Public Health England

Protecting and improving the nation's health

Influenza immunisation programme for England

GP patient groups

Data collection survey
Season 2014 to 2015

This collection has received approval from the Standardisation Committee for Care Information (SCCI), the new national gateway body for care information collection requests

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. It does this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. PHE is an operationally autonomous executive agency of the Department of Health.

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Executive summary

The purpose of the traditional seasonal influenza immunisation programme for 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. Ultimately this programme will target all children two to 17 years of age[1] with the aim of both directly protecting the children themselves, but also protecting the remainder of the population by reducing transmission.

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.[2] NHS England area teams (ATs) or clinical commissioning groups (CCGs) act on behalf of ATs to ensure that plans are in place.

The PHE influenza Surveillance Team has responsibility to co-ordinate and facilitate the national collection and reporting of data on the uptake of influenza vaccine.

The collection monitors and tracks vaccine uptake during the influenza season to provide a snapshot of the vaccination status of people who are currently registered at the GP practice on the day of data extraction. The data collection survey for influenza immunisation in England is not designed to assist GP payments.

The programme for 2014 to 2015 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 28 April 2014.[3] It was recommended that influenza vaccine be offered to the following eligible GP patient groups[4]:

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

[1] The children's influenza immunisation programme letter is accessible from the GOV.UK website (gateway reference 00275) at the following link; https://www.gov.uk/government/publications/childhood-flu-immunisation-programme-from-september-2014-to-2015-information-for-parents-and-schools

[2] NHS England has agreed responsibilities for commissioning the influenza programme under Section 7A agreement with the Secretary of State for Health. This describes in one place NHS England's public health responsibilities under that agreement as well as responsibilities arising from NHS England's duties to secure primary medical services for the population which includes securing influenza services under the Primary Medical Services (Directed Enhanced Service) Directions (the 'DES'). www.gov.uk/government/uploads/system/uploads/attachment_data/file/127322/Primary-Medical-Services-Directed-Enhanced-Services-Directions-2013.pdf.pdf

[3] The annual flu letter is accessible from the following link on the GOV.UK website (gateway reference 00157);https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/316007/FluImmunisationLetter2014_accessible.pdf.

[4] For further description and detail regarding patient groups eligible for influenza vaccine see Annex A page 9 in the annual flu letter.

- all patients aged two, three and four years
- all pregnant women
- carers (aged under 65 years, not at-risk, not pregnant and fulfils the 'carer' definition)

The aspirational target for vaccine coverage in 2014 to 2015 is to reach or exceed 75% uptake for people aged 65 years and over as recommended by the World Health Organization (WHO).

Cumulative data on vaccine uptake in the GP-registered population in England[5] was gathered from GPs online via the ImmForm reporting web-based system. This was extracted to the Immform system through pre-specified, automated uploads or entered manually onto the web-tool. The 2014 to 2015 influenza survey comprised a weekly sentinel return and four (retrospective) monthly returns on cumulative vaccinations administered from 1 September 2014[6] up to end October 2014, end November 2014, end December 2014 and end 31 January 2015 (inclusive).

The 2014 to 2015 influenza vaccine uptake (GP patient survey) data collection received approval from the Standardisation Committee for Care Information (SCCI), the new national gateway body for care information collection requests.

This report describes the uptake of influenza vaccine amongst eligible GP patient groups during the 2014 to 2015 vaccination programme in England. The data gathered in February 2015 for the final cumulative [January] survey are presented in this report and shown by different eligible and clinical at-risk groups and by age, with comparisons to uptake achieved in previous season's collections.

[5] People who are currently registered at the GP 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).

[6] Although the vaccination programme does not start until 1 October, some practices receive vaccine supplies in September and may start their vaccinations before 1 October. Therefore, for collection purposes, data are sought for vaccinations from 1 September 2014 onwards.

Key findings

Survey response

A total of 7,800 out of 7,809 GPs in England (99.9%), covering all 25 NHS ATs returned data for the final January 2015 survey on cumulative influenza vaccinations administered from 1 September 2014 to end of 31 January 2015.

National vaccine uptake

The percentages for national vaccine uptake are:

- those aged 65 years and over was 72.7%
- those aged six months to under 65 years in one or more clinical at-risk groups[7] was 50.3%
- all pregnant women was 44.1%
- all two-year-olds was 38.5%
- all three-year-olds was 41.3%
- all four-year olds was 32.9%
- those aged under 65 years in a clinical at-risk group[8] was 50.3% overall then ranging from 16.8% in the six months to under two years age category to 51.2% in the 16 to under 65 years age category
- clinical at-risk group(s) ranged from 32.9% in patients with asplenia or dysfunction of the spleen to 68.1% in patients with diabetes
- clinical at-risk groups by age varied; the lowest level was observed in the younger age group aged six months to under two years at 17.9% (patients with chronic degenerative neurological disease (including stroke/TIA, cerebral palsy or MS)) rising to 68.2% (patients with diabetes) in those aged16 to under 65 years.
- uptake for carers was 45.1%

[7] The 'Summary of patients in one or more at-risk group(s)' category on ImmForm excludes otherwise healthy pregnant women (ie without other risk factors) and healthy carers. It should only contain patients in one or more of the clinical risk groups and if a patient is in more than one risk group, they are only counted once

[8] The 'Summary of patients in one or more at-risk group(s)' category on ImmForm excludes otherwise healthy pregnant women (ie without other risk factors) and healthy carers. It should only contain patients in one or more of the clinical risk groups and if a patient is in more than one risk group, they are only counted once

Methods

The monitoring period for the 2014 to 2015 influenza vaccine uptake collection ran from 1 September 2014 to 31 January 2015 inclusive.

The data collection comprised:

- all data are cumulative on influenza vaccinations administered during this period and were collected from all GPs in England in four retrospective monthly surveys[9]. A weekly sentinel survey from GPs, using an automated XML bulk upload or web service only. This allows almost 'real time' monitoring of the programme at a national level from week ending 7 September 2014 to week ending 25 January 2015
- four monthly surveys from all practices (ie automatic and manual submissions) on vaccinations up to end October, end November, end December and end January (with collection starting from November 2014 through to February 2015), to provide more complete data

Data on influenza vaccine uptake were submitted by GP practices and/or AT immunisation influenza coordinators in England. Data were submitted on the ImmForm reporting website either via an automated extraction (XML bulk upload or a web service) provided by third party GP IT software suppliers (who extract data directly from GP computer systems)[10] or by PRIMIS via their CHART tool (which also extracts data from GP computer systems) or manually.

ImmForm

The ImmForm reporting website, hosted by Infomax Ltd provides a secure platform for vaccine uptake data collection for several immunisation surveys, including the influenza vaccine uptake collection.

Influenza vaccine uptake data are submitted on-line via the ImmForm website (accessed via www.immform.dh.gov.uk) either through an automated data extraction (normally performed by a GP IT software supplier extracting data direct from GP computer systems) or by an online manual submission.

[9] The first collection was the 'October' survey which took place at the start of November 2014 for data on vaccinations administered from 01/09/2014 up to end 31/10/2014. The second was the 'November' survey which took place at the start of December 2014 for data on vaccinations administered from 01/09/2014 up to end 30/11/2014. The third was the 'December' survey which took place at the start of January 2015 for data on vaccinations administered from 01/09/2014 up to end 31/12/2014 and the final collection was the 'January' survey which took place in February 2015 for cumulative data on vaccinations administered from 01/09/2014 up to end 31/01/2015.

[10] 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.

Data are submitted at GP practice level and can then be aggregated at CCG, AT or national [England] level as required. During the data collection period the NHS was able to use specific tools and functions available on the ImmForm website to enable local and regional management of the influenza programme. These functions include the ability to:

- view and evaluate influenza vaccine uptake rates by cohort broken down by age band and risk category allowing data providers to review and assess progress for their own area (ATs and CCGs can view data for all practices within their area)
- compare influenza vaccine uptake and performance anonymously with other GP practices/ATs/CCGs at local, regional and national levels allowing data providers to compare their own performance with other organisations
- validate the data at point of entry and correct any errors before data submission
- view uptake data in various formats (for example, as bar charts) including downloading data to EXCEL (in portrait or landscape mode) as well as having access to data from previous influenza seasons to compare with the current programme
- allow ATs to view a 'non-responder' report which highlights those GP practices within the AT who have failed to submit data thus allowing the AT to follow-up with these practices to obtain and submit outstanding data.

Dataset [11] [12]

The survey and dataset for 2014 to 2015 was modified to include all four-year-olds (including in at-risk groups) eligible for the intra-nasal flu vaccine introduced in 2013 to 2014.[13]

Cumulative data on influenza vaccinations in the GP-registered population in England administered from 1 September 2014 to end 31 January 2015 (inclusive) were collected in the following age and clinical risk groups:

- aged 65 years and older: mandatory data field
  (all patients)

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[11] The dataset collected reflects the eligible groups set out in the annual flu letter as best as possible but may not necessarily match the criteria exactly. Therefore, vaccine uptake data may not reflect inclusion of certain sets of patients with particular underlying clinical illnesses. See Appendix 1 'Eligible groups recommended influenza vaccination for 2014 to 2015 in the annual flu letter published 28 April 2014'.

[12] The data on 'All patients' and 'Summary of patients in one or more at-risk group(s)' are provided by all GP practices who responded to the survey. These are mandatory fields to be completed. However, the data broken down by individual at-risk group is not a mandatory requirement, therefore data for these fields are optional and are not necessarily given by all who provided data for the 'All patients' and 'Summary of patients in one or more at-risk group(s)' fields.

[13] Only one dose of nasal vaccine was recommended unless the child was in a risk group (see the algorithm, page 203 in chapter 19 on 'Influenza' of the Green Book which summarises the advice on influenza vaccination for winter 2014 to 2015); www.gov.uk/government/publications/influenza-the-green-book-chapter-19

Note that some children are contraindicated for the nasal vaccine, in which case they were to be offered the inactivated influenza vaccine.

- aged 6 months to under two years: mandatory data field
  (all patients and summary of patients in one or more clinical at-risk group(s))
- Two years to under five years: new mandatory data field

  (all patients and summary of patients in one or more clinical at-risk group(s))
- Five years to under 16 years: new mandatory data field

  (all patients and summary of patients in one or more clinical at-risk group(s))
- aged 16 years to under 65 years: mandatory data field
  (all patients and summary of patients in one or more clinical at-risk group(s))
- pregnant women: mandatory data field
  (includes 'healthy' pregnant women, ie not in a clinical at-risk group, and pregnant women falling in one or more clinical at-risk group(s) combined)
- age two: mandatory data field
  (includes 'healthy' two-year-olds, ie not in a clinical at-risk group and two-year-olds falling in one or more clinical at-risk group(s))
- age three: mandatory data field
  (includes 'healthy' three-year-olds, i.e. not in a clinical at-risk group and three-year-olds falling in one or more clinical at-risk group(s))
- age four: new mandatory data field

  (includes 'healthy' four-year-olds, ie not in a clinical at-risk group and four-year-olds falling in one or more clinical at-risk group(s)]
- clinical at-risk groups: optional data fields
  (by age and disease)
- carers: optional data field
  (patients vaccinated solely by virtue of being a carer; not aged 65 years or over, not in a clinical at-risk group and not pregnant)
- gender: new optional data field

  (gender is recorded for patients who are male, female or have an unspecified gender or unknown gender)
- vaccination by other healthcare settings: new optional field
- number of patients refused/declined: new optional field

  (this is looking for any patient who has not had a vaccination in the current influenza vaccine campaign and who has a declined or no consent read code on their medical record)

- ethnicity: new optional field

  (there were several issues with this cohort; one of the main GP IT software suppliers was not able to provide this data and the implementation of this cohort by the other GP IT software suppliers was inconsistent. The situation was exacerbated by the

existence of outdated hierarchy of ethnicity status based on ethnicity data prior to the current preferred model of the 2001 Census classification followed by the poor recording of ethnicity status in general. For these reasons, these data remain experimental and have not been included within this report)

Where data collection is optional, this is due to known data recording issues (and to minimise reporting burden on primary care by avoiding the need for extensive manual data entry). The data that is available does provides GPs with an indication of coverage in this group, with the aim of helping to drive up uptake in this target group.

Clinical at-risk group(s) aged six months to under 65 years [14]

Clinical at-risk groups were delineated by age and for each individual risk group as follows:

- chronic heart disease
- chronic respiratory disease
- chronic kidney disease
- chronic liver disease
- diabetes
- immunosuppression
- chronic neurological (stroke, transient ischaemic attack) or hereditary/degenerative disease of the central nervous system (including multiple sclerosis and cerebral palsy)
- asplenia or dysfunction of the spleen: new

Denominators

For those under 65 years of age in a clinical risk group, denominators are defined by the patient age on the date of data extraction. GP practices provided data on the number of patients registered on the date of data extraction that fell within each defined eligible group (the denominator) and the number of those vaccinated within each group (the numerator) up to end of 31 January 2015. This system means that denominator fluctuations will occur as patients joined and left practice, reached the age of six months, became pregnant, changed clinical status (ie 'joined' or 'left' a clinical at-risk group), changed carer status or died during the data collection campaign.

The denominator (number of registered patients) includes within it, patients that have been offered the vaccine but also refused it, as the uptake rate is measured against the overall eligible population. Data on the number of people that refused the vaccine were not

[14] For further description and detail regarding patient groups eligible for influenza vaccine, see Appendix 1 page 31 in this report, or Annex A page 9 in the annual flu letter available at the following link: www.gov.uk/government/uploads/system/uploads/attachment_data/file/418428/Annual_flu_letter_24_03_15__FINALv3_para9.pdf

collected in the vaccine uptake survey therefore data providers should not adjust their figures if a patient refused the vaccine.[15]

For those aged 65 years and older, the denominator is defined by patient age at 31 March 2015 (this fits with the policy, ie all those aged 65 years or older by the 31 March 2015 are eligible to receive vaccine in the 2014 to 2015 vaccination programme). [16]

The 'summary' count of at-risk patients on ImmForm excludes otherwise healthy pregnant women, healthy two-year-olds, healthy three-year-olds, healthy four-year-olds and carers; it should only include patients who fall into one or more at-risk group(s) and if a patient is in **more than** one at-risk group, they are only counted **once**.

Pregnant women

Pregnant women were defined as all pregnant women (in the first, second or third trimesters) as diagnosed by a medical professional (eg GP/midwife) that were pregnant before 1 September 2014 and still pregnant at any time during the period 1 September 2014 to 31 January 2015, and all women becoming pregnant during 1 September 2014 to 31 January 2015. This was the same as last season.

Pregnant women in 2014 to 15 were further delineated either as 'healthy' pregnant women (not in a clinical at-risk group) or with one or more of the clinical at-risk factors (listed earlier in this report). They were not delineated by age. The numerator(s) were defined as patients in these groups (whether combined as all pregnant women or delineated separately as 'healthy' or at-risk) that received flu vaccine during the period 1 September 2014 to 31 January 2015. The denominator therefore includes women who ceased to be pregnant for whatever reason and those that give birth during 1 September 2014 to 31 January 2015 before they may have been offered vaccination. Thus denominators for pregnant women could be regarded as over-inclusive as they may include women that become eligible and then ineligible for vaccination (ie individuals who were pregnant at some point on or after 1 September 2014, who were then no longer pregnant due to termination, miscarriage, or birth) before they could be vaccinated[17].

All two, three and four-year-olds

All GP practices in England were asked to offer immunisation to all registered patients aged two and three years and during the 2014 to 2015 season, this was extended to all registered patients aged four years. Thus, all children in this age range are included irrespective of whether they are in a clinical risk group or not.

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[15] The survey is based on actual vaccines administered (the numerator) not vaccines offered with the denominator being all those eligible to receive vaccine, including those that are not vaccinated for whatever reason.

[16] See 'birth date ranges' available at: www.gov.uk/government/publications/seasonal-influenza-vaccine-uptake-gp-patient-survey-data-collection

[17] Please refer to the section on data limitation within this report for further details of the challenges of recording data of influenza vaccine uptake by pregnant women.

With the introduction of all two, three and now four year-olds to the routine programme, GPs were encouraged to ensure that uptake of flu vaccine in these children was as high as possible. This was important in order to maximise the health benefits that the extended programme was expected to bring.[18]

In addition to all GP registered two, three and four-year-olds being vaccinated through primary care, the extension of the flu programme to all healthy children also included pilots in seven discrete geographical areas across England for children of primary school age (aged four to 11 years) in 2013 to 2014. These pilots were extended to include children in Years 7 and 8 (aged 11 to 13) in 2014 to 2015. The pilots tested a range of delivery methods for vaccination and a separate report will be published on this programme to cover the progress made in 2014 to 2015 [19].

Other people who may be included and/or excluded based on eligibility criteria

The 'All patients' category on ImmForm, applies to **all** patients registered at the practice (including those in a clinical at-risk group) on the date of data extraction (denominator) and all those recorded as having been vaccinated with influenza vaccine (numerator)[20]. Although household contacts of the immunocompromised can be considered for vaccination, there is no clear consistent way of classifying and identifying these individuals. Therefore, they cannot be included as a distinct group in the survey although any vaccinations given to this group will be included in the 'all patients' count on ImmForm.

Similarly, patients vaccinated where a GP has exercised their clinical judgement where they did not fall within a designated risk group, will also be counted under 'All patients' data. The 'all patients' data may also include people vaccinated privately or as part of their employer's occupational health programme when a record of these vaccinations has been entered onto the GP's clinical system.

The survey collects data on carers who fit the criteria set out in the annual flu letter, who are under 65 years of age, who are not pregnant and who do not fall into a clinical risk group.

[18] The extended programme for healthy children is expected to appreciably lower the public health impact of influenza by directly averting a large number of cases of disease in vaccinated children, and, through lowering influenza transmission in the community, indirectly preventing influenza in unvaccinated younger children, people in clinical risk groups, and older adults. Benefits include reduced influenza -related illness, GP consultations, hospital admissions and deaths.

[19] This report can be found at this link: www.gov.uk/government/publications/childhood-flu-immunisation-programme-from-september-2014-to-2015-information-for-parents-and-schools

[20] Denominators may also include the small group of people with a contraindication for the vaccine.

The current definition of a carer is:

> 'Those who are in receipt of a carer's allowance, or those who are the main carer or the carer of an elderly or disabled person whose welfare may be at risk if the carer falls ill.'[21]

The data will exclude patients who were vaccinated, but are now no longer registered at the GP practice (for example, because they have changed practice or died). The data will 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 electronic record.

It will be assumed that vaccinations given in other settings by other healthcare providers (eg pharmacies, schools, special clinics such as antenatal care, residential homes and private or occupational health vaccinations) will be recorded onto GP systems in a timely manner. This is essential for maintaining the individual's clinical record but also ensures a clear auditable trail to the original source of any data and will avoid double counting for the vaccine uptake survey. It may be that for some vaccinations where recording onto a GP system is difficult or slow, for example, vaccinations of travelling communities or those who are homeless or where patients are not registered; recording of these vaccinations may be missed by the survey although this is undesirable.

Patients who are vaccinated, but have **not** had their electronic patient record updated by the time of data extraction, will be excluded. Likewise the data will include patients vaccinated by another healthcare provider if a record of the vaccination has been correctly entered onto a GP's system in time.

[21] This should be given on an individual basis at the GP's discretion in the context of other clinical risk groups in their practice.

Data limitations

Denominator data for some dataset categories should be interpreted with caution due to validation and data quality issues. A summary of these findings is discussed below.

Pregnant women data: denominator variance

Ever since the category of pregnant women was included in 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 2014 may have been included in the denominator in error, due to the inaccuracy of the electronic record. It is likely therefore, that flu vaccine uptake by pregnant women is underestimated due to denominator inflation, however, it is not possible to determine the scale of the underestimation and it could vary considerably between GP practices.

Given the challenges of collecting data on the uptake of flu vaccine by pregnant women, uptake is likely to be underestimated and comparisons with estimated uptakes in other eligible groups are likely to be unreliable. Further consideration will need to be given as to how it may be improved ahead of future surveys. For instance, GP practices could be asked to proactively check their patient database before September for women who were pregnant but subsequently are no longer pregnant at the start of the programme and therefore would need to be excluded from the denominator and throughout September to January in order to identify women who are not pregnant at the start of the immunisation programme but become pregnant during the winter.

Taking into account the relatively small number of pregnant women in each practice at any one time, the task of identifying them could be dealt by manual search and scrutiny in order to ensure GP systems are updated.

This process will also need to include liaising with midwifery services as they may take much of the maternity care previously based in general practice. Thus, should a pregnant woman receive advice regarding seasonal influenza immunisation at their ante-natal class and/or receive the flu vaccine, it is important that the patient's GP practice is informed in a timely manner so that their electronic records can be updated accordingly, and included in vaccine uptake data collections. A delay will inevitably mean an increased probability for pregnant women that the GP's electronic record for this cohort is not always up to date resulting in the numerator (number of patients vaccinated) being discrepant.

Snapshot of influenza vaccine uptake data

It is important to note that influenza vaccine uptake data is only a snapshot of registered GP patients vaccinated at the time of data extraction/end of the data collection. The data will, therefore, not include patients who have received the vaccine but have subsequently died, who have since moved, those reaching the age of six months, women becoming pregnant, patients changing clinical status (ie 'joining' or 'leaving' a clinical risk group), patients changing carer status and 'temporary'[22] patients who may have received the vaccine but were not registered on the date of data extraction.

Consequently, 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 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 electronic record.

It is important to note that a number of providers are starting to commission influenza vaccine delivery in community pharmacies. It will be critically important to assure that vaccination data flows into primary care to ensure GP patient records are updated appropriately.

[22] If there is an increase in temporary patients that falls by the time of the final data collection then this will not be recorded. This would only affect the total number of patients vaccinated but would not affect overall vaccine uptake rates unless proportionally more temporary residents were vaccinated than permanent residents.

Results

Full data tables showing final influenza vaccine uptake for each of the recommended target groups at AT and CCG level described in the results section of this report are available to access at the following link:
www.gov.uk/government/collections/vaccine-uptake

GP practice response

A total of 7,800 out of 7,809 GPs in England (99.9%), covering all twenty-five NHS ATs returned data for the final January 2015 survey on cumulative influenza vaccinations administered from 1 September 2014 to end of 31 January 2015 (Figure 1, Appendix 2). The results were:

- all but six ATs achieved a response rate of 100% for their GP practices
- all but seven CCGs achieved a response rate of 100%
- the lowest response rate for a CCG was 92.0%, achieved by West Suffolk CCG

Data entry/extraction methods:

- the increased use of automated data extraction and upload mechanisms provided by GP IT software suppliers has to date accounted for just over 96.4% of GPs in England (7,530 out of 7,809) choosing to submit monthly automated data in the 2014 to 2015 campaign, an increase on the 91% seen last season and further reducing the burden of data collection on GP practices and AT immunisation influenza coordinators[23]
- manual submissions amounted to 3.5% of GP practices (270/7,809) typing data directly on the ImmForm website – this is a further decrease on the number of manual practices submitting data which last season was 8.8% (701/7,935 in 2013 to 2014)

Weekly versus monthly vaccine uptake comparison (provisional data)

The following points were noted:

- weekly and monthly data were overall in good agreement, with provisional national results from the four monthly returns matching their weekly equivalent with +/- 1%, confirmed that the weekly sentinel collection provides an excellent indicator of uptake at a national level

[23] GP practices were reminded that if they have or were in the process of changing their GP IT supplier, to turn off the automated extraction from their ‘old’ system and turn it on for their ‘new’ system. This is because of instances in the past where automatically uploaded data from their ‘old’ supplier has been submitted after the data from their ‘new’ system and consequently overwritten.

- the weekly sentinel survey only used automated extracts with over 75% of GPs submitted data the average size of the sentinel sample was slightly less than last year as there were some issues with GP IT software suppliers early in the season.

Patients aged 65 years and over

Vaccine uptake in patients over 65 years was 72.7% in 2014 to 2015, a slight decrease from 73.2% in 2013 to 2014.

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 January 2015, was just over seven million (n=7,163,103).This is an increase of 182,788 patients vaccinated aged 65 and over compared to 2013 to 2014 (n= 7,075,535) (Table 1, Figure 2 and Figure 3) [24].

The following results were achieved for patients aged 65 years and over:

- uptake by AT ranged from the lowest at 69.2% (London) to the highest at 76.5% (Merseyside)
- uptake by CCG ranged from starting with the lowest at 61.7% (Hammersmith and Fulham) to the highest at 80.1% (Stockport)
- six ATs (24%) achieved the WHO target uptake rate of 75% or more
- fifty CCGs (23.7%) achieved the WHO target uptake rate of 75% or more

Patients aged six months to under 65 years in a clinical at-risk group

Vaccine uptake in patients six months to under 65 years in a clinical at-risk group decreased from 52.3% in 2013 to 2014 to 50.3% in 2014 to 2015 (Table 2).

The extrapolated estimate of the total number of patients aged six months to under 65 years in a clinical at-risk group registered at a GP practice who would have been vaccinated assuming 100% of GPs had returned data by end of January 2015, was over three million (*n*=3,036,888), with an additional 180, 609 persons estimated to have been vaccinated in 2014 to 2015 compared to 2013 to 2014 (n=2,856,279). (Table 1, Figure 2 and Figure 3)**.**

The following results were achieved for patients aged six months to 65 years:

- uptake by AT ranged from the lowest of 46.3% (Essex and Surrey and Sussex) to the highest at 54.6% (Arden, Herefordshire and Worcestershire)
- uptake by CCG ranged from the lowest at 38.4% (Hammersmith and Fulham) to the highest at 63.6% (Newham)

[24] This figure is extrapolated based on the actual number of patients registered in this cohort. It is calculated by assuming a 100% response rate from GPs and assuming that there are no differences in the size of GP practices returning data compared to those that are not, so this figure should be regarded as an estimate.

Table 1. Actual and extrapolated estimate of number of patients registered and who received influenza vaccine during the 2014 to 2015 vaccine uptake campaign

Target groups for vaccination*	Number of patients registered	Number of patients vaccinated	% vaccine uptake
Aged 65 and over	9,836,086	7,154,857	72.7
Aged 65 and over extrapolated	9,847,422	7,163,103	72.7
Aged six months to under 65 years in a clinical risk group (excluding pregnant women without other risk factors and carers)	6,033,608	3,033,392	50.3
Aged six months to under 65 years in a clinical risk group (excluding pregnant women without other risk factors and carers) extrapolated	6,040,562	3,036,888	50.3
Total actual (65+ and under 65 at risk)	15,869,694	10,188,249	64.2
Total extrapolated (65+ and under 65 at risk)	15,887,984	10,199,991	64.2

*This does not include frontline health and social care workers who were also eligible to receive influenza vaccine in the 2014 to 2015 vaccination campaign (unless they were vaccinated at the GP practice and their vaccination details were entered on their GP practice's electronic record). Vaccine uptake data for frontline healthcare workers are collated in a separate survey and reported separately.[25]

Pregnant women[26]

Vaccine uptake in pregnant women increased from 39.8% in 2013 to 2014 to 44.1% in 2014 to 2015. This increase is mostly due to the increase in vaccinations among pregnant women not in a clinical risk group which increased from 38.2% in 2013 to 2014 to 42.5% this season. There was also an increase in uptake for pregnant women in a clinical risk group (61.5% uptake compared with 59.0% in 2013 to 2014).

[25] Available at the following link; www.gov.uk/government/collections/vaccine-uptake

[26] Data on the uptake of influenza vaccine by pregnant women need to be interpreted with caution. It is likely that influenza vaccine uptake by pregnant women is underestimated due to denominator inflation but it is not possible to determine the scale of the underestimation and it could vary considerably between data providers. Comparisons with estimated uptakes in other eligible groups are likely to be unreliable (for more information See 'Data Limitations' section of this report).

Table 2. Actual and extrapolated estimate number of pregnant women registered and who received influenza vaccine during the 2014 to 2015 vaccine uptake campaign

Target groups for vaccination	Number of patients registered	Number of patients vaccinated	% vaccine uptake
All pregnant women (includes both healthy and at-risk women)	**649,390**	**286,156**	**44.1**
All pregnant women extrapolated	650,138	286,486	44.1
Pregnant women and **in** a clinical risk group	54,986	33,825	61.5
Pregnant women and **in** a clinical risk group extrapolated	55,049	33,864	61.5
Pregnant women **not in** a clinical risk group (otherwise 'healthy women')	594,404	252,331	42.5
Pregnant women **not in** a clinical risk group (otherwise 'healthy women') extrapolated	595,089	252,622	42.5

Regional and local vaccine uptake:

- uptake for all pregnant women by AT ranged from the lowest at 39.6% Devon, Cornwall and Isle of Scilly) to the highest at 50.6% (Cheshire, Warrington and Wirral)
- uptake by CCG ranged from the lowest at 31.1% (Hammersmith and Fulham) to the highest at 72.0% (Stockport)
- uptake in pregnant women **in** a clinical risk group was 61.5% - the lowest uptake by AT was 54.7% (Devon, Cornwall and Isles of Scilly) and the highest was 68.2% (Greater Manchester)
- uptake in pregnant women **in** a clinical risk group by CCG ranged from starting with the lowest at 38.1% (Hammersmith and Fulham) to the highest at 81.0% (Stockport)
- uptake in pregnant women **not** a clinical risk group was 42.5%, higher than achieved last season at 38.2% - the lowest uptake by AT was 38.0% (Devon, Cornwall and Isles of Scilly) and the highest was 48.7% (Cheshire, Warrington and Wirral)
- uptake by CCG ranged from starting with the lowest at 30.1% (North Lincolnshire) to the highest at 71.0% (Stockport)

All two-year-olds

Uptake in all two-year-olds was 38.5% in 2014 to 2015 compared to 42.6% in 2013 to 2014. For all children aged two years (including those in risk groups), there was a 4% lower vaccine uptake, 38.5% than last season (42.6%). This decrease was mainly in those aged two and not in a clinical risk group where uptake was 38.1% compared to 42.1% in 2013 to 2014. Vaccine uptake for those aged two and in a clinical risk group was 53.7% uptake compared to 56.1% in 2013 to 2014.

Table 3. Actual and extrapolated estimate number of two-year-olds registered and who received influenza vaccine during the 2014 to 2015 vaccine uptake campaign

Target groups for vaccination	Number of patients registered	Number of patients vaccinated	% vaccine uptake
All two year olds (includes both 'healthy and at risk)	**727,980**	**280,451**	**38.5**
All two year olds (includes both 'healthy and at risk) extrapolated	728,819	280,774	38.5
Aged two and **in** a clinical risk group	20,325	10,918	53.7
Aged two and **in** a clinical risk group extrapolated	20,348	10,931	53.7
Aged two and **not in** a clinical risk group	707,655	269,533	38.1
Aged two and **not in** a clinical risk group extrapolated	708,471	269,844	38.1

Regional and local vaccine uptake:

- uptake for all two-year-olds by AT ranged from starting with the lowest at 30.3% (London) to the highest at 45.5% (Bristol, North Somerset, Somerset and South Gloucestershire)
- uptake by CCG ranged from starting with the lowest at 18.6% (West London (K&C &QPP) to the highest at 56.7% (Rushcliffe)
- uptake in two-year-olds **in** a clinical risk group was 53.7% compared to 56.1% last season - the lowest uptake by AT was 46.3% (Kent and Medway) and the highest was 62.3% (Bristol, North Somerset, Somerset and South Gloucestershire)
- uptake by CCG ranged from starting with the lowest at 24.2% (Dartford, Gravesham and Swanley) to the highest at 77.9% (South Warwickshire)
- uptake in two-year-olds **not** a clinical risk group was 38.1% compared to 42.2% last season. The lowest uptake by AT was 29.9% (London) and the highest was 45.1% (Bristol, North Somerset, Somerset and South Gloucestershire Area Team and Derbyshire and Nottinghamshire Area Team)
- uptake by CCG ranged from starting with the lowest at 18.4% (West London (K&C &QPP)) to the highest at 56.3% (Rushcliffe)

All three-year-olds

Uptake in all three-year-olds was 41.3% in 2014 to 2015 compared to 39.5% in 2013 to 2014. This is an increase of just less than two per cent uptake on last season. This increase was mainly in those patients aged three and not in a clinical risk group. Those aged three and not in a clinical risk group saw a slight 0.5% decrease in uptake however the number of registered patients and those vaccinated have increased.

Table 4. Actual and extrapolated estimate number of three-year-olds registered and who received influenza vaccine during the 2014 to 2015 vaccine uptake campaign

Target groups for vaccination	Number of patients registered	Number of patients vaccinated	% vaccine uptake
All three year olds (includes both 'healthy' and at risk)	**739,613**	**305,682**	**41.3**
All three year olds (includes both 'healthy' and at risk) extrapolated	740,465	306,034	41.3
Aged three and **in** a clinical risk group	29,150	16,438	56.4
Aged three and **in** a clinical risk group extrapolated	29,184	16,457	56.4
Aged three and **not in** a clinical risk group	710,463	289,244	40.7
Aged three and **not in** a clinical risk group extrapolated	711,282	289,577	40.7

Regional and local vaccine uptake:

- uptake for all three-year-olds by AT ranged from the lowest at 32.7% (London) to the highest at 48.4% (Cheshire, Warrington and Wirral Area Team and Derbyshire and Nottinghamshire Area Team)
- uptake by CCG ranged from the lowest at 19.5% (West London (K&C &QPP)) to the highest at 58.9% (North Derbyshire)
- uptake in three-year-olds **in** a clinical risk group was 56.4% compare to 56.8% last season
- the lowest uptake in three-year-olds **in** a clinical risk group by AT was 48.9% (Birmingham and the Black Country) and the highest was 64.1% (Derbyshire and Nottinghamshire)
- uptake by CCG ranged from starting with the lowest at 26.4% (Dartford, Gravesham and Swanley) to the highest at 77.1% (Stockport)
- uptake in three-year-olds **not** a clinical risk group was 40.7% compared to 38.9% last season - the lowest uptake by AT was 32.1% (London) and the highest was 47.8% (Cheshire, Warrington and Wirral Area Team and Derbyshire and Nottingham Area Team)
- uptake by CCG ranged from the lowest at 19.0% (West London (K&C &QPP)) to the highest at 58.5% (North Derbyshire).

All four-year-olds

This is the first year in which all GP registered four-year-olds, including those in a clinical at-risk group, were eligible to receive influenza vaccine as part of the routine national vaccination programme for England. Consequently, there are no figures from past seasons with which to compare.

Table 5. Actual and extrapolated estimate number of four-year-olds registered and who received influenza vaccine during the2014 to 2015 vaccine uptake campaign

Target groups for vaccination	Number of patients registered	Number of patients vaccinated	% vaccine uptake
All four year olds (includes both 'healthy' and at risk)	**736,815**	**242,530**	**32.9**
All four year olds (includes both 'healthy' and at risk) extrapolated	737,664	242,810	32.9
Aged four and **in** a clinical risk group	36,771	19,239	52.3
Aged four and **in** a clinical risk group extrapolated	36,813	19,261	52.3
Aged four and **not in** a clinical risk group	700,044	223,291	31.9
Aged four and **not in** a clinical risk group extrapolated	700,851	223,548	31.9

Regional and local vaccine uptake:

- uptake for all four-year-olds by AT ranged from the lowest at 23.6% (London) to the highest at 52.4% (Essex)
- uptake for all four-year-olds by CCG ranged from the lowest at 14.8% (West London (K&C &QPP)) to the highest at 70.2% (Basildon and Brentwood)
- uptake for all four-year-olds **in** a clinical risk group by AT ranged from starting with the lowest at 45.5% (Kent and Medway) to the highest at 65.2% (Essex)
- the lowest uptake in four-year-olds **in** a clinical risk group by CCG was 26.9% (Wyre Forest) and the highest was 78.4% (Basildon and Brentwood)
- the lowest uptake in four-year-olds **not** a clinical risk group by AT was 29.9% (London) and the highest was 45.1% (Derbyshire and Nottingham Area Team and Bristol, North Somerset and South Gloucestershire Area Team)
- uptake by CCG ranged from the lowest at 13.8% (West London (K&C &QPP)) to the highest at 69.6% (Basildon and Brentwood)

Patients aged six months to under 65 years at-risk: overall uptake in clinical risk groups

Uptake was 50.3% for all aged six months to under 65 years at-risk compared to 52.3% in 2013 to 2014.

Table 6. Actual and extrapolated estimate number of all aged six months to under 65 years at-risk registered by age group and who received influenza vaccine during the 2014 to 2015 vaccine uptake campaign

Target groups for vaccination	Number of patients registered	Number of patients vaccinated	% vaccine uptake
Total Actual six months under 65 years in a clinical risk group	**6,033,608**	**3,033,392**	**50.3**
Total extrapolated six months under 65 years in a clinical risk group	6,040,562	3,036,888	50.3
Six months to under two years in a clinical risk group	18,209	3,062	16.8
Two years to under 5 years in a clinical risk group	75,804	40,254	53.1
5 years to under 16 years in a clinical risk group	543,514	228,366	42.0
16 to under 65 years in a clinical risk group	5,396,081	2,761,710	51.2

Uptake by age for those aged under 65 years in a clinical risk group was lowest in children aged six months to under two years at 16.8%, this has decreased compared to last season (24.2%).

During the 2014 to 2015 campaign those aged two to under 16 years in a clinical risk group were disaggregated to two years to under five years and five years to under 16 years. Uptake was higher in two years to under five years (53.1%) than the five years to under 16 years (42.0%). The uptake for aged two to under 16 years in total was 43.4% which is similar to the 42.6% seen in 2013 to 2014.

In those aged 16 to under 65 years, uptake decreased from 53.4% in 2013 to 2014 compared to 51.2% in 2014 to 2015.

Patients aged six months to under 65 years at-risk: uptake in individual clinical group(s) and age

Table 7. Actual and extrapolated estimate number of all aged six months to under 65 years at-risk registered by risk group and who received influenza vaccine during the 2014 to 2015 vaccine uptake campaign

Age:	Six months to under two years	Two years to under five years	Five years to under 16 years	16 years to under 65	Total number under 65years
Risk group:	% Vaccine uptake				
Patients with chronic heart disease	21.4	47.5	31.6	51.6	50.1
Patients with chronic respiratory disease	24.4	56.7	44.6	49.8	49.2
Patients with chronic kidney disease	34.9	46.9	36.3	55.9	55.6
Patients with chronic liver disease	24.5	45.4	40.5	43.9	43.9
Patients with diabetes	24.7	63.5	60.5	68.2	68.1
Patients with immunosuppression	29.6	55.4	47.6	55.7	55.4
Patients with chronic neurological disease (including stroke/ TIA, cerebral palsy or MS)	17.9	47.3	33.1	51.5	50.4
Patients with asplenia or dysfunction of the spleen.	32.8	47.2	31.3	37.3	36.8

Data represents on average 97.6% of all GP practices in England responding (7,625/7,809), who provided data across all optional at-risk group categories for the 2014 to 2015 vaccine uptake survey (Table 7).

The highest uptake in this group was in patients with diabetes at 68.1% which is similar to last year (68.3%). Across the age groups, patients with diabetes have the highest uptake except for the youngest group, aged six months to under two years where patients with chronic kidney disease had the highest uptake of 34.9%.

Uptake by individual clinical risk group and age was lowest at 17.9% in children aged six months to under-two years with chronic degenerative neurological disease (including stroke/TIA and cerebral palsy or MS). This was a decrease compared with 21.9% last season. There are now more patients registered (~6%) in this risk group and more patients have been vaccinated in line with this increase this season.

Uptake for patients with chronic kidney disease has remained at 55.6% compared to last season. Uptake for patients with chronic liver disease has remained at a similar rate 43.9% as last season (43.5%), although the number of patients recorded in this population and the number vaccinated has increased by around six per cent.

Uptake for patients with immunosuppression has remained at a similar rate 50.4% as last season (50.1%). The number of patients recorded in this population and the number vaccinated has increased by around six per cent.

Uptake for patients with asplenia or dysfunction of the spleen was collected for the first time this season, with uptake of 36.8%. Uptake across the age groups ranged from 31.3% uptake in the five year olds to under 16 year olds age group to 47.2% in the two year olds to under five year olds age group.

Uptake in patients with chronic heart disease was 50.1% which is lower than last season, (52.9%). There was an increase of around 15% in the denominator (which compares to an increase of three per cent last year). Similarly, uptake in patients with chronic respiratory disease was 49.2% compared to 50.9% last season. The population for this cohort increased around 13%, compared to last year's population increase of around two per cent. Further investigation into these denominator increases is underway.

Carers

Table 8. Actual and extrapolated estimate number of carers aged under 65 years and not in a clinical risk group registered and who received influenza vaccine during the 2014 to 2015 vaccine uptake campaign

Target groups for vaccination	Number of patients registered	Number of patients vaccinated	% vaccine uptake
Carers	386,898	174,522	45.1
Carers extrapolated	396,113	178,679	45.1
Number of carers refused/declined vaccine	22,385	n/a	5.8
Number of carers refused/declined vaccine extrapolated	22,918	n/a	5.8
Number of carers who have had a vaccination given by other healthcare providers	n/a	6,249	1.6
Number of carers who have had a vaccination given by other healthcare providers extrapolated	n/a	6,398	1.6

Vaccine uptake was around the same for carers this year at 45.1% with 97.7% of GPs returning data (7,623/7,809)[27]. This is just slightly higher uptake compared to last season (44.8%). Although there has not been much change in the rate of uptake or the response from GPs returning data from last season, it would seem that data recording and access has improved as there has been a much larger increase (over 12%) in the number of carers being registered in their GP record and the number of actual vaccinations have increased in line with this.

[27]In 2013 to 2014 season, uptake was 44.8% and data was provided from 97.3% (7717/7935) of GP practices in England for this optional category in the 2013/14 vaccine uptake survey, compared with 95.4% of GPs (7608/7973) providing data in the 2012 to 2013 data collection.

‘All patients’

Table 9. Actual and extrapolated estimate number of all aged six months to under 65 years all patients registered and who received influenza vaccine during the 2014 to 2015 vaccine uptake campaign

Target groups for vaccination (includes those in a risk group and those not in a clinical risk group)	Number of patients registered	Number of patients vaccinated	% vaccine uptake
Total actual six months under 65 years	46,938,592	5,164,812	11.0
Total extrapolated six months under 65 years	46,992,689	5,170,765	11.0
Six months to under two years	1,001,444	6,642	0.7
Two years to under five years	2,121,916	714,385	33.7
Five years to under 16 years	7,094,447	600,841	8.5
16 to under 65 years	36,720,785	3,842,944	10.5

Influenza vaccine may also be given to patients who, for instance, were vaccinated on the basis of clinical judgement, who may not necessarily have been captured by the READ codes for the ‘clinical at-risk’ groups specified by the survey. These vaccinations are included within the ‘all patients’ data items on the ImmForm surveys which represents all registered patients (delineated by age bands) that received vaccine and, therefore, will also include patients in clinical risk groups, carers, pregnant women and any other patients vaccinated based on clinical need[28].

The actual total number of **all** patients aged six months to under 65 years (including those in a clinical at-risk group) who received vaccine by the end of January 2015, was over 5.1 million (*n*=5,164,812), a 11% uptake rate based on 99.9% of GP practices (7,800/7,809) in England responding. This is a rise compared with the number who received vaccine at the end of January 2014 which was just over 4.6million (n=4,686,438), a 10.1% uptake rate based on 99.8% of GP practices (7,935/7,950) in England responding to the 2013 to 2014 data collection.

The actual total number of patients aged six months to under 65 years who received vaccine who were **not** in a clinical risk group by the end of January 2015, was 5.2% at approximately 2.1 million (n=2,131,420). The ‘at-risk’ population is collected in the ‘summary of patients in one or more at-risk group(s)’ data fields on ImmForm and can be found elsewhere in this report.

[28] It is also possible that these data may include a proportion of healthcare workers who were administered influenza vaccine and had their vaccinations recorded on to their GP records. It is hoped that any frontline healthcare workers administered vaccine based on the criterion of direct patient care will have been captured in the separate HCWs influenza vaccine uptake survey for 2014 to 2015 www.gov.uk/government/collections/vaccine-uptake

Gender

The uptake rate in females in 2014 to 2015 was higher at 23.8% compared with uptake in in males which was 19.9%.

Table 10. Actual number of registered patients by gender and who received influenza vaccine during the 2014 to 2015 vaccine uptake campaign

Gender	Number of patients registered	Number of patients vaccinated	% Vaccine uptake
Female	19,235,261	4,579,896	23.8
Male	19,104,264	3,802,746	19.9
Unspecified/unknown	76	5	15.6

This is the first year in which the data for gender has been collected from GP registered patients in England. Consequently, there are no figures from past seasons with which to be compared.

For males, overall uptake was lowest in London at 13.9%. The highest overall uptake for males was in Cumbria, Northumberland, Tyne and Wear Area Team with 24.5% uptake.

When comparing the male and female uptake rates, the highest and lowest areas for uptake at the area team level are the same. The rate of uptake is just less than five per cent higher in females than males as above; this is expressed at the CCG level as well.

At CCG level, for males, the rate ranges from 10.2% in Hammersmith and Fulham to 30.4% in North Norfolk. For females rates ranged from 11.9% in Hammersmith and Fulham to 34.3% in North Norfolk.

Vaccinations given by other healthcare providers

Table 11. Actual number of registered patients who received influenza vaccine during the 2014 to 2015 vaccine uptake campaign from other healthcare providers other than in primary care

Target groups for vaccination	Number of vaccinations given by other healthcare providers	% vaccine uptake given by other healthcare provider
Aged 65 and over	197,936	2.0
Aged six months to under 65 years in a clinical risk group (excluding pregnant women without other risk factors and carers)	135,413	2.2
All pregnant women (includes both healthy and at-risk women)	14,529	2.2
Pregnant women and **in** a clinical risk group	1,764	3.2
Pregnant women **not in** a clinical risk group (otherwise 'healthy women')	12,765	2.1
All two year olds (includes both 'healthy' and at risk)	2,763	0.4
Aged two and **in** a clinical risk group	139	0.7
Aged two and **not in** a clinical risk group	2,624	0.4
All three year olds (includes both 'healthy' and at risk)	2,977	0.4
Aged three and **in** a clinical risk group	210	0.7
Aged three and **not in** a clinical risk group	2,767	0.4
All four year olds (includes both 'healthy' and at risk)	13,488	1.8
Aged four and **in** a clinical risk group	742	3.5
Aged four and **not in** a clinical risk group	12,746	2.0

This is the first year in which the data has been provided for vaccinations by other healthcare providers has been collected from GP registered patients in England. Consequently, there are no figures from past seasons with which to be compared.

On average, more people in at risk groups received their vaccination from other healthcare settings than those not in a clinical risk group for pregnant women, and those aged two, three or four years old.

Those aged four years were more likely to receive a vaccination in another healthcare setting than those aged two or three years old. All those aged four years had a higher vaccine uptake provided by other healthcare providers of 1.8% compared to those aged two (0.4%) and those aged three (0.7%).

It would seem that pregnant women had the highest vaccine uptake outside of the primary care setting at 2.2%, likely to be from midwifery services. At AT level, for pregnant women, the percentage of vaccinations by other healthcare provider ranges from 0.5% in Kent and

Medway to 6.2% in Thames Valley. For those in a clinical risk group this was slightly higher ranging from 0.7% in Kent and Medway to 7.1%Thames Valley.

Refused/declined

Figure12. Actual number of registered patients who refused or declined the influenza vaccine during the 2014 to 2015 vaccine uptake

Target groups for vaccination	Number of vaccinations refused/declined	% of vaccinations refused/declined
Aged 65 and over	847,388	8.6
Total aged six months under 65 years at risk	515,816	8.5
Six months to under two years at risk	309	1.7
Two years to under five years at risk	2,410	3.2
Five years to under 16 years at risk	21,604	4.0
16 to under 65 years at risk	491,493	9.1
All pregnant women (includes both healthy and at-risk women)	26,384	4.1
Pregnant women and **in** a clinical risk group	3,556	6.5
Pregnant women **not in** a clinical risk group (otherwise 'healthy women')	22,828	3.8

This is the first year in which the data has been provided for those who refused/declined the influenza vaccine from GP registered patients in England. Consequently, there are no figures from past seasons with which to be compared.

The rate of refusals/declines is similar between those over the age of 65, 8.6% and those under 65 at risk, 8.5%, however those aged 16 to under 65 at risk have the highest rate of refused/declined vaccinations at 9.1%. Those aged 16 to under 65 at risk have had a decrease in the rate of vaccine uptake this season but the actual number of those vaccinated have increased. In the younger age groupings, the rate of refusal is much lower, ranging from 1.7% to 4.0%.

The rate of all pregnant women who refuse/decline the vaccination is 4.1%. There is a clear difference between those pregnant women IN a clinical risk group (rate of refusal/decline was 6.5%) and those NOT in a clinical risk group (rate of refusal/decline was 3.8%).

Conclusions

The response rate for GP practices and ATs to the 2014 to 2015 survey was exceptionally high at 99.9% (7,800/7,809), an increase on last season from 99.8% (7,935/7,950). The continued decline in the manual burden on practices providing data online is encouraging, with the number of practices taking advantage of automated extraction processes increasing to just over 96.4% of GPs in England (7,530/7,809). This reflects the continuing growth in the proportion of data being extracted and uploaded automatically. Automated data extraction results in an almost zero burden on GPs in providing the data. The automated upload of data is an efficient method for capturing vaccine uptake data reducing the burden on GPs and ATs, and eliminates the typographical and transcription errors that may occur with manual data entry. The small number of practices currently not engaged in this process should consider the benefits to them and encourage their suppliers to provide them with the capability to provide data automatically or consider using the CHART tool provided free of charge by PRIMIS to GPs in England, which works on a number of different IT systems. Increasing the automated extraction process has been a key aspect of maintaining accurate surveillance as we have seen a decrease of 571 GP practices in England since 2009 to 2010 and as a result an increase in population per GP. The weekly sentinel surveillance has also once again proved to be beneficial in providing rapid data at national level to monitor the progress of the programme by giving a good indication of vaccine uptake rates with no additional burden to the NHS.[29]

By the end of the 2014 to 2015 winter season, just over 50% of people aged six months to under 65 years in a clinical risk group, had been vaccinated against influenza. Despite continued efforts to improve uptake and a sustained drive over the past couple of years, the remaining half of the clinical risk group population eligible to receive the vaccine, are still not getting immunised. The performance of some GP practices and ATs has demonstrated that it is possible to achieve uptake significantly higher than the national average.

Vaccine uptake is particularly low in the younger age groups with clinical conditions that put them at most risk of complications from flu. Uptake rates in the youngest of age groups, six months to under two years for example, has not improved much beyond rates of 10% overall. GPs and practice staff managing the influenza programme should make sure that all at-risk children have the opportunity to receive influenza vaccine.

This is the second season with the introduction of the intra-nasally administered live attenuated influenza vaccine for children. In 2013 to 2014, this was targeted at children two and three years of age through primary care. This season, the programme extended to four years. With the uptake levels achieved this year, it will be important to continue to

[29] An online weekly update on influenza activity and vaccine uptake throughout the 2014 to 2015 influenza season, was provided in the weekly PHE Influenza Bulletin available at the following link: https://www.gov.uk/government/statistics/weekly-national-flu-reports

build on this early success and improve uptake further in forthcoming seasons as the programme is rolled out to older cohorts.

In contrast, the uptake rate in those aged 65 years and over has remained relatively constant in the past few years, fluctuating between 72 and 75%. The recommended target for vaccination for those aged 65 years and over continues to be aligned with the WHO recommended target of 75%. Although this aspirational target was not achieved as we have an aging population, in real terms, the 65 and over population has increased by around two per cent since last season (189,653 more patients aged 65 and over), with 92,647 more patients aged 65 and over vaccinated.

Vaccine uptake varies widely between disease groups and by age category for those with an underlying clinical risk factor six months to 65 years of age. The diabetes disease group continues to have the highest uptake rate at just under 70%, a rate that has been fairly constant over recent campaigns. For clinical risk groups such as chronic heart and respiratory disease, uptake levels continue to remain at 50 to 52% in recent seasons. The only group to show steady improvement is in patients with chronic degenerative neurological disease (including stroke/TIA, cerebral palsy or MS), with uptake increasing from 40.4% in 2010 to 2011 to 50.4% in 2014 to 2015. This season, we began recording patients with asplenia or dysfunction of the spleen, this had the lowest uptake among the at-risk groups and improving uptake in this group alongside the other risk groups will be important.

Vaccine uptake in pregnant women increased the most in 2014 to 2015 to 44.1% compared with 39.8% in 2013 to 2014. Midwifery services have a key role in maximising uptake amongst pregnant women. If flu vaccine is offered through maternity services as part of routine care it is important that these immunisations are recorded in the individual’s electronic GP record. This season we recorded the number of refusals and there were very clear differences for patients who are pregnant and in a clinical risk group and those who are not in a clinical risk group. It is important to understand the reasons why patients may be refusing the vaccine to enable them to be addressed.

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- the ImmForm helpdesk and development team that provided and supported the online survey

Appendix 1

Groups recommended influenza vaccine in season 2014 to 2015

Eligible groups	Further detail
All patients aged 65 years and over	'Sixty-five and over' is defined as those aged 65 years and over on 31 March 2015 (ie born on or before 31 March 1950)
Chronic respiratory disease aged six months or older	Asthma that requires continuous or repeated use of inhaled or systemic steroids or with previous exacerbations requiring hospital admission. Chronic obstructive pulmonary disease (COPD) including chronic bronchitis and emphysema; bronchiectasis, cystic fibrosis, interstitial lung fibrosis, pneumoconiosis and bronchopulmonary dysplasia (BPD). Children who have previously been admitted to hospital for lower respiratory tract disease.
Chronic heart disease aged six months or older	Congenital heart disease, hypertension with cardiac complications, chronic heart failure, individuals requiring regular medication and/or follow-up for ischaemic heart disease.
Chronic kidney disease aged six months or older	Chronic kidney disease at stage three, four or five, chronic kidney failure, nephrotic syndrome, kidney transplantation.
Chronic liver disease aged six months or older	Cirrhosis, biliary artesia, chronic hepatitis
Chronic neurological disease aged six months or older	Stroke, transient ischaemic attack (TIA). Conditions in which respiratory function may be compromised, due to neurological disease (eg polio syndrome sufferers). Clinicians should consider on an individual basis the clinical needs of patients including individuals with cerebral palsy, multiple sclerosis and related or similar conditions; or hereditary and degenerative disease of the nervous system or muscles; or severe neurological disability.
Diabetes aged six months or older	Type 1 diabetes, type 2 diabetes requiring insulin or oral hypoglycaemic drugs, diet controlled diabetes.

Eligible groups	Further detail
Immunosuppression aged six months or older	Immunosuppression due to disease or treatment. Patients undergoing chemotherapy leading to immunosuppression. Asplenia or splenic dysfunction, HIV infection at all stages. Individuals treated with or likely to be treated with systemic steroids for more than a month at a dose equivalent to prednisolone at 20mg or more per day (any age) or for children under 20kg a dose of 1mg or more per kg per day. It is difficult to define at what level of immunosuppression a patient could be considered to be at a greater risk of the serious consequences of influenza and should be offered flu vaccination. This decision is best made on an individual basis and left to the patient's clinician. Some immunocompromised patients may have a suboptimal immunological response to the vaccine. Consideration should also be given to the vaccination of household contacts of immunocompromised individuals, ie individuals who expect to share living accommodation on most days over the winter and therefore for whom continuing close contact is unavoidable. This may include carers (see below).
Pregnant women	Pregnant women at any stage of pregnancy (first, second or third trimesters).
People living in long-stay residential care homes or other long-stay care facilities	Vaccination is recommended for people living in long-stay residential care homes or other long-stay care facilities where rapid spread is likely to follow introduction of infection and cause high morbidity and mortality. This does not include, for instance, prisons, young offender institutions, or university halls of residence.
Asplenia or dysfunction of the spleen	This also includes conditions such as homozygous sickle cell disease and coeliac syndrome that may lead to splenic dysfunction.

Eligible groups	Further detail
Carers	Those who are in receipt of a carer's allowance, or those who are the main carer, or the carer of an elderly or disabled person whose welfare may be at risk if the carer falls ill. (Please note – this category refers to individual carers entitled to a free influenza vaccine on the NHS and NOT professional health and social care workers, who are in direct contact with patients/clients and should be vaccinated by their employer as part of an occupational health programme.)

The list above is not exhaustive, and the healthcare practitioner should apply clinical judgement to take into account the risk of influenza exacerbating any underlying disease that a patient may have, as well as the risk of serious illness from influenza itself. Influenza vaccine should be offered in such cases even if the individual is not in the clinical risk groups specified above.

Appendix 2

Charts

(Data referenced in this report)

Figure 1. Number and percentage of GP's responding in 2014 to 2015 compared with recent survey years

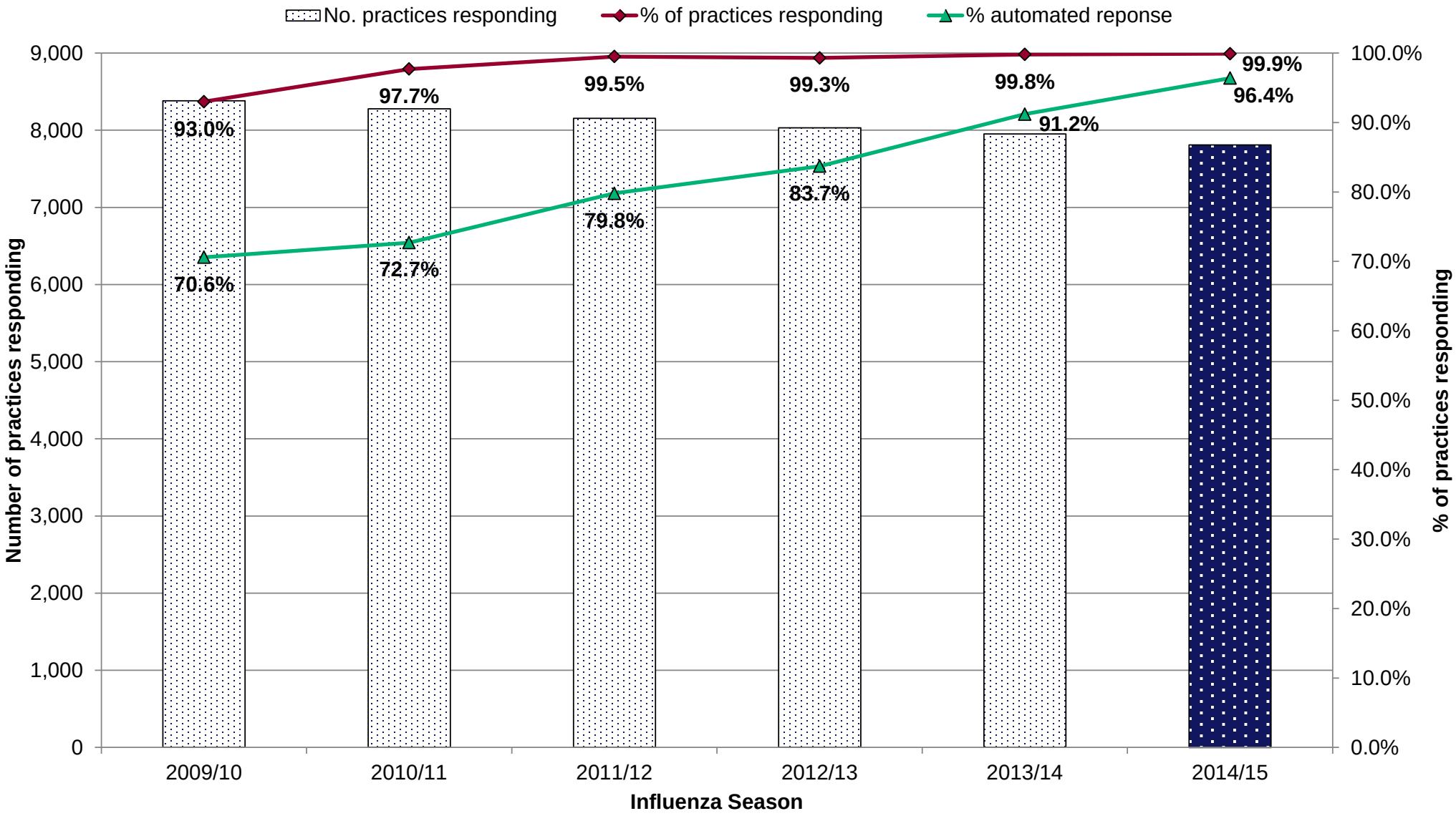


Figure 2. Influenza vaccine uptake for those aged 65 and over and 65 at risk from 2000 to 2001 through to 2014 to 2015 for England

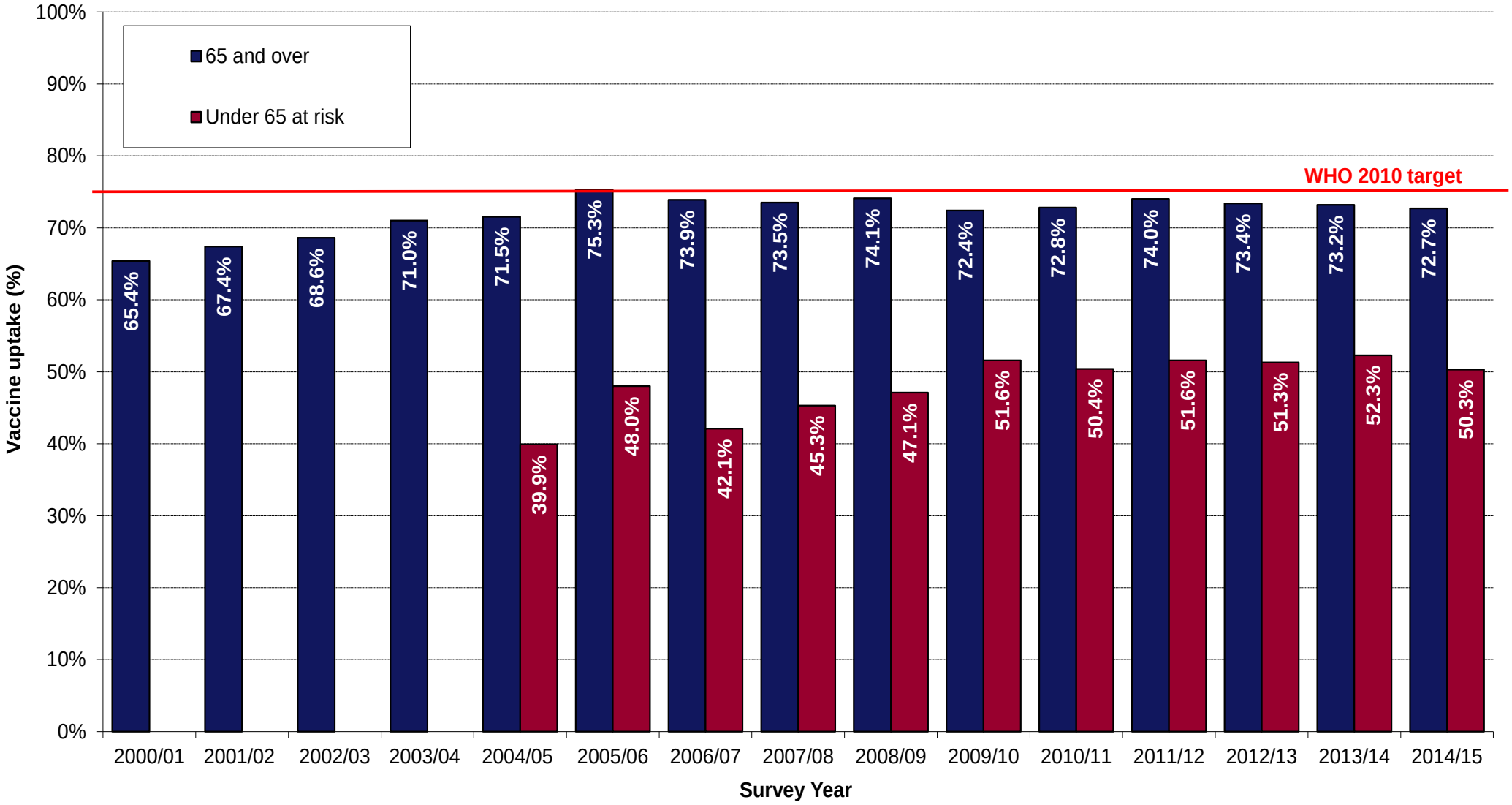


Figure 3. Extrapolated estimate(d) number of vaccines administered in the 65 and over, and under 65 at-risk for each survey year between 2000 to 2015 (cumulative data to end of January 2015) with percentage vaccine uptake (based on 100% GP response)

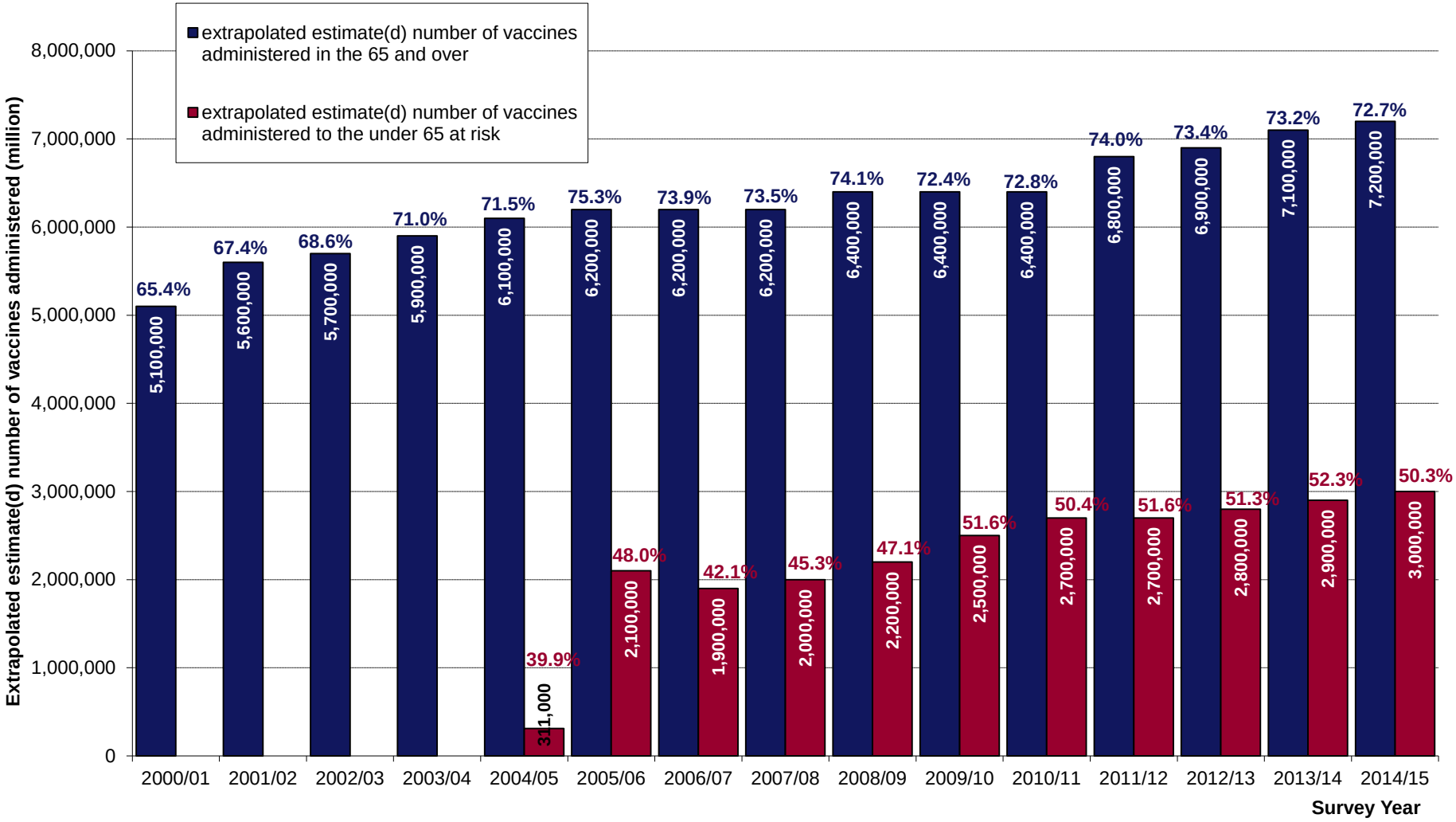
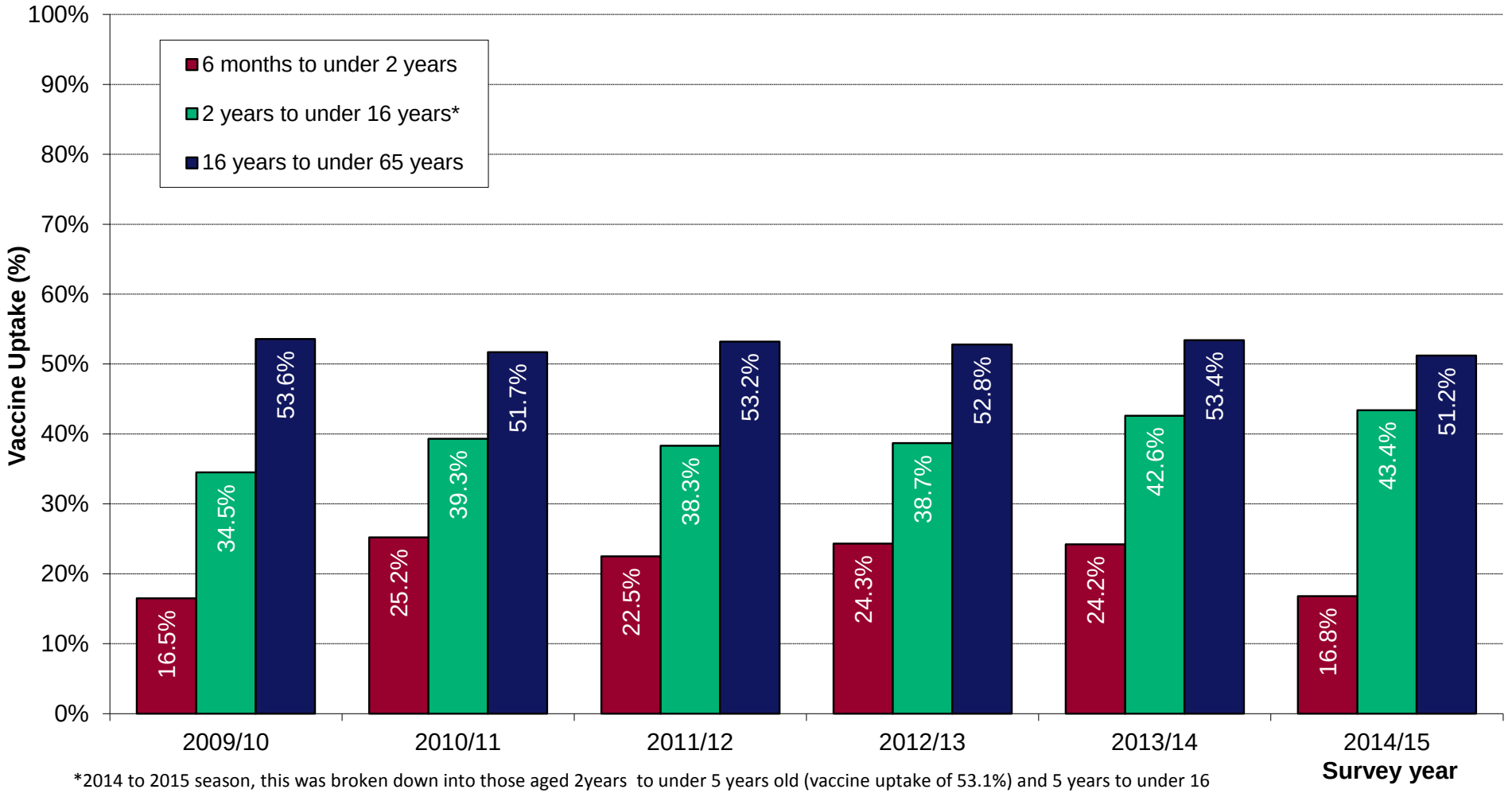
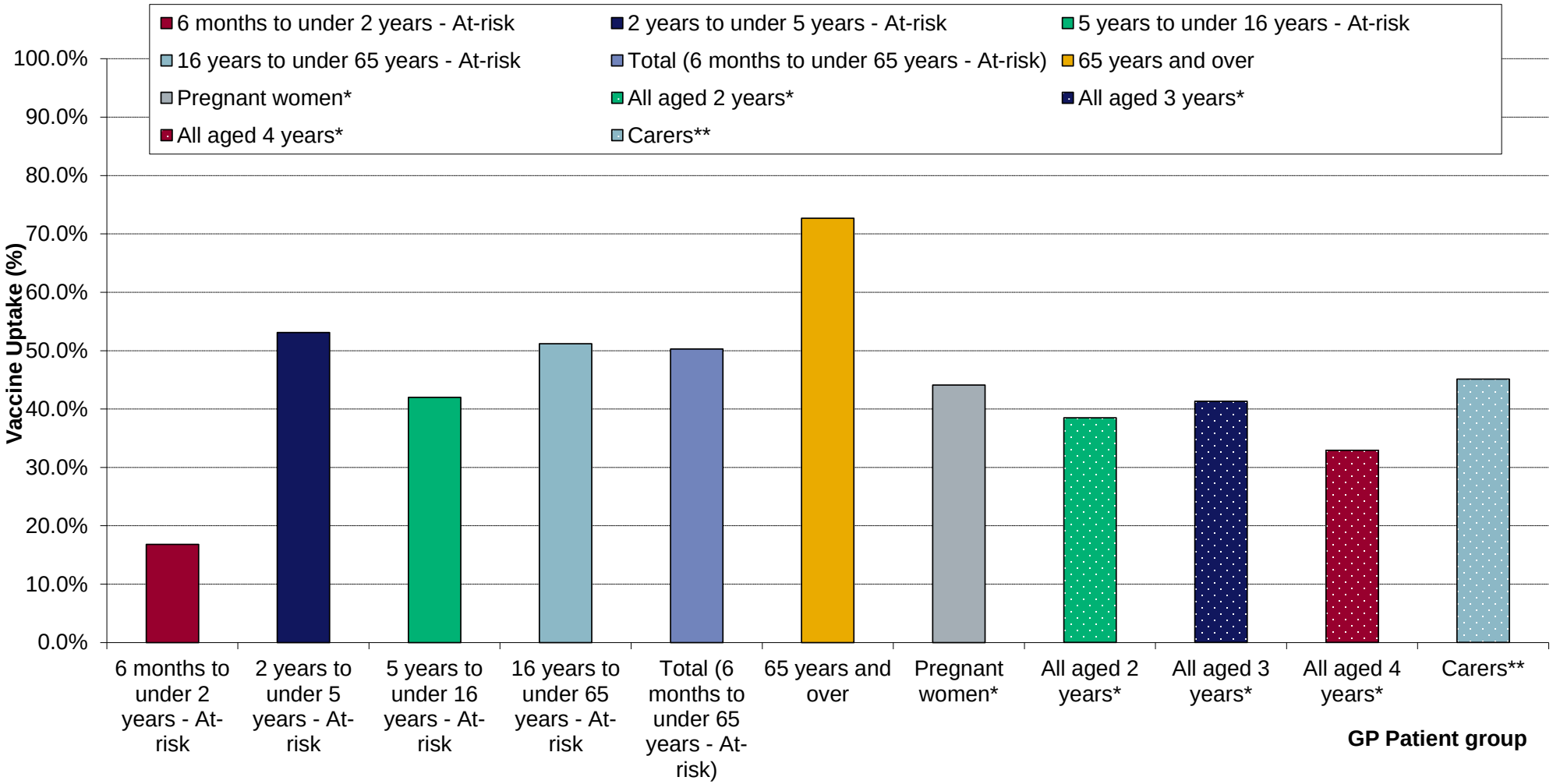


Figure 4. Influenza vaccine uptake in the under 65 at-risk by age group comparing recent survey years



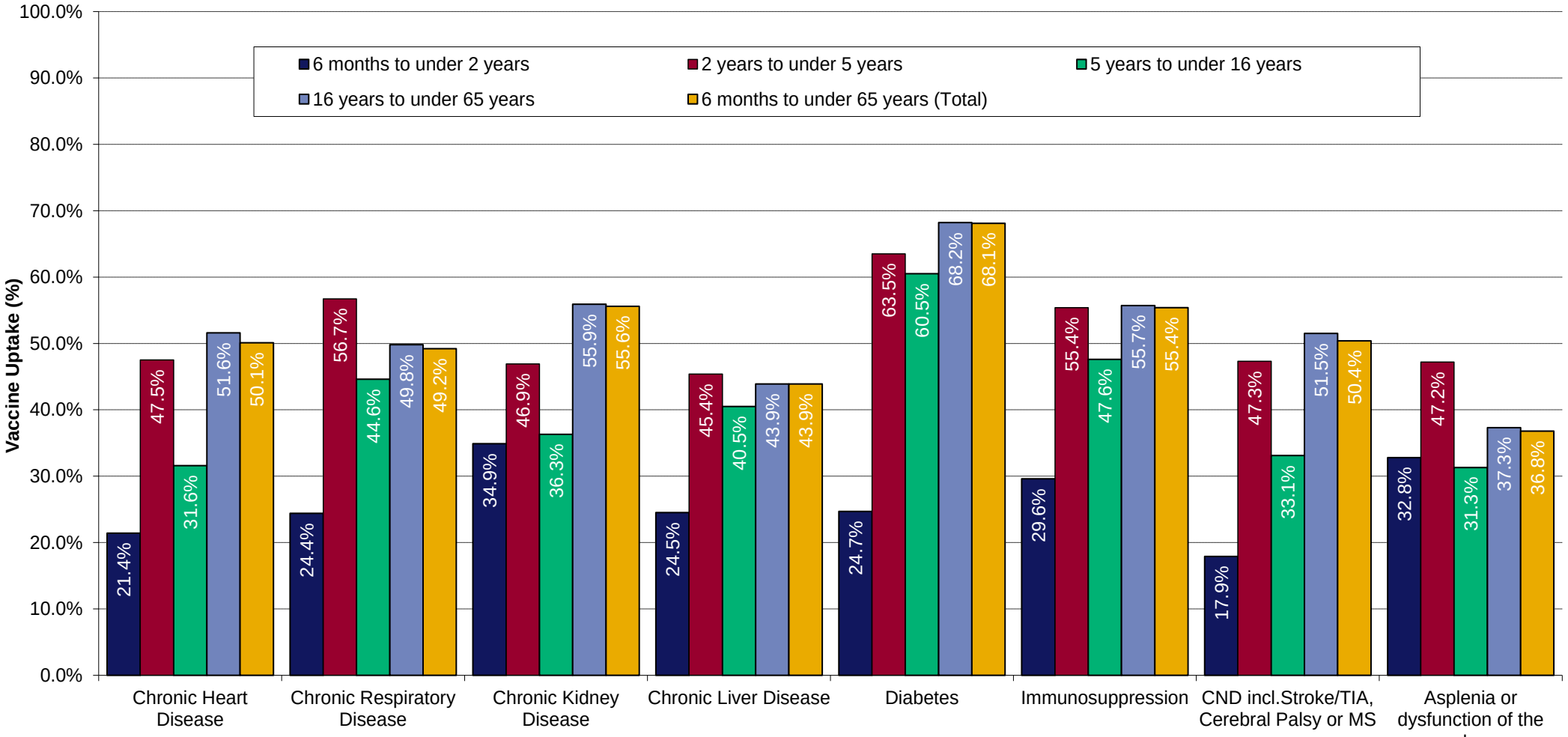
*2014 to 2015 season, this was broken down into those aged 2years to under 5 years old (vaccine uptake of 53.1%) and 5 years to under 16 years old (vaccine uptake of 42.0%).
Based on 99.9% (7,800/7.809) of GP practices providing data for the final January 2015 survey

Figure 5. Influenza vaccine uptake (%) in GP Patient groups for 2014 to 2015



*Includes those NOT in a clinical at-risk group and those IN a clinical at-risk group
**Carers aged under 65yrs, not at-risk and not pregnant

Figure 6. Influenza vaccine uptake (%) in the under 65 years at-risk by clinical risk group and age for the winter season 2014 to 2015 (cumulative data to end of January 2015)



Based on **97.6% (7,625/7,809)** of GP practices providing data across the optional risk group categories for the final January 2015 survey categories