Public Health England

Protecting and improving the nation's health

Seasonal influenza vaccine uptake in GP patients: winter season 2018 to 2019

Final data for 1 September 2018 to 28 February 2019

Public Health England

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-leading science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health and Social Care, and a distinct delivery organisation with operational autonomy. We provide government, local government, the NHS, Parliament, industry and the public with evidence-based professional, scientific and delivery expertise and support.

SUSTAINABLE DEVELOPMENT G☉ALS

Contents

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 overview of the end of season data on influenza vaccination uptake in 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.

Executive summary

The PHE Influenza Surveillance Team has responsibility to co-ordinate and facilitate the national collection and reporting of influenza vaccine uptake data. This report describes the final data in GP registered patients in England from 1 September 2018 to 28 February 2019.

Survey response

The response rate from GP practices in England were:

- 96.7% for the Main GP survey compared to 97.5% last season
- 96.2% for the Child survey compared to 97.2% last season

Only automated responses were requested for the end of February 2018 and 2019 surveys.

National vaccine uptake

Cumulative influenza vaccine uptake in GP registered patients from 1 September 2018 to 28 February 2019 in England was:

- 72.0% for patients aged 65 years and over decreased compared to 72.9% in 2017 to 2018
- 48.0% for patients aged 6 months to under 65 years old in 1 or more clinical risk group(s) decreased compared to 49.7% in 2017 to 2018
- 45.2% in all pregnant women decreased compared to 47.0% in 2017 to 2018
- vaccine uptake in all 2 and 3 year olds was 44.9% in 2018 to 2019 increased compared to 44.0% in 2017 to 2018

The 2018 to 2019 season presented new challenges with the extension of the childhood programme to all those aged 9 rising to 10 years old as well as the phased delivery of the newly licensed adjuvanted vaccine for those aged 65 and over. Despite this, 30/195 CCGs achieved the WHO target uptake rate of 75% or more in those aged 65 and over which although less than last season (48/195 CCGs) was higher than the season before (2016 to 2017) when 15 CCGs achieved the WHO target.

None of the adult clinical risk target groups increased vaccine uptake this season and further work is needed to identify underpinning reasons so that uptake can be further improved in the future in line with national uptake ambitions.

Uptake for the pre-school children's influenza vaccine programme continued to increase compared to the previous season. It is important this increase is maintained.

Background

The traditional 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 a newly licensed live attenuated influenza vaccine (LAIV) [1]. The childhood LAIV programme, which was first implemented in 2013 to 2014, continued its roll-out in 2018 to 2019, targeting all 2 and 3 year olds in primary care and all children of school age years' reception to year 5 across the England. Next season, this programme will target all children 2 to 11 years of age[2] with the aim to both directly protect the vaccinated children themselves and by reducing influenza transmission, to indirectly protect the rest of the population including those at elevated risk of the severe consequences of influenza infection.

NHS England has responsibility for commissioning the influenza programme with GPs, midwives, and other healthcare professionals. Immunisation managers and co-ordinators also play a key role in delivery within their CCG and Local Team boundaries.

The PHE Influenza Surveillance Team has responsibility for collating the data and reporting on the progress in the uptake of the seasonal influenza vaccine. We use the ImmForm website to enable us to monitor, track and report on provisional vaccine uptake on a weekly and monthly basis during the influenza season.

This end-of-season report provides the final influenza vaccine uptake figures in GP registered patients. It should be noted that the data is collated for surveillance purposes only and is not designed to support GP payments.

The programme for 2018 to 2019 was announced in the annual flu letter jointly issued to the NHS by Public Health England (PHE), the Department of Health (DH) and NHS England on 20 March 2018[3]. It was recommended that influenza vaccine be offered to the following eligible GP patient groups.

- all patients aged 65 years and over
- all patients aged 6 months to under 65 years, in a clinical at-risk group
- all patients aged 2 and 3 years

---

[1] Joint Committee on Vaccination and Immunisation. Meeting minutes, 5 Oct 2011. London. Available from: http://webarchive.nationalarchives.gov.uk/20120907090205/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@ab/documents/digitalasset/dh_133598.pdf

[2] 2019 to 2020 Annual flu letter for recommendations for next season: www.gov.uk/government/publications/national-flu-immunisation-programme-plan

[3] The annual flu letter is accessible from the following link on the GOV.UK website https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/694779/Annual_national_flu_programme_2018-2019.pdf

- all pregnant women
- carers (aged under 65 years, not at-risk, not pregnant and fulfils the 'carer' definition[4])
- all patients of school age[5] in years reception to year 5 (aged 4 rising to 10 year olds), delivered through school delivery models with the exception of the Isle of Scilly who deliver the vaccine via the GP practice

The ambition for vaccine coverage in 2018 to 2019 is to reach or exceed 75% uptake for people aged 65 years and over as recommended by the World Health Organization (WHO). Other national uptake ambitions were for those aged 6 months to under 65 years and in 1 or more clinical risk group(s) and for all pregnant women to achieve at least 55% and maintaining higher rates where those have already been achieved; for the pre-school aged children, it was to attain at least 48% vaccine uptake.

The seasonal influenza vaccine uptake survey in GP registered patients was 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 for the past 2 seasons in England. February 2018 was an experimental collection to assess whether data returning from outside the practice and later in-practice vaccinations would impact the end of season figures nationally. Following data validation and comparison to this year's data, we can now publish the February data which presents a more accurate national representation of the uptake rates. The February collection has been adopted for our end of season figures going forwards. The data counts the cumulative number of GP registered patients[6] who have had at least 1 dose of influenza vaccine from 1 September to the end of February.

---

[4] The definition of a carer can be found in the influenza chapter of the Green Book www.gov.uk/government/publications/influenza-the-green-book-chapter-19

[5] The National Childhood Influenza Vaccination Programme can be accessed via www.gov.uk/government/collections/vaccine-uptake#seasonal-flu-vaccine-uptake-figures

[6] 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).

Methods

Prior to the start of the seasonal data collection, the Influenza Surveillance Team produce a dataset for the collection and 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; Read 2; CTV3 or SNOMED codes.

Cumulative data on seasonal influenza vaccine uptake were collected for all GP practices in England between 1 September 2018 to 28 February 2019 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 comprise of:

- a weekly sentinel survey using an automated extraction only (XML bulk upload or a web service)
- 5 monthly surveys on vaccinations from the 1st September 2018 up to end of October and each month to the end of February 2019[7]

Data were submitted at the GP practice level across England to the ImmForm website either via an automated extraction provided by GPSS (who extract data directly from GP practice systems[8]) or via manual upload. Automated data extraction results in an almost zero burden on GP practices in providing the data. The weekly data allows almost 'real time' monitoring of the programme at a national level from calendar week 36 (week ending 9/9/2018) to calendar week 4 (week ending 27/01/2019)[9].

The dataset and details of the survey can be found on the GOV.UK website via www.gov.uk/government/publications/seasonal-influenza-vaccine-uptake-gp-patient-survey-data-collection

Extrapolated numbers are included in this report to provide an estimate of the total eligible population and the total that would have been vaccinated if there was a 100% response rate. The extrapolated number of the eligible population is derived by multiplying the mean population based on observed data to the total number of practices. The extrapolated number on vaccinations is derived by multiplying the mean number of vaccinations to the total number

---

[7]All monthly vaccine uptake data are published here: www.gov.uk/government/statistics/seasonal-flu-vaccine-uptake-in-gp-patients-monthly-data-2019-to-2019

[8] 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.

[9] Weekly vaccine uptake data are published as part of the weekly national flu report. www.gov.uk/government/statistics/weekly-national-flu-reports-2019-to-2019-season

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 Clinical Commissioning Group(CCG) level data. 18 CCGs in the 2017 NHS-E hierarchy were reconfigured and merged in to 6 CCGs in 2018; these were manually reconfigured into the 2018 NHS-E CCGs in the accompanying data tables, the reconfigurations can be found in the appendix. All comparative 2017 to 2018 season data is based on data to the end of February 2018 except for Other Healthcare Settings where data are compared to the end of January 2018 and January 2019.

February data was an experimental collection in 2017 to 2018.The data was collected to assess how much more data would be collected in that month to account for data returning from outside the GP practice and later in-practice vaccinations. Following evaluation, the February collection has been adopted for our end of season figures going forwards.

The Seasonal influenza vaccine uptake GP patients (Main and Child survey) have received full approval from the Data Coordination Board for the 2018 to 2019 influenza season[10].

ImmForm

Influenza vaccine uptake data are submitted via the ImmForm website www.immform.dh.gov.uk. Data are submitted at GP practice level and can then be aggregated as required to the different hierarchies such as the most recent NHS Local Teams (LTs) hierarchy; Local Authorities (LAs); and PHE Centres (PHEC).

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 CCG and previous seasons
- validate data at point of data entry with built in validations
- download 'non-responder' reports to aid local areas following up GP practices that have yet to respond to the survey

Data validation

Data validations are built into the ImmForm website to validate at point of entry. Data is then further validated by the PHE Influenza Surveillance Team on a weekly and monthly basis. PRIMIS are commissioned by PHE to write the clinical code specification for the surveys and commissioned to conduct 2 data validation reports using MiQuest extracts and native GPSS extracts to check alignment with the clinical code specification.

---

[10] DCB approval for these surveys can be found here:
https://digital.nhs.uk/data-and-information/information-standards/information-standards-and-data-collections-including-extractions/publications-and-notifications/assurance-certificates

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 discussed below. Further information on definitions and data limitations can be found in the user guide: www.gov.uk/government/collections/vaccine-uptake#seasonal-flu-vaccine-uptake:-data-collection-guidance

Snapshot of influenza vaccine uptake data

It is important to note that influenza vaccine uptake data presented in this report is only a snapshot of the GP registered patients vaccinated at the time of data extraction. 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 who have received the vaccine but have subsequently died, changed clinical status (ie 'joining' or 'leaving' a clinical risk group), 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 they 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 all patient data if they have no other clinical risk factors and the vaccination has been recorded in their GP record.

Pregnant women data: denominator variance

Since the introduction of the pregnant women category to the routine influenza vaccination programme, there have been difficulties in determining an accurate denominator through electronic means for this group of patients because of the complexities in the way pregnancy is recorded and coded on local clinical systems in primary care.

Consequently, monitoring vaccine uptake by pregnant women is particularly challenging and the context in which this data should be interpreted needs to consider the following conditions:

- the dynamic nature of the group with women continually entering and leaving the risk group
- the number and variable use of Read codes that can be used to identify pregnant women
- the delay in updating the individual's electronic GP clinical record following birth or loss of pregnancy

In relation to the last point, it is noted that there may be appreciable delays in GP practices updating records to reflect coding of pregnant women and/or changes in pregnancy outcomes following birth or loss of pregnancy. Therefore, women who were no longer pregnant by 1 September 2018 may have been included in the denominator in error, due to the inaccuracy of

the electronic record. It is likely therefore, that influenza vaccine uptake by pregnant women is underestimated due to denominator inflation, although the scale of the underestimation is not clear and could vary considerably between GP practices[11].

Vaccination in other healthcare settings

The number of patients vaccinated in a school, pharmacy and other healthcare setting was recorded by the survey. It is important to note that the data captured in settings outside of the GP practice does not come under an existing information standard therefore the quality of location recording may vary among GP practices and GP System Suppliers. In 2018 to 2019 pharmacies continued to be commissioned to administer influenza vaccinations to those aged 65 and over and any patient aged 18 to under 65 in a clinical risk group as well as pregnant women; carers; household contacts of immunocompromised individuals; people living in long-stay residential care homes or other long stay care facilities; social care workers and hospice workers[12].

Whilst the number of vaccinations reported as given in pharmacies can be taken as correct because there is a specific Read code associated with this, there is likely to be a lag in data being fed back into the GP record. Other healthcare settings for the pregnant women cohort seem to be relatively high and likely to be attributed to vaccinations administered by midwifery services.

As there is no Read code for 'vaccinated in school,' this was based upon an assumption that those aged 4 to 8 rising to 10 vaccinated outside of the GP practice will have been vaccinated in a school if not otherwise coded as 'vaccinated in a pharmacy'. Due to problems with data reaching the GP record, the cohort for this survey remains experimental until data flows between the Child Health Information Systems and GP records[13] have been improved. Improved data transfer will be important to ensure accurate and timely data is fed back into the GP record to reduce the administrative burden on GP practices.

---

[11] For further details of pregnancy data limitations, please see the GP survey user guide which can be found here: www.gov.uk/government/publications/seasonal-influenza-vaccine-uptake-gp-patient-survey-data-collection

[12] More information on pharmacy flu vaccination advanced service can be found on the Pharmaceutical Services Negotiating Committee website https://psnc.org.uk/psncs-work/our-events/register-your-interest-in-our-webinar/flu-vaccination-advanced-service-webinar/

[13] 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 can be accessed via www.gov.uk/government/collections/vaccine-uptake#seasonal-flu-vaccine-uptake-figures

Vaccine type

Vaccine type was introduced to the GP survey this 2018 to 2019 season as an experimental cohort. Vaccinations are normally recorded in the GP record using Read codes however it is not always possible to determine vaccine type from the coded data. However, vaccine type can be coded using Dictionary of medicines and devices (dm+d) codes and SNOMED codes. England is going through a transitional period moving from Read to SNOMED and we expect this cohort to become better recorded in the future.

Vaccine type does not appear to be coded frequently in GP systems; it is suspected that the information is recorded in the GP record but as free text and therefore not extractable using a clinical code specification. However, where vaccine type was coded, it was encouraging to see that most of the vaccinations were the recommended vaccines for the 2018 to 2019 season for each cohort.

Not all GPSS were able to supply data to us and around 10% of the data was excluded as there were more vaccine types than patients vaccinated. This is likely to be due to human error where patients have been coded multiple times with the same or different clinical codes that refer to a flu vaccination. It is also possible that some patients may have been given 2 doses of the vaccine though the number of these is likely to be small nationally.

Therefore, caution should be used when interpreting the data.

Results

Data tables showing final influenza vaccine uptake for each of the recommended target groups accompany the publication of this report and are available at NHS Region, Local Team and CCG level; as well as Local Authority and PHE Centre.
www.gov.uk/government/collections/vaccine-uptake

GP practice response rate[14]

GP response rate for the main GP survey was 96.7% (6,680/6,910). The GP response rate for the Child GP survey was 96.2% (6,645/6,909). No manual submissions were requested for the February surveys therefore data represents automated uploads only. One GPSS did not provide data which will affect local figures in the South West Region.

Weekly versus monthly vaccine uptake comparison (provisional data)

Weekly and monthly data were overall in good agreement, with the provisional national results from the 4 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 however on average over 92.5% of GP practices submitted data. The response rate ranged between 94.8% in week 46 to 97.6% in week 51 for the GP Main survey; and from 45.4% in week 39 to 97.9% in week 51 for the GP Child survey.

GP registered population size and number vaccinated

Using extrapolated GP registered populations for those aged 65 and over and those aged 6 months to under 65 years of age; we compared the population increase with ONS mid-year estimates to evaluate whether the population increase is in line with estimated ONS population changes.

The 65 and over GP registered population has increased by 1.7% from last season. ONS mid–year estimates for 2017 showed an 1.5% increase in people aged 65 and over.

For all GP registered patients aged 5 years to under 65 years has increased by 1.8%, ONS mid–year estimates for 2017 showed an 0.6% increase in the people aged 5 to under 65 years olds.

---

[14] See section on Data limitations: snapshot of influenza vaccine uptake data. This does not include frontline health and social care workers in the number vaccinated unless they were vaccinated at the GP practice or their vaccination details were entered on their GP practice's electronic record.

The extrapolated number of GP registered patients that were recorded as vaccinated in 2018 to 2019 season was 14,351,245 (Table 1).

Table 1. Observed and extrapolated estimate of number of patients registered and who received influenza vaccine during the 2018 to 2019 season

Total GP registered population	2018/19			2017/18		
	Number of patients registered	Number of patients vaccinated	% Vaccine uptake	Number of patients registered	Number of patients vaccinated	% vaccine uptake
Aged 65 and over	**10,087,978**	**7,260,596**	72.0	**10,032,613**	**7,309,125**	72.9
Aged 65 and over extrapolated	10,435,319	7,510,587		10,286,949	7,494,418	
All patients aged 6 months to under 65 years	**47,627,024**	**6,612,966**	13.9	**47,487,190**	**6,496,582**	13.7
All patients aged 6 months to under 65 years extrapolated	49,266,877	6,840,658		48,691,033	6,661,276	
Total observed (65+ and all patients under 65)	57,715,002	13,873,562	24.0	57,519,803	13,805,707	24.0
Total extrapolated (65+ and all patients under 65)	59,702,195	14,351,245		58,977,982	14,155,694	

Patients aged 65 years and over

Vaccine uptake in patients over 65 years old was 72.0% in the 2018 to 2019 season, compared to 72.9% last season (Table 1). This season saw a phased delivery of the recommended, newly licenced adjuvanted vaccine for the 65 and over population. 40% of the vaccine was supplied in September followed by 20% in October and 40% in November.

The end of season uptake level did not again reach the uptake ambition of 75% based on the World Health Organization (WHO) target for this cohort.

However, 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 2019, was over 7.5 million (n= 7,510,587) which is an increase in number vaccinated compared to 2017 to 2018. (Table 1, Figure 1 and Figure 2).

Regional and local vaccine uptake:

- vaccine uptake in 2018 to 2019 by NHS England Local Teams for patients aged 65 years and over ranged from 65.4% (London LT) to 75.1% (South West North LT).
- 1 LT achieved the WHO target uptake rate of 75% or more compared to 3 LTs last year.
- the median uptake was 72.1% at CCG level compared to 73.1% last season.
- at CCG level, vaccine uptake ranged from 56.5% (Hammersmith and Fulham CCG) to 81.0% (Rushcliffe CCG). A total of 30/195 CCGs achieved the WHO target uptake rate of 75% or more which is less than last season where 48/195 CCGs achieved the WHO target

'At-risk patients' aged 6 months to under 65 years in 1 or more clinical risk groups

Vaccine uptake in patients aged 6 months to under 65 years in 1 or more clinical risk group(s) was 48.0% compared to 49.7% in 2017 to 2018 (Table 2)[18, 19, 20].

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 just over 3.3 million (n= 3,389,409; Table 2, Figure 1, 2 and 3). This is a small decrease compared to the total vaccinated in 2017 to 2018.

The end of season uptake level did not reach the national uptake ambition of 55% or more.

Regional and local vaccine uptake:

- vaccine uptake by LT ranged from 44.4% (London) to 51.6% (Greater Manchester).
- the median uptake was 48.0% at CCG level compared to 49.6% last season
- at CCG level, vaccine uptake ranged from 32.3% (Hammersmith and Fulham) to 62.4% (Stockport). A total of 6/195 CCGs achieved the national vaccine uptake ambition of 55% or more compared to 11/195 last season

Table 2. Observed and extrapolated estimate of number of registered patients aged 6 months to under 65 years old and in 1 or more clinical risk group(s)(excluding pregnant women without other risk factors and carers), who received an influenza vaccine during the 2018 to 2019 season

Target groups for vaccination*	2018/19			2017/18		
	Number of patients registered	Number of patients vaccinated	% vaccine uptake	Number of patients registered	Number of patients vaccinated	% vaccine uptake
Aged 6 months to under 65 years in a clinical risk group	**6,820,919**	**3,276,592**	48.0	**6,742,316**	**3,353,724**	49.7
Aged 6 months to under 65 years in a clinical risk group extrapolated	7,055,771	3,389,409		6,913,240	3,438,744	

Figure 1. Influenza vaccine uptake for those aged 65 and over and 65 at risk from 2004 to 2018 to 2019 in England (data prior to 2018 to 2019 is data up to the end of January)
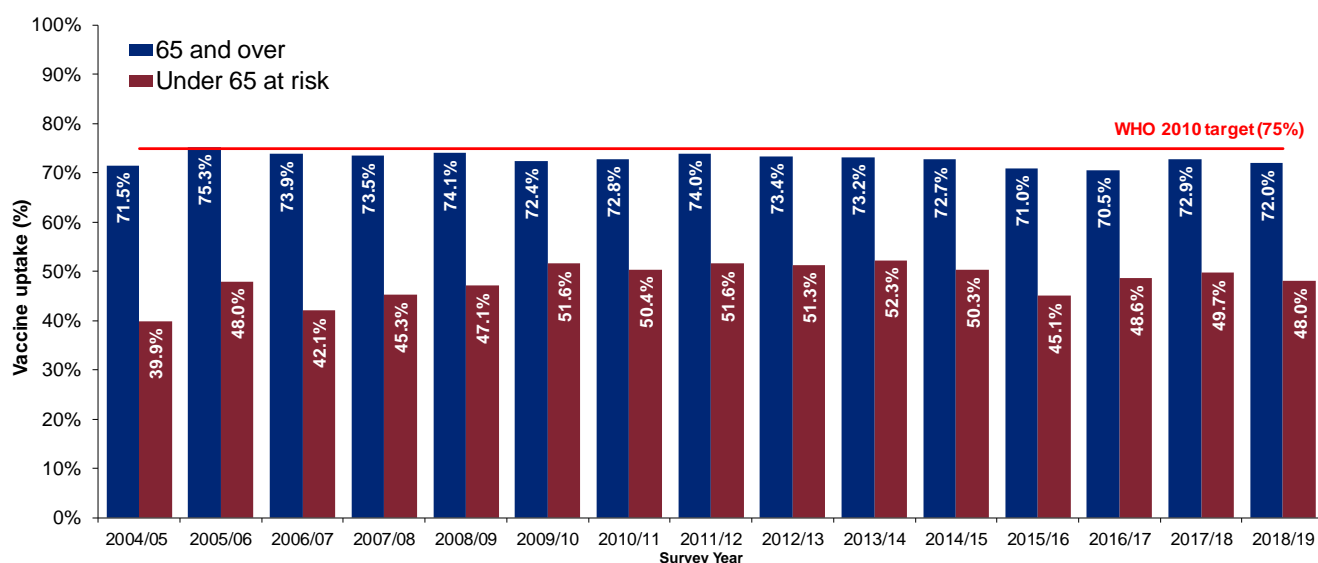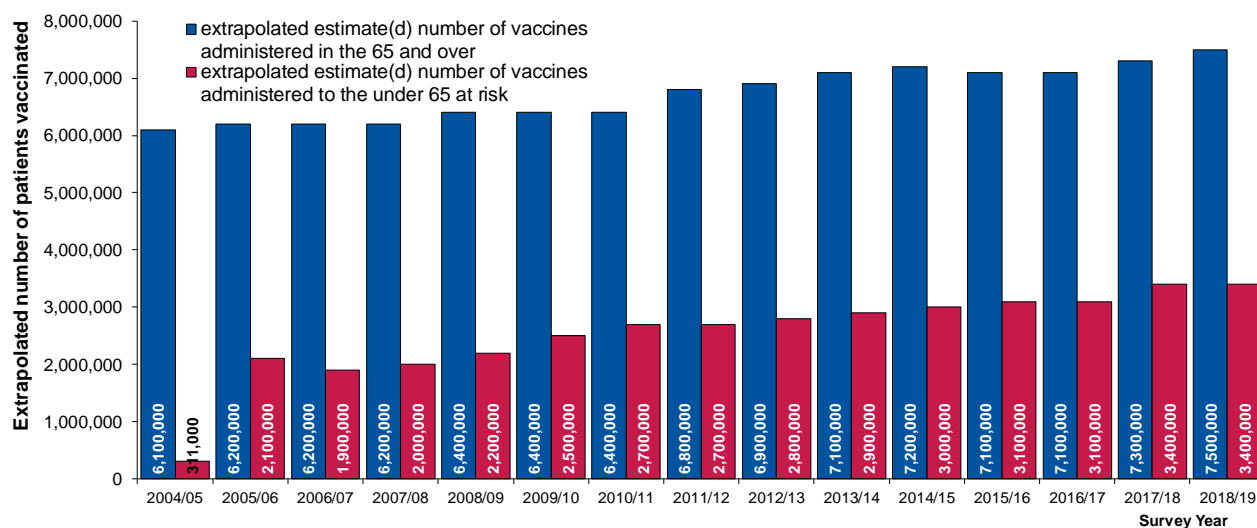

Figure 2. Extrapolated estimate(d) number of vaccines administered in the 65 and over, and under 65 at-risk from 2004 to 2018 to 2019 in England (data prior to 2018 to 2019 is data up to the end of January)
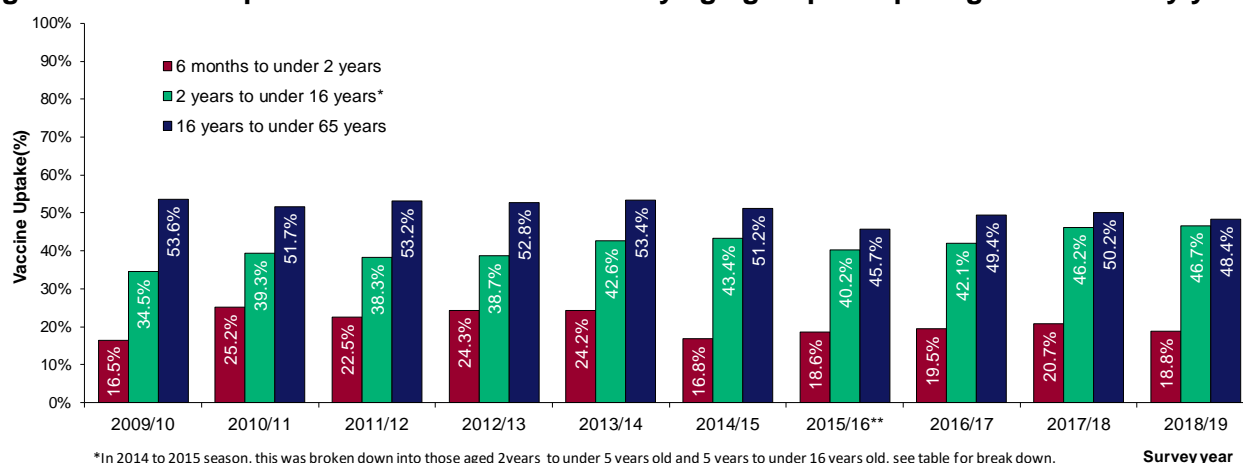

16

'At-risk patients' aged 6 months to under 65 years in 1 or more clinical risk groups by age band

Vaccine uptake in those aged 6 months to under 2 years (18.8% down from 20.7% in 2017 to 2018) remains the lowest in uptake by age band and those aged 2 years to under 5 years (52.7% down from 53.4% in 2017 to 2018) remains the highest (Table 3 and Figure 3).

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 in 1 or more clinical risk group(s)	2018/19			2017/18		
	Number of patients registered	Number of patients vaccinated	% vaccine uptake	Number of patients registered	Number of patients vaccinated	% vaccine uptake
Total observed 6 months under 65 years in a clinical risk group	**6,820,919**	**3,276,592**	**48.0**	**6,742,316**	**3,353,724**	**49.7**
Total extrapolated 6 months under 65 years in a clinical risk group	7,055,771	3,389,409		6,913,240	3,438,744	
6 months to under 2 years in a clinical risk group	14,029	2,638	18.8	13,870	2,868	20.7
6 months to under 2 years in a clinical risk group extrapolated	14,512	2,729		14,222	2,941	
2 years to under 5 years in a clinical risk group	62,307	32,862	52.7	64,964	34,693	53.4
2 years to under 5 years in a clinical risk group extrapolated	64,452	33,993		66,611	35,572	
5 years to under 16 years in a clinical risk group	551,394	245,221	44.5	556,527	252,520	45.4
5 years to under 16 years in a clinical risk group extrapolated	570,379	253,664		570,635	258,922	
16 to under 65 years in a clinical risk group	6,193,189	2,995,871	48.4	6,106,955	3,063,643	50.2
16 to under 65 years in a clinical risk group extrapolated	6,406,428	3,099,022		6,261,772	3,141,309	

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

*In 2014 to 2015 season, this was broken down into those aged 2years to under 5 years old and 5 years to under 16 years old, see table for break down.
** In 2015 to 2016, patients with morbid obesity with no other clinical risk groups was included in the denominator.

Individual risk groups

Vaccine uptake in the individual risk groups has decreased for all clinical risk groups compared to last season for all patients under 65 years old. The decreases range from -1% in patients with asplenia or dysfunction of the spleen to -5.4% decrease in patients with morbid obesity (BMI>=40). The clinical risk group with the highest uptake (diabetes) and lowest uptake (morbid obesity) has not changed since last season as highlighted in Table 4 and Figure 4. The largest decrease in uptake by age band was in those aged 16 to under 65 years old.

Table 4. Vaccine uptake by individual clinical risk groups for GP registered patients aged 6 months to under 65 years old who received influenza vaccine during the last 2 seasons. The colours compare vaccine uptake by age band to last season: red= decrease; yellow= no change; green= increase. Highest (green) and lowest (red) uptake highlighted for the total at risk patients aged 6 months to under 65 years.
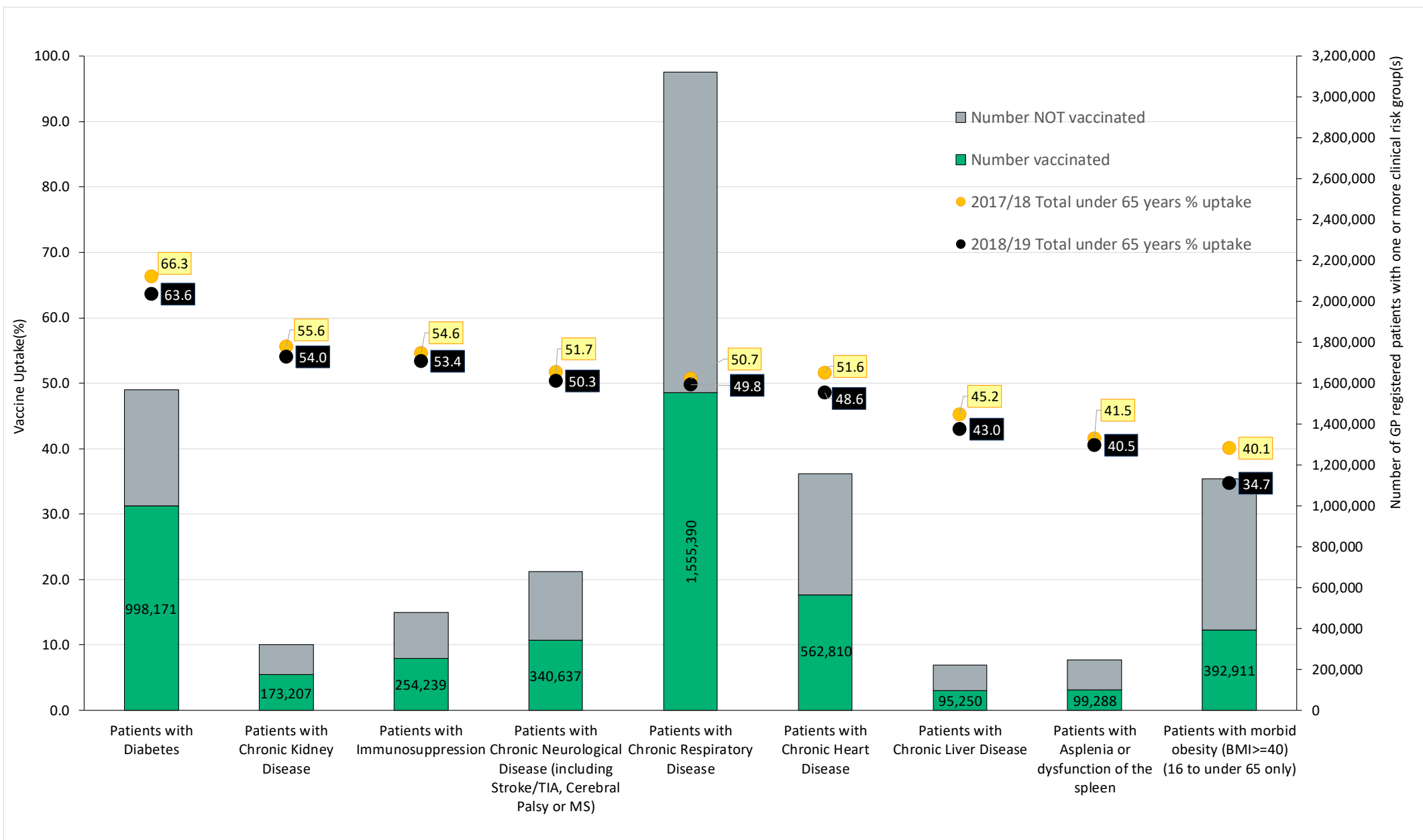
Age: Risk group:	2018/19					2017/18				
	6months to under 2 years	2years to under 5 years	5 years to under 16 years	16 years to under 65	Total under 65 years	6months to under 2 years	2years to under 5 years	5 years to under 16 years	16 years to under 65	Total under 65 years
Patients with Diabetes	27.6	58.1	56.2	63.7	63.6	29.5	60.2	58.3	66.4	66.3
Patients with Chronic Kidney Disease	26.9	46.7	37.8	54.3	54.0	23.5	47.6	39.2	55.9	55.6
Patients with Immunosuppression	18.5	52.7	44.3	53.7	53.4	24.5	55.0	45.6	54.9	54.6
Patients with Chronic Neurological Disease (including Stroke/TIA, Cerebral Palsy or MS)	19.3	47.7	39.6	51.0	50.3	19.5	48.5	39.6	52.5	51.7
Patients with Chronic Respiratory Disease	23.0	57.4	47.1	50.2	49.8	24.1	57.8	48.1	52.0	51.6
Patients with Chronic Heart Disease	18.2	48.1	38.4	49.6	48.6	20.3	48.1	38.1	51.9	50.7
Patients with Chronic Liver Disease	28.2	50.5	42.3	43.0	43.0	26.2	52.1	44.5	45.2	45.2
Patients with Asplenia or dysfunction of the spleen	26.0	53.2	38.5	40.6	40.5	31.9	55.2	38.8	41.6	41.5
Patients with morbid obesity (BMI>=40)	n/a			34.7	34.7	n/a			40.1	40.1

Although percentage vaccine uptake has decreased for all individual clinical risk groups; the number of patients in each clinical risk group has increased more than 2% except those with chronic respiratory disease which has remained stable (Table 5). The number of patients vaccinated increased in 4 of the clinical risk groups; those with chronic liver disease; those with asplenia or dysfunction of the spleen; those with immunosuppression; and those with chronic neurological disease (Table 5).

Table 5. Percentage difference in extrapolated GP registered populations for each individual risk group compared to last season for number of patients vaccinated and registered in that clinical risk group

Target group:	Percentage difference compared to last season	
	Patients registered	Number vaccinated
Patients with Asplenia or dysfunction of the spleen	6.5	3.9
Patients with Chronic Heart Disease	2.7	-1.6
Patients with Chronic Kidney Disease	2.3	-0.7
Patients with Chronic Liver Disease	10.9	5.4
Patients with Chronic Neurological Disease (including Stroke/TIA, Cerebral Palsy or MS)	4.1	1.2
Patients with Chronic Respiratory Disease	0.9	-2.6
Patients with Diabetes	3.4	-0.9
Patients with Immunosuppression	3.7	1.3

Figure 4. Extrapolated number of registered patients who received an influenza vaccine by individual clinical risk group for all those aged 6 months to under 65 for 2018 to 2019 (data up to end of February 2019)

Pregnant women[15]

Vaccine uptake in all pregnant women (healthy and in at risk groups combined) was 45.2% in the 2018 to 2019 season, decreasing from 47.0% in 2017 to 2018 (Table 6).

The end of season uptake level did not reach the national uptake ambition of 55% or more.

Table 6. Observed and extrapolated estimate number of pregnant women registered and who received an influenza vaccine during the 2018 to 2019 season

Target groups for vaccination	2018/19			2017/18		
	Number of patients registered	Number of patients vaccinated	% vaccine uptake	Number of patients registered	Number of patients vaccinated	% vaccine uptake
All pregnant women (includes both healthy and at-risk women)	**649,233**	**293,359**	45.2	**676,159**	**318,057**	47.0
All pregnant women extrapolated	671,587	303,460		693,300	326,120	
Pregnant women and **in** a clinical risk group	59,367	35,764	60.2	60,984	38,257	62.7
Pregnant women and **in** a clinical risk group extrapolated	61,411	36,995		62,530	39,227	
Pregnant women **not in** a clinical risk group	589,866	257,595	43.7	615,175	279,800	45.5
Pregnant women **not in** a clinical risk group extrapolated	610,176	266,464		630,770	286,893	

Regional and local vaccine uptake:

- vaccine uptake by LT for all pregnant women ranged from 41.0% (London) to 51.7% (Cumbria and North East)
- the median uptake for all pregnant women was 45.9% at CCG level compared to 47.8% last season
- at CCG level, vaccine uptake ranged from 28.9% (Enfield) to 69.4% (Stockport)
- vaccine uptake in pregnant women **in 1** or more clinical risk group(s) by LT ranged from 55.5% (London) and 66.2% (Greater Manchester)
- the median uptake for pregnant women in 1 or more clinical risk group(s) was 60.2% at CCG level compared to 63.0% last season. Vaccine uptake ranged from 42.9% (Hammersmith and Fulham) to 83.7% (Stockport)
- vaccine uptake in pregnant women **not in** a clinical risk group LT ranged from 37.9% (London) to 48.9% (Cumbria and North East)

---

[15] 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.

- the median uptake for pregnant women not in a clinical risk group(s) was 44.6% at CCG level compared to 46.4% last season. Vaccine uptake ranged from 27.8% (Enfield) to 67.6% (Stockport)
- a total of 12/195 CCGs achieved the national vaccine uptake ambition of 55% or more in all pregnant women compared to 18/195 last season

Pre-school aged children

All 2 and 3 year olds

Vaccine uptake in all 2 and 3 year olds was 44.9% in 2018 to 2019, a slight increase from last season 44.0%[16] (Table 7). Although there was an overall increase in the vaccine uptake, there was a slight decrease in vaccine uptake in those in 1 or more clinical risk groups from 44.5% uptake in 2017 to 2018 to 43.6% uptake in 2018 to 2019. Although uptake increased this season, the national uptake ambition of 48% or more was not achieved.

Table 7. Observed and extrapolated number of 2 and 3 year olds registered who received an influenza vaccine during the 2018 to 2019 season

Target groups for vaccination	2018/19			2017/18		
	Number of patients registered	Number of patients vaccinated	% vaccine uptake	Number of patients registered	Number of patients vaccinated	% vaccine uptake
All 2 and 3 year olds (includes both 'healthy' and at risk)	**1,322,663**	**593,706**	44.9	**1,330,150**	**585,791**	44.0
All 2 and 3 year olds (includes both 'healthy' and at risk) extrapolated	1,375,211	617,293		1,368,974	602,889	
All 2 and 3 and **in** a clinical risk group	41,583	23,237	55.9	42,031	23,695	56.4
All 2 and 3 and **in** a clinical risk group extrapolated	43,235	24,160		43,258	24,387	
All 2 and 3 and **not in** a clinical risk group	1,281,080	570,469	44.5	1,288,119	562,096	43.6
All 2 and 3 and **not in** a clinical risk group extrapolated	1,331,976	593,133		1,325,716	578,502	

Regional and local vaccine uptake:

- for all 2 and 3 year olds, uptake in 2018 to 2019 by LT ranged 32.4% (London) to 56.5 (South West South)
- the median uptake was 45.7% at CCG level compared to 44.7% last season
- at CCG level, vaccine uptake ranged from 18.9% (Bradford City) to 64.1% (Stockport)

---

[16] Vaccine uptake for individual year groups can be found in the accompanying tables.

- for all 2 and 3 year olds **in** 1 or more clinical risk group(s) by LT ranged from 46.2% (London) to 65.5% (South West South)
- the median uptake was 56.3% at CCG level compared to 56.9% last season
- at CCG level, vaccine uptake ranged from 26.9% (Bradford City) to 74.7% (Harrogate And Rural District)
- for all 2 and 3 year olds **not in** an at risk group by LT ranged 32.0% (London) to 56.2% (South West South)
- the median uptake was 45.3% at CCG level compared to 44.2% last season.
- at CCG level, vaccine uptake ranged from 18.5% (Bradford City) to 63.8% (Stockport)
- a total of 79/195 CCGs achieved the national vaccine uptake ambition of 48% or more in preschool age children compared to 72/195 last season

'All patients' aged 6 months to under 65 years old

Vaccine uptake was 13.9% which is a slight increase from last season where uptake was 13.7%. However, there were decreases in uptake in all age bands except those aged 5 years to under 16 years old (see Table 8). The increase in the 5 to under 16 year old age band reflects the continued extension of the childhood influenza vaccination programme. All those aged 9 rising to 10 years old became eligible for vaccination in the 2018 to 2019 season.

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 2019 was over 6.8 million (n=6,840,658).

Table 8. Observed and extrapolated figures for 'All patients' aged 6 months to under 65 years old who received influenza vaccine by age band during the 2018 to 2019 season

All Patient Data (includes those in a risk group and those not in a clinical risk group)	Number of patients registered	Number of patients vaccinated	2018/19 % vaccine uptake	2017/18 % vaccine uptake
Total observed 6 months under 65 years	**47,627,024**	**6,612,966**	**13.9**	**13.7**
Total extrapolated 6 months under 65 years	49,266,877	6,840,658		
6 months to under 2 years	935,257	4,970	0.5	0.6
6 months to under 2 years extrapolated	967,459	5,141		
2 years to under 5 years	1,983,868	751,542	37.9	37.2
2 years to under 5 years extrapolated	2,052,175	777,418		
5 years to under 16 years	7,443,824	1,736,664	23.3	20.3
5 years to under 16 years extrapolated	7,700,123	1,796,459		
16 to under 65 years	37,264,075	4,119,790	11.1	11.4
16 to under 65 years extrapolated	38,547,119	4,261,639		

Refused/declined[17]

Refused/declined vaccinations have remained stable for all cohorts. However, refused/declined vaccinations increased slightly for those aged 16 to under 65 years old and in 1 or more clinical risk group(s) (14.1% compared to 13.6% in 2017/18), see Table 9 and Figure 5.
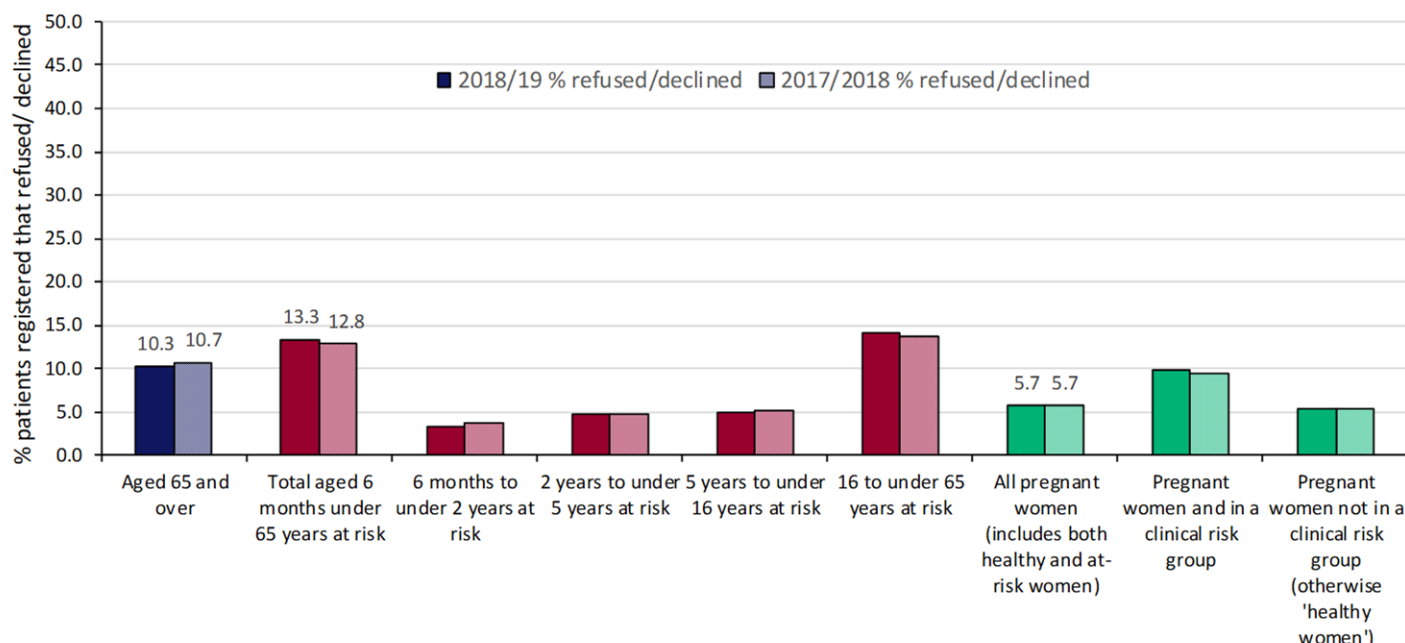
Table 9. Number of registered patients who refused or declined the influenza vaccine

Target groups for vaccination (extrapolated)	Number of vaccinations refused/declined	2018 to 2019 % refused/declined	2017 to 2018 % refused/declined
Aged 65 and over	**1,041,631**	**10.3**	**10.7**
Total aged 6 months under 65 years at risk	**905,291**	**13.3**	**12.8**
6 months to under 2 years at risk	456	3.3	3.7
2 years to under 5 years at risk	2,987	4.8	4.8
5 years to under 16 years at risk	27,494	5.0	5.2
16 to under 65 years at risk	874,354	14.1	13.6
All pregnant women (includes both healthy and at-risk women)	**36,969**	**5.7**	**5.7**
Pregnant women and **in** a clinical risk group	5,799	9.8	9.4
Pregnant women **not in** a clinical risk group (otherwise 'healthy women')	31,170	5.3	5.3

These figures should not be summed for total number refused/declined as it will double count pregnant women who are in a clinical risk group.

---

[17] 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.

Figure 5. Percentage of refused/ declined vaccination by target group for 2018 to 2019 compared to 2017 to 2018

Other healthcare settings[18]

Other healthcare settings were not collected in the February 2018 collection and therefore we have reported the January 2019 compared to January 2018 data. Most vaccinations are still delivered within the GP practices though there continues to be a gradual increase in vaccinations in pharmacies and other healthcare settings this season (Table 10 and Figure 6).

Vaccinations given outside of GP practice in patients aged 65 and over had the highest percentage of vaccinations given outside of the practice however the percentage of vaccinations remained relatively stable from last season. Whereas vaccinations given outside of GP practice in both at risk and pregnant women cohorts increased by 1.8% and 3.3% respectively.

---

[18] It is important to note that 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).

Figure 6. Percentage of vaccinations given by location for those aged 65 and over; patients aged 6 months to under 65 and in 1 or more clinical risk group(s); and pregnant women
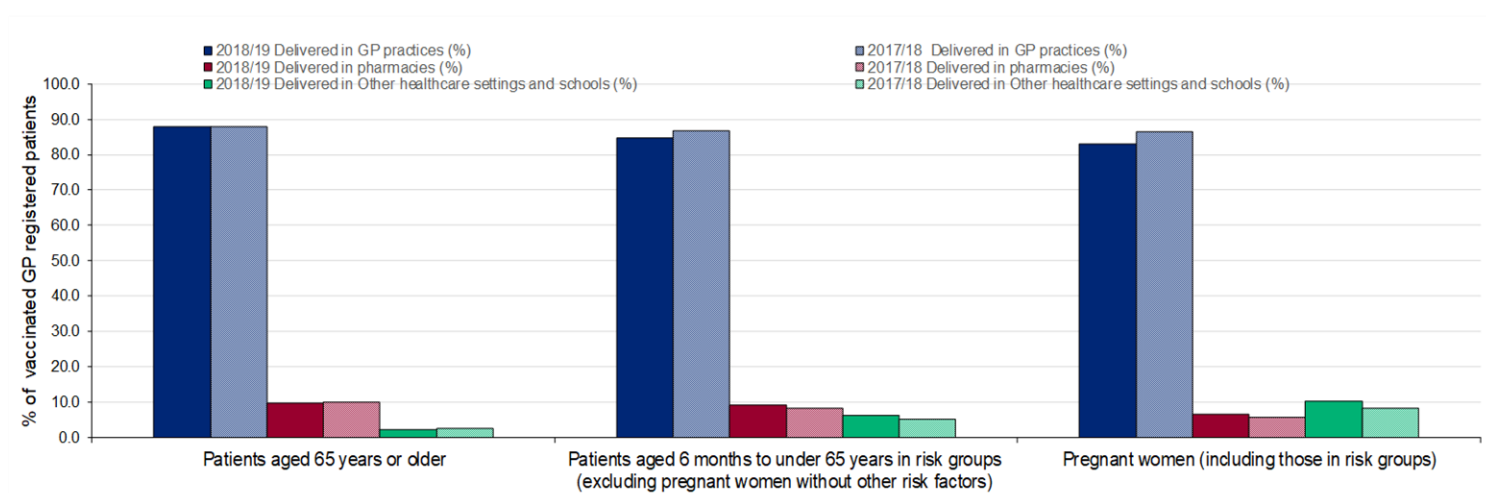

Table 10. Percentage vaccine uptake by GP practices, pharmacies and other healthcare settings (OHS)

Patient Group	Jan 2018/19	GP practices	Pharmacies	Other healthcare settings and schools	Jan 2017/18	GP practices	Pharmacies	Other healthcare settings and schools
65 and over	71.3	88.0	9.7	2.3	72.4	87.8	9.8	2.4
6 months to under 65 years at risk	46.9	84.8	9.1	6.1	48.7	86.7	8.2	5.2
All Pregnant women	45.0	83.1	6.6	10.3	47.1	86.4	5.5	8.1
All 2 and 3 year olds	44.2	98.7	0.1	1.2	43.5	98.7	0.1	1.2

Carers

Vaccine uptake for carers aged 16 to under 65 years old not in a clinical risk group was 39.0% compared to 40.7% in 2017 to 2018 season (Table 11). The median vaccine uptake at CCG level was 39.4% compared to 40.8% last season.

Table 11. Observed and extrapolated figures for 'Carers' who received an influenza vaccine during the 2018 to 2019 season

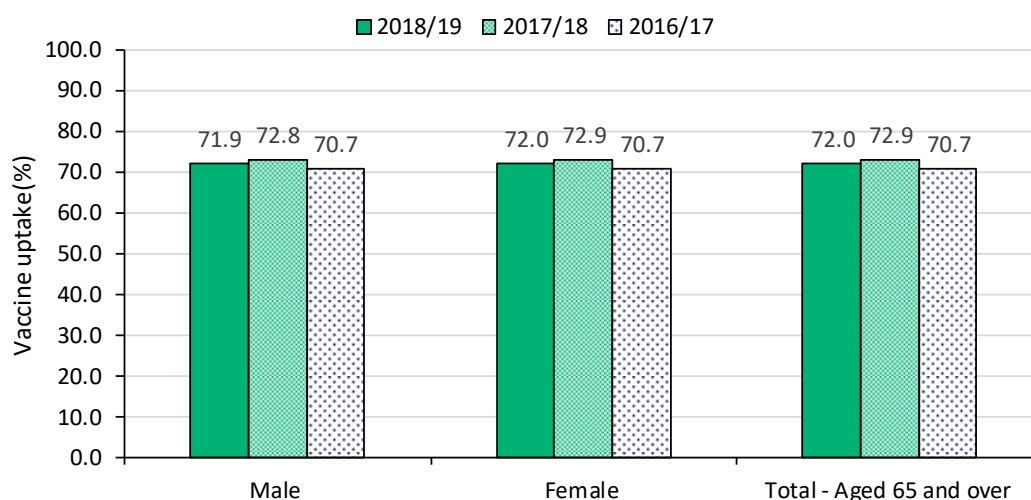| Target groups for vaccination	Number of patients registered	Number of patients vaccinated	2018 to 2019 % vaccine uptake	2017 to 2018 % vaccine uptake
16 years to under 65 years not at-risk who fulfil the 'Carer' definition	**497,598**	**194,153**	**39.0**	**40.7**
16 years to under 65 years not at-risk who fulfil the 'Carer' definition extrapolated	514,731	200,838		

Gender

Data presented here for 2016 to 2017 is for data to the end of January 2017; and for the last 2 seasons, data is to the end of February. Those with gender not specified or unknown were removed due to small numbers.

65 and over by gender

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

Geographically, at LT level, uptake varies across the teams as seen in the section on 65 and over but the gender data shows this variation is consistent between males and females. A similar pattern was seen when the LA level data was compared to the 2015 Indices of Multiple Deprivation deciles (2015 IMD) where there was some variation across the 2015 IMDs but this was consistent across males and females.

Figure 7. Influenza vaccine uptake in those aged 65 and over by gender for England from 2016 to 2017 season to 2018 to 2019 season
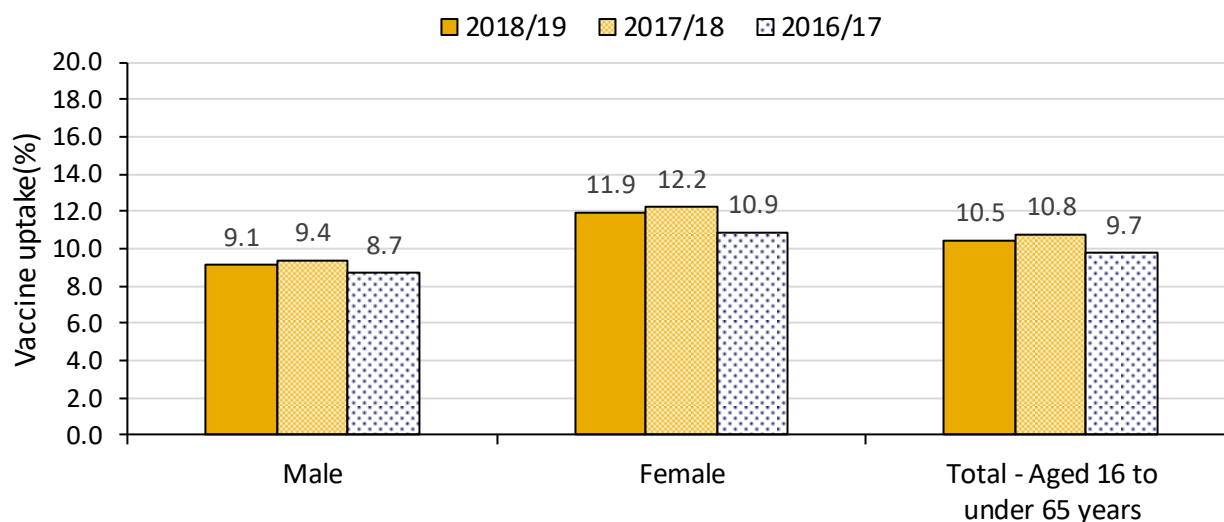

All patients aged 16 to under 65 by gender

For all patients aged 16 years to under 65 years old, vaccine uptake was more than 2% higher in females than males (Figure 8), this is after taking into account differences caused by pregnant women vaccinations. All pregnant women were removed from the numerator (number vaccinated) and the denominator (number of pregnant women). We do not collect pregnant women by age band and for this purpose assumed all pregnant women are over the age of 16 which the majority will be. This difference in uptake is seen across the past 3 seasons (Figure 8), averaging 2.6% difference between male and female vaccine uptake. A similar pattern was seen when the LA level data was compared to the 2015 IMD deciles where there was some variation across IMDs but all deciles had at least a 2% difference in uptake between males and females.

Geographically, at LT level, the higher the uptake in females, the higher the uptake in males but difference between male and female vaccination increased i.e. the LT with the highest uptake in females (14.3%), was also the highest uptake in males (10.7%) but the gender gap was 3.6% compared to the lowest LT where the difference between male and female uptake was 1.3% (lowest uptake in females and males by LT was 8.5% and 7.2% respectively).

Figure 8. Influenza vaccine uptake in all patients aged 16 to under 65 years old by gender for England from 2016 to 2017 season to 2018 to 2019 season

Vaccine Type

Vaccine type was introduced to the GP survey this season as an experimental cohort. Data was available for 69.2% of those vaccinated aged 65 and over; and 80.3% of those vaccinated aged 16 to under 65 and in a clinical risk group. Despite the high response, only around 28% of vaccinations were coded with a defined vaccine type. Therefore, caution should be used when interpreting the data.

Where vaccine type was provided; those aged 65 and over mostly received the recommended adjuvanted vaccine (23.1% of those vaccinated); and those aged 16 to under 65, in a clinical risk group received the recommended quadrivalent non-adjuvanted vaccine (27.5% of those vaccinated), Table 12 and Figure 9.

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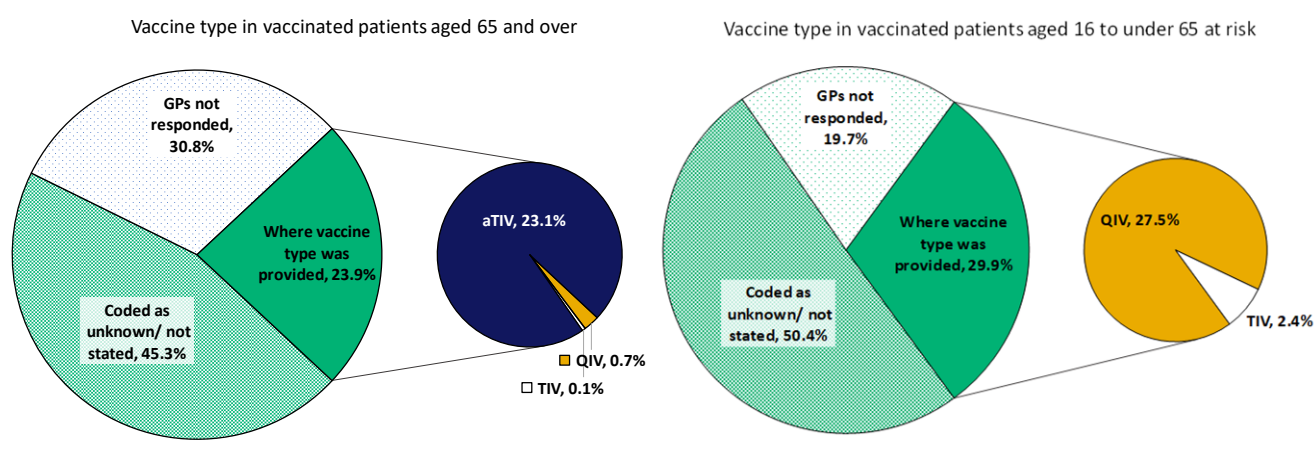

29

Table 12. Extrapolated number of vaccinations given by vaccine type in patients aged 65 and over; and those aged 16 to under 65 and in 1 or more clinical risk group(s) during the 2018 to 2019 season

Feb 2018/19		Patient Group:	Patients aged 65 years or older	Patients aged 16 to under 65 years at risk
		Vaccine uptake (%)	72.0	48.4
		Extrapolated number of people vaccinated	7.5 million	3.1 million
Vaccine type	Adjuvanted vaccine	% of those vaccinated	23.1	n/a
		Extrapolated number of people vaccinated	1.7 million	
	QIV non adjuvanted vaccine	% of those vaccinated	0.7	27.5
		Extrapolated number of people vaccinated	50,000	853,000
	TIV non adjuvanted vaccine	% of those vaccinated	0.1	2.4
		Extrapolated number of people vaccinated	11,000	73,000
	GP not responded or unknown/ not stated or not responded	% of those vaccinated	76.1	70.1
		Extrapolated number of people vaccinated	5.7 million	2.2 million

Discussion

The automated response rate for GP practices for the 2018 to 2019 end of season surveys remained high at over 96%. 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 the quality of the data inputted into the GP record as well as what is extracted by the GP System Suppliers. This will be important for the changes in the coming years when all clinical systems in England move to using the international clinical terminology, SNOMED.

The weekly sentinel surveillance has once again proved to be beneficial in providing rapid data at a national level to monitor the progress of the programme especially during the phased roll out of the recommended vaccine for the 65 and over cohort. 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; CCG average and overall national uptake.

The uptake rate in those aged 65 years and over has remained relatively constant in the past few seasons (approximately 70%). Uptake for this season was slightly lower (72.0%) compared to 2017 to 2018 (72.9%) although the total number vaccinated was larger, despite the phased roll out of the adjuvanted vaccine[19]. The national ambition for vaccination in those aged 65 years and over continues to be aligned with the WHO target of 75%. 30/195 CCGs achieved the WHO target uptake rate of 75% or more in those aged 65 and over which although less than last season (48/195 CCGs) was higher than the season before (2016 to 2017) when 15 CCGs achieved the WHO target.

Vaccine uptake in patients aged 6 months to under 65 years in 1 or more clinical risk group(s) was 48.0% compared to 49.7% in 2017 to 2018. Also for this age group, the percentage of refused/declined vaccination have increased slightly from 12.8% to 13.3%.

Vaccine uptake in pregnant women was 45.2% which was a decrease compared to 47.0% in 2017 to 2018. Vaccine uptake in this cohort should be treated with caution[20] and as more vaccines are delivered as part of routine midwifery services, it is key to ensure that the patient's GP record is updated to optimise data quality. It is important to maintain and improve uptake in pregnant women as the vaccine protects babies who are too young to have the vaccine.

---

[19] www.gov.uk/government/statistics/weekly-national-flu-reports-2018-to-2019-season

[20] See section on data limitations

Vaccine uptake in the individual risk groups has decreased for all clinical risk groups compared to last season for all patients aged 6 months to under 65 years old.

The clinical risk group with the highest uptake (diabetes) and lowest uptake (morbid obesity) has not changed since last season.

The childhood LAIV programme, which was first implemented in 2013 to 2014, continued its roll-out in 2018 to 2019 extending the programme to all those aged 9 rising to 10. Vaccinations for school years' reception to year 5 were delivered through schools and uptake in these cohorts have all increased on last season's figures; a separate report has been published on the GOV.UK website. Uptake in those aged 2 and 3 years old continued to increase this season from 44.0% in 2017 to 2018 to 44.9%.

This year, we have included data on vaccine uptake by gender for the last 3 seasons. For those aged 65 and over, there was little or no difference in uptake between genders. For all patients aged 16 years to under 65 years old, vaccine uptake was more than 2% higher in females than males, this is after taking into account differences caused by pregnant women vaccinations. All pregnant women were removed from the numerator (number vaccinated) and the denominator (number of pregnant women). Further investigation is needed to understand the difference in uptake and next season we will be collecting gender data for those aged 16 to under 65 and in 1 or more clinical risk group(s).

Vaccine type was introduced this season as an experimental cohort. It does not appear to be coded frequently in GP systems possible due to coding issues. However, it is suspected that the information is recorded in the GP record but as free text and therefore not extractable using a clinical code specification. However, where vaccine type was available, it was encouraging to see that most of the vaccinations were the recommended vaccines for the 2018 to 2019 season for each cohort.

None of the adult target groups increased vaccine uptake this season and further work is needed to identify underpinning reasons so that uptake can be improved in the future in line with national uptake ambitions. Uptake for the pre-school children's influenza vaccine programme did increase compared to the previous season and it will be important to ensure this increase is maintained in forthcoming seasons.

Acknowledgements

Appendix

CCG Changes for the 2018/19 NHS Hierarchy				
2017/18		**2018/19**		
Old Org Code	**CCG Org Name**	**New Org Code**	**CCG Org Name**	**LT Org Name**
02V	NHS LEEDS NORTH CCG	15F	NHS LEEDS CCG	NHS ENGLAND NORTH (YORKSHIRE AND HUMBER)
03C	NHS LEEDS WEST CCG	15F	NHS LEEDS CCG	NHS ENGLAND NORTH (YORKSHIRE AND HUMBER)
03G	NHS LEEDS SOUTH AND EAST CCG	15F	NHS LEEDS CCG	NHS ENGLAND NORTH (YORKSHIRE AND HUMBER)
15F	**NHS LEEDS CCG**			
04X	NHS BIRMINGHAM SOUTH AND CENTRAL CCG	15E	BIRMINGHAM AND SOLIHULL CCG	NHS ENGLAND MIDLANDS AND EAST (WEST MIDLANDS)
05P	NHS SOLIHULL CCG	15E	BIRMINGHAM AND SOLIHULL CCG	NHS ENGLAND MIDLANDS AND EAST (WEST MIDLANDS)
13P	NHS BIRMINGHAM CROSSCITY CCG	15E	BIRMINGHAM AND SOLIHULL CCG	NHS ENGLAND MIDLANDS AND EAST (WEST MIDLANDS)
15E	**BIRMINGHAM AND SOLIHULL CCG**			
10G	NHS BRACKNELL AND ASCOT CCG	15D	NHS EAST BERKSHIRE CCG	NHS ENGLAND SOUTH EAST (HAMPSHIRE, ISLE OF WIGHT AND THAMES VALLEY)
10T	NHS SLOUGH CCG	15D	NHS EAST BERKSHIRE CCG	NHS ENGLAND SOUTH EAST (HAMPSHIRE, ISLE OF WIGHT AND THAMES VALLEY)
11C	NHS WINDSOR, ASCOT AND MAIDENHEAD CCG	15D	NHS EAST BERKSHIRE CCG	NHS ENGLAND SOUTH EAST (HAMPSHIRE, ISLE OF WIGHT AND THAMES VALLEY)
15D	**NHS EAST BERKSHIRE CCG**			

2017/18		2018/19		
Old Org Code	CCG Org Name	Old Org Code	CCG Org Name	Old Org Code
10M	NHS NEWBURY AND DISTRICT CCG	15A	NHS BERKSHIRE WEST CCG	NHS ENGLAND SOUTH EAST (HAMPSHIRE, ISLE OF WIGHT AND THAMES VALLEY)
10N	NHS NORTH & WEST READING CCG	15A	NHS BERKSHIRE WEST CCG	NHS ENGLAND SOUTH EAST (HAMPSHIRE, ISLE OF WIGHT AND THAMES VALLEY)
10W	NHS SOUTH READING CCG	15A	NHS BERKSHIRE WEST CCG	NHS ENGLAND SOUTH EAST (HAMPSHIRE, ISLE OF WIGHT AND THAMES VALLEY)
11D	NHS WOKINGHAM CCG	15A	NHS BERKSHIRE WEST CCG	NHS ENGLAND SOUTH EAST (HAMPSHIRE, ISLE OF WIGHT AND THAMES VALLEY)

15A   NHS BERKSHIRE WEST CCG

2017/18		2018/19		
10Y	NHS AYLESBURY VALE CCG	14Y	NHS BUCKINGHAMSHIRE CCG	NHS ENGLAND SOUTH EAST (HAMPSHIRE, ISLE OF WIGHT AND THAMES VALLEY)
10H	NHS CHILTERN CCG	14Y	NHS BUCKINGHAMSHIRE CCG	NHS ENGLAND SOUTH EAST (HAMPSHIRE, ISLE OF WIGHT AND THAMES VALLEY)

14Y   NHS BUCKINGHAMSHIRE CCG

2017/18		2018/19		
11H	NHS BRISTOL CCG	15C	NHS BRISTOL, NORTH SOMERSET AND SOUTH GLOUCESTERSHIRE CCG	NHS ENGLAND SOUTH WEST (SOUTH WEST NORTH)
11T	NHS NORTH SOMERSET CCG	15C	NHS BRISTOL, NORTH SOMERSET AND SOUTH GLOUCESTERSHIRE CCG	NHS ENGLAND SOUTH WEST (SOUTH WEST NORTH)
12A	NHS SOUTH GLOUCESTERSHIRE CCG	15C	NHS BRISTOL, NORTH SOMERSET AND SOUTH GLOUCESTERSHIRE CCG	NHS ENGLAND SOUTH WEST (SOUTH WEST NORTH)

15C   NHS BRISTOL, NORTH SOMERSET AND SOUTH GLOUCESTERSHIRE CCG