



Pandemic H1N1 (Swine) Influenza Vaccine Uptake amongst Patient Groups in Primary Care in England

2009/10

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Contents

- 1.0 Executive summary3**
- 2.0 Key findings3**
- 3.0 Introduction5**
- 4.0 Aims and objectives6**
- 5.0 Methods6**
 - 5.1 ImmForm website8*
- 6.0 Results.....9**
 - 6.1 GP response rate.....9*
 - 6.2 Weekly and monthly vaccine uptake.....9*
 - 6.3 Overall vaccine uptake for targeted groups9*
 - 6.4 Patients aged six months to under 65 years in a clinical risk group.....10*
 - 6.5 Patients aged 65 years and over in a clinical risk group10*
 - 6.6 Pregnant women.....11*
 - 6.7 Healthy children aged six months to under five years.....11*
 - 6.8 All patients11*
 - 6.9 Data limitations11*
- 7.0 Discussion.....13**
- 8.0 Conclusions14**
- 9.0 References15**
- 10.0 Acknowledgements16**
- Appendix A: Monthly data collection schedule 2009/1017**
- Appendix B: Graphs.....18**
- Appendix C: Data tables (SHA & PCT).....21**
- Appendix D: Data tables29**
- Appendix E: Seasonal influenza vaccine uptake survey – birth date ranges ...31**

1.0 Executive summary

The Department of Health (DH) announced the start of the pandemic H1N1 influenza (swine flu) vaccination programme in England in October 2009 (referred to as H1N1 vaccination programme hereafter). The programme was initially targeted at those most at-risk from serious illness or death: this included those in the usual seasonal influenza clinical risk groups (all ages), household contacts of the immunocompromised, and all pregnant women. In December 2009, healthy children aged six months to under five years of age were also included in the vaccination programme.

This report describes and reports the results of the survey on the uptake of H1N1 vaccine amongst the targeted groups up to 31 March 2010 in England. Early provisional data on H1N1 vaccinations were published within reports issued by the Chief Medical Officer (CMO) for England during the pandemic and may differ from final data published in this report. The H1N1 vaccination programme is continuing into the 2010/11 seasonal influenza vaccination programme. H1N1 vaccine uptake data (up to 31 August 2010) will be reported in the autumn.

2.0 Key findings¹

87.4% (7333/8392) of GP practices in England provided data on H1N1 vaccinations administered up to 31 March 2010. The overall national vaccine uptake in clinical risk groups (all ages, including pregnant women) was 37.6%. The main results by priority group were as follows:

National vaccine uptake in patients aged under 65 years in clinical risk groups (including pregnant women) was 35.4%

- Vaccine uptake by SHA ranged from 27.3% to 39.6%
- The lowest PCT uptake was 18.2%, whilst the highest was 44.7%
- 54.5% of PCTs (83/152) achieved a vaccine uptake rate of 35.0% or more
- The lowest uptake by age band was 20.8% in those aged 16 years to under 25 years, and the highest was 48.2% in those aged 60 years to under 65 years in a clinical risk group
- Uptake by clinical risk group ranged from 32.4% among patients with chronic degenerative neurological disease to 50.9% among those with diabetes (on medication)

¹ H1N1 vaccine uptake figures are based on the total number of first doses of Pandemrix[®] administered. Pandemrix[®] figures are primarily provided in this report, as the majority of targeted groups received this vaccine (less than 0.1% of individuals received Celvapan[®]).

National vaccine uptake in those aged 65 years and over in clinical risk groups was 40.4%

- Vaccine uptake by SHA ranged from 35.7% to 46.6%
- The lowest PCT uptake was 21.6 % and the highest was 58.9 %
- 48.7% of PCTs (74/152) achieved a vaccine uptake rate of 40.0% or over

National vaccine uptake in pregnant women was 14.9%

- Vaccine uptake by SHA ranged from 11.8% to 18.2%
- The lowest PCT uptake was 2.1%, whilst the highest was 24.7%
- 55.9% of PCTs (85/152) achieved a vaccine uptake rate of 14.0%

All data on H1N1 vaccine uptake by pregnant women are likely to be less precise than data reported on other patient groups for reasons explained later in the report.

Vaccine uptake in healthy children aged over six months to under five years was 23.6%

- Vaccine uptake by SHA ranged from 14.7% to 29.7%
- The lowest PCT uptake was 8.5% and the highest was 38.5%
- 64.5% of PCTs (98/152) achieved an uptake of more than 20%

3.0 Introduction

The H1N1 vaccination programme² was introduced to protect groups at elevated risk of severe disease from this infection. The initial priority groups for vaccination identified by the Joint Committee for Vaccination and Immunisation (JCVI) in order of priority for vaccination were:

- individuals aged six months and up to 65 years in the current seasonal influenza vaccine clinical risk groups
- all pregnant women
- household contacts of immunocompromised individuals
- individuals aged 65 years and over in the current seasonal influenza vaccine clinical risk groups

Individuals in the first four groups were offered pandemic H1N1 vaccine from late October 2009 onwards. Vaccine supplies were initially limited. Clinical risk groups targeted for vaccination included those with chronic respiratory disease, chronic heart disease, chronic kidney disease, chronic liver disease, chronic neurological disease, diabetes and immunosuppression.³ In contrast to seasonal influenza vaccination programmes, healthy adults (i.e. not in a clinical risk group) over 65 years of age were not targeted. Healthy children aged from six months up to five years were offered H1N1 vaccine from December 2009.

Two brands of H1N1 vaccine were used in the UK - Pandemrix[®] and Celvapan[®]. Pandemrix[®] was recommended for all individuals apart from those with a history of severe anaphylactic reaction to egg containing products, for which Celvapan[®] (two doses required) was recommended. One dose of Pandemrix was required for most, but two doses was required for immunocompromised individuals and, initially, children under 10 years of age, although during the programme the number of doses for this group was revised to one dose in December 2009.⁴ Pandemrix[®] was used widely and relatively few persons received Celvapan[®]. Therefore, the data in this report primarily reflects the uptake of Pandemrix[®].

² The CMO announced the H1N1 vaccination programme on 15 October 2009:
http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_107190.pdf

³ Definitions of clinical risk groups for 2009/10 were provided in Annex 5 of a DH letter (dated 3 April 2009):
http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_097535.pdf

⁴ Updated advice on the dosage schedule for children was provided in a DH letter (dated 15 December 2009):
http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_110180.pdf

4.0 Aims and objectives

The aims and objectives of the H1N1 vaccine uptake 2009/10 programme in England were to:

- monitor vaccine uptake amongst clinical risk groups, pregnant women, and healthy children aged six months to under five years
- collect vaccine uptake data to support assessment by DH, SHAs, and PCTs of the management and delivery of the H1N1 vaccination programme whilst the programme was running
- allow PCTs, SHAs, and DH to assess local, regional, and national vaccine programme performance
- provide data on vaccine uptake for pharmacovigilance purposes
- gather uptake data to inform the HPA evaluation of the impact and effectiveness of the H1N1 vaccination programme

Data from the survey have also been used by the Quality and Outcomes Framework.⁵

5.0 Methods

H1N1 vaccine uptake data were submitted onto the ImmForm website either via an automated data extraction provided by GP IT software suppliers, who extract data directly from GP computer systems, or by PRIMIS+ via their CHART tool, or manually by GP practices and/or PCTs. Around 65% of all GP practices submitted monthly data using automated methods with no burden to the NHS. Both monthly and weekly collections were undertaken.

Data collection period

Cumulative data were collected via five monthly surveys on vaccinations administered from October 2009 to 31 March 2010. The cumulative data gathered in the March 2010 collection are presented in this report and are used to describe national H1N1 vaccine uptake during the 2009/10 season. Monthly surveys are continuing for the period April 2010 to August 2010. These are automated sentinel collections only, except the final August 2010 survey, which is for all practices (these data will be reported separately). [Appendix A](#) (Figure 1) shows monthly data collection dates for GP practices and PCTs for the 2009/10 programme up to 31 March 2010.

Each survey was open to all GP practices and PCTs at the start of each month. GP practices had seven working days to provide cumulative vaccine uptake data. PCTs

⁵Information on the Quality and Outcomes Framework (QOF) is accessible from: <http://www.qof.ic.nhs.uk/>

had two additional working days to submit further data on behalf of GP practices, amend data if necessary, and validate data. However, deadline extensions were provided in some months to allow for public holidays. In addition, the March 2010 survey was re-opened in May 2010 following comparative analysis and investigation of denominators reported for the seasonal influenza and H1N1 vaccine uptake surveys for the six months to two years age band. This investigation indicated some denominator discrepancies in data reported amongst some practices. As a result, GP practices and PCTs were requested to correct/validate March data (including denominators for all age bands). A summary of these findings are reported in section '6.9 Data limitations' (pages 11).

Weekly vaccine uptake data

Weekly data were collected from a sentinel group of GP practices (around 40%) and were automatically extracted via the GP IT supplier, EMIS (LV platform only). Data were collected on vaccinations administered up to midnight on Sunday each week and were usually available to view on the ImmForm website by the following Wednesday. This allowed H1N1 vaccine uptake data to be monitored regularly with no additional burden on GP practices or PCTs.

Data collected

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). This system allowed denominator fluctuations as patients joined, left, or died during the collection. Denominators for pregnant women were inclusive, that is, they included women who had become eligible and then ineligible for vaccination (i.e. individuals who were no longer pregnant due to termination, miscarriage, or birth) before they could be vaccinated, as the uptake rate is measured against the overall population.

Vaccine uptake data were collected on all targeted groups, except household contacts of immunocompromised individuals. Data were not collected on this group, as there is not a nationally recognised method of identifying and classifying this cohort. Therefore, data are not available for this specific group.

PRIMIS+ were commissioned to provide H1N1 Read codes for priority groups for vaccination. These were used to identify patients for immunisation, and were based on those used for the seasonal influenza vaccination programme with the addition of pregnancy as a priority group, and specific procedure and product codes⁶.

It is important to note that the survey dataset had to be produced rapidly before the H1N1 vaccination programme had started. Consequently, some decisions regarding the dataset design had to be made before all the programme details (including the

⁶ The full Read codes specification is accessible from:
http://www.dh.gov.uk/en/PublicHealth/Flu/Swineflu/InformationandGuidance/Vaccinationprogramme/DH_107355

programme duration, target groups, and vaccine schedules) were confirmed. Therefore, a comprehensive dataset was designed that collected data by narrow age bands (as opposed to the broader age bands used in the seasonal influenza survey), to allow flexibility in case subsequent priority groups/age bands were identified and targeted for vaccination. The increased number of age bands together with the requirement to record vaccinations by vaccine brand and dose resulted in a very large dataset. This caused some ImmForm website performance challenges, including slower running of some of the website functions in the survey, making it difficult for some practices (specifically those submitting data manually or via a semi-automated method) to submit vaccine uptake data.

5.1 ImmForm website

One of the functions of the ImmForm website is to provide a secure platform for vaccine uptake data collection for several immunisation surveys, including the H1N1 vaccine uptake collection. The website is hosted and managed by the DH and allows PCTs and GPs practices to:

- view and evaluate H1N1 vaccine uptake rates by each of the cohort target groups broken down further by age band and risk category
- compare H1N1 vaccine uptake and performance anonymously with other GP practices/PCTs/SHAs at local, regional, and national levels
- validate the data at point of entry and correct any errors before data submission
- allow PCTs to view a 'non-responder' report, which highlights practices that have failed to submit data, thus allowing them to follow-up with these practices to obtain and submit outstanding data

The ImmForm website can be accessed at www.immform.dh.gov.uk (internet) or nww.immform.dh.nhs.uk (N3)

6.0 Results⁷

6.1 GP response rate

87.4% (7333/8392) of GP practices in England (with all 152 PCTs represented) provided data on cumulative H1N1 vaccine uptake for the period up to 31 March 2010.

6.2 Weekly and monthly vaccine uptake

[Appendix B](#) (Graph 1) shows weekly and monthly data on H1N1 vaccine uptake amongst individuals aged six months to under 65 years in a clinical risk group (inclusive of pregnant women, but not healthy children aged under 5 years) and for those aged 65 years and over in a clinical risk group. Vaccine uptake rates increased only gradually during the early weeks of the programme (weeks 43-45). After week 45, vaccine uptake rates rose more rapidly for both groups up to week 52 (end of December 2009). After week 52, uptake in the 65 years and over group continued to increase steadily, whilst uptake in the six months to under 65 years group was relatively constant with some slight fluctuations caused by weekly variations in practice response rate. Weekly and monthly data were in good agreement confirming that the weekly sentinel collection provides a reasonable indicator of uptake at national level.

6.3 Overall vaccine uptake for targeted groups

National uptake for targeted groups of H1N1 vaccine was 34.5%. The total population (extrapolated estimate) of registered patients eligible to receive vaccine in the March survey was over 13 million (n=13,183,780), of whom over 4.5 million (n=4,547,603) received a first dose of Pandemrix[®]. These two figures include all clinical risk groups (all ages), pregnant women, and healthy children aged six months to under five years, but not household contacts of immunocompromised individuals. National H1N1 vaccine uptake in clinical risk groups (for all ages including pregnant women) was 37.6%.

[Appendix B](#) (Graph 2) shows national vaccine uptake by priority group. [Appendix C](#) (Tables 1 and 2) provides H1N1 vaccine uptake data by clinical risk groups (all ages, including pregnant women) and healthy children aged over 6 months to under 5 years broken down by SHA and PCT.

⁷ H1N1 vaccine uptake figures are based on the total number of first doses of Pandemrix[®] administered. Pandemrix[®] figures are primarily provided in this report, as the majority of targeted groups received this vaccine (less than 0.1% of individuals received Celvapan[®]).

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

H1N1 vaccine uptake amongst this cohort was 35.4%. The estimated (extrapolated) total number of individuals who received vaccine was just over 2 million (n=2,042,891). By age group the highest uptake was in patients aged 60 to under 65 years (48.2%), whilst the lowest uptake was among 16 to 25 year olds (20.8%), see [Appendix D](#) (Table 1). Vaccine uptake by SHA and PCT ranged from 27.3% to 39.6% and 18.2% to 44.7%, respectively. More than half of PCTs (83) achieved a vaccine uptake rate of 35.0% or more, with 27 PCTs achieving more than 40.0 % uptake or more. [Appendix C](#) (Tables 1 and 2) shows H1N1 vaccine uptake data by all clinical risk groups (all ages, including pregnant women) broken down by SHA and PCT.

Specific clinical risk groups (aged six months to under 65 years)

[Appendix D](#) (Table 2) provides national H1N1 vaccine uptake data by clinical risk group and age band. For specific clinical risk groups, in the six months to under 65 years cohort, vaccine uptake was highest amongst those with diabetes and diabetes on medication at 48.6% and 50.9% respectively. The lowest vaccine uptake was in those with chronic degenerative neurological disease including multiple sclerosis at 32.4% and chronic liver disease at 32.7%. [Appendix B](#) (Graph 3) shows national H1N1 vaccine uptake data by each individual clinical risk group.

By age band, vaccine uptake in the six months to under two years age band was highest amongst those with chronic liver disease (46.8%) and lowest amongst patients with immunosuppression (29.0%). Uptake in the two years to under 16 years age cohort, ranged from 33.8% to 55.0% amongst those with chronic heart disease and diabetes (on medication), respectively. In the 16 years to under 65 years age band the lowest and highest uptakes were reported amongst those with degenerative neurological disease (32.2%) and diabetes (on medication) (50.8%) groups, respectively.

6.5 Patients aged 65 years and over in a clinical risk group

National vaccine uptake among this group was 40.4%. The estimated (extrapolated) total number of people who received the vaccine was over 1.8 million (n=1,821,054). Uptake by SHA ranged from 35.7% to 46.6% and for PCTs from 21.6 % to 58.9 %. Almost half of PCTs (74) achieved a vaccine uptake rate of 40.0% and over, with four PCTs achieving 50% uptake or more. (See [Appendix C](#), Tables 1 and 2).

Specific clinical risk groups (aged 65 years and over)

In the 65 years and over age cohort, vaccine uptake was highest among those with diabetes at 45.8% and diabetes on medication at 47.5%. The lowest vaccine uptake was in those with chronic degenerative neurological disease (including MS) and stroke/TIA at 31.9% and 37.4%, respectively. (See [Appendix D](#), Table 2).

6.6 Pregnant women

Data on H1N1 vaccine uptake amongst pregnant women are likely to be less precise than data reported on other targeted groups (see section '6.9 Data limitations'). National H1N1 influenza vaccine uptake among this cohort was 14.9%. The estimated (extrapolated) total number of patients in this group who received the vaccine was 118,000. Vaccine uptake by SHA and PCT ranged from 11.8% to 18.2% and 2.1% to 24.7%, respectively. More than half of PCTs (85) achieved a vaccine uptake rate of 14.0%, and 11 achieved more than 20.0 %. (See [Appendix C](#), Tables 1 and 2).

6.7 Healthy children aged six months to under five years

National H1N1 influenza vaccine uptake amongst this group was 23.6%. The estimated (extrapolated) total number of individuals in this group who received the vaccine by the end of March 2010 was almost 684,000 (n= 683,658). Vaccine uptake by SHA ranged from 14.7% to 29.7% and for PCTs from 8.5% to 38.5%. 98 PCTs achieved an uptake of more than 20%, with 19 achieving more than 30%. (See [Appendix C](#), Tables 1 and 2).

6.8 All patients

H1N1 influenza vaccine was also given to people outside of the those identified in the groups above including household contacts of immunocompromised individuals, and other patients that may have been vaccinated on the basis of clinical judgement that are not captured by the Read codes for the 'clinical risk' groups by the survey. These data may also include a proportion of healthcare workers whose vaccinations may have been recorded onto their GP records. The actual total number of individuals vaccinated by the end of March 2010 was over 4.8 million (n= 4,805,426) based on the data received from 87.4% of GP practices in England. The estimated (extrapolated) total number of individuals vaccinated was almost 5.5 million (n=5,498,199).

6.9 Data limitations

It is important to note that all H1N1 and seasonal influenza vaccine uptake data cannot be compared directly since there are a number of differences between the two surveys. Firstly, the two surveys used two different query specifications, thus the clinical risk denominator populations (particularly for the six months to under two years age band) vary between the seasonal and H1N1 influenza surveys. This is because the previously established seasonal influenza survey used a fixed age command to determine the denominator population (see [Appendix E](#) for the seasonal influenza survey birth date ranges for 2009/10), whilst the H1N1 influenza survey denominators were determined by age on the date of data extraction. The rationale for this difference was because the seasonal influenza vaccination programme (and data collection period) was set over a specific time period, whereas the duration of the H1N1 vaccination programme (and data collection period) were initially unconfirmed. Subsequently, for the latter seasonal influenza surveys, the populations

for the lower age bands represent a sub-optimal denominator compared to the lower age bands in the H1N1 influenza survey. Therefore, the seasonal influenza denominators decrease by 1/18 each month, thus the January 2010 survey denominators for the six months to under two years age band should be approximately 15/18 (83%) of the denominators reported at the start of the collection (i.e. the October 2009 survey). The specification for the 2010/11 seasonal influenza vaccine uptake data collection has now been changed so that the six month age limit is now determined by age on date of data extraction, instead of a fixed reference date.

Secondly, following the investigation on H1N1 vaccine and seasonal influenza denominators on the six months to two years age band, GP IT software suppliers identified some coding errors that would cause a degree of inflation of clinical risk group denominators (for all ages, including pregnant women). These errors are believed to have had a minor overall impact on the data and are outlined below:

- The TPP cystic fibrosis code Y07ec was incorrectly included in the survey denominator for this clinical risk group (in addition to the correct PRIMIS+ Read code for cystic fibrosis C370%). This error has now been corrected (i.e. code Y07ec is not included in H1N1 surveys from May 2010 onwards).
- PRIMIS+ believe that codes under the 62P hierarchy may be recorded in both the mother and child's records. The inclusion of this code together with no age restriction set for pregnant patients, would result in the inclusion of both the mother and/or child in the pregnancy denominator, subsequently causing inflated denominators for this cohort.

7.0 Discussion

Over a third (37.6%) of clinical risk groups (all ages, including pregnant women) had received the H1N1 vaccine between late October 2009 and 31 March 2010, with higher uptake rates reported amongst certain clinical risk groups (in particular those with diabetes). Almost a quarter (23.6%) of healthy children aged over six months to under five years were vaccinated over this period. However, uptake amongst pregnant women was low (14.9%). Vaccine uptake rates were gradual during the early weeks of the vaccine programme (due to limited supplies of H1N1 vaccine initially). Retrospective analysis of influenza activity shows that once the vaccine had become available most vaccinations occurred during the second half of the second epidemic wave of pandemic influenza activity.

For specific clinical risk groups, the highest H1N1 uptake rates were amongst the diabetes and diabetes on medication cohorts. These groups also achieved the highest seasonal influenza uptake rates. Most clinical risk groups achieved vaccine uptake rates that exceeded the overall national average (37.6%), except for chronic degenerative neurological disease (all ages) and chronic liver disease (for those aged under 65 years) cohorts. Conversely, the population mortality rates and relative risk by risk group (for those aged between six months to under 65 years), have been reported to be highest amongst patients with underlying chronic neurological disease (followed by chronic respiratory disease, immunosuppression, and chronic liver disease).⁸

H1N1 vaccine uptake in pregnant women was 14.9%, with local vaccine uptake rates varying (between 2.1% to 24.7%), despite pandemic influenza in pregnancy being reported as a significant risk factor for mortality.⁸ However, it is important to note that denominators for pregnant women were inclusive of those who may have at one time been eligible, but became no longer eligible (i.e. because of loss, termination, or birth) and thus the figures represent the totality of women who may have been eligible at any point in time during the survey for H1N1 vaccination.

Almost a quarter (23.6%) of healthy children aged six months to under five years received the H1N1 vaccination, despite a shorter vaccination programme window period for this cohort (as this group was only eligible for vaccination from December 2009).

The GP response rate for the pandemic H1N1 vaccination programme (87.4%) was lower than that for the 2009/10 seasonal influenza collection (93.0%). The reason for the difference in response rates is unclear. However, ImmForm performance challenges (caused by the large H1N1 dataset), resulted in some data submission issues, and may have contributed to a lower GP response rate. It may be possible to

⁸Euro Surveill. 2010;15(20):pii=19571. Available online: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19571>

design a more simplified pandemic dataset in preparation for the future pandemic influenza vaccine uptake programmes.

8.0 Conclusions

Data show that nearly 5.5 million people received the H1N1 vaccine in England. National H1N1 vaccine uptake rates were highest amongst those in the usual seasonal influenza clinical risk groups, lower in healthy children aged over six months to under five years, and lowest amongst pregnant women. The availability of H1N1 vaccine determined the timing of the vaccination programme and this was not optimal in relation to the levels of pandemic influenza disease activity in the population. The comprehensive H1N1 vaccine uptake dataset was required before all programme details (including programme duration and dosing schedules for priority groups) were known, which presented dataset design challenges, and ultimately some data submission issues. However, it may be possible to design simpler datasets for future pandemic programmes.

9.0 References

- The report 'Seasonal influenza vaccine uptake among the 65 years and over and under 65 years at risk in England, winter season 2009-10' is accessible from:
http://www.dh.gov.uk/dr_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_118542.pdf
- Clinical information on H1N1 and seasonal influenza vaccination is provided within the DH Green Book:
http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_116622.pdf

10.0 Acknowledgements

- All those who participated in and supported the H1N1 vaccine uptake collection, especially PCT influenza and immunisation co-ordinators and GP practices in England
- GP IT software suppliers, who provide reporting tools for GP practices, including EMIS, The Phoenix Partnership (TPP) and Microtest, who provide bulk upload extracts for practices
- PRIMIS+ who were commissioned to provide the Read Codes specification, a 2009/10 influenza library for their CHART tool and a bulk data extraction process for their CHART tool
- DH colleagues for their contribution in producing this report, especially Dr Tom Barlow, Principal Scientist, Immunisation Branch, Peter Gates, Project Manager, Immunisation Web Group Programme - IT lead for ImmForm, members of the ImmForm Development and Test Team, and the ImmForm Support Team
- Colleagues who contributed to the preparatory work on the GP vaccine uptake survey, particularly Dr Ginny Belson, Immunisation Policy Advisor, Immunisation Branch (DH), and Fateha Begum, Influenza Vaccine Tracking Officer, Respiratory Diseases Department (HPA)

Appendix A: Monthly data collection schedule 2009/10

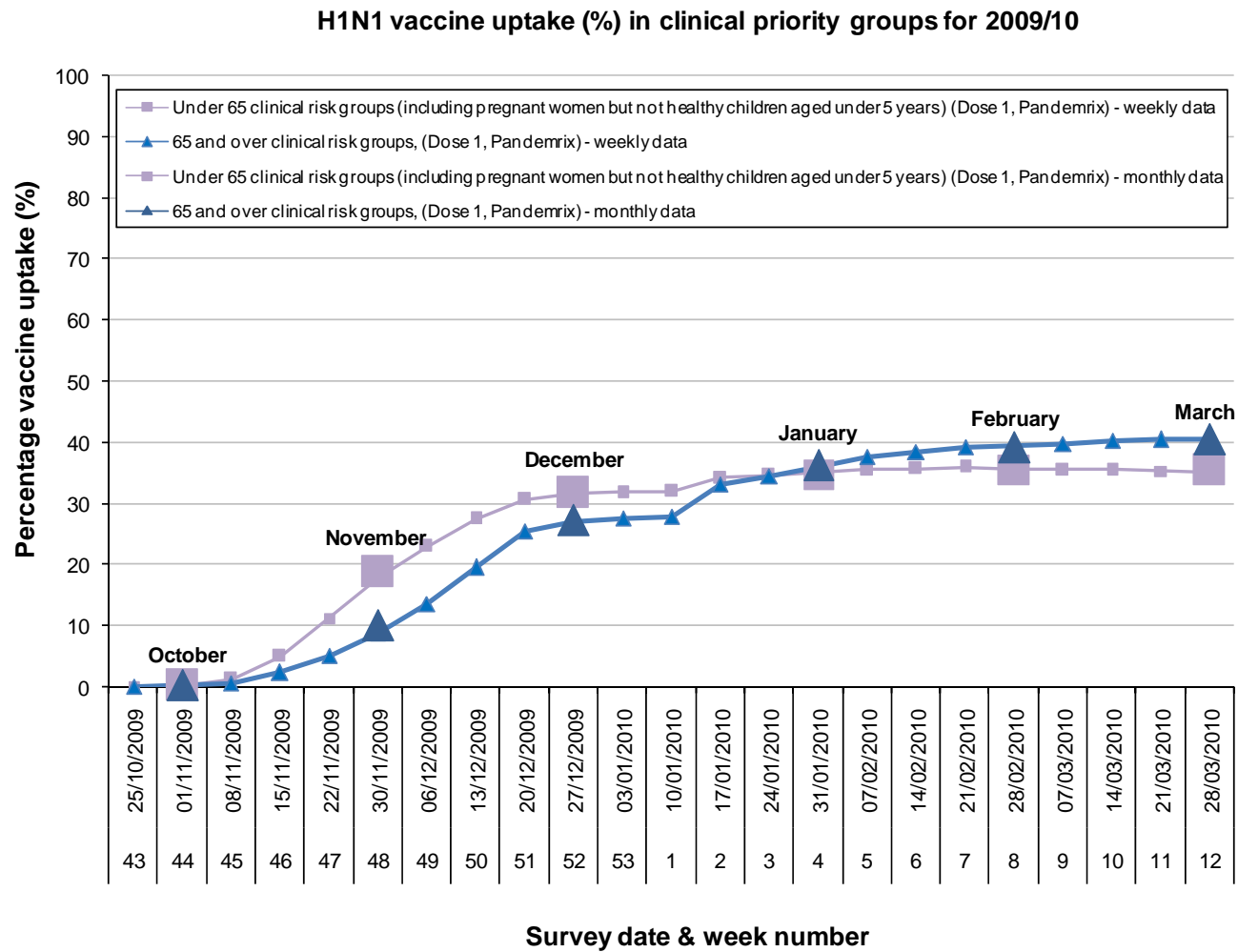
Figure 1 shows monthly data collection dates for the H1N1 vaccination programme 2009/10 for GP practices and PCTs.

Figure 1

Survey Name	Swine flu October collection	Swine flu November collection	Swine flu December collection	Swine flu January collection	Swine flu February collection	Swine flu March collection
	<i>Uptake data for 21st Oct 09 to end of Oct 09</i>	<i>Uptake data for 21st Oct 09 to end of Oct 09</i>	<i>Uptake data for 21st Oct 09 to end of Nov 09</i>	<i>Uptake data for 21st Oct 09 to end of Dec 09</i>	<i>Uptake data for 21st Oct 09 to end of Jan 10</i>	<i>Uptake data for 21st Oct 09 to end of Mar 10</i>
GPs	Tue 3rd Nov to Mon 9th Nov	Tues 1st Dec to Mon 7th Dec	Mon 4th Jan to Tues 12th Jan	Mon 1st Feb to Tues 9th Feb	Mon 1st Mar to Tue 9th Mar	Thurs 1st Apr to Mon 19th Apr
PCTs	Tue 3rd Nov to Wed 11th Nov	Tues 1st Dec to Wed 9th Dec	Mon 4th Jan to Thurs 14th Jan	Mon 1st Feb to Thurs 11th Feb	Mon 1st Mar to Thurs 11th Mar	Thurs 1st Apr to Fri 23rd Apr

Appendix B: Graphs

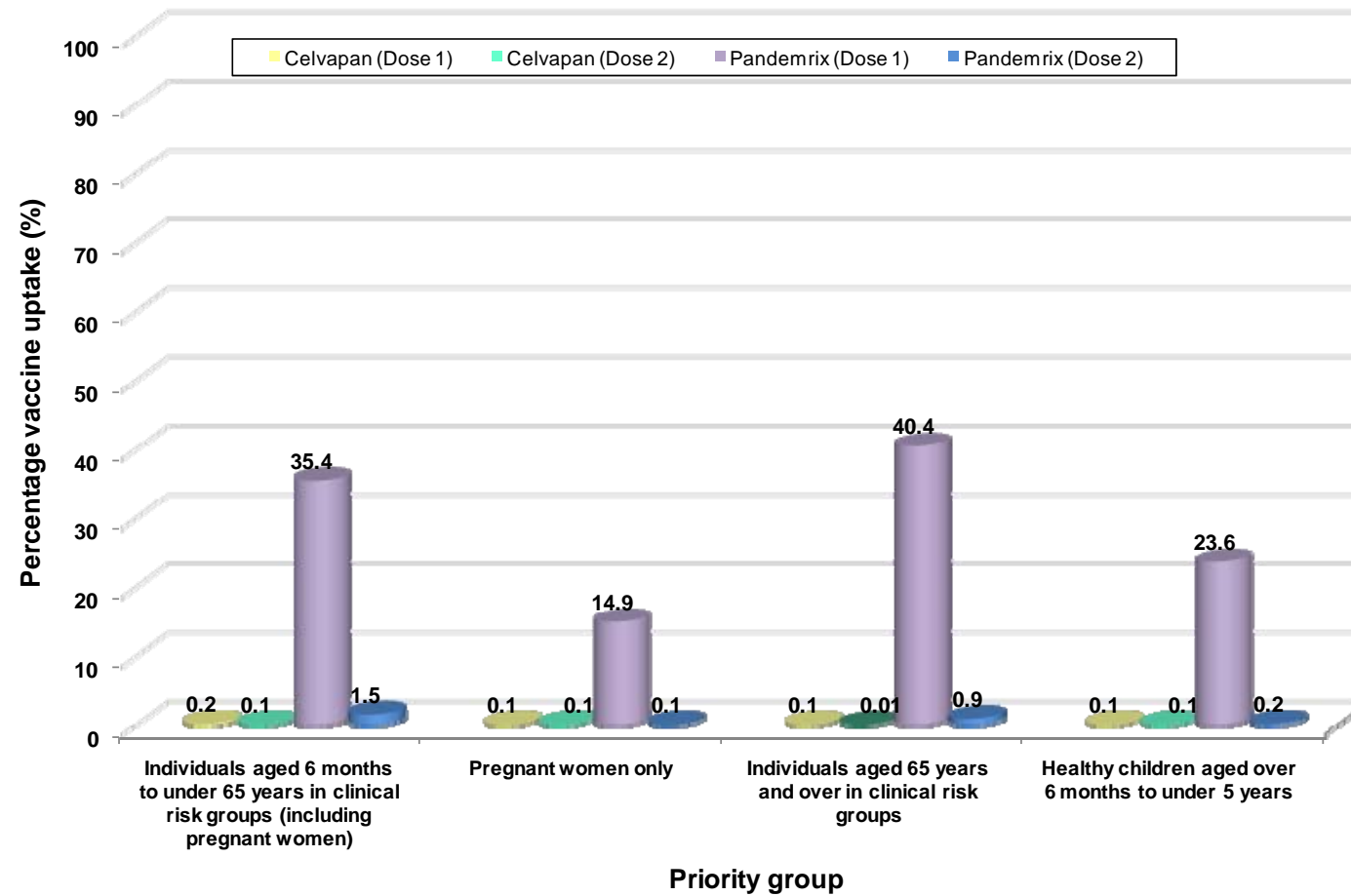
Graph 1



Data source: ImmForm website

Graph 2

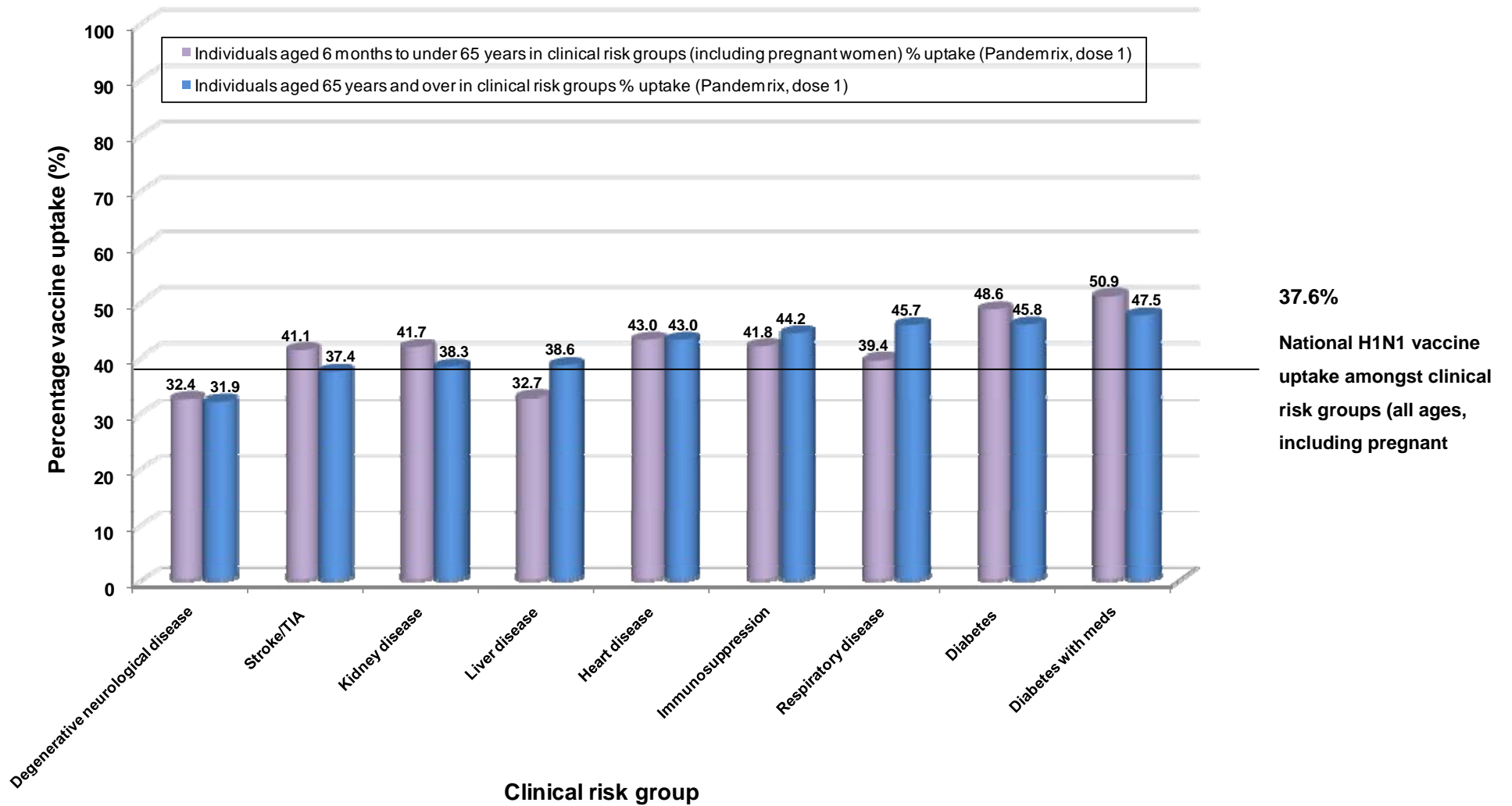
National H1N1 vaccine uptake by priority group 2009/10



Data source: ImmForm website

Graph 3

National H1N1 vaccine uptake by clinical risk group 2009/10



Data source: ImmForm website

Appendix C: Data tables (SHA & PCT)

Table 1: H1N1 vaccine uptake among priority groups by SHA 2009/10

SHA name	Clinical risk groups (all ages, including pregnant women)			Healthy children aged six months to under five years		
	No. of registered patients	No. vaccinated (dose 1 Pandemrix®)	% vaccine uptake	No. of registered patients	No. vaccinated (dose 1 Pandemrix®)	% vaccine uptake
NORTH EAST SHA	517328	203229	39.3	118649	29459	24.8
NORTH WEST SHA	1244554	477049	38.3	342013	76587	22.4
YORKSHIRE AND THE HUMBER SHA	1014515	393388	38.8	266792	63612	23.8
EAST MIDLANDS SHA	854473	335453	39.3	217076	64126	29.5
WEST MIDLANDS SHA	979893	355662	36.3	269371	57046	21.2
NHS EAST OF ENGLAND	1016760	371947	36.6	281001	74502	26.5
LONDON SHA	1053843	318161	30.2	407673	60075	14.7
SOUTH EAST COAST SHA	668097	237633	35.6	187066	45103	24.1
SOUTH CENTRAL SHA	639904	254530	39.8	203982	56272	27.6
SOUTH WEST SHA	1001635	430036	42.9	237999	70735	29.7
ENGLAND	8991002	3377088	37.6	2531622	597517	23.6

Data source: ImmForm website

Data provided are derived from the responses received from 87.4% of GP practices in England. Thus, they do not represent the total number of patients offered vaccine or the total number of patients vaccinated. However, the data could be extrapolated to estimate the total number of patients offered vaccine and those vaccinated based on the response rate.

Table 2: H1N1 vaccine uptake among priority groups by SHA and PCT 2009/10

Organisation name	Clinical risk groups (all ages, including pregnant women)			Healthy children aged six months to under five years		
	No. of registered patients	No. vaccinated (dose 1 Pandemrix®)	% vaccine uptake	No. of registered patients	No. vaccinated (dose 1 Pandemrix®)	% vaccine uptake
ENGLAND	8991002	3377088	37.6	2531622	597517	23.6
National vaccine % uptake range			30.2 - 42.9			14.7 - 29.7
North East SHA	517328	203229	39.3	118649	29459	24.8
SHA vaccine % uptake range			36.1 - 45.8			19.5 - 32.4
COUNTY DURHAM PCT	95254	34414	36.1	20478	4710	23.0
DARLINGTON PCT	18229	7225	39.6	4811	939	19.5
GATESHEAD PCT	44940	17872	39.8	9548	2529	26.5
HARTLEPOOL PCT	12686	5598	44.1	3635	723	19.9
MIDDLESBROUGH PCT	26770	10445	39.0	7780	1772	22.8
NEWCASTLE PCT	48994	18243	37.2	12480	3513	28.1
NORTH TYNESIDE PCT	44669	16656	37.3	10156	2591	25.5
NORTHUMBERLAND CARE TRUST	70357	32189	45.8	13617	4413	32.4
REDCAR & CLEVELAND PCT	26620	9939	37.3	5500	1147	20.9
SOUTH TYNESIDE PCT	33316	12895	38.7	7116	1415	19.9
STOCKTON-ON-TEES PCT	35657	14009	39.3	10022	2780	27.7
SUNDERLAND TEACHING PCT	59836	23744	39.7	13506	2927	21.7
North West SHA	1244554	477049	38.3	342013	76587	22.4
SHA vaccine % uptake range			26.2 - 51.0			10.6 - 38.5
ASHTON, LEIGH AND WIGAN PCT	37996	15399	40.5	12604	3569	28.3
BLACKBURN WITH DARWEN PCT	31341	11134	35.5	9872	2401	24.3
BLACKPOOL PCT	26139	7148	27.3	6606	1298	19.6
BOLTON PCT	41184	16703	40.6	13684	3416	25.0

BURY PCT	35754	9373	26.2	10662	1129	10.6
CENTRAL & EASTERN CHESHIRE PCT	91515	38862	42.5	22600	8702	38.5
CENTRAL LANCASHIRE PCT	79869	31377	39.3	21107	3899	18.5
CUMBRIA PCT	106995	46696	43.6	22232	4331	19.5
EAST LANCASHIRE PCT	69883	26073	37.3	18823	3393	18.0
HALTON & ST. HELENS PCT	23050	8279	35.9	6277	1075	17.1
HEYWOOD, MIDDLETON & ROCHDALE PCT	40046	14612	36.5	12995	2612	20.1
KNOWSLEY PCT	28433	14501	51.0	7871	2272	28.9
LIVERPOOL PCT	83179	30686	36.9	23652	4179	17.7
MANCHESTER PCT	82833	30331	36.6	29672	6649	22.4
NORTH LANCASHIRE PCT	57367	20919	36.5	11004	2232	20.3
OLDHAM PCT	43271	15134	35.0	14635	3700	25.3
SALFORD PCT	31647	10753	34.0	14149	2380	16.8
SEFTON PCT	45794	16986	37.1	9664	1528	15.8
STOCKPORT PCT	58390	20517	35.1	15636	3735	23.9
TAMESIDE AND GLOSSOP PCT	45732	16124	35.3	13129	2728	20.8
TRAFFORD PCT	27777	12254	44.1	7513	1722	22.9
WARRINGTON PCT	39333	14817	37.7	10649	2506	23.5
WEST CHESHIRE PCT	50806	22047	43.4	11968	3396	28.4
WIRRAL PCT	66220	26324	39.8	15009	3735	24.9
YORKSHIRE & THE HUMBER SHA	1014515	393388	38.8	266792	63612	23.8
SHA vaccine % uptake range			27.8 - 44.8			16.7 - 31.0
BARNSLEY PCT	52030	17863	34.3	12393	2975	24.0
BRADFORD & AIREDALE PCT	96162	35782	37.2	34558	8912	25.8
CALDERDALE PCT	38226	10640	27.8	10706	2282	21.3
DONCASTER PCT	58853	23096	39.2	14358	2650	18.5
EAST RIDING OF YORKSHIRE PCT	61860	24912	40.3	12462	2819	22.6
HULL PCT	52710	17999	34.1	15593	2597	16.7
KIRKLEES PCT	73111	24935	34.1	22773	4879	21.4
LEEDS PCT	117203	46204	39.4	33349	7659	23.0

NORTH EAST LINCOLNSHIRE CARE TRUST PLUS	36342	14095	38.8	8670	1804	20.8
NORTH LINCOLNSHIRE PCT	34580	15487	44.8	8036	2342	29.1
NORTH YORKSHIRE & YORK PCT	157484	69779	44.3	34622	9461	27.3
ROTHERHAM PCT	53723	18433	34.3	13408	2932	21.9
SHEFFIELD PCT	107799	42934	39.8	28422	8797	31.0
WAKEFIELD DISTRICT PCT	74432	31229	42.0	17442	3503	20.1
WEST MIDLANDS SHA	979893	355662	36.3	269371	57046	21.2
SHA vaccine % uptake range			27.5 - 45.7			12.0 - 31.1
BIRMINGHAM EAST & NORTH PCT	76509	21061	27.5	27414	5284	19.3
COVENTRY TEACHING PCT	62275	20388	32.7	19765	3830	19.4
DUDLEY PCT	51493	14826	28.8	13383	1937	14.5
HEART OF BIRMINGHAM TEACHING PCT	52529	16816	32.0	23956	3882	16.2
HEREFORDSHIRE PCT	34988	15986	45.7	8032	2248	28.0
NORTH STAFFORDSHIRE PCT	43502	17841	41.0	8699	2537	29.2
SANDWELL PCT	42816	12254	28.6	12996	1726	13.3
SHROPSHIRE COUNTY PCT	58858	25337	43.0	12022	2635	21.9
SOLIHULL CARE TRUST	40734	15512	38.1	10569	2483	23.5
SOUTH BIRMINGHAM PCT	45814	13568	29.6	13482	1618	12.0
SOUTH STAFFORDSHIRE PCT	108226	45043	41.6	26101	5394	20.7
STOKE ON TRENT PCT	57070	21842	38.3	15713	4892	31.1
TELFORD AND WREKIN PCT	26690	8426	31.6	8084	1843	22.8
WALSALL TEACHING PCT	48973	18195	37.2	14182	2067	14.6
WARWICKSHIRE PCT	91963	34700	37.7	24241	7098	29.3
WOLVERHAMPTON CITY PCT	32079	11501	35.9	8665	1947	22.5
WORCESTERSHIRE PCT	105374	42366	40.2	22067	5625	25.5
East Midlands SHA	854473	335453	39.3	217076	64126	29.5

SHA vaccine % uptake range			29.5 - 43.1			21.0 - 34.7
BASSETLAW PCT	22989	9184	39.9	5195	1213	23.3
DERBY CITY PCT	55296	21231	38.4	16453	4539	27.6
DERBYSHIRE COUNTY PCT	141339	56679	40.1	31664	10964	34.6
LEICESTER CITY PCT	56781	16760	29.5	19260	4048	21.0
LEICESTERSHIRE COUNTY & RUTLAND PCT	119369	43921	36.8	29360	10200	34.7
LINCOLNSHIRE PCT	143927	58681	40.8	28935	8500	29.4
NORTHAMPTONSHIRE PCT	130575	52151	39.9	38652	9883	25.6
NOTTINGHAM CITY PCT	58922	22858	38.8	17798	4660	26.2
NOTTINGHAMSHIRE COUNTY PCT	125275	53988	43.1	29759	10119	34.0
EAST OF ENGLAND SHA	1016760	371947	36.6	281001	74502	26.5
SHA vaccine % uptake range			26.3 - 43.5			17.8 - 32.2
BEDFORDSHIRE PCT	76030	26944	35.4	22757	6802	29.9
CAMBRIDGESHIRE PCT	84018	35486	42.2	22126	7132	32.2
EAST & NORTH HERTFORDSHIRE PCT	96335	35613	37.0	30669	7499	24.5
GREAT YARMOUTH & WAVENEY PCT	49923	21709	43.5	10317	3236	31.4
LUTON PCT	27326	7197	26.3	13899	2473	17.8
MID ESSEX PCT	68770	22904	33.3	18184	4218	23.2
NORFOLK PCT	140098	55824	39.8	27947	8558	30.6
NORTH EAST ESSEX PCT	52998	19468	36.7	12658	3921	31.0
PETERBOROUGH PCT	32816	13335	40.6	10453	3070	29.4
SOUTH EAST ESSEX PCT	61904	17389	28.1	15782	3281	20.8
SOUTH WEST ESSEX PCT	66446	20365	30.6	21364	4510	21.1
SUFFOLK PCT	121908	46922	38.5	29052	9120	31.4
WEST ESSEX PCT	43705	14311	32.7	13499	2673	19.8
WEST HERTFORDSHIRE PCT	94483	34480	36.5	32294	8009	24.8
London SHA	1053843	318161	30.2	407673	60075	14.7
SHA vaccine % uptake range			21.4 - 40.5			8.5 - 27.9

BARKING AND DAGENHAM PCT	15254	4299	28.2	8547	1131	13.2
BARNET PCT	37199	12257	32.9	13068	2092	16.0
BEXLEY CARE TRUST (PCT BASED)	19634	5049	25.7	7632	1138	14.9
BRENT TEACHING PCT	37038	11718	31.6	13775	2377	17.3
BROMLEY PCT	46562	14879	32	14893	2412	16.2
CAMDEN PCT	37420	10197	27.3	9251	814	8.8
CITY AND HACKNEY TEACHING PCT	26075	5574	21.4	8461	716	8.5
CROYDON PCT	51516	17329	33.6	20227	3625	17.9
EALING PCT	33040	11079	33.5	12381	1986	16.0
ENFIELD PCT	21922	7896	36	8344	1349	16.2
GREENWICH TEACHING PCT	30091	8577	28.5	18578	1873	10.1
HAMMERSMITH AND FULHAM PCT	16024	4950	30.9	8146	1054	12.9
HARINGEY TEACHING PCT	36749	10301	28	17004	2027	11.9
HARROW PCT	31332	10702	34.2	9645	1763	18.3
HAVERING PCT	55198	17931	32.5	12060	1915	15.9
HILLINGDON PCT	45893	15559	33.9	15903	4278	26.9
HOUNSLOW PCT	41250	13591	32.9	17325	2635	15.2
ISLINGTON PCT	33389	10874	32.6	11280	1801	16.0
KENSINGTON AND CHELSEA PCT	20822	7026	33.7	8907	996	11.2
KINGSTON PCT	5014	2031	40.5	2142	597	27.9
LAMBETH PCT	41733	9759	23.4	16546	1705	10.3
LEWISHAM PCT	44994	11391	25.3	18453	2903	15.7
NEWHAM PCT	54995	17010	30.9	24080	3368	14.0
REDBRIDGE PCT	51129	14951	29.2	17104	2344	13.7
RICHMOND AND TWICKENHAM PCT	14283	4754	33.3	10496	1754	16.7
SOUTHWARK PCT	35012	8590	24.5	16412	1824	11.1
SUTTON AND MERTON PCT	60408	19813	32.8	22171	3721	16.8
TOWER HAMLETS PCT	28972	7927	27.4	12090	1589	13.1
WALTHAM FOREST PCT	22523	5435	24.1	9671	1136	11.7
WANDSWORTH PCT	31937	8972	28.1	13159	2061	15.7
WESTMINSTER PCT	26435	7740	29.3	9922	1091	11.0

SOUTH CENTRAL SHA	639904	254530	39.8	203982	56272	27.6
SHA vaccine % uptake range			33.2 - 43.9			18.2 - 34.1
BERKSHIRE EAST PCT	59869	21451	35.8	21486	4906	22.8
BERKSHIRE WEST PCT	65184	25136	38.6	25150	7245	28.8
BUCKINGHAMSHIRE PCT	74747	28751	38.5	23555	5907	25.1
HAMPSHIRE PCT	219551	96301	43.9	64243	21934	34.1
ISLE OF WIGHT HEALTHCARE PCT	12640	4715	37.3	2771	503	18.2
MILTON KEYNES PCT	36457	12112	33.2	15737	4664	29.6
OXFORDSHIRE PCT	117126	45924	39.2	34473	7122	20.7
PORTSMOUTH CITY TEACHING PCT	37457	13103	35	11163	2511	22.5
SOUTHAMPTON CITY PCT	16873	7037	41.7	5404	1480	27.4
SOUTH EAST COAST SHA	668097	237633	35.6	187066	45103	24.1
SHA vaccine % uptake range			33.1 - 38.4			16.4 - 26.8
BRIGHTON AND HOVE CITY PCT	43397	15703	36.2	12966	3395	26.2
EAST SUSSEX DOWNS & WEALD PCT	51639	19805	38.4	11402	2942	25.8
EASTERN & COASTAL KENT PCT	70698	24615	34.8	18755	4108	21.9
HASTINGS & ROTHER PCT	33660	11536	34.3	7302	1194	16.4
MEDWAY PCT	34021	11580	34	13094	2937	22.4
SURREY PCT	198266	65681	33.1	57634	14611	25.4
WEST KENT PCT	83016	29931	36.1	28048	5785	20.6
WEST SUSSEX PCT	153400	58782	38.3	37865	10131	26.8
SOUTH WESTCOAST SHA	1001635	430036	42.9	237999	70735	29.7
SHA vaccine % uptake range			37.9 - 47.9			24.7 - 38.1
BATH AND NORTH EAST SOMERSET PCT	31025	12818	41.3	7900	2507	31.7
BOURNEMOUTH & POOLE PCT	61306	26138	42.6	14732	4347	29.5
BRISTOL PCT	80002	32917	41.1	25096	6512	25.9
CORNWALL & ISLES OF SCILLY PCT	97768	42980	44	20829	5307	25.5

DEVON PCT	152735	61864	40.5	29754	7456	25.1
DORSET PCT	84137	38763	46.1	16777	4993	29.8
GLOUCESTERSHIRE PCT	109030	41356	37.9	24064	7068	29.4
NORTH SOMERSET PCT	39571	16522	41.8	10192	3419	33.5
PLYMOUTH TEACHING PCT	47372	21034	44.4	12161	3525	29
SOMERSET PCT	101670	43614	42.9	22270	8489	38.1
SOUTH GLOUCESTERSHIRE PCT	48076	21438	44.6	13420	4470	33.3
SWINDON PCT	33527	16052	47.9	12529	3913	31.2
TORBAY CARE TRUST	32443	14830	45.7	6527	1613	24.7
WILTSHIRE PCT	82973	39710	47.9	21748	7116	32.7

Data source: ImmForm website

Data provided are derived from the responses received from 87.4% of GP practices in England. Thus, they do not represent the total number of patients offered vaccine or the total number of patients vaccinated. However, the data could be extrapolated to estimate the total number of patients offered vaccine and those vaccinated based on the response rate.

Appendix D: Data tables

Table 1: H1N1 vaccine uptake amongst clinical risk groups by age band 2009/10

Clinical risk group age band	No. of registered patients	No. vaccinated (dose 1 Pandemrix®)	% vaccine uptake
6 months to under 2 years	25773	6670	25.9
2 years to under 3 years	19338	7601	39.3
3 years to under 5 years	51472	21787	42.3
5 years to under 10 years	152394	58494	38.4
10 years to under 13 years	108734	39142	36.0
13 years to under 16 years	112960	38026	33.7
16 years to under 25 years	473442	98558	20.8
25 years to under 35 years	763861	167508	21.9
35 years to under 45 years	829618	256871	31.0
45 years to under 60 years	1657967	679607	41.0
60 years to under 65 years	852423	411223	48.2
65 and over	3943020	1591601	40.4

Data source: ImmForm website

Data provided are derived from the responses received from 87.4% of GP practices in England. Thus, they do not represent the total number of patients offered vaccine or the total number of patients vaccinated. However, the data could be extrapolated to estimate the total number of patients offered vaccine and those vaccinated based on the response rate.

Table 2: H1N1 vaccine uptake by clinical risk and age band 2009/10

Age band	6 months to under 2 years			2 years to under 16 years			16 years to under 65 years			65 and over		
Clinical risk group	No. of registered patients	No. vaccinated (dose 1 Pandemrix®)	% vaccine uptake	No. of registered patients	No. vaccinated (dose 1 Pandemrix®)	% vaccine uptake	No. of registered patients	No. vaccinated (dose 1 Pandemrix®)	% vaccine uptake	No. of registered patients	No. vaccinated (dose 1 Pandemrix®)	% vaccine uptake
Diabetes	54	23	42.6	13523	7207	53.3	858062	416130	48.5	934259	428289	45.8
Chronic heart disease	4929	1854	37.6	46000	15552	33.8	513283	225029	43.8	1237900	532754	43.0
Immunosuppression	3102	900	29.0	20844	8143	39.1	350418	147279	42.0	247716	109538	44.2
Chronic kidney (renal) disease	39	14	35.9	3545	1313	37.0	244609	102068	41.7	1191137	456435	38.3
Chronic liver disease	94	44	46.8	1633	671	41.1	124158	40423	32.6	48577	18768	38.6
Chronic respiratory disease	4064	1492	36.7	266879	105059	39.4	1378668	542987	39.4	859438	392640	45.7
Patients with stroke/TIA	109	44	40.4	1255	463	36.9	149244	61362	41.1	551608	206026	37.4
Degenerative chronic neurological disease (including MS)	670	273	40.7	20172	7009	34.7	189453	60922	32.2	191381	61084	31.9
Diabetes on medication	46	19	41.3	12738	7010	55.0	700780	356190	50.8	694850	330280	47.5

Data source: ImmForm website

Data provided are derived from the responses received from 87.4% of GP practices in England. Thus, they do not represent the total number of patients offered vaccine or the total number of patients vaccinated. However, the data could be extrapolated to estimate the total number of patients offered vaccine and those vaccinated based on the response rate.

Appendix E: Seasonal influenza vaccine uptake survey – birth date ranges

(As published in Seasonal Influenza Vaccine Uptake among the 65 Years and Over and Under 65 Years At-Risk in England, Winter Season 2009-10 report)

Dates of birth	Aged 6 months to under 2 years of age		Aged 2 to under 16 years of age		Aged 16 to under 65 years of age		Aged 65 and over
Date of data extraction	Date of birth on or after	Date of birth on or before	Date of birth on or after	Date of birth on or before	Date of birth on or after	Date of birth on or before	Date of birth on or before
OCTOBER SURVEY (Vaccinations from 1 September to 31 October, collected in November)							
2nd November 2009	3rd Nov. 2007	1st April 2009	3rd Nov. 1993	2nd Nov. 2007	1st April 1945	2nd Nov. 1993	31st March 1945
3rd November 2009	4th Nov. 2007		4th Nov. 1993	3rd Nov. 2007		3rd Nov. 1993	
4th November 2009	5th Nov. 2007		5th Nov. 1993	4th Nov. 2007		4th Nov. 1993	
5th November 2009	6th Nov. 2007		6th Nov. 1993	5th Nov. 2007		5th Nov. 1993	
6th November 2009	7th Nov. 2007		7th Nov. 1993	6th Nov. 2007		6th Nov. 1993	
NOVEMBER SURVEY (Vaccinations from 1 September to 30 November, collected in December)							
1st December 2009	2nd Dec. 2007	1st April 2009	2nd Dec. 1993	1st Dec. 2007	1st April 1945	1st Dec. 1993	31st March 1945
2nd December 2009	3rd Dec. 2007		3rd Dec. 1993	2nd Dec. 2007		2nd Dec. 1993	
3rd December 2009	4th Dec. 2007		4th Dec. 1993	3rd Dec. 2007		3rd Dec. 1993	
4th December 2009	5th Dec. 2007		5th Dec. 1993	4th Dec. 2007		4th Dec. 1993	
7th December 2009	8th Dec. 2007		8th Dec. 1993	7th Dec. 2007		7th Dec. 1993	
DECEMBER SURVEY (Vaccinations from 1 September to 31 December, collected in January)							
4th January 2010	5th Jan. 2008	1st April 2009	5th Jan. 1994	4th Jan. 2008	1st April 1945	4th Jan. 1994	31st March 1945
5th January 2010	6th Jan. 2008		6th Jan. 1994	5th Jan. 2008		5th Jan. 1994	
6th January 2010	7th Jan. 2008		7th Jan. 1994	6th Jan. 2008		6th Jan. 1994	
7th January 2010	8th Jan. 2008		8th Jan. 1994	7th Jan. 2008		7th Jan. 1994	
8th January 2010	9th Jan. 2008		9th Jan. 1994	8th Jan. 2008		8th Jan. 1994	
11th January 2010	12th Jan. 2008		12th Jan. 1994	11th Jan. 2008		11th Jan. 1994	
12th January 2010	13th Jan 2008		13th Jan 1994	12th Jan 2008		12th Jan 1994	
JANUARY SURVEY (Vaccinations from 1 September to 31 January, collected in February)							
1st February 2010	2nd Feb. 2008	1st April 2009	2nd Feb. 1994	1st Feb. 2008	1st April 1945	1st Feb. 1994	31st March 1945
2nd February 2010	3rd Feb. 2008		3rd Feb. 1994	2nd Feb. 2008		2nd Feb. 1994	
3rd February 2010	4th Feb. 2008		4th Feb. 1994	3rd Feb. 2008		3rd Feb. 1994	
4th February 2010	5th Feb. 2008		5th Feb. 1994	4th Feb. 2008		4th Feb. 1994	
5th February 2010	6th Feb. 2008		6th Feb. 1994	5th Feb. 2008		5th Feb. 1994	