared with 2021 to 2022**

Target groups for vaccination in one or more clinical risk group(s)	2022 to 2023 Number of patients registered	2022 to 2023 Number of patients vaccinated	2022 to 2023 Percentage vaccine uptake	2021 to 2022 Number of patients registered	2021 to 2022 Number of patients vaccinated	2021 to 2022 Percentage vaccine uptake
Aged 65 years and over	10,723,554	8,563,437	<b>79.9</b>	10,653,768	8,773,058	82.3
Aged 65 years and over extrapolated	11,049,185	8,823,474	<b>79.9</b>	10,967,262	9,031,211	82.3
All patients aged 6 months to under 65 years*	49,600,961	11,841,165	<b>23.9</b>	49,264,539	13,091,982	26.6
All patients aged 6 months to under 65 years extrapolated	51,107,143	12,200,734	<b>23.9</b>	50,714,180	13,477,222	26.6
Total observed (65 years and over and all patients under 65 years)*	60,324,515	20,404,602	<b>33.8</b>	59,918,307	21,865,040	36.5
Total extrapolated (65 years and over and all patients under 65 years)	62,156,329	21,024,208	<b>33.8</b>	61,681,442	22,508,433	36.5

\*Note that these denominators include patients not eligible as part of the NHS funded flu vaccination programme.

**Figure 1. Influenza vaccine uptake for those aged 65 years and over, and under 65 years at-risk from 2008 to 2009 to 2022 to 2023 in England (data prior to 2018 to 2019 is data up to the end of January)**



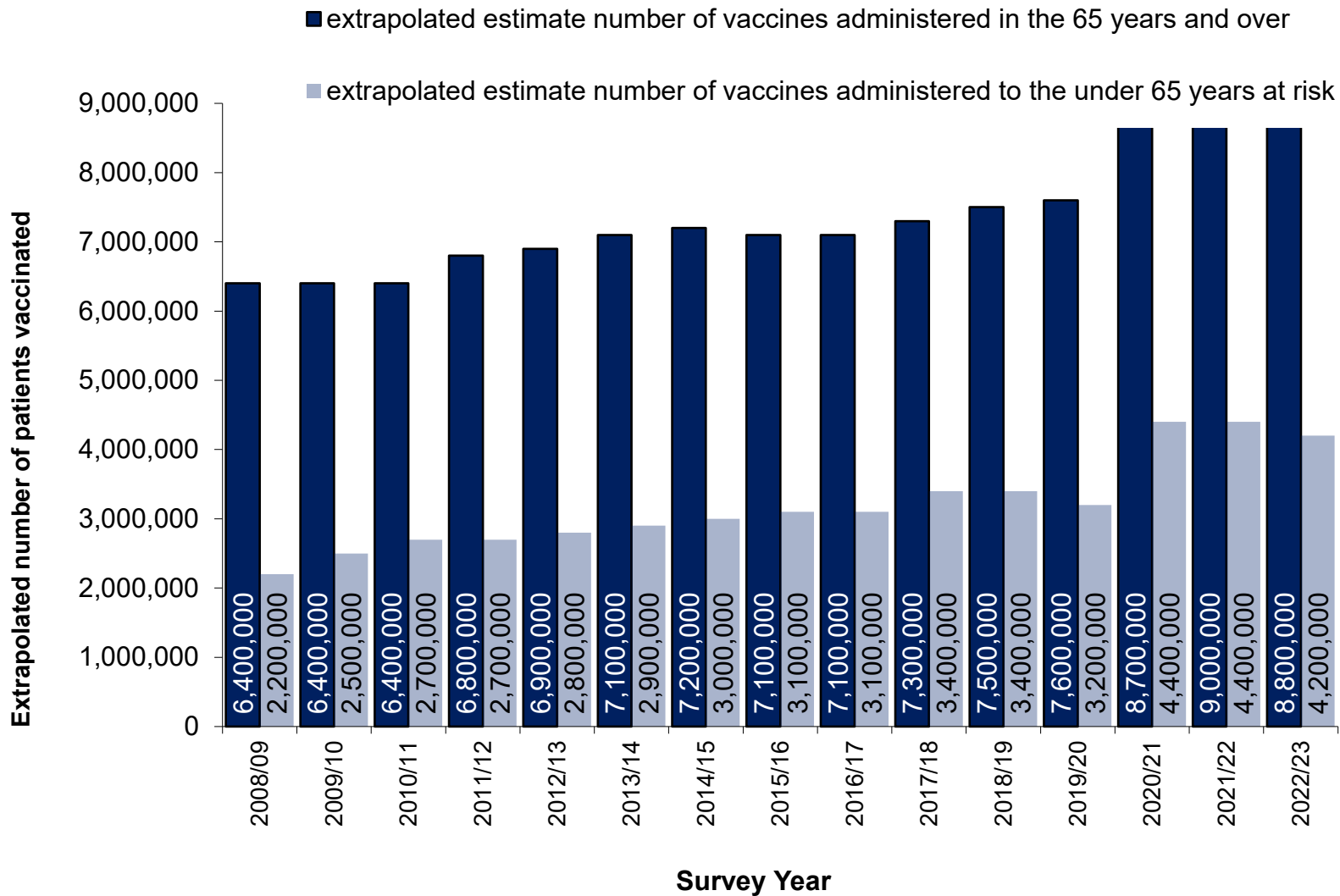
## At-risk patients aged 6 months to under 65 years

Vaccine uptake in patients aged 6 months to under 65 years in one or more clinical risk group(s) was 49.1% compared with 52.9% in 2021 to 2022 ([Table 2, Figure 1](#)). This is a 3.8 percentage point decrease compared with last season. The extrapolated estimate of the total number of patients aged 6 months to under 65 years in a clinical at-risk group who would have been vaccinated was over 4.2 million (4,223,003);([Table 2, Figure 2](#)) which is 209,350 patients less than the previous season.

**Table 2. Observed and extrapolated estimate of number of registered patients aged 6 months to under 65 years old and in one or more clinical risk group(s) (excluding pregnant women without other risk factors and carers), who received an influenza vaccine in 2022 to 2023 compared with 2021 to 2022**

Target groups for vaccination	2022 to 2023 Number of patients registered	2022 to 2023 Number of patients vaccinated	2022 to 2023 Percentage vaccine uptake	2021 to 2022 Number of patients registered	2021 to 2022 Number of patients vaccinated	2021 to 2022 Percentage vaccine uptake
Aged 6 months to under 65 years in a clinical risk group	8,350,452	4,098,547	49.1	8,132,906	4,305,656	52.9
Aged 6 months to under 65 years in a clinical risk group extrapolated	8,604,022	4,223,003	49.1	8,372,222	4,432,353	52.9

**Figure 2. Extrapolated estimated number of vaccines administered in the 65 years and over, and those under 65 years at-risk, from 2008 to 2009 to 2021 to 2022 in England (data prior to 2018 to 2019 is data up to the end of January)**



**Table 3. Observed and extrapolated number of registered patients aged 6 months to under 65 years at-risk by age band who received an influenza vaccine**

Target groups for vaccination	2022 to 2023 Number of patients registered	2022 to 2023 Number of patients vaccinated	2022 to 2023 Percentage vaccine uptake	2021 to 2022 Number of patients registered	2021 to 2022 Number of patients vaccinated	2021 to 2022 Percentage vaccine uptake
Total observed 6 months under 65 years in a clinical risk group	8,350,452	4,098,547	<b>49.1</b>	8,132,906	4,305,656	52.9
Total extrapolated 6 months under 65 years in a clinical risk group	8,604,022	4,223,003	<b>49.1</b>	8,372,222	4,432,353	52.9
6 months to under 2 years in a clinical risk group	16,271	1,652	<b>10.2</b>	13,976	2,008	14.4
6 months to under 2 years in a clinical risk group extrapolated	16,765	1,702	<b>10.2</b>	14,387	2,067	14.4
2 years to under 5 years in a clinical risk group	59,860	27,970	<b>46.7</b>	56,112	29,084	51.8
2 years to under 5 years in a clinical risk group extrapolated	61,678	28,819	<b>46.7</b>	57,763	29,940	51.8
5 years to under 16 years in a clinical risk group	563,390	268,272	<b>47.6</b>	543,886	278,268	51.2
5 years to under 16 years in a clinical risk group extrapolated	580,498	276,418	<b>47.6</b>	559,890	286,456	51.2

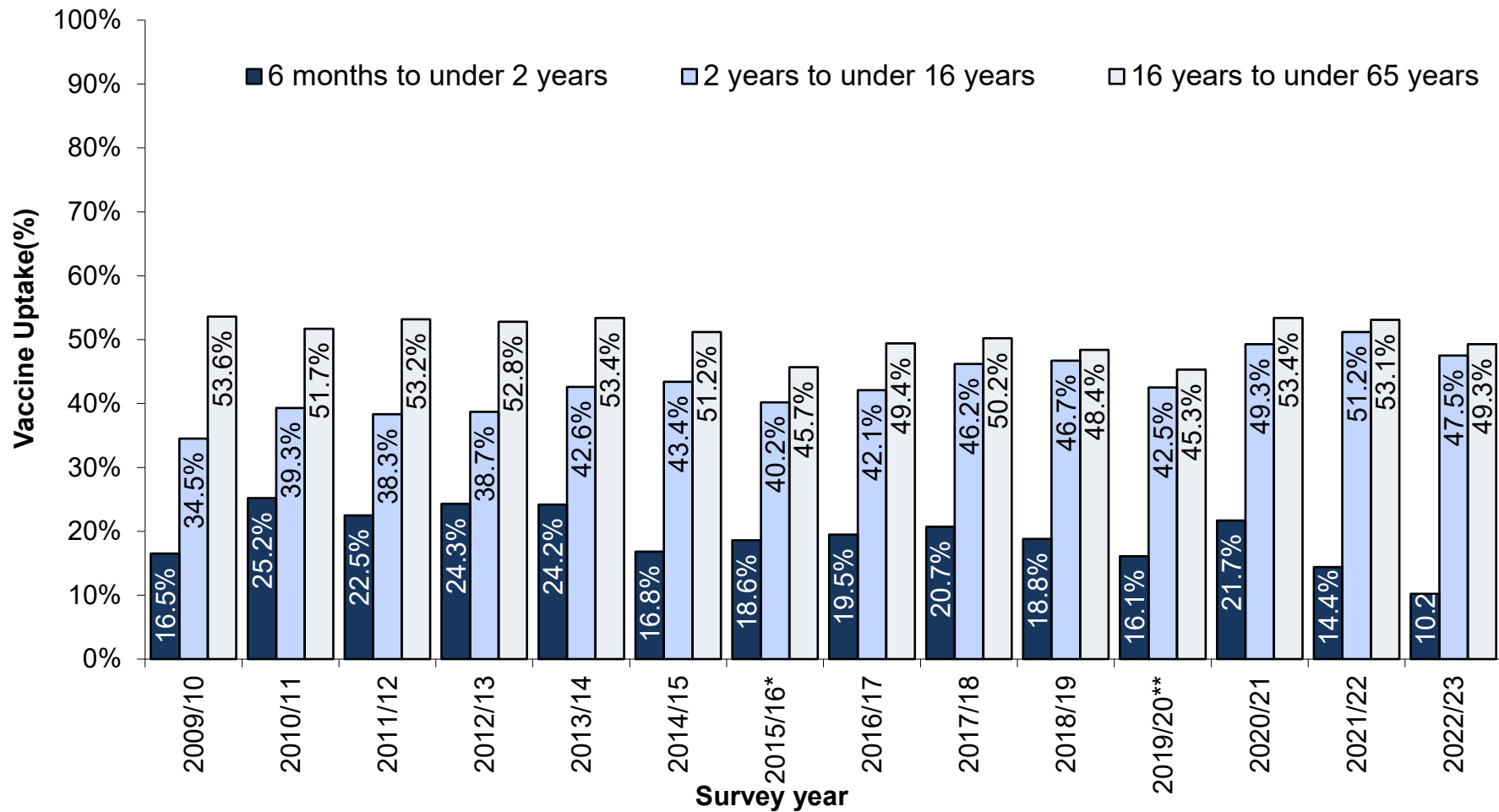
Seasonal influenza vaccine uptake in GP patients winter season 2022 to 2023

Target groups for vaccination	2022 to 2023 Number of patients registered	2022 to 2023 Number of patients vaccinated	2022 to 2023 Percentage vaccine uptake	2021 to 2022 Number of patients registered	2021 to 2022 Number of patients vaccinated	2021 to 2022 Percentage vaccine uptake
16 to under 65 years in a clinical risk group	7,710,931	3,800,653	<b>49.3</b>	7,518,932	3,996,296	53.1
16 to under 65 years in a clinical risk group extrapolated	7,945,081	3,916,064	<b>49.3</b>	7,740,181	4,113,890	53.1

Vaccine uptake remains lowest in those aged 6 months to under 2 years in a clinical risk group (10.2 % down from 14.4% in 2021 to 2022), whereas uptake is highest in those aged 16 years to under 65 years in a clinical risk group (49.3 % compared with 53.1% in 2021 to 2022) ([Table 3](#) and [Figure 3](#)). For those aged 6 months to under 2 years, vaccine uptake is the lowest on record since the 2009 to 2010 season.



**Figure 3. Vaccine uptake in the under 65 years at-risk by age group comparing previous survey years**



\* From the 2015 to 2016 season, patients with morbid obesity with no other clinical risk groups was included in the denominator.

\*\*There were supply issues for the live attenuated influenza vaccine (LAIV) vaccine in the 2019 to 2020 season which affected those aged 2 years to under 16 years.

## Individual risk groups

Vaccine uptake in the individual risk groups varies for patients in a clinical risk group aged under 65 years old and for all groups was below last season (2021 to 2022) ([Table 5](#)). Amongst the general population aged 6 months to under 65 years, the proportion in each of the risk groups has been relatively stable over the last 2 years ([Table 4](#)). It is important to note that there were changes to the individual risk group denominators that affected patients with morbid obesity ([Table 4](#)).

Vaccine uptake varies across individual risk groups and by age ([Table 5](#)). The greatest variation by age was seen in patients with chronic kidney disease ranging from 9.3% in those aged 6 months to under 2 years, to 58.5 % in those aged 16 to under 65 years old ([Table 5](#)). Similar differences were seen between these age groups for patients with immunosuppression (ranging from 7.6 % in those aged 6 months to under 2 years to 56.6 % in those aged 16 to under 65 years old) and patients with diabetes (ranging from 13.9 % in those aged 6 months to under 2 years to 60.3 % in those aged 16 to under 65 years old). The least variation by age was seen in patients with any learning disability (including severe), ranging from 21.3 % in those aged 6 months to under 2 years and 35.1 % in those aged 16 to under 65 years old.

This season the highest vaccine uptake by individual risk group was in patients with severe learning disabilities at 61.6 %. This group also had the highest uptake in the previous season (65.4% in the 2021 to 2022 season). The lowest uptake this season was in patients with any learning disability (including severe) at 36.0% compared with 39.6% in the same group last season ([Table 5](#) and [Figure 4](#)). Following the same pattern as last season, the second and third lowest uptake was seen in patients with morbid obesity (43.8% this season compared with 47.4% in 2021 to 2022 season) and in patients with chronic liver disease (44.6% this season compared with 48.2% in 2021 to 2022 season). Another group with over half of patients not vaccinated this season was in those with chronic heart disease (49.3% compared with 53.0% in 2021 to 2022 season) ([Table 5](#) and [Figure 4](#)).

**Table 4. Percentage of each risk group in the at-risk and total population in the GP record compared with last season (2021 to 2022) for all those aged 6 months to under 65 years**

<b>Risk Group</b>	<b>Prevalence per 100 in total 6 months to 65 years population 2022 to 2023</b>	<b>Prevalence per 100 in total 6 months to 65 years population 2021 to 2022</b>
Patients with diabetes	3.5	3.4
Patients with chronic kidney disease	0.7	0.7
Patients with immunosuppression	1.4	1.3
Patients with chronic neurological disease (including stroke or TIA, cerebral palsy, or MS)	1.8	1.8
Patients with a severe learning disability (subset of chronic neurological disease)	0.1	0.1
Patients with any learning disability (including severe)	1.8	1.6
Patients with chronic respiratory disease	6.2	6.1
Patients with chronic heart disease	3.8	3.7
Patients with chronic liver disease	1.6	1.4
Patients with asplenia or dysfunction of the spleen	0.5	0.4
Patients with morbid obesity (BMI more than 40) (aged 16 to under 65 years only)	2.3	3.2

**Table 5. Vaccine uptake by individual clinical risk groups and age band for GP registered patients aged 6 months to under 65 years old during the last 2 seasons (2021 to 2022 and 2022 to 2023).**

The colours compare vaccine uptake by age band to last season: red = decrease; white = comparator data not available.

Risk group*	2022 to 2023					2021 to 2022				
	6 months to under 2 years	2 years to under 5 years	5 years to under 16 years	16 years to under 65	Total under 65 years	6 months to under 2 years	2 years to under 5 years	5 years to under 16 years	16 years to under 65	Total under 65 years
Patients with Diabetes	13.9	44.9	47.8	60.3	60.1	17.3	53.3	53.2	64.2	64.1
Patients with Chronic Kidney Disease	9.3	40.5	40.1	58.5	58.1	11.4	48.3	44.4	62.4	62.0
Patients with Immunosuppression*	7.6	44.3	43.6	56.6	56.1	20.3	49.6	49.0	60.3	59.9
Patients with Chronic Neurological Disease (including Stroke or TIA, Cerebral Palsy or MS) *	12.6	43.5	44.9	51.7	50.9	14.9	48.1	47.9	54.9	54.1
Patients with a Severe Learning Disability (Subset of Chronic Neurological Disease)	25.0	45.1	42.1	63.6	61.6	33.3	51.8	44.9	67.5	65.4
Patients with any Learning Disability (including severe)	21.3	37.8	37.5	35.1	36.0	29.3	40.9	40.4	39.2	39.6

Seasonal influenza vaccine uptake in GP patients winter season 2022 to 2023

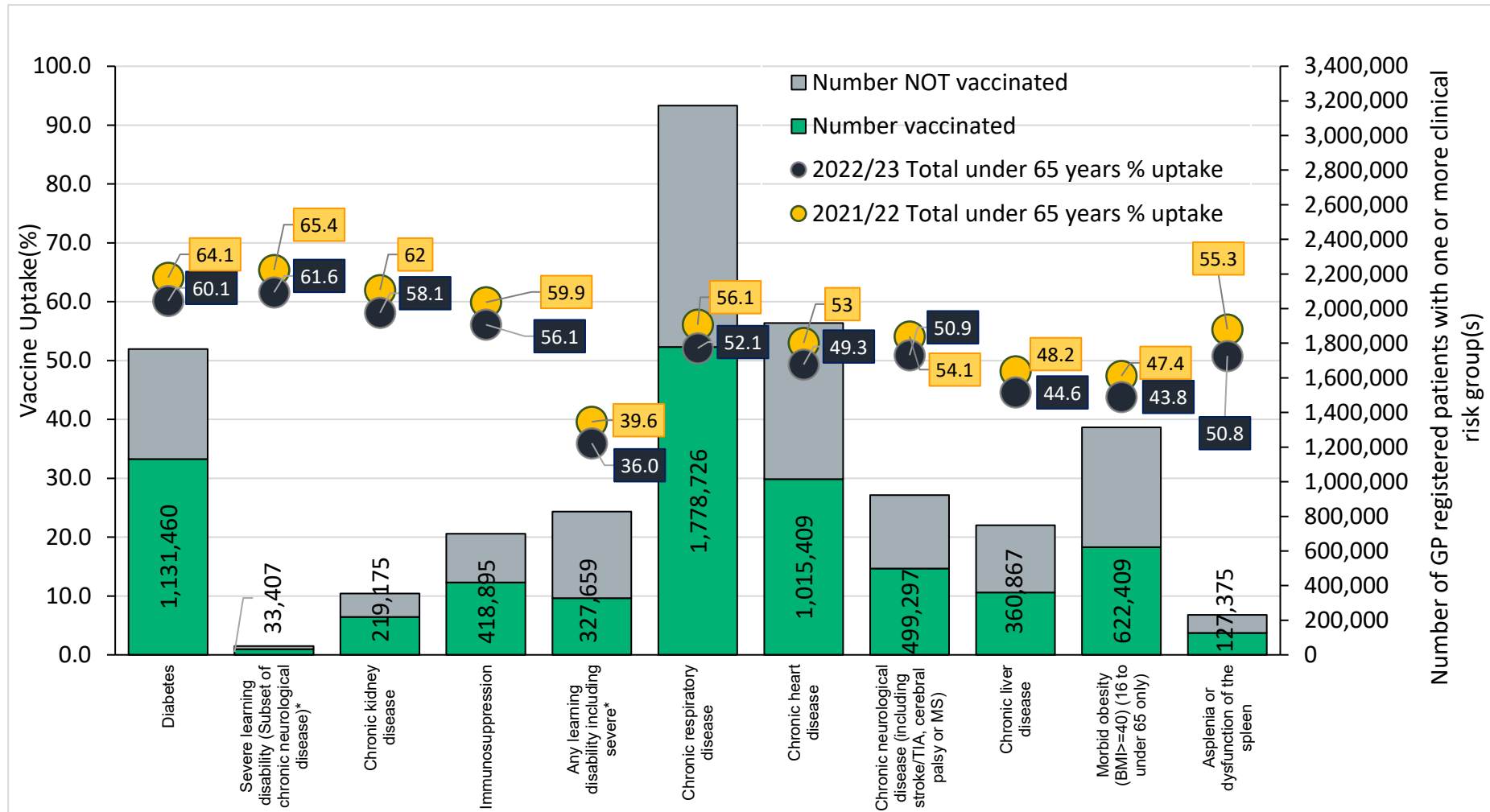
Risk group*	2022 to 2023					2021 to 2022				
	6 months to under 2 years	2 years to under 5 years	5 years to under 16 years	16 years to under 65	Total under 65 years	6 months to under 2 years	2 years to under 5 years	5 years to under 16 years	16 years to under 65	Total under 65 years
Patients with Chronic Respiratory Disease	15.5	52.9	49.9	52.4	52.1	18.2	55.6	53.1	56.4	56.1
Patients with Chronic Heart Disease*	10.2	43.9	46.2	49.8	49.3	14.5	50.4	49.3	53.3	53.0
Patients with Chronic Liver Disease*	10.8	45.0	38.1	44.6	44.6	16.9	49.9	42.0	48.3	48.2
Patients with Asplenia or dysfunction of the spleen*	15.1	51.5	49.1	51.0	50.8	21.9	56.6	53.6	55.6	55.3
Patients with morbid obesity (BMI>=40) *	**	42.9	39.0	43.8	43.8	**	47.0	42.4	47.4	47.4

\* There were adjustments to classification in clinical coding of these groups in the SNOMED CT transition and caution should be applied in historical comparisons.

\*\* Indicates data was suppressed due to small numbers.

The prevalence of individual at risk groups can vary from year to year depending on current definitions of persons at-risk and the quality of the data capture, see [SNOMED CT transition](#) for further context. See [Table 4](#) for the changes to the prevalence of each risk group in the at-risk population aged 6 months to under 65 years old.

**Figure 4. Vaccine uptake in 2022 to 2023 and 2021 to 2022 seasons; and extrapolated number of registered patients who received an influenza vaccine by individual clinical risk group for all those aged 6 months to under 65 years for 2022 to 2023 (data up to end of February 2023)**



## Pregnant women<sup>19</sup>

This group was added to the national programme in 2010 to 2011 and the highest uptake on record was during the 2017 to 2018 season (47.1%). Vaccine uptake in all pregnant women (healthy and in at-risk groups combined) was 35.0% in the 2022 to 2023 season, decreasing 2.9 percentage points from 37.9% in 2021 to 2022 ([Table 6](#)). This is the lowest end of season uptake on record since 2011 to 2012 (27.3%). The extrapolated estimate of the number of pregnant women registered at a GP practice who would have been vaccinated by end of February 2023 was 225,340 which is 26, 487 less individuals than the previous season.

**Table 6. Observed and extrapolated estimate number of pregnant women registered and who received an influenza vaccine in 2022 to 2023 compared with 2021 to 2022**

Target groups for vaccination	2022 to 2023 Number of patients registered	2022 to 2023 Number of patients vaccinated	2022 to 2023 Percentage vaccine uptake	2021 to 2022 Number of patients registered	2021 to 2022 Number of patients vaccinated	2021 to 2022 Percentage vaccine uptake
All pregnant women (includes both 'healthy' and at-risk)	625,383	218,699	35.0	645,285	244,629	37.9
All pregnant women extrapolated (includes both 'healthy' and at-risk)	644,373	225,340	35.0	664,273	251,827	37.9
Pregnant women and <b>in</b> a clinical risk group	75,691	36,188	47.8	77,992	40,403	51.8
Pregnant women and <b>in</b> a clinical risk group extrapolated	77,989	37,287	47.8	80,287	41,592	51.8
Pregnant women <b>not in</b> a clinical risk group	549,692	182,511	33.2	567,293	204,226	36.0

<sup>19</sup> Data on the uptake of influenza vaccine by pregnant women need to be interpreted with caution, see [Data Limitations: pregnant women section of the report](#).

Seasonal influenza vaccine uptake in GP patients winter season 2022 to 2023

Target groups for vaccination	2022 to 2023 Number of patients registered	2022 to 2023 Number of patients vaccinated	2022 to 2023 Percentage vaccine uptake	2021 to 2022 Number of patients registered	2021 to 2022 Number of patients vaccinated	2021 to 2022 Percentage vaccine uptake
Pregnant women <b>not in a clinical risk group</b> extrapolated	566,384	188,053	33.2	583,986	210,235	36.0

## Pre-school aged children<sup>20</sup>

Vaccine uptake in those aged 2 and 3 years old was 43.7%<sup>20</sup> in 2022 to 2023, compared with 50.1% in the previous season ([Table 7](#)), which is a decrease of 6.4 percentage points. The extrapolated estimate of the number of those aged 2 and 3 years old registered at a GP practice who would have been vaccinated by end of February 2023 was 554,389 which is 93,701 less individuals than the previous season. For a second consecutive season vaccine uptake in those aged 2 and 3 years old decreased (see separate [report](#) for more historical data in this cohort).

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<sup>20</sup> Vaccine uptake for individual year groups can be found in the [accompanying tables](#).



**Table 7. Observed and extrapolated number of GP registered patients aged 2 and 3 years old who received an influenza vaccine in 2022 to 2023 compared with 2021 to 2022**

Target groups for vaccination	2022 to 2023 Number of patients registered	2022 to 2023 Number of patients vaccinated	2022 to 2023 Percentage vaccine uptake	2021 to 2022 Number of patients registered	2021 to 2022 Number of patients vaccinated	2021 to 2022 Percentage vaccine uptake
<b>All 2 and 3 year olds (includes both 'healthy' and at risk)</b>	<b>1,247,032</b>	<b>545,525</b>	43.7	<b>1,256,015</b>	<b>629,157</b>	50.1
All 2 and 3 year olds (includes both 'healthy' and at risk) extrapolated	1,267,295	554,389	43.7	1,293,812	648,090	50.1
All 2 and 3 and <b>in</b> a clinical risk group	39,968	19,325	48.4	36,445	20,533	56.3
All 2 and 3 and <b>in</b> a clinical risk group extrapolated	40,617	19,639	48.4	37,542	21,151	56.3
All 2 and 3 and <b>not in</b> a clinical risk group	1,207,064	526,200	43.6	1,219,570	608,624	49.9
All 2 and 3 and <b>not in</b> a clinical risk group extrapolated	1,226,677	534,750	43.6	1,256,270	626,939	49.9

Vaccine uptake in those aged 2 years old was 42.3 % in 2022 to 2023, compared with 48.7% in the previous season ([Table 8](#)), which is a decrease of 6.4 percentage points. The extrapolated estimate of the number of those aged 2 years old registered at a GP practice who would have been vaccinated by end of February 2023 was 262,392 which is 47,257 less individuals than the previous season. Vaccine uptake in this cohort is the lowest on record since the 2016 to 2017 season (38.9%) and comparable to that seen in 2017 to 2018 season (42.8%).

**Table 8. Observed and extrapolated number of GP registered patients aged 2 years old who received an influenza vaccine in 2022 to 2023 compared with 2021 to 2022**

Target groups for vaccination	2022 to 2023 Number of patients registered	2022 to 2023 Number of patients vaccinated	2022 to 2023 Percentage vaccine uptake	2021 to 2022 Number of patients registered	2021 to 2022 Number of patients vaccinated	2021 to 2022 Percentage vaccine uptake
<b>All 2 year olds (includes both 'healthy' and at risk)</b>	<b>610,163</b>	<b>258,197</b>	<b>42.3</b>	617,023	300,603	48.7
All 2 year olds (includes both 'healthy' and at risk) extrapolated	620,077	262,392	<b>42.3</b>	635,591	309,649	48.7
Aged 2 and <b>in</b> a clinical risk group	16,782	7,781	<b>46.4</b>	15,721	8,537	54.3
Aged 2 and <b>in</b> a clinical risk group extrapolated	17,055	7,907	<b>46.4</b>	16,194	8,794	54.3
Aged 2 and <b>not in</b> a clinical risk group	593,381	250,416	<b>42.2</b>	601,302	292,066	48.6
Aged 2 and <b>not in</b> a clinical risk group extrapolated	603,023	254,485	<b>42.2</b>	611,072	296,812	48.6

Vaccine uptake in those aged 3 years old was 45.1% in 2022 to 2023, compared with 51.4 % in the previous season ([Table 9](#)), which is a decrease of 6.3 percentage points. The extrapolated estimate of the number of those aged 3 years old registered at a GP practice who would have been vaccinated by end of February 2023 was 291,997 which is 46,444 less individuals than the previous season. Although vaccine uptake in this cohort has continued to decrease for a second consecutive season, uptake remains above levels seen before the COVID-19 pandemic (2019 to 2020 season saw an uptake of 44.2%).

**Table 9. Observed and extrapolated number of GP registered patients aged 3 years old who received an influenza vaccine in 2022 to 2023 compared with 2021 to 2022**

Target groups for vaccination	2022 to 2023 Number of patients registered	2022 to 2023 Number of patients vaccinated	2022 to 2023 Percentage vaccine uptake	2021 to 2022 Number of patients registered	2021 to 2022 Number of patients vaccinated	2021 to 2022 Percentage vaccine uptake
<b>All 3 year olds (includes both 'healthy' and at risk)</b>	<b>636,869</b>	<b>287,328</b>	45.1	638,992	328,554	51.4
All 3 year olds (includes both 'healthy' and at risk) extrapolated	647,217	291,997	45.1	658,221	338,441	51.4
Aged 3 and <b>in</b> a clinical risk group	23,186	11,544	49.8	20,724	11,996	57.9
Aged 3 and <b>in</b> a clinical risk group extrapolated	23,563	11,732	49.8	21,348	12,357	57.9
Aged 3 and <b>not in</b> a clinical risk group	613,683	275,784	44.9	618,268	316,558	51.2
Aged 3 and <b>not in</b> a clinical risk group extrapolated	623,655	280,265	44.9	628,314	321,702	51.2

## Patients aged 50 to under 65 years

As a temporary measure due to the COVID-19 pandemic, in the 2020 to 2021 season the influenza vaccination programme was extended to include all those aged 50 to under 65 years not in clinical risk groups from 1 December 2020. This part of the programme was phased to ensure the prioritisation of those in risk groups. During the 2021 to 2022 season, this group were eligible alongside other cohorts from the 1 September 2021. For the 2022 to 2023 season originally this group was not included in the programme<sup>21</sup> but this was amended in July 2022<sup>22</sup> and those aged 50 to under 65 years not in clinical risk groups became eligible from 15 October 2022. Due to the difference in eligibility start dates vaccine uptake is not comparable across seasons.

This season 40.6% in those aged 50 to under 65 years who were not in a clinical risk group were vaccinated, with an estimated 3,176,204 vaccinations given. For those aged 50 to 64 years in a clinical risk group uptake was 62.4%, which was higher than both the 50 to 64 year olds not in clinical risk groups and also higher the average across all clinical risk groups (49.1%) ([Table 10](#)).

As those aged 50 to 64 years old in clinical risks groups were eligible from 1 September each season data is comparable across seasons. Vaccine uptake for this group was 62.4% in 2022 to 2023, compared with 66.1% in the previous season, ([Table 10](#)), which is a decrease 3.7 percentage points. The extrapolated estimate of the number of those aged 50 to 64 years old in clinical risks groups registered at a GP practice who would have been vaccinated by end of February 2023 was 2,536,994 which is 80,584 less individuals than the previous season.

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<sup>21</sup> [National flu immunisation programme plan 2022 to 2023 \(annual flu letter\)](#) (22 April 2022)

<sup>22</sup> [Statement of amendments to annual flu letter 2022 to 2023](#) (21 July 2022)

**Table 10. Observed and extrapolated figures for patients aged 50 to under 65 years old who received influenza vaccine in 2022 to 2023 compared with 2021 to 2022**

Target groups for vaccination	Number of patients registered	Number of patients vaccinated	2022 to 2023 Percentage vaccine uptake	2021 to 2022 Percentage vaccine uptake
All patients aged 50 to under 65 years (includes both 'healthy' and at-risk)	11,535,965	5,544,824	48.1	52.5
All patients aged 50 to under 65 years extrapolated (includes both 'healthy' and at- risk)	11,886,266	5,713,198	48.1	52.5
Aged 50 to under 65 years and <b>in</b> a clinical risk group	3,945,634	2,462,226	62.4	66.1
Aged 50 to under 65 years and <b>in</b> a clinical risk group extrapolated	4,065,447	2,536,994	62.4	66.1
Aged 50 to under 65 years <b>not in</b> a clinical risk group	7,590,331	3,082,598	40.6	45.7
Aged 50 to under 65 years <b>not in</b> a clinical risk group extrapolated	7,820,819	3,176,204	40.6	45.7

## All patients aged 6 months to under 65 years

Overall vaccine uptake is lower than last season at 23.9 % (compared with 26.6 % in 2021 to 2022 season). All age bands showed a decrease in uptake (see [Table 11](#)). The decrease in the 5 years to under 16 years age band likely reflects the continued changes of the school-aged influenza vaccination programme and notably for the 2022 to 2023 season a change in policy between April<sup>23</sup> and July<sup>24</sup> 2022 to the secondary school-aged cohorts. The 50 to 64 year olds not in clinical risk groups also saw a policy change during the same time period and eligibility of this cohort was from 15 October 2022 compared with 1 September 2021. The extrapolated number of all registered patients aged 6 months to under 65 years (including those in a clinical at-risk group) who received an influenza vaccine by the end of February 2023 was 12.2 million (12,200,734).

**Table 11. Observed and extrapolated figures for ‘All patients’ aged 6 months to under 65 years old who received influenza vaccine by age band in 2022 to 2023 compared with 2021 to 2022**

All GP registered patient data (Includes those in a risk group and those not in a clinical risk group)	Number of patients registered	Number of patients vaccinated	2022 to 2023 Percentage vaccine uptake	2021 to 2022 Percentage vaccine uptake
Total observed 6 months under 65 years	49,600,961	11,841,165	23.9	26.6
Total extrapolated 6 months under 65 years	51,107,143	12,200,734	23.9	26.6
6 months to under 2 years	872,345	2,682	0.3	0.4
6 months to under 2 years extrapolated	898,835	2,763	0.3	0.4
2 years to under 5 years	1,827,905	706,118	38.6	42.1
2 years to under 5 years extrapolated	1,883,411	727,560	38.6	42.1
5 years to under 16 years	7,755,486	3,081,946	39.7	42.5

<sup>23</sup> [National flu immunisation programme plan 2022 to 2023 \(annual flu letter\)](#) (22 April 2022)

<sup>24</sup> [Statement of amendments to annual flu letter 2022 to 2023](#) (21 July 2022)

All GP registered patient data (Includes those in a risk group and those not in a clinical risk group)	Number of patients registered	Number of patients vaccinated	2022 to 2023 Percentage vaccine uptake	2021 to 2022 Percentage vaccine uptake
5 years to under 16 years extrapolated	7,990,989	3,175,532	39.7	42.5
16 years to under 65 years	39,145,225	8,050,419	20.6	23.2
16 years to under 65 years extrapolated	40,333,909	8,294,878	20.6	23.2

## Refused or declined<sup>25</sup>

Refused or declined vaccinations have increased in all target groups for vaccination. The largest increase was in those aged 16 years to under 65 years and at-risk (10.6% compared with 7.1% in 2021 to 2022), see [Table 12](#) and [Figure 5](#).

**Table 12. Number of registered patients who refused or declined the influenza vaccine in 2022 to 2023 compared with 2021 to 2022**

Target groups for vaccination	Number of vaccinations refused or declined	2022 to 2023% of population refused or declined	2021 to 2022 % of population refused or declined
Aged 65 years and over	699,903	6.5	4.9
Total aged 6 months under 65 years at-risk	844,495	10.1	6.8
6 months to under 2 years at-risk	594	3.7	3.0
2 years to under 5 years at-risk	4,429	7.4	5.4

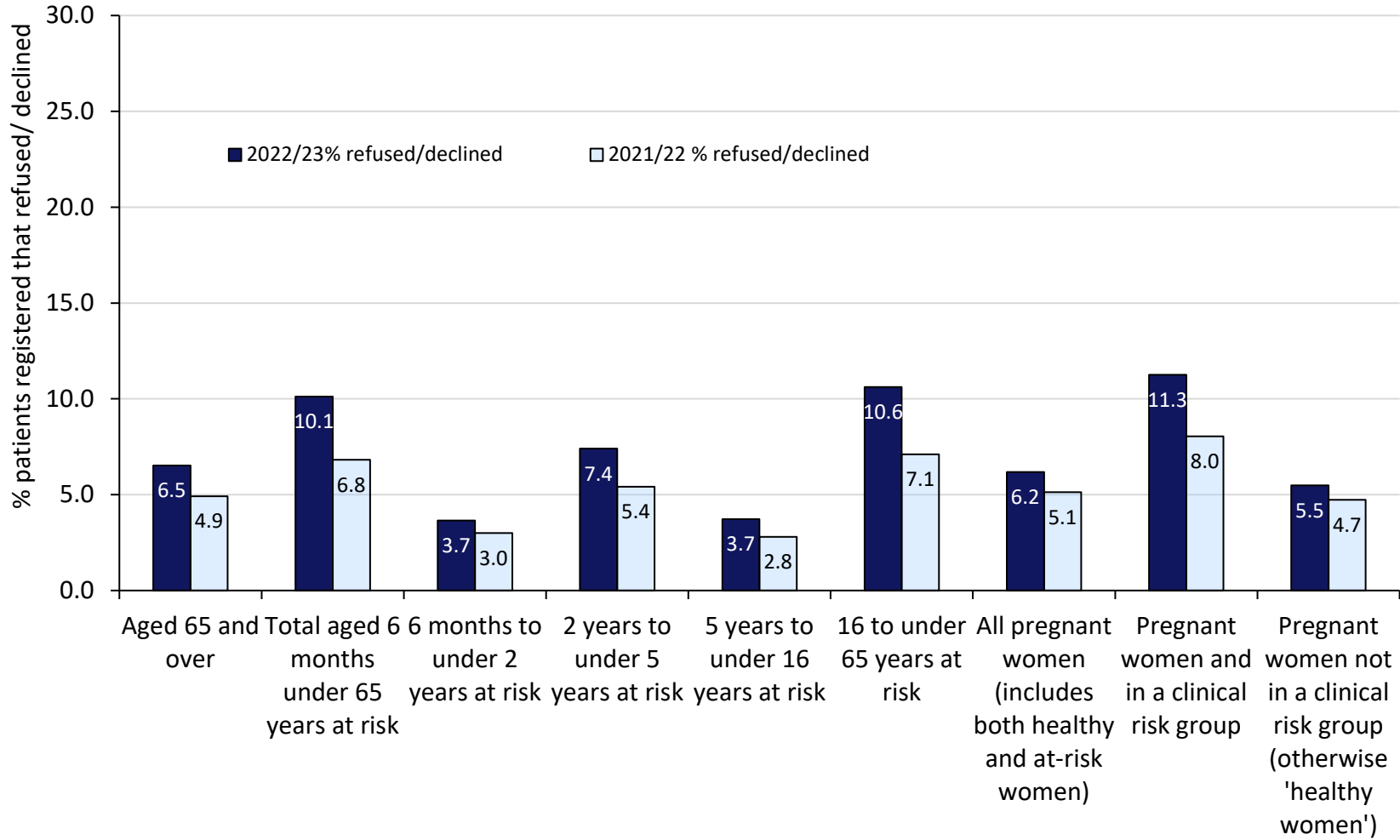
<sup>25</sup> Caution should be exercised when looking at these figures as different GP System suppliers use different ways of recording this and some may be collected via non-coded mechanisms.

Seasonal influenza vaccine uptake in GP patients winter season 2022 to 2023

<b>Target groups for vaccination</b>	<b>Number of vaccinations refused or declined</b>	<b>2022 to 2023% of population refused or declined</b>	<b>2021 to 2022 % of population refused or declined</b>
5 years to under 16 years at-risk	21,013	3.7	2.8
16 years to under 65 years at-risk	818,459	10.6	7.1
All pregnant women (includes both healthy and at-risk women)	38,658	6.2	5.1
Pregnant women and <b>in</b> a clinical risk group	8,521	11.3	8.0
Pregnant women <b>not in</b> a clinical risk group (otherwise 'healthy women')	30,137	5.5	4.7



**Figure 5. Percentage of refused or declined vaccination by target group for 2022 to 2023 compared with 2021 to 2022**



## Other healthcare settings<sup>26</sup>

Most vaccinations are still delivered within GP practices, though during this season there continued to be a gradual increase in vaccinations delivered in pharmacies and other healthcare settings (for example, antenatal clinics, residential homes and private or occupational health), particularly in the 65 years or older cohort and the pregnant women cohort ([Table 13](#) and [Figure 6](#) and in [additional tables](#)). Those aged 50 to under 65 years and not at-risk had the highest percentage of vaccinations recorded to be given outside of the GP practice, with nearly 40% of all vaccines in this cohort given in pharmacies. Pregnant women saw a 2.1% increase in vaccinations given outside GPs compared with the 2021 to 2022 season, with an 1.7% increase in vaccinations given in other healthcare settings. Those aged 65 years and over also saw an increase, with 3.0 % higher proportion of recorded vaccinations given outside GP practices than last season.

Data from the 2019 to 2020 to 2022 to 2023 seasons are presented in [additional tables](#). Pre-COVID-19 pandemic (2019 to 2020 season) 89.9% of 65 years and over, 80.8% of under 65 years at risk, and 90% of pregnant women were vaccinated through GP practice. Since 2020 to 2021 season there has been a decline in vaccinations given in GP practices (and corresponding increase in vaccinations delivered in pharmacies and other healthcare settings) for all age groups apart from 2 and 3 year olds. Last season (2021 to 2022) saw the greatest season on season decline in vaccinations given in GP practices for those aged 65 years and over and under 65 years at risk.

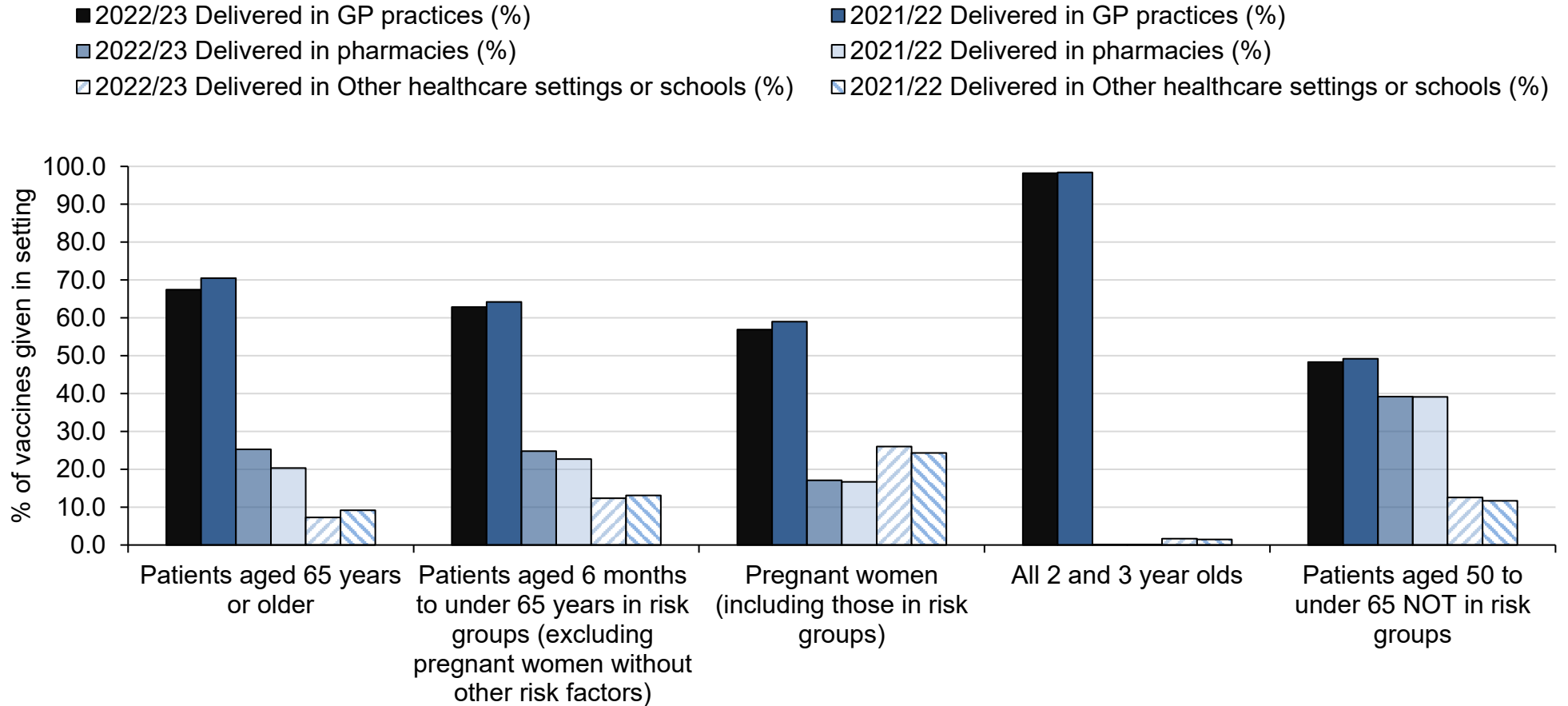
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<sup>26</sup> Recording of vaccinations given in another healthcare setting outside of the GP practice does not come under an existing information standard, therefore location recording can be varied amongst GP practices and GP System suppliers (see data limitations section of this report).

**Table 13. Percentage vaccine uptake by GP practices, pharmacies, and other healthcare settings in 2022 to 2023 compared with 2021 to 2022**

Patient Group	2022 to 2023 GP practices	2022 to 2023 Pharmacies	2022 to 2023 Other healthcare settings and schools	2021 to 2022 GP practices	2021 to 2022 Pharmacies	2021 to 2022 Other healthcare settings and schools
65 years and over	67.5	25.2	7.3	70.5	20.3	9.2
Six months to under 65 years at-risk	62.8	24.8	12.4	64.2	22.7	13.1
All pregnant women	56.9	17.1	26.0	59	16.7	24.3
All 2 and 3 year olds	98.2	0.1	1.7	98.4	0.1	1.5
50 years to under 65 years <b>not</b> in a clinical risk group	48.3	39.2	12.5	49.2	39.1	11.7

**Figure 6. Percentage of vaccinations given by location for those aged 65 years and over; patients aged 6 months to under 65 years and in one or more clinical risk group, pregnant women, all 2 and 3 year olds and patients aged 50 to under 65 years not in a clinical risk group in 2022 to 2023 compared with 2021 to 2022**



## Carers

Vaccine uptake for carers aged 16 to under 65 years old and not in a clinical risk group was 42.4% compared with 51.2 % in the 2021 to 2022 season, a decrease of 8.8 percentage points ([Table 14](#)).

**Table 14. Observed and extrapolated figures for Carers who received an influenza vaccine during the 2022 to 2023 season in 2022 to 2023 compared with 2021 to 2022**

Target groups for vaccination	Number of patients registered	Number of patients vaccinated	2022 to 2023 Percentage vaccine uptake	2021 to 2022 Percentage vaccine uptake
16 years to under 65 years not at-risk who fulfil the carer definition	719,310	305,259	42.4	51.2
16 years to under 65 years not at-risk who fulfil the carer definition extrapolated	741,153	314,528	42.4	51.2

## Social Care workers

The collection of vaccination data for GP registered patients who are social care workers was introduced to the GP survey in the 2019 to 2020 season as an experimental cohort. In 2022 to 2023 data was available for 59.8% (3,854 out of 6,447) of all GP practices in England, compared with 57.7% (3,777 out of 6,542) of all GP practices in England in the 2021 to 2022 season. The response rate ranged from 31.9% in London to 86.1% in the South West. Therefore, caution should be used when interpreting the data.

There were 31,667 social care workers who were recorded on data submitted by GP practices, decreasing from 37,919 last season. This is likely to account for around 2.0% of social care workers (1.52 million in adult social care). Of social care workers included in this data collection, 47.6% were vaccinated, compared with 61.0% last season. At the regional level, vaccine uptake ranged from 35.8% (London) to 52.7% (East of England).

Despite SNOMED CT codes for social care occupations being added in 2018, this is still poorly recorded in the GP record and is not likely to be kept up to date on such a fluid workforce with

very little available occupational health support. Data flows from social care employers and pharmacies will need to improve to ensure that vaccination status is reflected accurately in the GP record similar to other vaccinations given in other settings.

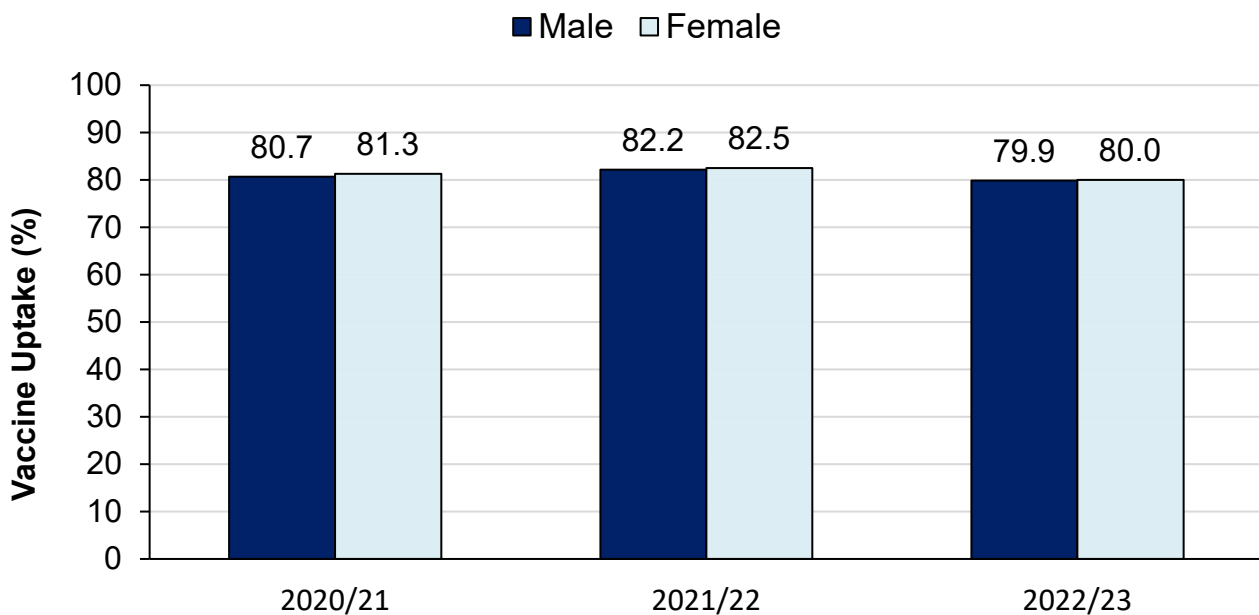
## Sex

Those with sex not specified or unknown were removed due to small numbers.

### 65 years and over by sex

For those aged 65 years and over, there was little or no difference in uptake between sex for the last 3 seasons ([Figure 7](#)).

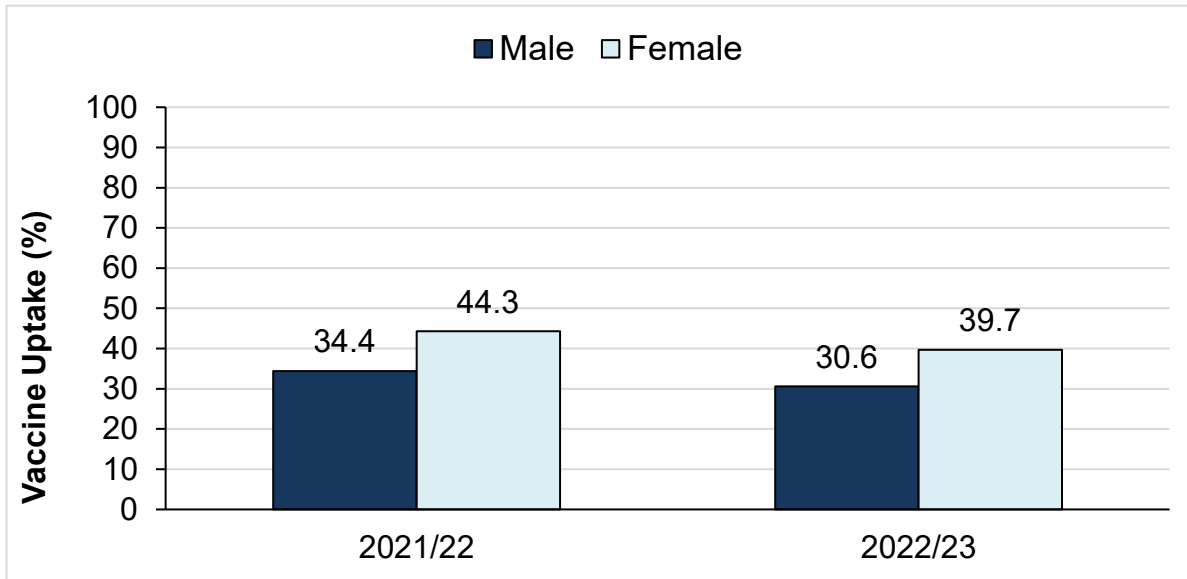
**Figure 7. Influenza vaccine uptake in those aged 65 years and over by sex for England from 2020 to 2021 season to 2022 to 2023 season**



### At-risk patients aged 16 to under 65 years by sex

For the current and previous season, data was collected for at-risk patients aged 16 years to under 65 years. The at-risk cohort includes pregnant women with other risk factors but excludes otherwise 'healthy' pregnant women. In the 2022 to 2023 season, vaccine uptake in at-risk patients aged 16 years to under 65 years was 9.1 percentage points higher in females than males in England (see [Figure 8](#)). This does not account for differences caused by the vaccination of pregnant women.

**Figure 8. Influenza vaccine uptake in at risk patients aged 16 to under 65 years old by sex for England from 2022 to 2023 to 2021 to 2022**



## Ethnicity

Ethnicity data was collected for the following cohorts; adults aged 65 years and over, those aged 16 to under 65 years in a clinical risk group, and pregnant women (see [Table 17](#)). The data presented in Table 15 is near final end of season data, however end of season trends will not differ from what is presented. Ethnicity is coded using the 16+1 ethnic data categories defined in the 2001 census that forms the national mandatory standard for the collection and analysis of ethnicity.

For those aged 65 years and over, 81.7% were recorded with a 2001 code, 4.9% were recorded with no code and 13.0% were recorded with a non-2001 census code. Individual refused was recorded for 0.4%, and uptake for those who refused to give their ethnicity data was 68.9%. For those aged 16 to under 65 years in a clinical risk group 83.7% were recorded with a 2001 code, 3.9% were recorded with no code and 12.0% with a non-2001 census code. Individual refused were recorded for 0.4%, and uptake for those who refused to give their ethnicity data was 38.1%. For pregnant women, 85.3% were recorded with a 2001 code, 3.4% were recorded with no code and 10.8% with a non-2001 census code. Individual refused were recorded for 0.4%, and uptake for those who refused to give their ethnicity data was 29.4%.

At a national level the Black or Black British – Caribbean group had the lowest uptake in all three cohorts, but at a regional level (presented in the Ethnicity data by region presented with heat maps tab in the [additional tables](#)) the group with the lowest uptake varied by region. In the [additional tables](#) (in the Ethnicity data by region presented with heat maps tab) regional ethnicity uptake data is presented with heat maps in descending order with highest uptake in green and

lowest uptake in red. At a national level the highest uptake in those aged 16 to under 65 years in a clinical risk group, and 65 years and over, was in the White – British group, for the pregnant women cohort the highest uptake was in the Other ethnic groups – Chinese group. For both pregnant women and those 65 years and over all regional data mirrored what was seen at the national level with regards to the groups with the highest uptake. However, for the clinical risk cohort, the White – British group had the highest uptake in all regions except London, where 3 groups (Asian or Asian British - Bangladeshi, Asian or Asian British – Indian, and Asian or Asian British - any other Asian background) had higher uptake than the White – British group, which was ranked fourth.

## 65 years and over

For those 65 years and over, when grouped by ethnicity at a national level, only one group was higher than the national average vaccine uptake of 81.7%, which was White – British. This group was just 1.9 percentage points higher than average. The 6 groups with the lowest uptake were seen in all of the Black and Mixed Black groups (Black or Black British – Caribbean, Black or Black British – African, Black or Black British – Any other Black background, Mixed – White and Black Caribbean, Mixed - White and Black African) and the Asian or Asian British - Pakistani group. All Black and Mixed Black groups had uptake below 58%, with the percentage point differences below the national average ranging from just 33.2 to 23.8. The Pakistani group was 26.9 percentage point lower than average.

## At-risk patients aged 16 to under 65 years

For those in clinical risk groups and aged 16 to under 65 years when grouped by ethnicity at a national level, 6 groups had vaccine uptake higher or equivalent to the national average of 49.3%: White - British, Asian or Asian British - Bangladeshi, White Irish, Asian or Asian British - Indian, Asian or Asian British - Any other Asian background, and Other ethnic groups – Chinese. The highest uptake was in the White – British group who were 5.1 percentage points above average. Mixed – White and Asian group was 4.6 percentage points below the national average, but all other groups were more than 10 percentage points below the national average. The 6 groups with the lowest uptakes were in Black groups (Black or Black British – Caribbean; Mixed – White and Black Caribbean and Black or Black British – Any other Black background), White – other, Asian or Asian British – Pakistani and Mixed White and Black African. The percentage point differences below the national average ranged from 21.3 to 12.7 for these groups.

## Pregnant women

For pregnant women, when grouped by ethnicity at a national level, 6 groups had vaccine uptake higher or equivalent than the national average of 34.9%. The highest uptake (Other ethnic groups – Chinese) was 10.7 percentage points higher than average. The other groups reaching above average uptake were some White (British and Irish) and some Asian (Asian or



Asian British – Indian, Any other Asian background - Any other Asian background, and Mixed White and Asian) groups. The group with the lowest uptake (Black or Black British – Caribbean) was 21.4 percentage points lower than the national average. The 6 groups with the lowest uptake were Black groups (Caribbean, Mixed White and Black Caribbean, and Any other Black background), White – other, Asian or Asian British – Pakistani, and Other ethnic group.

**Table 15. Influenza vaccine uptake in those aged 65 years and over, 16 to under 65 years in a clinical risk group, and all pregnant women by ethnicity group**

Ethnicity Group	Aged 65 years and over			16 to under 65 years in a clinical risk group			Pregnant women		
	Number of patients registered	Number of patients vaccinated	Percentage vaccine uptake	Number of patients registered	Number of patients vaccinated	Percentage vaccine uptake	Number of patients registered	Number of patients vaccinated	Percentage vaccine uptake
White - British	7,372,296	6,163,589	83.6 (Highest)	4,534,195	2,467,943	54.4 (Highest)	305,716	121,605	39.8
White - Irish	89,707	69,753	77.8	40,599	20,299	50.0	3,011	1,164	38.7
White - Other	328,747	204,655	62.3	397,093	132,302	33.3	59,773	14,591	24.4
Mixed - White and Black Caribbean	14,426	8,110	56.2	35,727	10,735	30.0	4,209	821	19.5
Mixed - White and Black African	10,556	6,111	57.9	28,451	10,401	36.6	3,704	1,002	27.1
Mixed - White and Asian	9,815	6,978	71.1	22,560	10,075	44.7	2,761	964	34.9
Mixed - Any other mixed background	24,036	15,896	66.1	46,812	18,153	38.8	6,211	1,831	29.5
Asian or Asian British - Indian	197,764	142,807	72.2	238,651	118,765	49.8	29,024	11,410	39.3

Seasonal influenza vaccine uptake in GP patients winter season 2022 to 2023

Ethnicity Group	Aged 65 years and over			16 to under 65 years in a clinical risk group			Pregnant women		
	Number of patients registered	Number of patients vaccinated	Percentage vaccine uptake	Number of patients registered	Number of patients vaccinated	Percentage vaccine uptake	Number of patients registered	Number of patients vaccinated	Percentage vaccine uptake
Asian or Asian British - Pakistani	91,430	50,069	54.8	231,678	79,274	34.2	26,186	6,680	25.5
Asian or Asian British - Bangladeshi	25,304	17,125	67.7	92,124	47,865	52.0	11,475	3,968	34.6
Asian or Asian British - Any other Asian background	88,273	60,269	68.3	141,952	70,456	49.6	16,202	5,992	37.0
Black or Black British - Caribbean	72,600	35,243	48.5 (lowest)	81,709	22,860	28.0 (lowest)	4,345	587	13.5 (lowest)
Black or Black British - African	65,338	32,778	50.2	187,251	69,397	37.1	21,566	5,846	27.1
Black or Black British - Any other Black background	17,338	9,042	52.2	50,288	15,668	31.2	4,314	921	21.3
Other ethnic groups - Chinese	34,321	22,001	64.1	30,176	14,872	49.3	3,521	1,605	45.6 (Highest)

Seasonal influenza vaccine uptake in GP patients winter season 2022 to 2023

Ethnicity Group	Aged 65 years and over			16 to under 65 years in a clinical risk group			Pregnant women		
	Number of patients registered	Number of patients vaccinated	Percentage vaccine uptake	Number of patients registered	Number of patients vaccinated	Percentage vaccine uptake	Number of patients registered	Number of patients vaccinated	Percentage vaccine uptake
Other ethnic groups - Any other ethnic group	65,986	39,235	59.5	102,938	37,840	36.8	16,732	4,420	26.4
Ethnicity not stated	148,686	104,349	70.2	118,826	45,382	38.2	9,942	2,920	29.4
Ethnicity code not recorded (no code)	523,398	336,502	64.3	293,647	103,821	35.4	21,240	5,769	27.2
Ethnicity not given – patient refused	40,534	27,940	68.9	32,702	12,455	38.1	2,492	733	29.4
Ethnicity code is a non-2001 ethnicity code	1,379,923	1,110,419	80.5	915,179	446,559	48.8	67,216	23,713	35.3
<b>Total</b>	<b>10,600,478</b>	<b>8,462,871</b>	<b>79.8</b>	<b>7,622,558</b>	<b>3,755,122</b>	<b>49.3</b>	<b>619,640</b>	<b>216,542</b>	<b>34.9</b>

The highest (green) and lowest (red) uptake are indicated in each eligible group.

## Deprivation

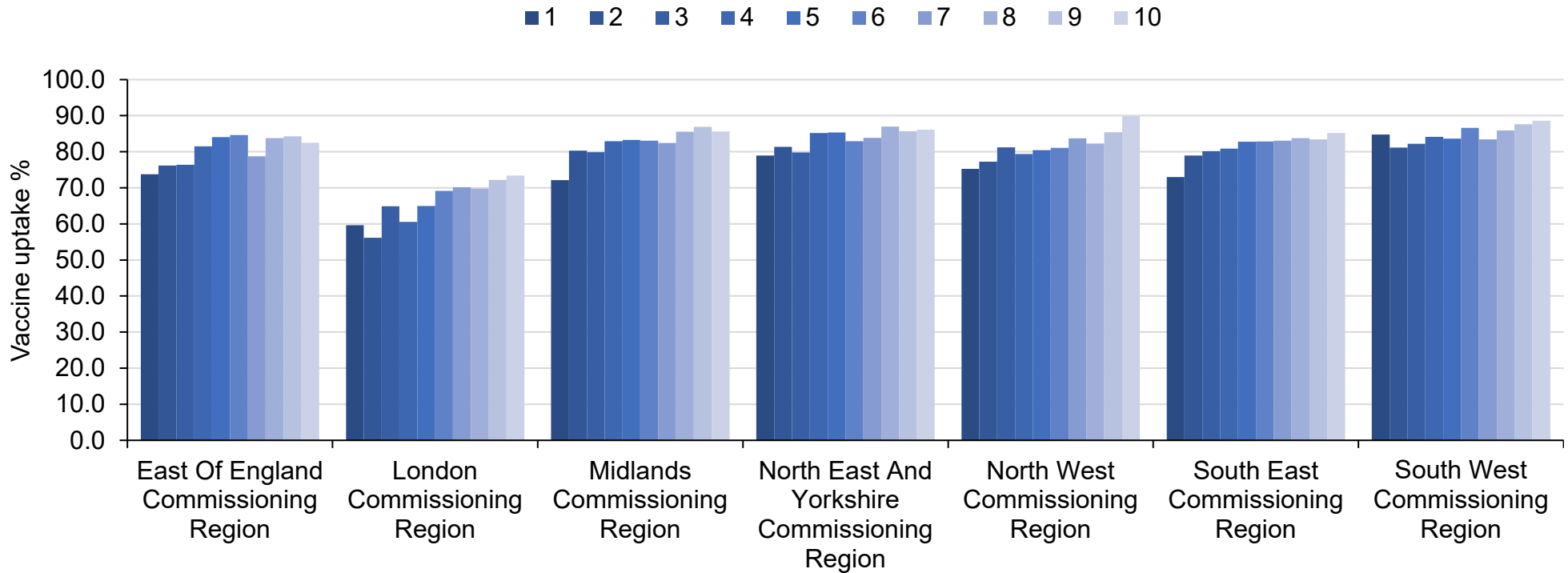
Vaccine uptake by deprivation is presented below using indices of multiple deprivation (IMD) deciles for the following cohorts; 65 years and over; 16 to under 65 years at-risk, and pregnant women. GP postcode is used as a proxy for IMD of the patients in the practice therefore caution is advised. Vaccinations in these cohorts all show the same trend where vaccine uptake is highest in the least deprived areas and the lowest uptake in the most deprived areas (Table 16). The largest difference in vaccine uptake by IMD is in pregnant women where this varies by 16.7% compared with 11.1% in those aged 16 to under 65 years at-risk; and 7.4% in those aged 65 years and over. Trends by IMD are similar across other national immunisation programmes and there is still work to be done to reduce vaccine inequality.

**Table 16. Influenza vaccination uptake in those aged 65 and over, all pregnant women and 16 to under 65 years in a clinical risk group and all pregnant women by index of multiple deprivation.**

IMD	Target group influenza vaccination uptake (%) 65 years and over	Target group influenza vaccination uptake (%) 16 to under 65 years at- risk	Target group influenza vaccination uptake (%) All pregnant women
1 (Most deprived)	76.4	45.3	28.8
2	78.3	47.1	28.5
3	78.4	48.6	33.7
4	80.7	50.3	36.0
5	82.1	53.3	40.7
6	82.7	52.8	40.3
7	82.1	53.0	38.7
8	82.0	54.5	42.7
9	83.7	56.3	42.8
10 (least deprived)	83.8	56.5	45.5
<b>Total England</b>	<b>79.9</b>	<b>49.3</b>	<b>35.0</b>

## 65 years and over

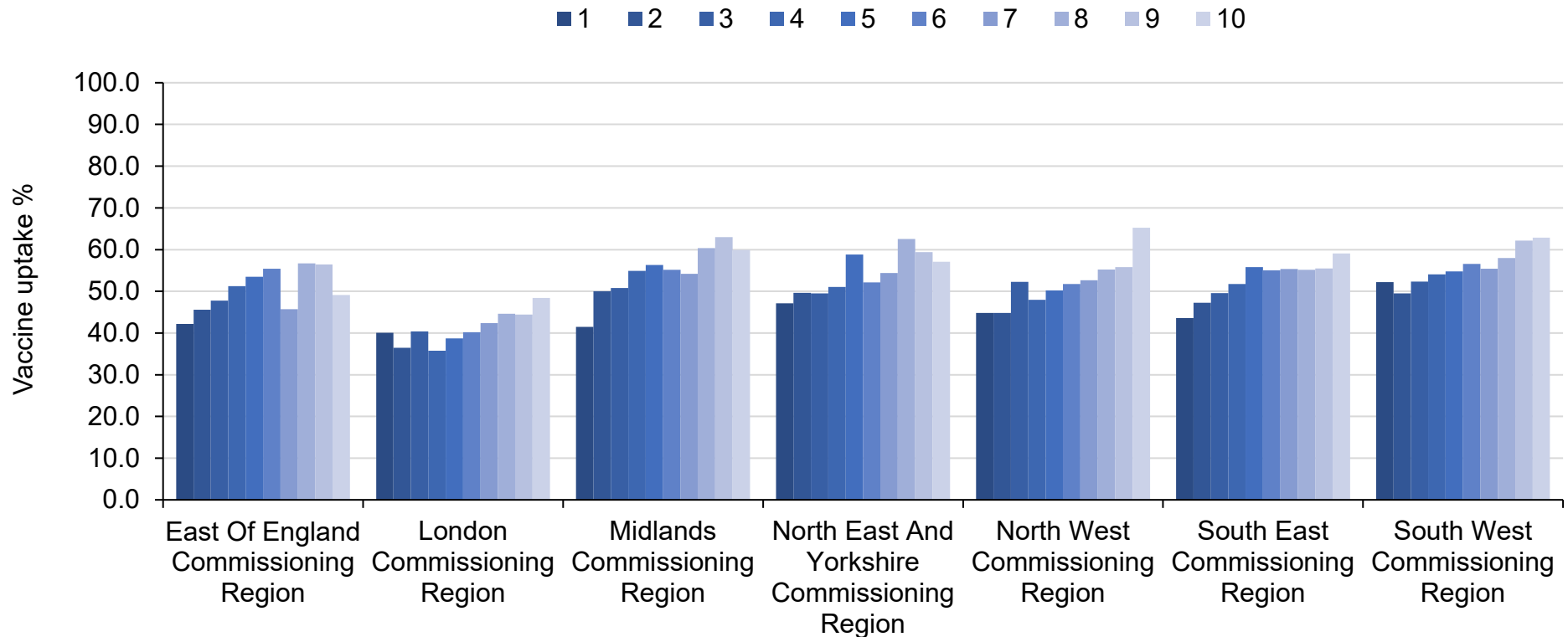
**Figure 10. Influenza vaccine uptake in those aged 65 years and over by index of multiple deprivation in each NHS commissioning region (1 to 10 is a scale of IMD with 1 being the most deprived and 10 being the least deprived).**



Vaccine uptake by IMD varies by region in those aged 65 years and over, the largest variation by IMD is seen in London where vaccine uptake is 13.8% lower in the most deprived group compared with the least deprived group. The regions with the least variation by IMD was in the South West region with around 3.9% variation between the least and most deprived groups.

## At-risk patients aged 16 to under 65 years

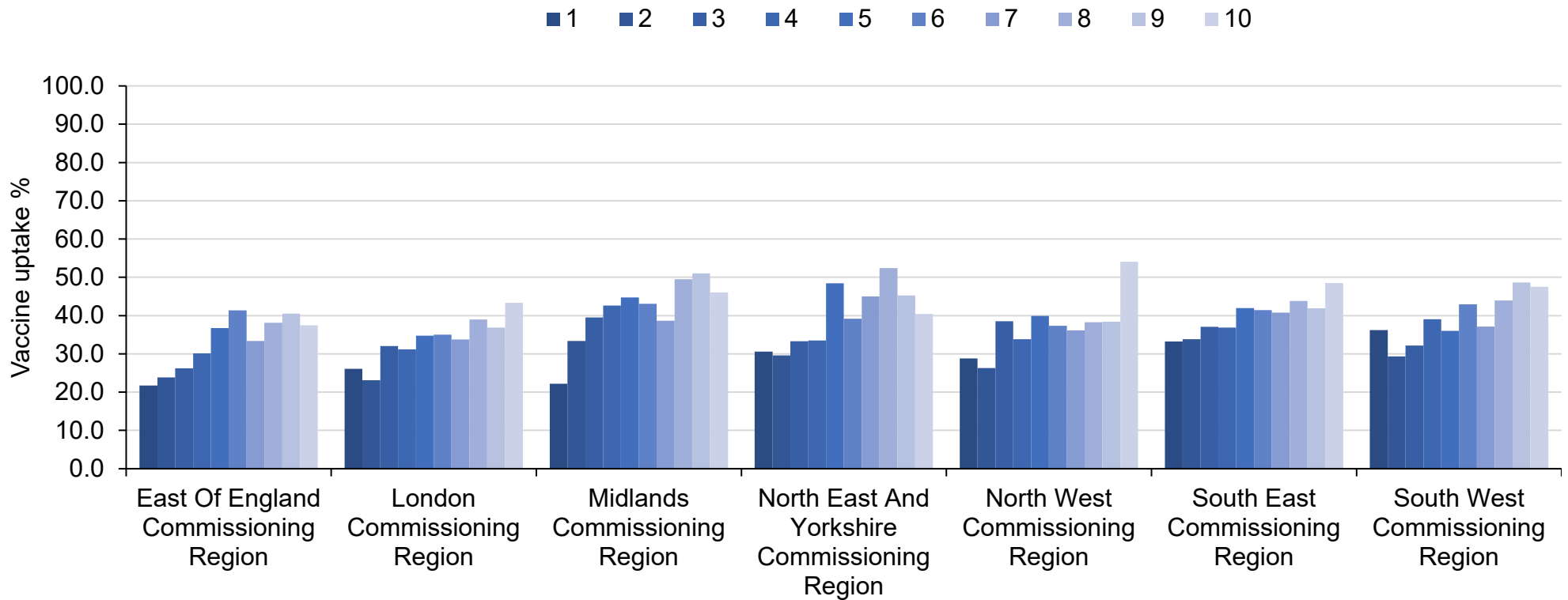
**Figure 11. Influenza vaccine uptake in those aged 16 to 65 years in a clinical risk group by index of multiple deprivation in each NHS commissioning region (1 to 10 is a scale of IMD with 1 being the most deprived and 10 being the least deprived).**



Vaccine uptake by IMD varies by region in those aged 16 to under 65 years at-risk, the largest variation by IMD is seen in North West region where vaccine uptake is 20.4% lower in the most deprived group compared with the least deprived groups. The regions with the least variation by IMD was in the East of England region with around 6.9% variation between the least and most deprived groups.

## Pregnant women

**Figure 12. Influenza vaccine uptake in all pregnant women by index of multiple deprivation in each NHS commissioning region (1 to 10 is a scale of IMD with 1 being the most deprived and 10 being the least deprived)**



Vaccine uptake by IMD varies by region in all pregnant women, the largest variation by IMD is seen in North West region where vaccine uptake is 25.3% lower in the most deprived cohort compared with the least deprived group. The region with the least variation by IMD was the South West region with around 11.3% variation between the least and most deprived groups.



## Vaccine type

Vaccine type was introduced to the GP survey in 2018 to 2019 as experimental data. Data was available again this year for 98.7% of those vaccinated aged 65 years and over; and 98.2% of those vaccinated aged 16 to under 65 years and in a clinical risk group. The percentage of vaccination coded with a defined type remained similar to the 2021 to 2022 season with 40.4% in 2022 to 2023 compared with 47.2% last season for those aged 16 to under 65 years. A recombinant quadrivalent vaccine (QIVr) was commissioned for use in the UK in 2020 to 2021. QIVr continued to be administered in the 2022 to 2023 season as [advised by JCVI](#) in at-risk adults and those age 65 years and older when first line vaccines were unavailable.

Where vaccine type was provided for 42.8% of GP practices responding, 94.4% of those aged 65 years and over received the first line recommended adjuvanted quadrivalent influenza vaccine (aQIV)<sup>27</sup>. Second-line vaccinations were administered to 5.0% (4.1% with cell-grown quadrivalent influenza vaccine (QIVc) and 0.9% with QIVr). Egg-grown quadrivalent influenza vaccine (QIVe), which was not recommended to those aged 65 and over, was given to 0.6%. This compares to 3.8% of this group last season (2021 to 2022) who were vaccinated with QIVe.

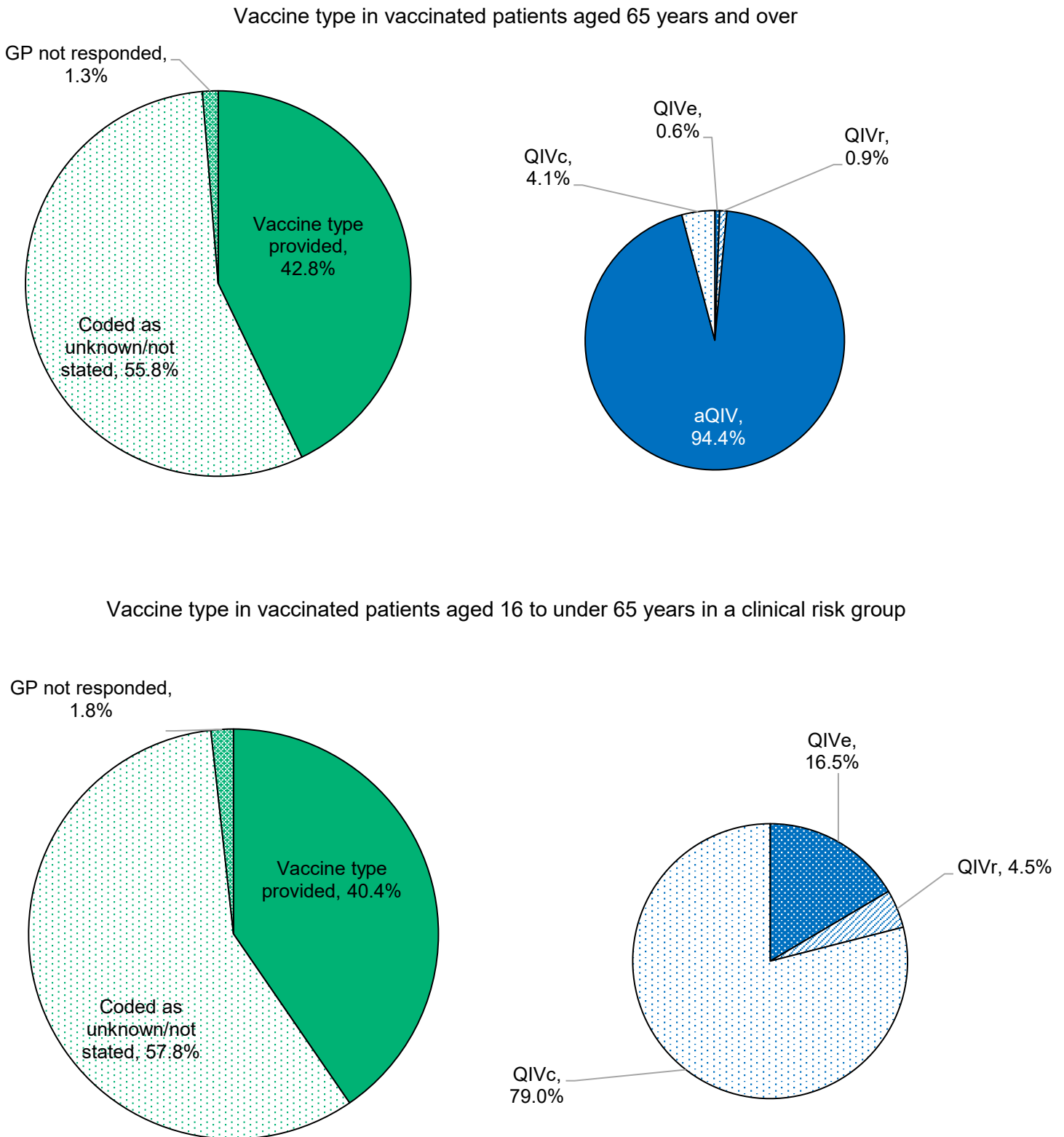
Where vaccine type was provided for 40.4% of GP practices responding, 83.5% of those aged 16 to under 65 years in a clinical risk group received the recommended first-line vaccines, 79.0% were QIVc and 4.5% were recorded with QIVr. 16.5% were vaccinated with the second-line QIVe vaccine. See [Figure 9](#) and [Table 17](#).

Data by vaccine type still remained very low. However, where vaccine type was available, it is encouraging to see that a very high proportion of the vaccinations given were in line with recommendations for first-line vaccine types for each cohort.

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<sup>27</sup> JCVI also recommended the high dose quadrivalent influenza vaccine (QIV-HD) however, QIV-HD is not currently available in the UK market.

**Figure 9. Percentage of vaccine type codes in the GP record by target cohort**



**Table 17. Extrapolated number of vaccinations given by vaccine type in patients aged 65 years and over; and those aged 16 to under 65 years and in one or more clinical risk group(s) during the 2022 to 2023 season**

2022 to 2023	Patient Group		Patients aged 65 years or older	Patients aged 16 to under 65 years at risk
	Vaccine uptake (%)		79.9%	49.1%
	Extrapolated number of people vaccinated		8.8 million	4.2 million
Vaccine type*	Adjuvanted vaccine (aQIV)	% of those vaccinated where vaccine type is available	94.4%	N/A
		Extrapolated number of people vaccinated	8.3 million	
	Cell based vaccine (QIVc)	% of those vaccinated where vaccine type is available	4.1%	79.0%
		Extrapolated number of people vaccinated	362,000	3.3 million
	Recombinant quadrivalent vaccine (QIVr)	% of those vaccinated where vaccine type is available	0.9%	4.5%
		Extrapolated number of people vaccinated	79,000	190,000
	QIV non-adjuvanted vaccine (QIVe)	% of those vaccinated where vaccine type is available	0.6%	16.5%
		Extrapolated number of people vaccinated	53,000	697,000

This table has been updated since first publication. For details, please see 'document history' under 'notes on the report'.

Caution should also be exercised when interpreting the extrapolated number of people vaccinated by vaccine type as this is based on the limited available data. A large proportion of vaccine type is unknown or not stated, at 57.1% and 59.6%, respectively, for those aged 65 years and over, and for those aged 16 to under 65 years in a clinical risk group. Caution should also be exercised when interpreting these figures because of rounding.

The number of LAIV vaccinations recorded for patients aged 2 and 3 years old have been collected as an experimental cohort for the last 4 years. Where vaccine type was provided for 98.4% of GP practices responding, 96.2% of vaccinated 2 and 3 year olds received LAIV (Table 18).

**Table 18. Influenza vaccine uptake in those aged 2 and 3 years old for England from 2019 to 2020 season to 2022 to 2023 season; and the proportion of LAIV vaccinations recorded for this cohort**

<b>All 2 and 3 year olds</b>	<b>2022 to 2023</b>	<b>2021 to 2022</b>	<b>2020 to 2021</b>	<b>2019 to 2020</b>
Vaccine uptake (%)	43.7%	50.10%	56.7	43.8
Extrapolated number of people vaccinated	554,000	648,000	746,700	594,200
% of those vaccinated with LAIV	96.2%	97.50%	92.10%	96.20%
Extrapolated number of people vaccinated with LAIV	533,000	632,000	688,000	572,000

## Discussion

The automated response rate for GP practices for the 2022 to 2023 end of season surveys remained very high at over 97%. The increase in GP practice mergers and closures resulting in an increase in GP registered populations per GP practice have meant that automated extraction of data has become more important.

Automated responses mean that there is little or no burden on the NHS to provide data already collected in the GP records. However, more needs to be done to ensure optimum quality data is inputted into the GP record, as well as optimum extractions by the GP System Suppliers, such as vaccine type and social care worker status.

Weekly automated surveillance has again proved to be beneficial in providing rapid data at a national level to monitor the progress of the programme. In addition, an uptake summary tool continued to be provided on the ImmForm website that allowed users to view and evaluate their uptake rates by target cohorts, comparing them against the previous season, sub-ICB average and overall national uptake.

Vaccine uptake in many cohorts was the highest on record during the 2020 to 2021 season (those aged 6 months to under 65 years in risk groups, 2 and 3 year olds) or in 2021 to 2022 season (those aged 65 years and over). This season, no group achieved the national vaccine uptake ambitions of equivalent or higher uptake than in 2021 to 2022 season, with vaccine uptake decreasing in all groups (those aged 6 months to 65 years at risk, all pregnant women and patients aged 2 and 3 years, those aged 65 years and over; and in patients aged 50 to 64 years not in a clinical risk group) compared with the 2021 to 2022 season. In pregnant women, vaccine uptake is the lowest on record since 2011 to 2012 season and for those aged 2 and 3 years old vaccine uptake decreased for a second consecutive season. Vaccine uptake in 2 year olds is the lowest on record since the 2016 to 2017 season. Although vaccine uptake has decreased in those aged 6 months to 65 years in at risk groups compared with the previous season, vaccine uptake remains above levels seen pre-COVID-19 pandemic (2019 to 2020 season). However, for those in a clinical risk group aged 6 months to under 2 years uptake is the lowest on record since the 2009 to 2010 season. For a third consecutive season in those aged 65 years and over vaccine uptake continued to exceed the WHO vaccine uptake target of 75%.

Vaccine uptake by IMD was presented this season using GP post code as a proxy for patient IMD. Ethnicity data was presented for 65 years and over, clinical risk groups under 65 years and all pregnant women. This season, data on vaccine uptake by sex for those aged 16 to under 65 years and in a clinical risk group continued to be included. For those aged 65 years and over, there was little or no difference in vaccine uptake between male and female. For patients aged

16 years to under 65 years old and in a clinical risk group, vaccine uptake was 9.1 percentage points higher in females than males in England (similar to the difference seen in 2021 to 2022). Equality trends by sex, ethnicity and IMD are similar across other national immunisation programmes and there is still work to be done to reduce vaccine inequity.

This year saw one the largest flu vaccination programmes ever delivered, vaccinating over 21 million individuals, however we must ensure we improve vaccine uptake across all cohorts.

## Acknowledgements

The authors would like to thank everyone that contributed to the data collection, specifically:

- all those who participated in and supported the influenza vaccine uptake collection (GP patient survey), principally GP practice data providers, NHSE regional public health commissioning teams, screening and immunisations teams and screening and immunisation influenza coordinators in England.
- the participation of GP IT system suppliers and third-party suppliers in providing the reporting tools and services for their customers in particular; EMIS Health, VISION and TPP, who enabled automated extracts of data.
- the participation of the PRIMIS team based in Nottingham, who was commissioned to provide the SNOMED CT Codes specification for this collection
- the ImmForm helpdesk and development team that provided and supported the online survey.

## Appendix 1: Comparison of sustainability and transformation partnerships (STP) 2021 to 2022, with integrated care boards (ICB) 2022 to 2023

2021 to 2022 STP organisation name	2022 to 2023 ICB organisation name
<b>London Commissioning Region</b>	<b>London Commissioning Region</b>
Our Healthier South East London STP	NHS SOUTH EAST LONDON INTEGRATED CARE BOARD
East London Health and Care Partnership STP	NHS NORTH EAST LONDON INTEGRATED CARE BOARD
North London Partners In Health and Care STP	NHS NORTH CENTRAL LONDON INTEGRATED CARE BOARD
North West London Health and Care Partnership STP	NHS NORTH WEST LONDON INTEGRATED CARE BOARD
South West London Health and Care Partnership STP	NHS SOUTH WEST LONDON INTEGRATED CARE BOARD
<b>North East and Yorkshire Commissioning Region</b>	<b>North East and Yorkshire Commissioning Region</b>
South Yorkshire and Bassetlaw STP	NHS SOUTH YORKSHIRE INTEGRATED CARE BOARD
Cumbria and North East STP	NHS NORTH EAST AND NORTH CUMBRIA INTEGRATED CARE BOARD
Humber, Coast and Vale STP	NHS HUMBER AND NORTH YORKSHIRE INTEGRATED CARE BOARD
West Yorkshire and Harrogate Health and Care Partnership STP	NHS WEST YORKSHIRE INTEGRATED CARE BOARD

Seasonal influenza vaccine uptake in GP patients winter season 2022 to 2023

2021 to 2022 STP organisation name	2022 to 2023 ICB organisation name
<b>North West Commissioning Region</b>	<b>North West Commissioning Region</b>
Cheshire and Merseyside STP	NHS CHESHIRE AND MERSEYSIDE INTEGRATED CARE BOARD
Healthier Lancashire and South Cumbria	NHS LANCASHIRE AND SOUTH CUMBRIA INTEGRATED CARE BOARD
Greater Manchester Health and Social Care Partnership STP	NHS GREATER MANCHESTER INTEGRATED CARE BOARD
<b>Midlands Commissioning Region</b>	<b>Midlands Commissioning Region</b>
Herefordshire and Worcestershire STP	NHS HEREFORDSHIRE AND WORCESTERSHIRE INTEGRATED CARE BOARD
Birmingham and Solihull STP	NHS BIRMINGHAM AND SOLIHULL INTEGRATED CARE BOARD
Joined Up Care Derbyshire STP	NHS DERBY AND DERBYSHIRE INTEGRATED CARE BOARD
Lincolnshire STP	NHS LINCOLNSHIRE INTEGRATED CARE BOARD
Leicester, Leicestershire and Rutland STP	NHS LEICESTER, LEICESTERSHIRE AND RUTLAND INTEGRATED CARE BOARD
Staffordshire and Stoke On Trent STP	NHS STAFFORDSHIRE AND STOKE-ON-TRENT INTEGRATED CARE BOARD
Shropshire and Telford and Wrekin STP	NHS SHROPSHIRE, TELFORD AND WREKIN INTEGRATED CARE BOARD
Northamptonshire STP	NHS NORTHAMPTONSHIRE INTEGRATED CARE BOARD
Nottingham and Nottinghamshire Health and Care STP	NHS NOTTINGHAM AND NOTTINGHAMSHIRE INTEGRATED CARE BOARD
The Black Country and West Birmingham STP	NHS BLACK COUNTRY INTEGRATED CARE BOARD



Seasonal influenza vaccine uptake in GP patients winter season 2022 to 2023

2021 to 2022 STP organisation name	2022 to 2023 ICB organisation name
Coventry and Warwickshire STP	NHS COVENTRY AND WARWICKSHIRE INTEGRATED CARE BOARD
<b>East Of England Commissioning Region</b>	<b>East Of England Commissioning Region</b>
Mid and South Essex STP	NHS MID AND SOUTH ESSEX INTEGRATED CARE BOARD
Bedfordshire, Luton and Milton Keynes STP	NHS BEDFORDSHIRE, LUTON AND MILTON KEYNES INTEGRATED CARE BOARD
Suffolk and North East Essex STP	NHS SUFFOLK AND NORTH EAST ESSEX INTEGRATED CARE BOARD
Hertfordshire and West Essex STP	NHS HERTFORDSHIRE AND WEST ESSEX INTEGRATED CARE BOARD
Norfolk and Waveney Health and Care Partnership STP	NHS NORFOLK AND WAVENEY INTEGRATED CARE BOARD
Cambridgeshire and Peterborough STP	NHS CAMBRIDGESHIRE AND PETERBOROUGH INTEGRATED CARE BOARD
<b>South East Commissioning Region</b>	<b>South East Commissioning Region</b>
Kent and Medway STP	NHS KENT AND MEDWAY INTEGRATED CARE BOARD
Frimley Health and Care Ics STP	NHS FRIMLEY INTEGRATED CARE BOARD
Sussex and East Surrey STP	NHS SUSSEX INTEGRATED CARE BOARD
Hampshire and The Isle Of Wight STP	NHS HAMPSHIRE AND ISLE OF WIGHT INTEGRATED CARE BOARD
Buckinghamshire, Oxfordshire and Berkshire West STP	NHS BUCKINGHAMSHIRE, OXFORDSHIRE AND BERKSHIRE WEST INTEGRATED CARE BOARD
Surrey Heartlands Health and Care Partnership STP	NHS SURREY HEARTLANDS INTEGRATED CARE BOARD

Seasonal influenza vaccine uptake in GP patients winter season 2022 to 2023

2021 to 2022 STP organisation name	2022 to 2023 ICB organisation name
<b>South West Commissioning Region</b>	<b>South West Commissioning Region</b>
Devon STP	NHS DEVON INTEGRATED CARE BOARD
Bath and North East Somerset, Swindon and Wiltshire STP	NHS BATH AND NORTH EAST SOMERSET, SWINDON AND WILTSHIRE INTEGRATED CARE BOARD
Gloucestershire STP	NHS GLOUCESTERSHIRE INTEGRATED CARE BOARD
Somerset STP	NHS SOMERSET INTEGRATED CARE BOARD
Cornwall and The Isles Of Scilly Health and Social Care Partnership STP	NHS CORNWALL AND THE ISLES OF SCILLY INTEGRATED CARE BOARD
Bristol, North Somerset and South Gloucestershire STP	NHS BRISTOL, NORTH SOMERSET AND SOUTH GLOUCESTERSHIRE INTEGRATED CARE BOARD
Dorset STP	NHS DORSET INTEGRATED CARE BOARD

## Appendix 2: Comparison of clinical commissioning groups (CCGs) 2021 to 2022, with sub integrated care boards (sub ICB) 2022 to 2023

CCG organisation name	Sub ICB organisation name
<b>NORTH EAST AND YORKSHIRE COMMISSIONING REGION</b>	<b>NORTH EAST AND YORKSHIRE COMMISSIONING REGION</b>
NHS NORTHUMBERLAND CCG	NHS NORTH EAST AND NORTH CUMBRIA ICB - 00L
NHS SOUTH TYNESIDE CCG	NHS NORTH EAST AND NORTH CUMBRIA ICB - 00N
NHS SUNDERLAND CCG	NHS NORTH EAST AND NORTH CUMBRIA ICB - 00P
NHS NORTH CUMBRIA CCG	NHS NORTH EAST AND NORTH CUMBRIA ICB - 01H
NHS NEWCASTLE GATESHEAD CCG	NHS NORTH EAST AND NORTH CUMBRIA ICB - 13T
NHS TEES VALLEY CCG	NHS NORTH EAST AND NORTH CUMBRIA ICB - 16C
NHS COUNTY DURHAM CCG	NHS NORTH EAST AND NORTH CUMBRIA ICB - 84H
NHS NORTH TYNESIDE CCG	NHS NORTH EAST AND NORTH CUMBRIA ICB - 99C
NHS EAST RIDING OF YORKSHIRE CCG	NHS HUMBER AND NORTH YORKSHIRE ICB - 02Y
NHS HULL CCG	NHS HUMBER AND NORTH YORKSHIRE ICB - 03F
NHS NORTH EAST LINCOLNSHIRE CCG	NHS HUMBER AND NORTH YORKSHIRE ICB - 03H
NHS NORTH LINCOLNSHIRE CCG	NHS HUMBER AND NORTH YORKSHIRE ICB - 03K
NHS VALE OF YORK CCG	NHS HUMBER AND NORTH YORKSHIRE ICB - 03Q
NHS NORTH YORKSHIRE CCG	NHS HUMBER AND NORTH YORKSHIRE ICB - 42D
NHS BARNESLEY CCG	NHS SOUTH YORKSHIRE ICB - 02P
NHS DONCASTER CCG	NHS SOUTH YORKSHIRE ICB - 02X
NHS ROTHERHAM CCG	NHS SOUTH YORKSHIRE ICB - 03L
NHS SHEFFIELD CCG	NHS SOUTH YORKSHIRE ICB - 03N
NHS CALDERDALE CCG	NHS WEST YORKSHIRE ICB - 02T
NHS WAKEFIELD CCG	NHS WEST YORKSHIRE ICB - 03R
NHS LEEDS CCG	NHS WEST YORKSHIRE ICB - 15F

Seasonal influenza vaccine uptake in GP patients winter season 2022 to 2023

<b>CCG organisation name</b>	<b>Sub ICB organisation name</b>
NHS BRADFORD DISTRICT AND CRAVEN CCG	NHS WEST YORKSHIRE ICB - 36J
NHS KIRKLEES CCG	NHS WEST YORKSHIRE ICB - X2C4Y
<b>NORTH WEST COMMISSIONING REGION</b>	<b>NORTH WEST COMMISSIONING REGION</b>
NHS HALTON CCG	NHS CHESHIRE AND MERSEYSIDE ICB - 01F
NHS KNOWSLEY CCG	NHS CHESHIRE AND MERSEYSIDE ICB - 01J
NHS SOUTH SEFTON CCG	NHS CHESHIRE AND MERSEYSIDE ICB - 01T
NHS SOUTHPORT AND FORMBY CCG	NHS CHESHIRE AND MERSEYSIDE ICB - 01V
NHS ST HELENS CCG	NHS CHESHIRE AND MERSEYSIDE ICB - 01X
NHS WARRINGTON CCG	NHS CHESHIRE AND MERSEYSIDE ICB - 02E
NHS WIRRAL CCG	NHS CHESHIRE AND MERSEYSIDE ICB - 12F
NHS CHESHIRE CCG	NHS CHESHIRE AND MERSEYSIDE ICB - 27D
NHS LIVERPOOL CCG	NHS CHESHIRE AND MERSEYSIDE ICB - 99A
NHS BOLTON CCG	NHS GREATER MANCHESTER ICB - 00T
NHS BURY CCG	NHS GREATER MANCHESTER ICB - 00V
NHS OLDHAM CCG	NHS GREATER MANCHESTER ICB - 00Y
NHS HEYWOOD, MIDDLETON AND ROCHDALE CCG	NHS GREATER MANCHESTER ICB - 01D
NHS SALFORD CCG	NHS GREATER MANCHESTER ICB - 01G
NHS STOCKPORT CCG	NHS GREATER MANCHESTER ICB - 01W
NHS TAMESIDE AND GLOSSOP CCG	NHS GREATER MANCHESTER ICB - 01Y
NHS TRAFFORD CCG	NHS GREATER MANCHESTER ICB - 02A
NHS WIGAN BOROUGH CCG	NHS GREATER MANCHESTER ICB - 02H
NHS MANCHESTER CCG	NHS GREATER MANCHESTER ICB - 14L
NHS BLACKBURN WITH DARWEN CCG	NHS LANCASHIRE AND SOUTH CUMBRIA ICB - 00Q
NHS BLACKPOOL CCG	NHS LANCASHIRE AND SOUTH CUMBRIA ICB - 00R
NHS CHORLEY AND SOUTH RIBBLE CCG	NHS LANCASHIRE AND SOUTH CUMBRIA ICB - 00X
NHS EAST LANCASHIRE CCG	NHS LANCASHIRE AND SOUTH CUMBRIA ICB - 01A
NHS GREATER PRESTON CCG	NHS LANCASHIRE AND SOUTH CUMBRIA ICB - 01E
NHS MORECAMBE BAY CCG	NHS LANCASHIRE AND SOUTH CUMBRIA ICB - 01K
NHS WEST LANCASHIRE CCG	NHS LANCASHIRE AND SOUTH CUMBRIA ICB - 02G
NHS FYLDE & WYRE CCG	NHS LANCASHIRE AND SOUTH CUMBRIA ICB - 02M

Seasonal influenza vaccine uptake in GP patients winter season 2022 to 2023

<b>CCG organisation name</b>	<b>Sub ICB organisation name</b>
NHS BIRMINGHAM AND SOLIHULL CCG	NHS BIRMINGHAM AND SOLIHULL ICB - 15E
NHS COVENTRY AND WARWICKSHIRE CCG	NHS COVENTRY AND WARWICKSHIRE ICB - B2M3M
NHS HEREFORDSHIRE AND WORCESTERSHIRE CCG	NHS HEREFORDSHIRE AND WORCESTERSHIRE ICB - 18C
NHS TAMESIDE AND GLOSSOP CCG	NHS DERBY AND DERBYSHIRE ICB - 15M
NHS LINCOLNSHIRE CCG	NHS LEICESTER, LEICESTERSHIRE AND RUTLAND ICB - 03W
NHS LEICESTER CITY CCG	NHS LEICESTER, LEICESTERSHIRE AND RUTLAND ICB - 04C
NHS WEST LEICESTERSHIRE CCG	NHS LEICESTER, LEICESTERSHIRE AND RUTLAND ICB - 04V
NHS LINCOLNSHIRE CCG	NHS LINCOLNSHIRE ICB - 71E
NHS CAMBRIDGESHIRE AND PETERBOROUGH CCG	NHS NORTHAMPTONSHIRE ICB - 78H
NHS BASSETLAW CCG	NHS NOTTINGHAM AND NOTTINGHAMSHIRE ICB - 02Q
NHS NOTTINGHAM AND NOTTINGHAMSHIRE CCG	NHS NOTTINGHAM AND NOTTINGHAMSHIRE ICB - 52R
NHS SHROPSHIRE, TELFORD AND WREKIN CCG	NHS SHROPSHIRE, TELFORD AND WREKIN ICB - M2L0M
NHS CANNOCK CHASE CCG	NHS STAFFORDSHIRE AND STOKEONTRENT ICB - 04Y
NHS EAST STAFFORDSHIRE CCG	NHS STAFFORDSHIRE AND STOKEONTRENT ICB - 05D
NHS NORTH STAFFORDSHIRE CCG	NHS STAFFORDSHIRE AND STOKEONTRENT ICB - 05G
NHS SOUTH EAST STAFFORDSHIRE AND SEISDON PENINSULA CCG	NHS STAFFORDSHIRE AND STOKEONTRENT ICB - 05Q
NHS STAFFORD AND SURROUNDS CCG	NHS STAFFORDSHIRE AND STOKEONTRENT ICB - 05V
NHS STOKE ON TRENT CCG	NHS STAFFORDSHIRE AND STOKEONTRENT ICB - 05W
NHS BIRMINGHAM AND SOLIHULL CCG	NHS BLACK COUNTRY ICB - D2P2L
<b>EAST OF ENGLAND COMMISSIONING REGION</b>	<b>EAST OF ENGLAND COMMISSIONING REGION</b>
NHS BEDFORDSHIRE, LUTON AND MILTON KEYNES CCG	NHS BEDFORDSHIRE, LUTON AND MILTON KEYNES ICB - M1J4Y
NHS CAMBRIDGESHIRE AND PETERBOROUGH CCG	NHS CAMBRIDGESHIRE AND PETERBOROUGH ICB - 06H
NHS EAST AND NORTH HERTFORDSHIRE CCG	NHS HERTFORDSHIRE AND WEST ESSEX ICB - 06K
NHS HERTS VALLEYS CCG	NHS HERTFORDSHIRE AND WEST ESSEX ICB - 06N
NHS WEST ESSEX CCG	NHS HERTFORDSHIRE AND WEST ESSEX ICB - 07H
NHS MID ESSEX CCG	NHS MID AND SOUTH ESSEX ICB - 06Q

Seasonal influenza vaccine uptake in GP patients winter season 2022 to 2023

<b>CCG organisation name</b>	<b>Sub ICB organisation name</b>
NHS BASILDON AND BRENTWOOD CCG	NHS MID AND SOUTH ESSEX ICB - 99E
NHS CASTLE POINT AND ROCHFORD CCG	NHS MID AND SOUTH ESSEX ICB - 99F
NHS SOUTHEND CCG	NHS MID AND SOUTH ESSEX ICB - 99G
NHS NORFOLK & WAVENEY CCG	NHS NORFOLK AND WAVENEY ICB - 26A
NHS IPSWICH AND EAST SUFFOLK CCG	NHS SUFFOLK AND NORTH EAST ESSEX ICB - 06L
NHS NORTH EAST ESSEX CCG	NHS SUFFOLK AND NORTH EAST ESSEX ICB - 06T
NHS WEST SUFFOLK CCG	NHS SUFFOLK AND NORTH EAST ESSEX ICB - 07K
<b>LONDON COMMISSIONING REGION</b>	<b>LONDON COMMISSIONING REGION</b>
NHS NORTH EAST LONDON CCG	NHS NORTH EAST LONDON ICB - A3A8R
NHS NORTH CENTRAL LONDON CCG	NHS NORTH CENTRAL LONDON ICB - 93C
NHS NORTH WEST LONDON CCG	NHS NORTH WEST LONDON ICB - W2U3Z
NHS SOUTH EAST LONDON CCG	NHS SOUTH EAST LONDON ICB - 72Q
NHS SOUTH WEST LONDON CCG	NHS SOUTH WEST LONDON ICB - 36L
<b>SOUTH EAST COMMISSIONING REGION</b>	<b>SOUTH EAST COMMISSIONING REGION</b>
NHS OXFORDSHIRE CCG	NHS BUCKINGHAMSHIRE, OXFORDSHIRE AND BERKSHIRE WEST ICB - 10Q
NHS BUCKINGHAMSHIRE CCG	NHS BUCKINGHAMSHIRE, OXFORDSHIRE AND BERKSHIRE WEST ICB - 14Y
NHS BERKSHIRE WEST CCG	NHS BUCKINGHAMSHIRE, OXFORDSHIRE AND BERKSHIRE WEST ICB - 15A
NHS FRIMLEY CCG	NHS FRIMLEY ICB - D4U1Y
NHS PORTSMOUTH CCG	NHS HAMPSHIRE AND ISLE OF WIGHT ICB - 10R
NHS HAMPSHIRE, SOUTHAMPTON AND ISLE OF WIGHT CCG	NHS HAMPSHIRE AND ISLE OF WIGHT ICB - D9Y0V
NHS KENT AND MEDWAY CCG	NHS KENT AND MEDWAY ICB - 91Q
NHS SURREY HEARTLANDS CCG	NHS SURREY HEARTLANDS ICB - 92A
NHS BRIGHTON AND HOVE CCG	NHS SUSSEX ICB - 09D
NHS WEST SUSSEX CCG	NHS SUSSEX ICB - 70F
NHS EAST SUSSEX CCG	NHS SUSSEX ICB - 97R
<b>SOUTH WEST COMMISSIONING REGION</b>	<b>SOUTH WEST COMMISSIONING REGION</b>

Seasonal influenza vaccine uptake in GP patients winter season 2022 to 2023

<b>CCG organisation name</b>	<b>Sub ICB organisation name</b>
NHS BATH AND NORTH EAST SOMERSET, SWINDON AND WILTSHIRE CCG	NHS BATH AND NORTH EAST SOMERSET, SWINDON AND WILTSHIRE ICB - 92G
NHS BRISTOL, NORTH SOMERSET AND SOUTH GLOUCESTERSHIRE CCG	NHS BRISTOL, NORTH SOMERSET AND SOUTH GLOUCESTERSHIRE ICB - 15C
NHS KERNOW CCG	NHS CORNWALL AND THE ISLES OF SCILLY ICB - 11N
NHS DEVON CCG	NHS DEVON ICB - 15N
NHS DORSET CCG	NHS DORSET ICB - 11J
NHS GLOUCESTERSHIRE CCG	NHS GLOUCESTERSHIRE ICB - 11M
NHS SOMERSET CCG	NHS SOMERSET ICB - 11X

# About the UK Health Security Agency

The [UK Health Security Agency](#) is an executive agency, sponsored by the [Department of Health and Social Care](#).

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