

Influenza immunisation programme for England

GP patient groups

Data collection survey Season 2013/14

This collection received approval as a MANDATORY collection from the Review of Central Returns Steering Committee (ROCR) under licence ROCR/OR/0113/007PMAND

About Public Health England

Public Health England's mission is to protect and improve the nation's health and to address inequalities through working with national and local government, the NHS, industry and the voluntary and community sector. PHE is an operationally autonomous executive agency of the Department of Health.

Public Health England
133-155 Waterloo Road
Wellington House
London SE1 8UG

Tel: 020 7654 8000

www.gov.uk/phe

Twitter: [@PHE_uk](https://twitter.com/PHE_uk)

Facebook: www.facebook.com/PublicHealthEngland

Prepared by: Fateha Begum and Dr Richard Pebody

For queries relating to this document please contact: Fateha Begum

Email: fateha.begum@phe.gov.uk or influenza@phe.gov.uk

© Crown copyright 2014

You may re-use this information (excluding logos) free of charge in any format or medium, under the terms of the Open Government Licence v2.0. To view this licence, visit OGL or email psi@nationalarchives.gsi.gov.uk. Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned.

Published June 2014

PHE publications gateway number: 2014113

Contents

Executive summary	4
Season 2013/14: key results	7
Methods	8
Collection monitoring period.....	14
Results	16
Data limitations.....	26
Conclusions.....	28
Acknowledgements	30
Appendix 1	31
Appendix 2	34

Executive summary

The purpose of the traditional influenza immunisation programme for England is to offer protection to those who are at most risk of serious illness or death should they develop flu. In 2012, the Joint Committee on Vaccination and Immunisation (JCVI) recommended the roll-out of a new universal childhood influenza vaccine programme with a newly licensed live attenuated influenza vaccine. Ultimately this programme will target all children 2-17 years of age. The influenza immunisation programme for 2013/14 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 dated 5 June 2013.¹ It was recommended that influenza vaccine be offered to the following eligible GP patient groups²:

- all patients aged 65 years and over
- all patients aged six months to under 65 years, in a clinical at-risk group
- all patients aged 2 and 3 years (but not 4 years or older)
- all pregnant women
- carers (aged under 65 years, not at-risk, not pregnant and fulfils the 'carer' definition)

Over a three-year period, a trajectory was forecast for increases in uptake in clinical at-risk groups and pregnant women starting with 60% in 2011/12, 70% in 2012/13 and 75% to be reached or exceeded in 2013/14. Consequently, the NHS was asked to put in place plans to achieve the following aspirational targets for vaccine coverage in 2013/14:

- to reach or exceed 75% uptake for people aged 65 years and over as recommended by the World Health Organization (WHO), and
- to reach or exceed 75% uptake for people under age 65 with underlying clinical conditions which put them more at risk of severe disease following infection with flu.

Also in 2013/14, the routine vaccination programme was extended and all GP practices in England were to start offering flu immunisation to all registered patients aged two and three years (but not four years or older) on 1 September 2013 (i.e. date of birth on or after 2 September 2009 and on or before 1 September 2011). A second supplementary flu letter was published on 26 July 2013 setting out details of the extension of the flu immunisation programme to children.³ The programme will be extended over a number of years to offer flu vaccination to all healthy children aged 2 to 17 years inclusive.

The reforms of the NHS and public health system in 2013 provided specific roles for NHS England and PHE for the commissioning and system leadership of the national

¹ The annual flu letter is accessible from the following link on the GOV.UK website (gateway reference 00157); www.gov.uk/government/publications/flu-immunisation-programme-2013-to-2014.

² For further description and detail regarding patient groups eligible for flu vaccine see Annex A page 9 in the annual flu letter.

³ The children's flu immunisation programme letter is accessible from the GOV.UK website (gateway reference 00275) at the following link; www.gov.uk/government/publications/childrens-flu-immunisation-programme-2013-to-2014

immunisation programmes. NHS England has responsibility for commissioning the flu programme with GPs, midwives, and other healthcare professionals with immunisation managers and coordinators continuing to play a key role in delivery.⁴ NHS England area teams (ATs) or clinical commissioning groups (CCGs) acting on behalf of ATs, will ensure that robust plans are in place locally to identify all eligible patients, to ensure that sufficient vaccine has been ordered by practices to meet their needs, and that high vaccination uptake levels are reached in all the eligible groups.

On behalf of DH, the PHE influenza immunisation uptake monitoring team co-ordinates and facilitates the data collection process for GP practices and ATs, as well as collating and analysing end of campaign data, to produce the annual report.

PHE has responsibility to coordinate the national data collection survey and reporting of national data on the uptake of influenza vaccine to:

- support assessment by the DH and NHS of the management and delivery of the vaccination programme whilst the programme is running,
- allow NHS and DH to assess local, regional and national delivery and compare with previous influenza vaccination programmes,
- identify groups (by age and/or at-risk status) and geographical area where coverage is low (and high),
- provide epidemiological data to allow assessment of the impact and effectiveness of the influenza vaccination programme, and
- provide information to the public and ministers.

Cumulative data on vaccine uptake in the GP-registered population in England were gathered from GP practices online via the ImmForm reporting web-based system. These were entered either manually or transferred through automated electronic XML bulk uploads. The 2013/14 influenza survey comprised a weekly sentinel return and four (retrospective) monthly returns on cumulative vaccinations administered from 1 September 2013⁵ up to end October 2013, end November 2013, end December 2013 and end 31 January 2014 (inclusive). Formal approval from the Review of Central Returns Steering Committee (ROCR) was received for the collection of this data from the NHS under reference ROCR/OR/0113/007PMAND as a mandatory collection.

⁴ NHS England has agreed responsibilities for commissioning the flu 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 flu 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

⁵ 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 2013 onwards.

The data collection survey for influenza immunisation in England is not designed nor implemented to assess GP payments. The collection monitors and tracks vaccine uptake during the influenza season to provide a snapshot of 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).

This report describes the uptake of influenza vaccine amongst eligible GP patient groups during the 2013/14 vaccination programme in England. The data gathered in February 2014 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.

Season 2013/14: key results

Cumulative uptake on influenza vaccinations administered from 1 September 2013 to end of 31 January 2014 from 99.8% (7935/7950) of GP practices in England, covering all twenty-five NHS ATs showed uptake in:

- those aged 65 years and over was 73.2%
- those aged six months to under 65 years in one or more clinical at-risk groups⁶ was 52.3%
- all pregnant women was 39.8%.
- all two-year-olds was 42.6%
- all three-year-olds was 39.5%
- those aged under 65 years in a clinical at-risk group was 24.2% in the six months to under 2 years age category and 53.4% in the 16 to under 65 years age category
- clinical at-risk group(s) ranged from 43.5% (up from 42.9% in 2012/13) in patients with chronic liver disease to 68.3% (closely matching 68.5% reached in 2012/13) 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 2 years at 21.9% (patients with chronic degenerative neurological disease (including stroke/TIA, cerebral palsy or MS)) rising to 68.4% (patients with diabetes) in those aged 16 to under 65 years.

⁶ Excluding pregnant women without other risk factors, two-year-olds without other risk factors, three-year-olds without other risk factors and carers.

Methods

Data on influenza vaccine uptake were submitted by GP practices and/or AT immunisation flu 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)⁷ or by PRIMIS via their CHART tool (which also extracts data from GP computer systems) or manually.

Just over 91% of all GP practices in England who returned data to the 2013/14 survey (7234 out of 7935) submitted monthly data using automated methods with no burden to the NHS. Weekly collections were also undertaken from a sentinel group (automated only), which allowed for weekly reporting and assessment of the programme.

Dataset^{8 9}

The survey and dataset for 2013/14 was modified to include all two- and three-year-olds (including in at-risk groups) eligible for the intra-nasal flu vaccine introduced in 2013/14.¹⁰

Cumulative data on influenza vaccinations in the GP-registered population in England administered from 1 September 2013 to end 31 January 2014 (inclusive) were collected in the following age and clinical risk groups:

- aged 65 years and older: MANDATORY DATA FIELD
[all patients]
- aged 6 months to under 2 years: MANDATORY DATA FIELD
[all patients and summary of patients in one or more clinical at-risk group(s)]
- aged 2 years to under 16 years: MANDATORY DATA FIELD
[all patients and summary of patients in one or more clinical at-risk group(s)]

⁷ The source of data is from GP practice systems only. It is assumed that vaccinations given in other settings by other healthcare providers (e.g. pharmacies, 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 (e.g. vaccinations of travelling communities or homeless) or where patients are not registered.

⁸ 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 flu vaccination for 2013/14 in the annual flu letter published 5 June 2013'.

⁹ 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.

¹⁰ 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 2013/14); 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 flu vaccine.

- 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, i.e. not in a clinical at-risk group, and pregnant women falling in one or more clinical at-risk group(s) combined]
- age 2: NEW MANDATORY DATA FIELD
[includes 'healthy' two-year-olds, i.e. not in a clinical at-risk group and two-year-olds falling in one or more clinical at-risk group(s)]
- age 3: NEW 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)]
- 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]

Clinical at-risk group(s) aged six months to under 65 years¹¹

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
- chronic neurological (stroke, transient ischaemic attack) or hereditary/degenerative disease of the central nervous system (including multiple sclerosis and cerebral palsy)
- diabetes
- immunosuppression

The data should be aggregated by those aged:

- 6 months to less than 65 years,
- 6 months to less than 2 years,
- 2 years to less than 16 years, and
- 16 years to less than 65 years age bands.

in one or more of the clinical risk groups and individually for each clinical risk group.

¹¹ For further description and detail regarding patient groups eligible for flu 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/207008/130613_Flu_Letter_v_29_Gatway_GW_signed.pdf

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 2014. 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 (i.e. '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 collected in the vaccine uptake survey therefore data providers should not adjust their figures if a patient refused the vaccine.¹²

For those aged 65 years and older, the denominator is defined by patient age at 31 March 2014 (this fits with the policy, i.e. all those aged 65 years or older by the 31 March 2014 are eligible to receive vaccine in the 2013/14 vaccination programme).¹³

The 'Summary' count of at-risk patients on ImmForm excludes otherwise healthy pregnant women, healthy two-year-olds, healthy three-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 (e.g. GP/midwife) that were pregnant before 1 September 2013 and still pregnant at any time during the period 1 September 2013 to 31 January 2014, and all women becoming pregnant during 1 September 2013 to 31 January 2014. This was the same as last season.

Pregnant women in 2013/14 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 2013 to 31 January 2014. The denominator therefore includes women who ceased to be pregnant for whatever reason and those that give birth during 1 September 2013 to 31 January 2014 before they may have been offered vaccination.

¹² 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.

¹³ See 'Birth Date Ranges' available at: www.gov.uk/government/publications/seasonal-influenza-vaccine-uptake-gp-patient-survey-data-collection-2013-to-2014

Thus denominators for pregnant women could be regarded as over-inclusive as they may include women that become eligible and then ineligible for vaccination (i.e. individuals who were pregnant at some point on or after 1 September 2013, who were then no longer pregnant due to termination, miscarriage, or birth) before they could be vaccinated. Thus there is the likelihood that the denominator will increase as more women become pregnant over time, whilst those who are no longer pregnant, are not rapidly removed.

READ codes need to be selected that code for women confirmed by a medical professional as pregnant. However, no READ codes would be required for loss/termination of pregnancy or birth for the data collection, although they are relevant to clinicians when scheduling and administering the vaccinations.¹⁴

It is important that clinical records for those that were pregnant but then ceased to be pregnant before 1 September 2013 are updated, such that they are not included in the denominators, thus artificially inflating the denominators.

In addition, general practices should be encouraged to review their clinical records for pregnant women as well as for other clinical risk groups, to maintain their accuracy and liaise with community midwives to ensure accurate and timely recording of pregnant women by the practice.¹⁵

All two- and three-year-olds

All GP practices in England were asked to offer immunisation to all registered patients aged two and three years (but not four years or older) on 1 September 2013, in other words, the denominator was defined as children aged two or three years but not four years or older on the 1 September 2013 (date of birth on or after 2 September 2009 and on or before 1 September 2011). Thus, all children in this age range are included irrespective of whether they are in a clinical risk group or not.

With the introduction of all two- and three-year-olds to the routine programme, GPs were encouraged to ensure that uptake of flu vaccine in these children was as high as possible.

¹⁴ The inclusion of pregnant women as a separate risk group introduced a significant change, which required a coding system for pregnancy and eligibility (or non-eligibility) that could be used as the basis for data extraction and analysis of vaccine uptake data for this group. GP practices were able to code pregnant women and subsequently pregnancy outcome by means of software searches using PRIMIS recommended READ codes to extract vaccine uptake data, as the main source for identifying the eligible group for influenza vaccination. The numerators for pregnant women are only counted for those that fall within the respective denominator, as a proportion of the number vaccinated out of the number identified as 'very probably pregnant' (i.e. identified according to the READ code specification).

See pp16-17 in the 'Seasonal influenza vaccine uptake reporting specification 2013/14' produced by PRIMIS available on their website at this link:

www.primis.nottingham.ac.uk/documents/information/Seasonal_Flu_LQD_Specification_V5.0.5_20130917_FINAL_1.1.pdf

¹⁵ GPs will need to check their patient database throughout the flu season in order to identify women who are not pregnant at the start of the immunisation programme but become pregnant during the winter. GPs should also review their records of pregnant women before the start of the immunisation programme to ensure that women who are no longer pregnant are not called for vaccination (unless they are in other clinical risk groups) and so that they can measure the uptake of flu vaccine by pregnant women accurately. Please note, the GP patient survey only collects data to end of January. However, pregnant women (and other eligible patients) may continue to be vaccinated up to the end of March 2014.

This was important in order to maximise the health benefits that the extended programme was expected to bring.¹⁶ It is also expected the extension to all children will have a positive impact on uptake rates for others who are eligible for flu immunisation, particularly those in clinical at-risk groups for whom the risk of serious complications is highest, and for whom coverage is presently just over 50%.

In addition to all GP registered two- and three-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 in 2013/14 for children of primary school age. These pilots tested a range of delivery methods for vaccinating all pre- and primary-school-age children, with the majority of immunisations undertaken in primary schools. The first of these pilots ran alongside the routine programme in September 2013 for four- to ten-year-olds (up to and including pupils in school year 6).¹⁷ A separate report will be published on this programme.

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).¹⁸

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. However, this data is optional, so GP practices can choose not to provide it if they wish.

¹⁶ The extended programme is expected to appreciably lower the public health impact of flu by directly averting a large number of cases of disease in vaccinated children, and, through lowering flu transmission in the community, indirectly preventing flu in unvaccinated younger children, people in clinical risk groups, and older adults. Benefits also include reduced flu-related illness, GP consultations, hospital admissions and deaths.

¹⁷ A detailed evaluation and analysis on the level of uptake achieved in these pilot areas for 2013/14 will be included in a separate report and made available on the GOV.UK website.

¹⁸ 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.'*¹⁹

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 (e.g. pharmacies, 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.

¹⁹ This should be given on an individual basis at the GP's discretion in the context of other clinical risk groups in their practice.

Collection monitoring period

The monitoring period for the 2013/14 influenza vaccine uptake collection ran from 1 September 2013 to 31 January 2014 inclusive. Cumulative data on vaccinations administered during this period were collected from all GP practices in England in four retrospective monthly surveys²⁰ and from a sentinel sample (automated extractions only) in the weekly surveys of approximately 80+% of GP practices submitting electronic transfer of data.

All data are cumulative (i.e. total vaccinations administered from 1 September 2013 to the end of the month/week in question).

The increased use of automated data extraction and upload mechanisms provided by GP IT software suppliers has to date accounted for just over 91% of GPs in England choosing to submit automated data in the 2013/14 campaign, an increase on the 84% seen last season and further reducing the burden of data collection on GP practices and AT immunisation flu coordinators.²¹ 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.²²

The data collection comprised:

- A weekly sentinel survey from approximately two-thirds or more of GP practices, using automated XML bulk upload or web service only. This allows almost 'real time' monitoring of the programme at a national level from week ending 8 September 2013 to week ending 26 January 2014.
- Four monthly surveys from all practices (i.e. automatic and manual submissions) on vaccinations up to end October, end November, end December and end January (with collection starting from November 2013 through to February 2014), to provide more complete data.

²⁰ The first collection was the 'October' survey which took place at the start of November 2013 for data on vaccinations administered from 01/09/2013 up to end 31/10/2013. The second was the 'November' survey which took place at the start of December 2013 for data on vaccinations administered from 01/09/2013 up to end 30/11/2013. The third was the 'December' survey which took place at the start of January 2014 for data on vaccinations administered from 01/09/2013 up to end 31/12/2013 and the final collection was the 'January' survey which took place in February 2014 for cumulative data on vaccinations administered from 01/09/2013 up to end 31/01/2014.

²¹ 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.

²² An online weekly update on influenza activity and vaccine uptake throughout the 2013/14 influenza season, was provided in the weekly PHE Influenza Bulletin available at the following link:
www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/SeasonalInfluenza/EpidemiologicalData/05influsWeeklyinfluenzareportsarchive/

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 on-line manual submission.

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 facilitate 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, and
- 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.

Results

Charts and tables referenced in this report are provided at the end in [Appendix 2](#).

Full data tables showing final influenza vaccine uptake for each of the recommended target groups at area team 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

Increased from 99.3% in 2012/13 to 99.8% in 2013/14

99.8% (7935/7950) of GP practices in England provided data on cumulative influenza vaccine uptake for the period 1 September 2013 up to end 31 January 2014 (inclusive). ([Chart 1](#))

- All but four ATs (21) achieved a response rate of 100% for their GP practices.
- All but twelve CCGs (199) achieved a response rate of 100%.
- The lowest response rate for a CCG was 92.3%, achieved by Central London (Westminster) CCG.

Data entry/extraction methods

- Automated upload: 91.2% of practices (7234/7935) submitted data via an automated XML bulk transfer or a web service upload. This was an increase on the rate observed last season which was 83.7% (6676 out of 7973 practices returning data in 2012/13).
- Manual submissions amounted to 8.8% of GP practices (701/7935) typing data directly on the ImmForm website. This is a further decrease on the number of manual practices submitting data which last season was 16.3% (1297/7973 returning data in 2012/13).

Weekly versus monthly vaccine uptake comparison (provisional data)

The weekly survey using timely data automatically extracted from a sentinel group of around 80+% of GP practices was compared with both automated and manual submissions from the 'all-practices' monthly surveys.

Weekly and monthly data were overall in good agreement, with provisional national results from the four monthly returns matching their weekly equivalent confirming that the weekly sentinel collection provides an excellent indicator of uptake at national level. ([Chart 3](#))

Patients aged 65 years and over

Decreased from 73.4% in 2012/13 to 73.2% in 2013/14

The national mean uptake at the end of the 2013/14 campaign for the 65 years and over was 73.2%, a slight decrease compared with 73.4% achieved in 2012/13. ([Chart 4](#))

The extrapolated estimate of the total number of patients aged 65 years and over registered at a GP practice who would have been vaccinated assuming 100% of GPs returned data by end of January 2014, was just over 7 million ($n=7,076,363$).²³ ([Figure 1](#) and [Chart 2](#))

- Uptake by AT ranged from starting with the lowest at 70.0% (London) to the highest at 76.5% (Merseyside). Seventeen out of 25 ATs (68%) achieved uptake rates equal the national average of 73.2% or higher.
- Uptake by CCG ranged from starting with the lowest at 62.9% (Hammersmith and Fulham) to the highest at 80.5% (Stockport).
- 104 CCGs (49.3%) out of 211 in total achieved an uptake equal to the national average of 73.2% or higher.
- Seven ATs (28%) achieved the WHO target uptake rate of 75% or more.
- 60 CCGs (28.4%) achieved the WHO target uptake rate of 75% or more.

Patients aged six months to under 65 years in a clinical at-risk group **Increased from 51.3% in 2012/13 to 52.3% in 2013/14**

The national mean uptake at the end of the 2013/14 campaign for those aged six months to under 65 years in a clinical at-risk group²⁴ was 52.3%, compared with 51.3% reached last season. ([Chart 4](#))

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 2014, was over 2.8 million ($n=2,856,613$).²⁵ ([Figure 1](#) and [Chart 2](#))

- Uptake by AT ranged from starting with the lowest at 47.2% (Essex) to the highest at 56.9% (Lancashire). Fourteen out of 25 ATs (56%) achieved uptake rates equal to or higher than the national average uptake.
- Uptake by CCG ranged from starting with the lowest at 38.9% (Hammersmith and Fulham) to the highest at 68.6% (Stockport).
- 98 CCGs (46.4%) out of 211 in total achieved an uptake equal to the national average of 52.3% or higher.
- No AT or CCG reached the aspirational target of 75% for this cohort as a whole.

²³ 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.

²⁴ Excluding pregnant women without other risk factors, two-year-olds without other risk factors, three-year-olds without other risk factors and carers.

²⁵ 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.

Overall population extrapolated estimates [registered and vaccinated]

Figure 1. Actual and extrapolated estimate of number of patients registered and who received influenza vaccine during the 2013/14 vaccine uptake campaign

Target groups for vaccination	Number of patients Registered	Number of patients Vaccinated	Percentage Uptake (%)
Aged 65 years and over	9,646,433	7,062,210	73.2%
Aged 65 years and over (extrapolated estimate)	9,665,765	7,076,363	73.2%
Aged under 65 years in a clinical risk group (excluding pregnant women without other risk factors and Carers)	5,454,966	2,850,900	52.3%
Aged under 65 years in a clinical risk group (excluding pregnant women without other risk factors and Carers) (extrapolated estimate)	5,465,898	2,856,613	52.3%
Total Actual (65+ and under 65 at risk)	15,101,399	9,913,110	65.6%
Total Extrapolated (estimate)	15,131,662	9,932,976	65.6%

The total population (extrapolated estimate) of registered patients eligible to receive vaccine, those aged 65 years and over and those aged six months to under 65 years of age in a clinical at-risk group, assuming 100% of GP practices had returned data, was over 15.1 million ($n=15,131,662$).²⁶

The total population (extrapolated estimate) of vaccinated patients in the same cohorts, who would have been vaccinated assuming 100% of GP practices had returned data, is just over 9.9 million ($n=9,932,976$).²⁷

This does not include frontline health and social care workers who were also eligible to receive influenza vaccine in the 2013/14 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.²⁸

²⁶ This figure does not include pregnant women without other risk factors, two-year-olds without other risk factors, three-year-olds without other risk factors and carers.

²⁷ This figure does not include pregnant women without other risk factors, two-year-olds without other risk factors, three-year-olds without other risk factors and carers.

²⁸ Available at the following link; www.gov.uk/government/collections/vaccine-uptake

Pregnant women²⁹

Decreased from 40.3% in 2012/13 to 39.8% in 2013/14

Figure 2. Actual and extrapolated estimate number of pregnant women registered and who received influenza vaccine during the 2013/14 vaccine uptake campaign

Target groups for vaccination	Number of patients Registered	Number of patients Vaccinated	Percentage Uptake (%)
All Pregnant women*	659,223	262,081	39.8%
All Pregnant women (extrapolated estimate)	660,544	262,606	39.8%
At-risk pregnant women	48,446	28,585	59.0%
At-risk pregnant women (extrapolated estimate)	48,543	28,642	59.0%
Healthy pregnant women only	610,777	233,496	38.2%
Healthy pregnant women only (extrapolated estimate)	612,001	233,964	38.2%
* includes both healthy and at-risk			

- Uptake for all pregnant women by AT ranged from starting with the lowest at 34.3% (Kent and Medway) to the highest at 45.1% (West Yorkshire). Sixteen out of 25 ATs (68%) achieved uptake rates equal to the national average of 39.8% or higher.
- Uptake by CCG ranged from starting with the lowest at 26.9% (Dartford, Gravesham and Swanley) to the highest at 68.8% (Stockport).
- 100 CCGs (47.4%) out of 211 in total achieved an uptake equal to the national average of 39.8% or higher.
- Uptake in pregnant women IN a clinical risk group was 59.0% exactly matching that which was achieved last season. The lowest uptake by AT was 52.3% (Kent and Medway) and the highest was 63.5% (Cheshire, Warrington and Wirral).
- Uptake by CCG ranged from starting with the lowest at 40.3% (Cannock Chase) to the highest at 82.9% (Stockport).
- 103 CCGs (48.8%) out of 211 in total achieved an uptake of equal to the national average of 59.0% or higher.

²⁹ 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).

- Uptake in pregnant women NOT a clinical risk group was 38.2%, slightly lower than that was achieved last season at 38.8%. The lowest uptake by AT was 32.9% (Kent and Medway) and the highest was 43.7% (West Yorkshire).
- Uptake by CCG ranged from starting with the lowest at 25.6% (Dartford, Gravesham and Swanley) to the highest at 67.4% (Stockport).
- 100 CCGs (47.4%) out of 211 in total achieved an uptake equal to the national average of 38.2% or higher.

(Figure 2 and Table 3)

All two-year-olds

Uptake in all two-year-olds was 42.6% in 2013/14

Figure 3. Actual and extrapolated estimate number of two-year-olds registered and who received influenza vaccine during the 2013/14 vaccine uptake campaign

Target groups for vaccination	Number of patients Registered	Number of patients Vaccinated	Percentage Uptake (%)
All 2 year olds*	724,865	308,964	42.6%
All 2 year olds (extrapolated estimate)	726,318	309,583	42.6%
At-risk 2 year olds	19,822	11,121	56.1%
At-risk 2 year olds (extrapolated estimate)	19,862	11,143	56.1%
Healthy 2 year olds only	705,043	297,843	42.2%
Healthy 2 year olds only (extrapolated estimate)	706,456	298,440	42.2%
* includes both healthy and at-risk			

This is the first year in which all GP registered two-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.

- Uptake for all two-year-olds by AT ranged from starting with the lowest at 32.7% (London) to the highest at 51.0% (Cheshire, Warrington and Wirral). Nineteen out of 25 ATs (76%) achieved uptake rates equal to the national average of 42.6% or higher.
- Uptake by CCG ranged from starting with the lowest at 21.1% (Hammersmith and Fulham) to the highest at 61.7% (North Derbyshire).
- 118 CCGs (55.9%) out of 211 in total achieved an uptake equal to the national average of 42.6% or higher.

- Uptake in two-year-olds IN a clinical risk group, was 56.1%. The lowest uptake by AT was 47.8% (Hertfordshire and the South Midlands) and the highest was 65.1% (Derbyshire and Nottinghamshire). Fifteen out of 25 ATs (60%) achieved an uptake of equal the national average of 56.1% or higher.
- Uptake by CCG ranged from starting with the lowest at 28.0% (Swale) to the highest at 84.6% (Windsor, Ascot and Maidenhead).
- 117 CCGs (55.4%) out of 211 in total achieved an uptake equal to the national average of 56.1% or higher.
- Uptake in two-year-olds NOT a clinical risk group was 42.2%. The lowest uptake by AT was 32.4% (London) and the highest was 50.8% (Cheshire, Warrington and Wirral). Nineteen out of 25 ATs (76%) achieved an uptake of equal the national average of 42.2% or higher.
- Uptake by CCG ranged from starting with the lowest at 20.8% (Hammersmith and Fulham) to the highest at 61.4% (North Derbyshire)
- 116 CCGs (54.9%) out of 211 in total achieved an uptake equal to the national average of 42.2% or higher.

(Figure 3 and Table 4)

All three-year-olds

Uptake in all three-year-olds was 39.5% in 2013/14

Figure 4: Actual and extrapolated estimate number of three-year-olds registered and who received influenza vaccine during the 2013/14 vaccine uptake campaign

Target groups for vaccination	Number of patients Registered	Number of patients Vaccinated	Percentage Uptake (%)
All 3 year olds*	722,438	285,646	39.5%
All 3 year olds (extrapolated estimate)	723,886	286,218	39.5%
At-risk 3 year olds	27,011	15,348	56.8%
At-risk 3 year olds (extrapolated estimate)	27,065	15,379	56.8%
Healthy 3 year olds only	695,427	270,298	38.9%
Healthy 3 year olds only (extrapolated estimate)	696,821	270,840	38.9%
* includes both healthy and at-risk			

This is the first year in which all GP registered three-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.

- Uptake for all three-year-olds by AT ranged from starting with the lowest at 29.4% (London) to the highest at 47.9% (Cheshire, Warrington and Wirral). Eighteen out of 25 ATs (72%) achieved uptake rates equal to the national average of 39.5% or higher.
- Uptake by CCG ranged from starting with the lowest at 16.6% (Hammersmith and Fulham) to the highest at 59.1% (Newbury and District)
- 123 CCGs (58.2%) out of 211 in total achieved an uptake equal to the national average of 39.5% or higher.
- Uptake in three-year-olds IN a clinical risk group, was 56.8%. The lowest uptake by AT was 48.1% (London) and the highest was 64.8% (Wessex). Seventeen out of 25 ATs (68%) achieved an uptake equal to the national average of 56.8% or higher.
- Uptake by CCG ranged from starting with the lowest at 32.0% (Dartford, Gravesham and Swanley) to the highest at 81.1% (Vale Royal).
- 120 CCGs (56.8%) out of 211 in total achieved an uptake of equal the national average of 56.8% or higher.
- Uptake in three-year-olds NOT a clinical risk group was 38.9%. The lowest uptake by AT was 28.8% (London) and the highest was 47.4% (Cheshire, Warrington and Wirral). Seventeen out of 25 ATs (68%) achieved an uptake equal to the national average of 38.9% or higher.
- Uptake by CCG ranged from starting with the lowest at 16.2% (Hammersmith and Fulham) to the highest at 58.6% (North Derbyshire).
- 118 CCGs (55.9%) out of 211 in total achieved an uptake equal to the national average of 38.9% or higher.

([Figure 4](#) and [Table 5](#))

Patients aged six months to under 65 years at-risk: overall uptake in clinical risk groups ³⁰

Total overall uptake by clinical risk group ranged from starting with the lowest at 43.5% among patients with chronic liver disease compared with 42.9% for the same risk group last season. The highest uptake reached was 68.3% among patients with diabetes compared with 68.5% for the same risk group in 2012/13. ([Table 6](#))

Uptake in patients with chronic degenerative neurological disease, including stroke/TIA, cerebral palsy or MS was 50.1%, a slight improvement compared with 49.2% achieved last season. Uptake in patients with chronic respiratory disease was 50.9%, a slight increase

³⁰ Data represents on average 97.0% of all GP practices in England responding (7704/7935), who provided data across all optional at-risk group categories for the 2013/14 vaccine uptake survey.

on 50.0% achieved last season. Uptake in patients with chronic heart disease was 52.6%, almost an exact match on last season's figure of 52.5%.

Uptake in patients with chronic kidney (renal) disease and in patients with immunosuppression was the same at 55.6%. For both risk groups, this was a decrease compared with last season (2012/13) at 56.1% and 54.7% respectively.

([Chart 6](#) and [Table 6](#))

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

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 24.2%, similar to what was achieved last season in the same age group at 24.3%. There was an increase in those aged 2 to under 16 years from 38.7% in 2012/13 to 42.6% in 2013/14. In those aged 16 to under 65 years, uptake increased marginally from 52.8% in 2012/13 to 53.4% in 2013/14. ([Chart 5](#))

Uptake by individual clinical risk group and age was lowest at 21.9% in children aged six months to under two years with chronic degenerative neurological disease (including stroke/TIA and cerebral palsy or MS). This was, however, an increase compared with 18.6% achieved in the same age for the same risk group last season. The highest uptake in this age band was 44.3% in those with diabetes.

Vaccine uptake in the two years to under 16 years age group was highest in patients with diabetes at 59.7%, a decrease on the uptake achieved in the same age and the same risk group at 61.6% in 2012/13. The lowest uptake rate for this age band was in those with chronic heart disease at 32.5%, an improvement, however, on last season's figure of 27.2% in 2012/13. ([Chart 6](#))

Vaccine uptake in the 16 years to under 65 age group was highest in patients with diabetes at 68.4%, a slight decrease on the uptake achieved in 2012/13 at 68.6%. The lowest uptake was in patients with chronic liver disease at 43.6%, a slight improvement on last season's figure of 43.0% in 2012/13. ([Chart 6](#))

The highest uptake by risk group and age comparing all three age categories was 68.4% in those aged 16 to under 65 years, for patients with diabetes. This was slightly lower compared with 68.6% achieved in the same age for the same risk group in 2012/13. ([Chart 6](#))

Carers

The national mean uptake in carers aged under 65 years, not in a clinical at-risk group and not pregnant was 44.8% (154,119 vaccinated out of 344,104 registered) for 2013/14. This is lower compared with the uptake level reached in 2012/13 at 46.3%.³¹

³¹ Data represents 97.3% (7717/7935) of GP practices in England responding, who provided data for this optional category in the 2013/14 vaccine uptake survey, compared with 95.4% of GPs (7608/7973) providing data in the 2012/13 data collection.

All patients

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.

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 2014, was over 4.6 million ($n=4,686,438$), a 10.1% uptake rate based on 99.8% of GP practices (7935/7950) in England responding. This is a rise compared with the number who received vaccine at the end of January 2013 which was just over 4 million ($n=4,042,807$), an 8.8% uptake rate based on 99.3% of GP practices (7973/8032) in England responding to the 2012/13 data collection.

The *extrapolated* estimate number of patients aged six months to under 65 years (including those in a clinical risk group) who would have received vaccine assuming 100% of GPs had returned data in 2013/14 is 4,695,830.

The difference in the number of all patients aged six months to under 65 years (including those in a clinical risk group) who received influenza vaccine at the end of January 2014 increased again, by 643,631 (approximately a 13.7% rise). This is compared with the differential increase observed last season of 95,769 more people immunised at the end of January 2013 (a 2.4% rise) compared with the year before (4,042,807 vaccinated in 2012/13 vis-a-vis 3,947,038 vaccinated in 2011/12).

The sub-set 'at-risk' population is collected in the 'Summary of patients in one or more at-risk group(s)' data fields on ImmForm and thus is distinguishable for separate analysis (as shown elsewhere in this report).³² The actual total number of patients aged six months to under 65 years who received vaccine, *excluded* from the identifiable clinical risk group population by the end of January 2014, was 4.5% at approximately 1.8 million ($n=1,835,538$) based on 99.8% of GP practices (7935/7950) in England responding.

The *extrapolated* estimate number of patients aged six months to under 65 years who received vaccine in primary care and were not identified at risk, was also approximately 1.8 million ($n=1,839,216$).³³

³² 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 2012/13.

³³ 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 with those that are not. Assuming also no differences between GPs in administering vaccine to individuals outside the listed at-risk groups based on judgment of clinical need. Therefore, this figure should be regarded as an estimate.

In absolute terms, the number of people *eligible* to receive influenza vaccine has markedly increased from approximately 12.4 million ($n=12,439,026$) in season 2007/08 (those aged 65 years and over and those aged under 65 years falling in a clinical at-risk group), to just over 15.1 million ($n=15,101,399$) in 2013/14 in the same cohorts (excluding healthy pregnant women, healthy two- and healthy three-year-olds and carers) (none extrapolated figures)).

In parallel, the number of people *vaccinated* has increased from just over 7.9 million ($n=7,911,879$) in 2007/08 to approximately 9.9 million ($n=9,913,110$); an increase compared with 9.6 million ($n=9,664,381$) in 2012/13.

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, and
- 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 2013 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 (i.e. 'joining' or 'leaving' a clinical risk group), patients changing carer status and 'temporary'³⁴ 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 patient records are updated appropriately.

³⁴ 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.

Conclusions

The response rate for GP practices and ATs returning data to the 2013/14 survey was exceptionally high at 99.8% (7935/7950), an increase on last season of 99.3% (7973/8032). In addition, the increasing decline in the manual burden on practices providing data online continued, with the number of practices taking advantage of automated extraction processes increasing to over 90% of all returns. 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 GP practices and ATs, and eliminates the typographical and transcription errors that may occur with manual data entry. 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 GP practices in England, which works on a number of different IT systems.

By the end of the 2013/14 winter season, just over 52% of people aged six months to under 65 years in a clinical risk group, had been vaccinated against flu. Despite continued efforts to improve uptake and a sustained drive over the past couple of years to meet aspirational target uptake of 75% or more, 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 or hospitalisation 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 around 24~25% overall. The risk of serious illness from influenza is higher amongst children under six months of age, therefore it is important that children and parents of children in clinical risk groups, understand the importance of having flu vaccine. GPs and practice staff managing the flu programme should make sure that all at-risk children have the opportunity to receive flu vaccine and order adequate supplies of appropriate vaccine.

This is the first season with the introduction of the newly-licensed intra-nasally administered live attenuated influenza vaccine for children. In 2013-14, this was targeted at children two and three years of age. Bearing in mind this is the first year of the programme overall uptake was good. It is important that this success is built on 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 72-75%. The recommended target for vaccination for those aged 65 years and over continues to be aligned with the WHO recommended target of 75%.

Vaccine uptake varies widely between disease groups and by age category. The diabetes disease group continues to have the highest uptake rate at just under 70%, a rate that has been fairly constant over recent seasonal flu vaccine uptake campaigns. For clinical risk groups such as chronic heart and respiratory disease, uptake levels continue to remain around the 50-52% mark for recent seasons. The only group to show steady improvement is in patients with chronic degenerative neurological disease (including stroke/TIA, cerebral palsy or MS). Here, uptake has increased from 40.4% in 2010/11 to 50.1% in 2013/14.

Vaccine uptake in pregnant women fell in 2013/14 compared with last season when a significant increase from the year before was observed with the highest uptake recorded at 40.3% in 2012/13 (compared with 27.4% attained in 2011/12). The best route for maximising uptake amongst pregnant women is through midwifery services. Health professionals working in maternity services are encouraged to provide flu vaccine as part of routine care for all pregnant women. It is important that these immunisations are recorded in the individual's electronic GP record.

Acknowledgements

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

- all those who participated in and supported the influenza vaccine uptake collection (GP patient survey) for 2013/14, principally GP practice data providers and area team/CCG screening and immunisation flu coordinators in England,
- the participation of GP IT software suppliers and third party suppliers in providing the reporting tools and services for their customers in particular; EMIS (LV and Webservice platform), InPS VISION, iSoFT, Microtest and The Phoenix Partnership (TPP), who enabled XML automated extracts of data,
- the participation of the PRIMIS team based in Nottingham, who were commissioned to provide the READ Codes specification for this collection, a 2013/14 flu library for their CHART tool and a bulk data extraction process for their CHART tool, and
- the ImmForm helpdesk and development team that provided and supported the online survey.

Appendix 1

Groups recommended influenza vaccine in season 2013/14.

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 2014 (i.e. born on or before 31 March 1949)
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 3, 4 or 5, 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 (e.g. 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
<p>Immunosuppression aged six months or older</p>	<p>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.</p> <p>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.</p> <p>Some immunocompromised patients may have a suboptimal immunological response to the vaccine.</p> <p>Consideration should also be given to the vaccination of household contacts of immunocompromised individuals, i.e. 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).</p>
<p>Pregnant women</p>	<p>Pregnant women at any stage of pregnancy (first, second or third trimesters).</p>
<p>People living in long-stay residential care homes or other long-stay care facilities</p>	<p>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.</p>

Eligible groups	Further detail
Carers	<p>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.</p> <p>(Please note – this category refers to individual carers entitled to a free flu 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.)</p>

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

Appendix 2

Charts and tables (Data referenced in this report)

Chart 1

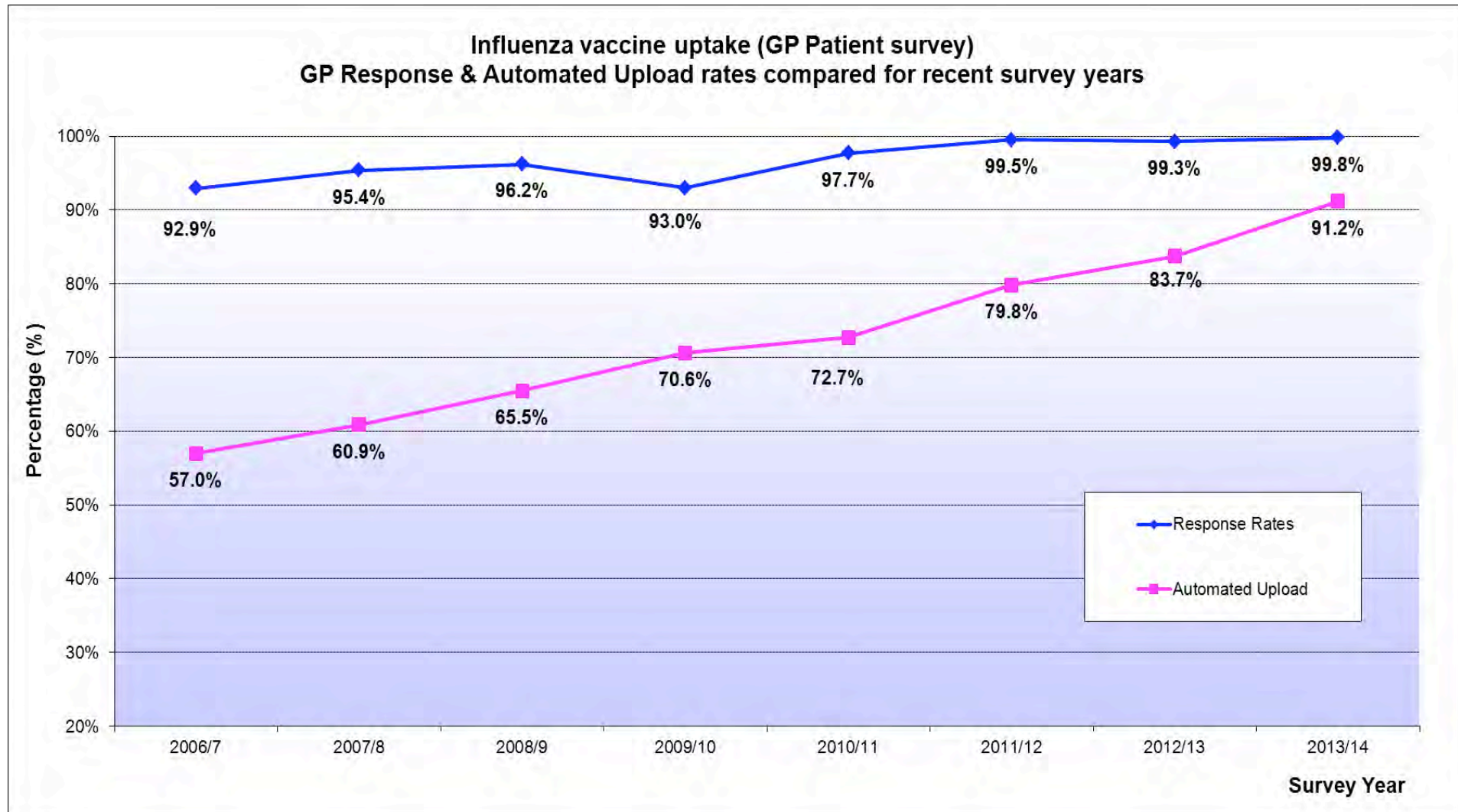


Chart 2

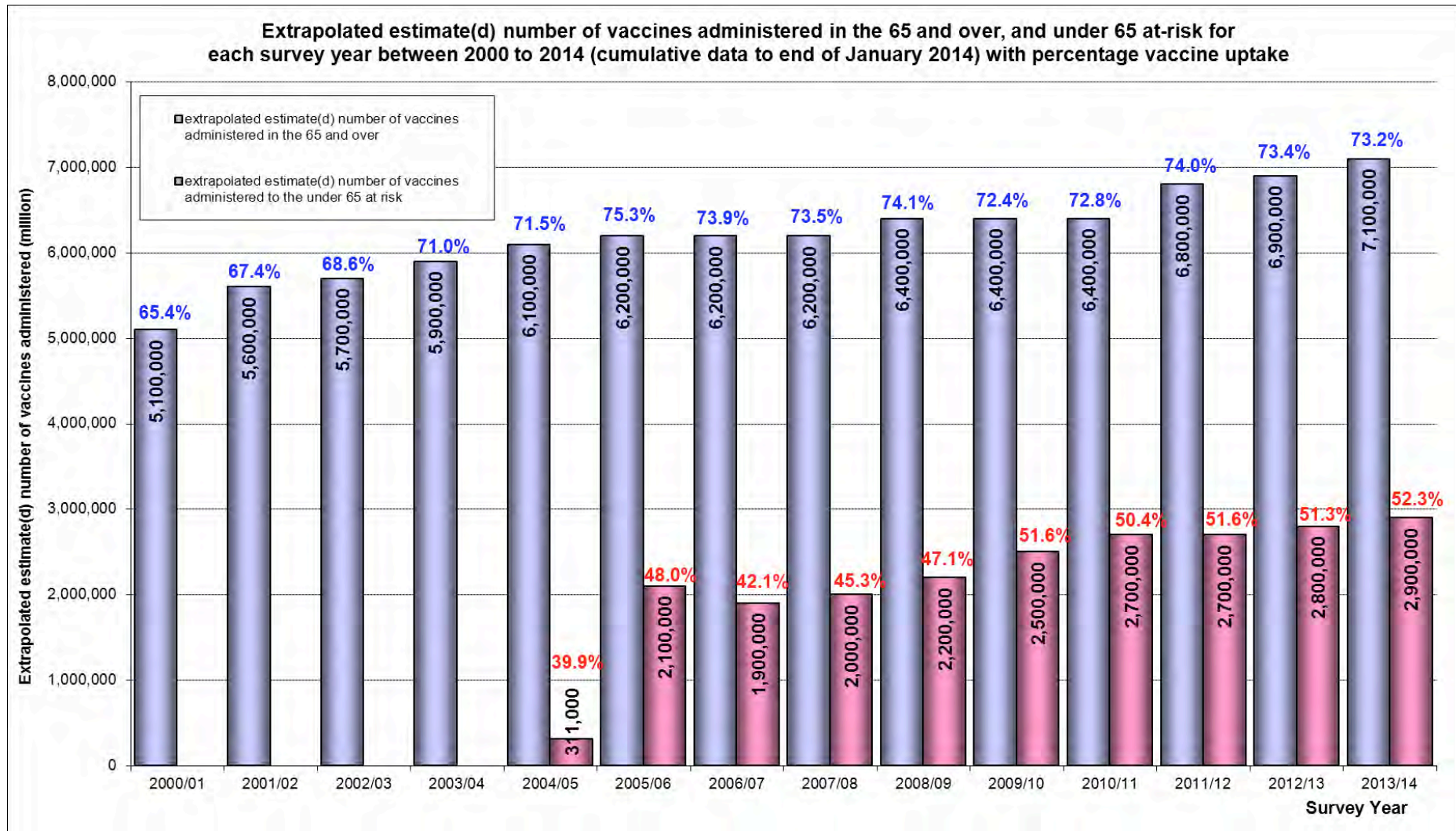


Chart 3

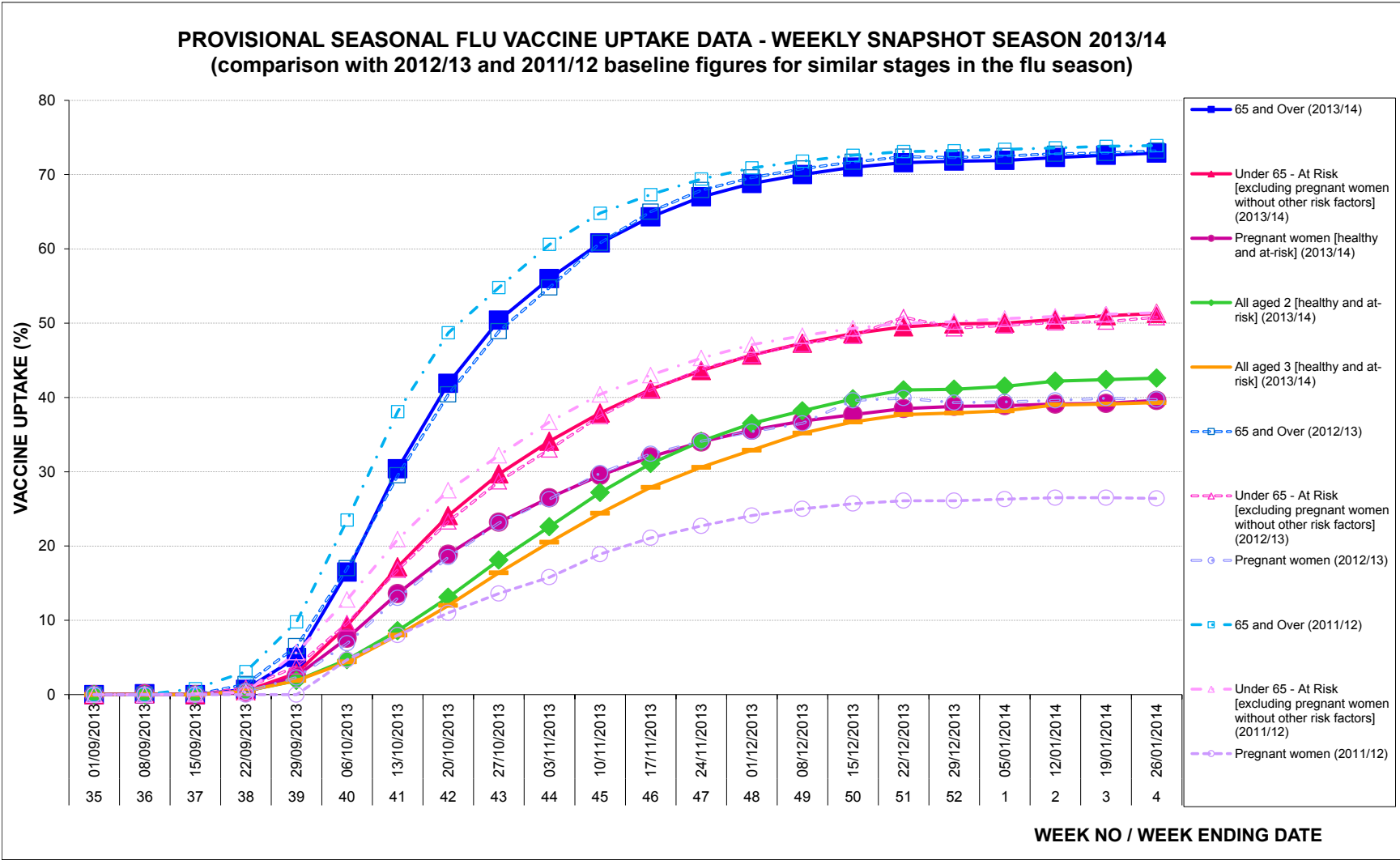


Chart 4

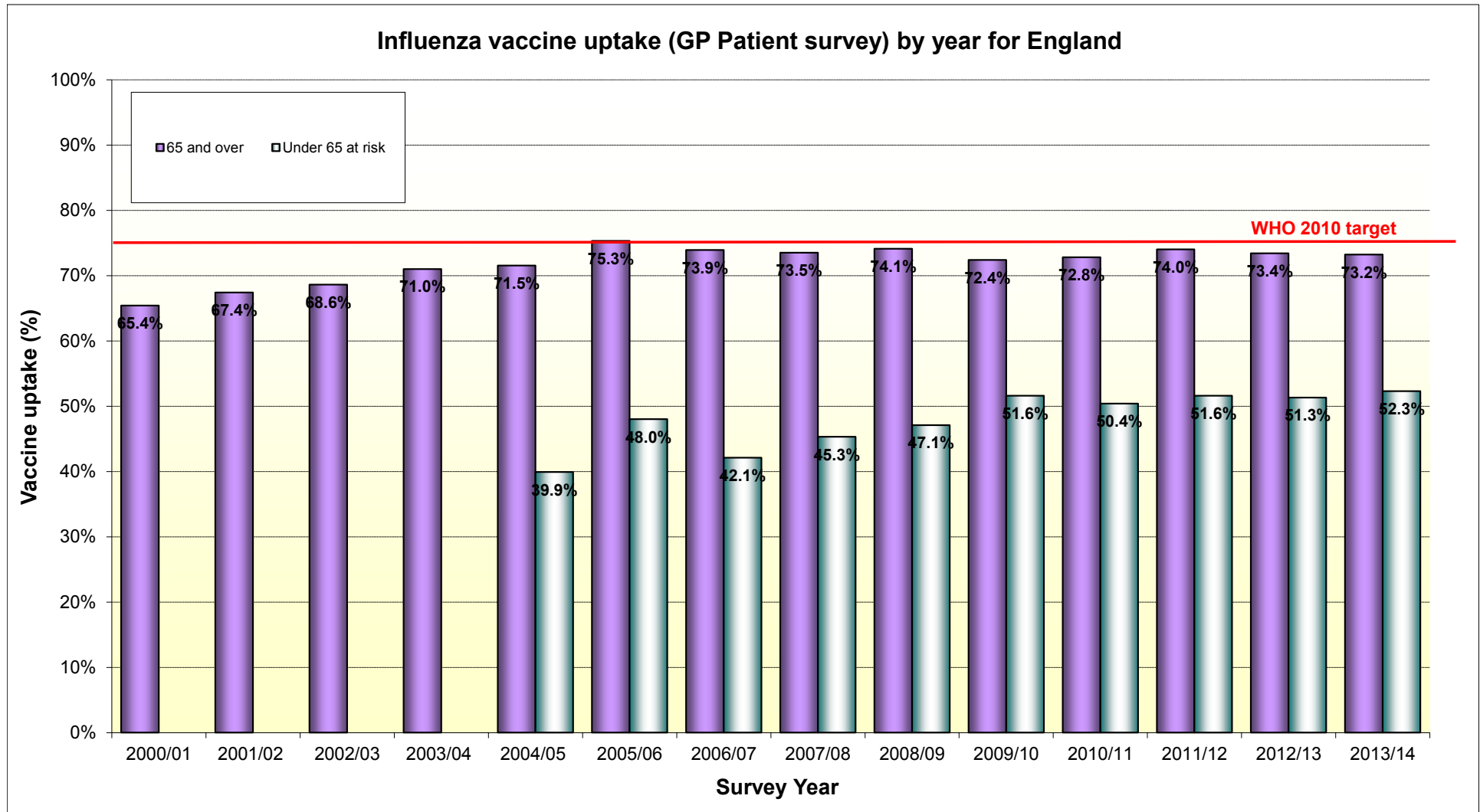


Chart 5

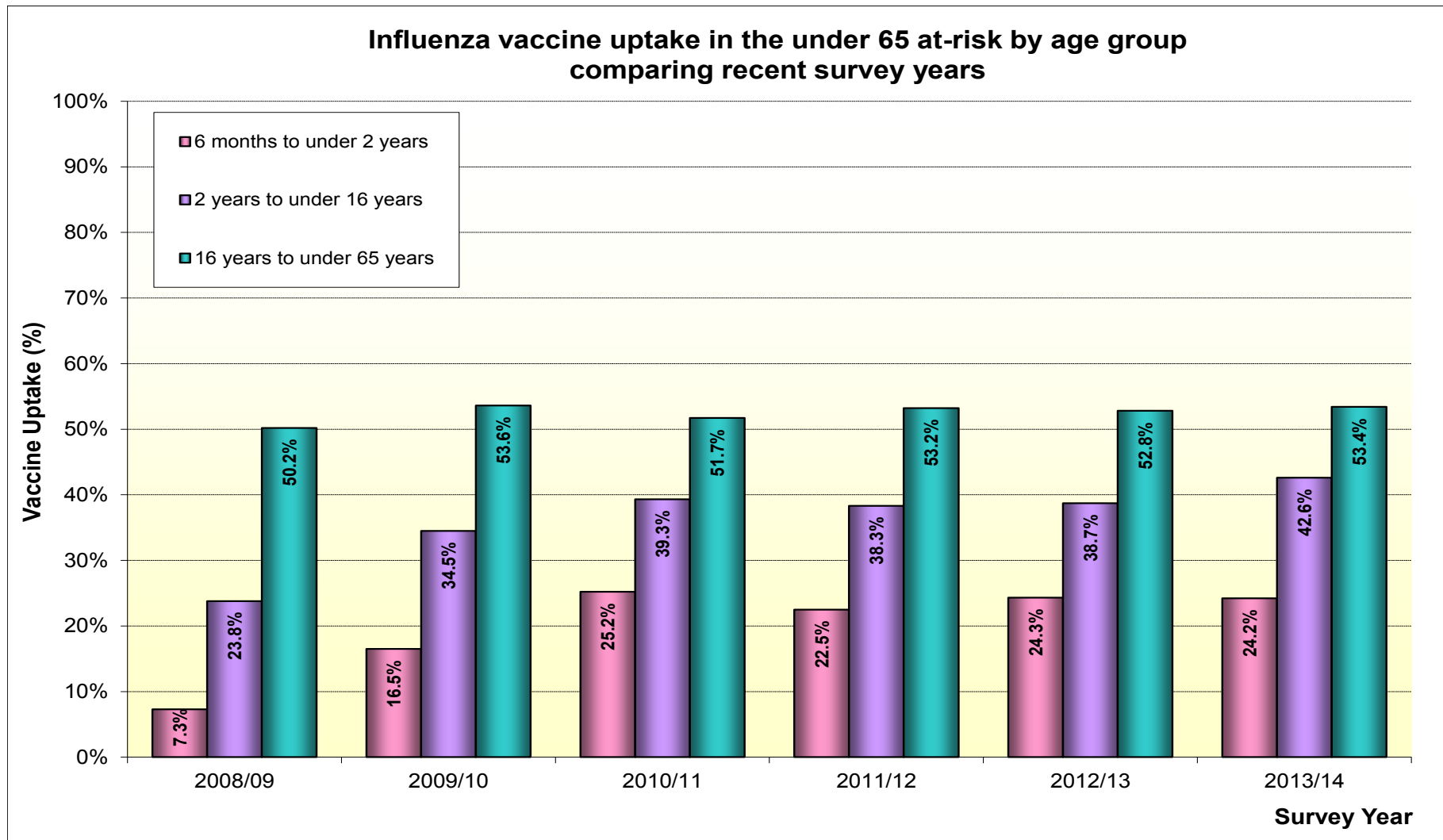


Chart 6

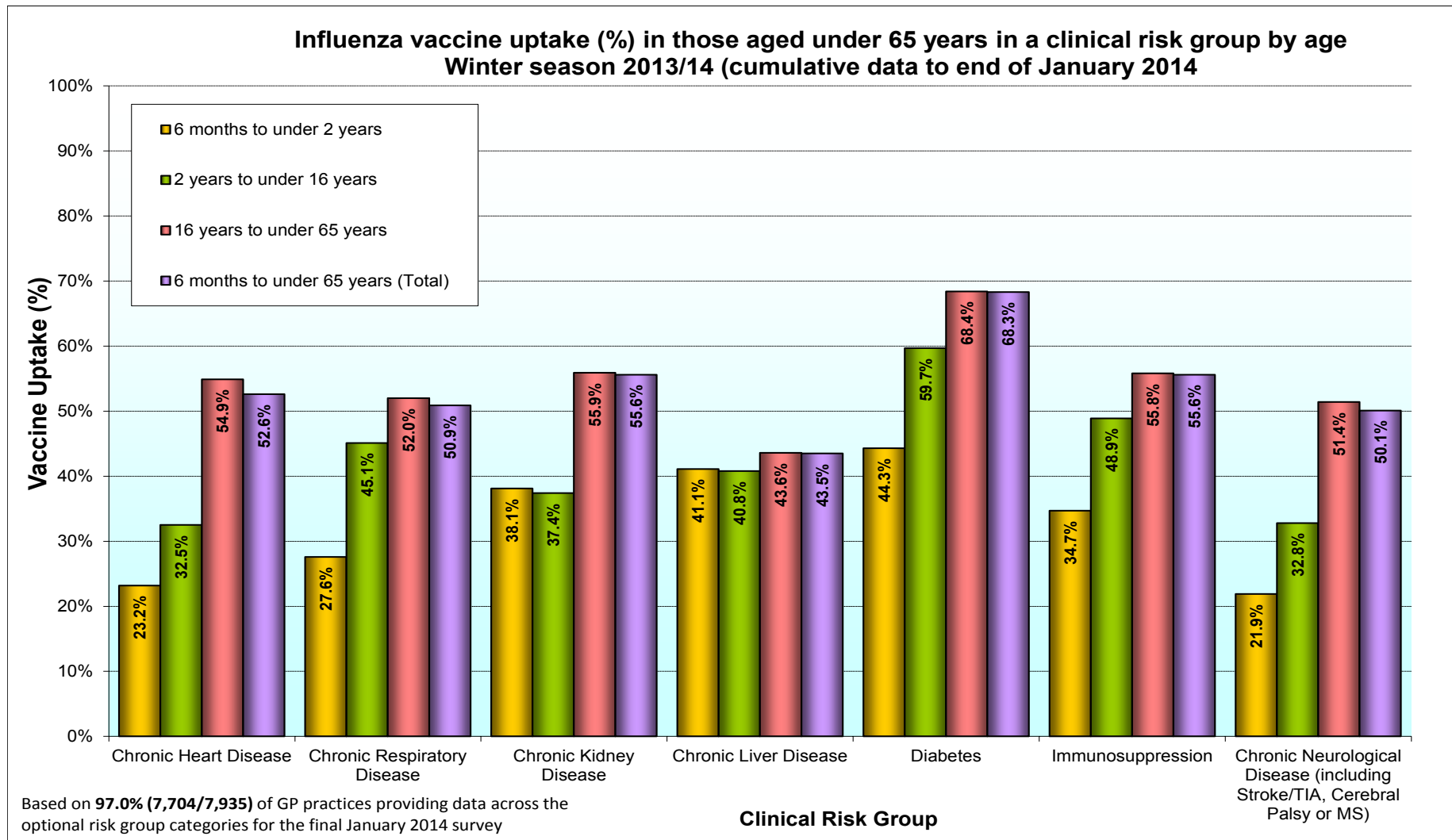


Chart 7

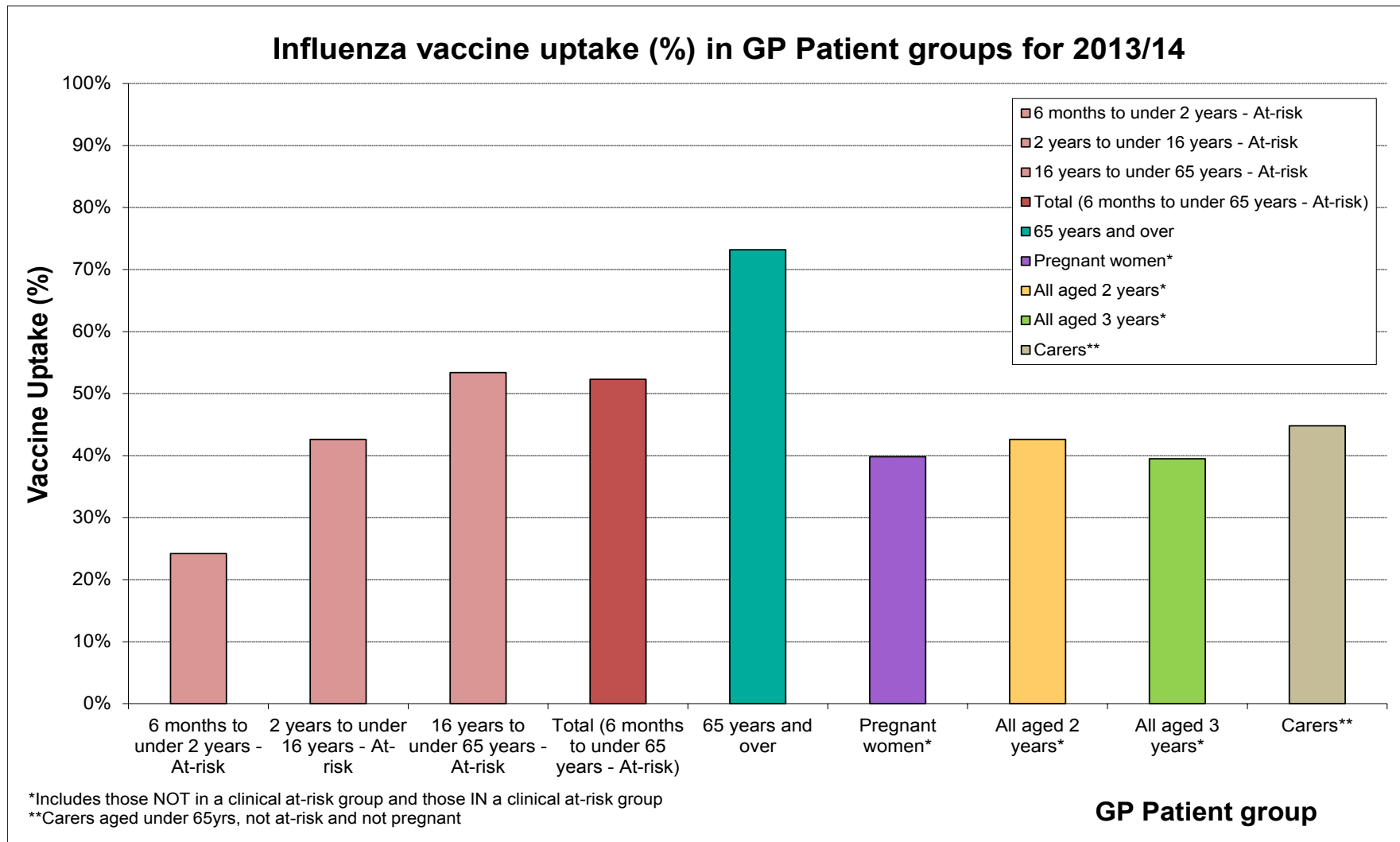


Table 1

Influenza vaccine uptake in the eligible GP patient groups for 2013/14 (actual registered and vaccinated)

Patient Eligible Group	Patients registered	Number vaccinated	Vaccine Uptake (%)
65 years and over	9,646,433	7,062,210	73.2%
6 months to under 65 years - At-risk (Total)	5,454,966	2,850,900	52.3%
Pregnant women*	659,223	262,081	39.8%
All 2 year olds*	724,865	308,964	42.6%
All 3 year olds*	722,438	285,646	39.5%
Carers**	344,104	154,119	44.8%

* Includes those NOT in a clinical at-risk group and those IN a clinical at-risk group

** Carers aged under 65 years, not at-risk and not pregnant

Table 2

Influenza vaccine uptake in patients aged six months to under 65 years falling in a clinical risk group (excluding pregnant women without other risk factors, excluding healthy two- and healthy three-year-olds and excluding carers) by age, for 2013/14

Influenza vaccine uptake in patients aged 6 months to under 65 years falling in a clinical at-risk group, by age band for 2013/14					
Age Group	Number of patients registered on day of data extraction	Number of patients vaccinated up until 31.01.14	Vaccine Uptake (%)	Extrapolated (estimate) number of patients registered eligible*	Extrapolated (estimate) number of patients vaccinated
6 months to under 2 years	13,706	3,310	24.2	13,733	3,317
2 years to under 16 years	550,660	234,389	42.6	551,764	234,859
16 years to under 65 years	4,890,600	2,613,201	53.4	4,900,401	2,618,438
Total by Risk Group	5,454,966	2,850,900	52.3%	5,465,898	2,856,613

* Assuming a 100% GP practice response

Table 3

Influenza vaccine uptake in all pregnant women (including those not at-risk and those falling in a clinical risk group) for 2013/14

Influenza vaccine uptake in Pregnant Women for 2013/14					
Pregnant Women	Number of patients registered on day of data extraction	Number of patients vaccinated up until 31.01.14	Vaccine Uptake (%)	Extrapolated (estimate) number of patients registered eligible*	Extrapolated (estimate) number of patients vaccinated
Pregnant and NOT IN a clinical risk group	610,777	233,496	38.2	612,001	233,964
Pregnant and IN a clinical risk group	48,446	28,585	59.0	48,543	28,642
Pregnant combined	659,223	262,081	39.8%	660,544	262,606

* Assuming a 100% GP practice response

Table 4

Influenza vaccine uptake in all two-year-olds (including those not at-risk and those falling in a clinical risk group) for 2013/14

Influenza vaccine uptake in all 2 year olds for 2013/14					
Aged 2 years	Number of patients registered on day of data extraction	Number of patients vaccinated up until 31.01.14	Vaccine Uptake (%)	Extrapolated (estimate) number of patients registered eligible*	Extrapolated (estimate) number of patients vaccinated
Aged 2 and NOT IN a clinical risk group	705,043	297,843	42.2	706,456	298,440
Aged 2 and IN a clinical risk group	19,822	11,121	56.1	19,862	11,143
Aged 2 combined	724,865	308,964	42.6%	726,318	309,583

* Assuming a 100% GP practice response

Table 5

Influenza vaccine uptake in all three-year-olds (including those not at-risk and those falling in a clinical risk group) for 2013/14

Influenza vaccine uptake in all 3 year olds for 2013/14					
Aged 3 years	Number of patients registered on day of data extraction	Number of patients vaccinated up until 31.01.14	Vaccine Uptake (%)	Extrapolated (estimate) number of patients registered eligible*	Extrapolated (estimate) number of patients vaccinated
Aged 3 and NOT IN a clinical risk group	695,427	270,298	38.9	696,821	270,840
Aged 3 and IN a clinical risk group	27,011	15,348	56.8	27,065	15,379
Aged 3 combined	722,438	285,646	39.5%	723,886	286,218

* Assuming a 100% GP practice response

Table 6

Influenza vaccine uptake in patients aged six months to under 65 years at-risk, by individual clinical risk group and age, for 2013/14

Seasonal Influenza vaccine uptake in patients aged 6 months to under 65 at risk, by age group and disease for 2013/14												
Age Group	6 months to under 2 years			2 years to under 16 years			16 years to under 65 years			Total by Risk Group (population eligible and vaccinated from age groups combined)		
Risk Group	Number of patients registered on day of data extraction	Number of patients vaccinated up until 31.01.14	Vaccine Uptake (%)	Number of patients registered on day of data extraction	Number of patients vaccinated up until 31.01.14	Vaccine Uptake (%)	Number of patients registered on day of data extraction	Number of patients vaccinated up until 31.01.14	Vaccine Uptake (%)	Number of patients registered on day of data extraction	Number of patients vaccinated up until 31.01.14	Vaccine Uptake (%)
Chronic Heart Disease	7,980	1,855	23.2%	75,976	24,719	32.5%	785,176	430,988	54.9%	869,132	457,562	52.6%
Chronic Respiratory Disease	3,391	937	27.6%	393,840	177,770	45.1%	2,195,681	1,141,818	52.0%	2,592,912	1,320,525	50.9%
Chronic Kidney (Renal) Disease	42	16	38.1%	4,755	1,777	37.4%	286,075	159,901	55.9%	290,872	161,694	55.6%
Chronic Liver Disease	168	69	41.1%	2,721	1,110	40.8%	148,611	64,725	43.6%	151,500	65,904	43.5%
Patients with Diabetes	79	35	44.3%	18,087	10,796	59.7%	1,272,186	870,643	68.4%	1,290,352	881,474	68.3%
Patients with Immunosuppression	176	61	34.7%	10,522	5,149	48.9%	347,757	193,976	55.8%	358,455	199,186	55.6%
Patients with Chronic Degenerative Neurological Disease (incl.Stroke/TIA, Cerebral Palsy or MS)	1,577	346	21.9%	35,972	11,802	32.8%	511,118	262,663	51.4%	548,667	274,811	50.1%

Data coverage shows end of campaign cumulative vaccine uptake data for England, for seasonal flu vaccinations administered from 1st September 2013 to 31st January 2014

Data represents on average 97.0% of responding GP practices in England (7,704/7,935), that provided data for optional at-risk group categories

Footnotes on how the data shown on ImmForm for those aged under 65 years falling in a clinical risk group, should be interpreted.

1. Patients may appear in more than one risk group. This means that it is possible that the total people in all risk groups might be more than the total people at risk.
2. People that appear in more than one risk group, **are counted once** in 'Summary of patients in one or more at-risk group(s)' on ImmForm.
3. 'All patients' is a count of all patients, including those in risk groups on ImmForm.