



Public Health
England

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Seasonal influenza vaccine uptake in children of primary school age: winter season 2017 to 2018

Final data for 1 September 2017 to 31 January 2018

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Public Health England

Wellington House

133-155 Waterloo Road

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: Influenza Surveillance Team, Vaccines and Countermeasures Service, National Infection Service, PHE

For queries relating to this document, please contact: Childfluvac@phe.gov.uk



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Key points

During the 2017 to 2018 influenza season, the primary school age programme was expanded in England to include 2 additional cohorts:

- children in reception (aged 4 rising to 5 years)
- children in academic school year 4 (aged 8 rising to 9 years)

Cumulative influenza vaccine uptake from 1 September 2017 to 31 January 2018 for the national programme in England was:

- 62.6% (410,946/656,533) in children reception (aged 4 rising to 5 years) (compared to 33.9% during the 2016 to 2017 season via GP practices only)
- 61.0% (414,923/680,565) in children school years 1 (aged 5 rising to 6 years) compared to 57.6% during the 2016 to 2017 season
- 60.4% (411,938/682,104) in children school years 2 (aged 6 rising to 7 years) compared to 55.4% during the 2016 to 2017 season
- 57.6% (388,247/673,744) in children school years 3 (aged 7 rising to 8 years) compared to 53.3% during the 2016 to 2017 season
- 55.8% (372,484/668,051) in children school years 4 (aged 8 rising to 9 years) (no comparison available)
- 59.5% (1,998,538/ 3,360,997) in children school years reception, 1, 2, 3 and 4 age combined
- Data was returned for a total of 152/153 Local Authorities (LA) in England within the 14 NHS England Local Teams on cumulative influenza vaccinations administered from 1 September 2017 to 31 January 2018

Cumulative Influenza vaccine uptake from 1 September 2017 to 31 January 2018 for the 5 pilot programme in England was:

- 62.4% (195,185 / 312,697) overall in children school years reception to 6 age (aged 4 to 10 years, but not 11 or older)
- Ranging from 66.9% (29,420 / 43,998) in reception (aged 4 rising to 5 years) to 57.9% (25,073 / 43,310) in school year group 6 (aged 10 rising to 11 years)
- For school years 1 to 6 combined, the uptake in 2017 to 2018 was: 61.7% (165,765 / 268,699) and was 1.4% higher compared to the 2016 to 2017 season (60.3%, 172,175 / 285,735)

Notes on the report

Intended audience

This report is aimed at professionals directly involved in the delivery of the influenza vaccine in children, GPs, pharmacy leads, screening and immunisation teams, local commissioners involved in planning and financing of local health services, the wider public health community, governmental organisations and researchers with an interest in the influenza vaccination programme in England.

Aim of the report

This report provides an update on influenza vaccination uptake (%) in school children (from school academic years reception, 1, 2, 3 and 4) at national and sub-national levels. The report also includes an update on influenza vaccination uptake in all primary school children (from reception to year 6) in 5 pilot areas where the influenza vaccine in England is offered to these cohorts.

Background

In 2012, the Joint Committee on Vaccination and Immunisation (JCVI) recommended the roll-out of a universal childhood influenza vaccine programme with a licensed live attenuated influenza vaccine (LAIV)¹. Ultimately this programme will target all children 2 to 17 years of age with the aim of providing both direct protection for those immunised as well as indirectly protecting the remaining population, by reducing transmission¹.

In 2013 to 2014, vaccination against influenza with LAIV was first offered nationally across England to all children aged 2 and 3 years in primary care. An additional pilot programme was introduced to 7 geographically discrete areas that were commissioned to vaccinate children 4 to 11 years of age (reception to school year 6) in order to inform the optimal delivery mechanism.

In 2014 to 2015, the national programme was extended to include all children aged 2 to 4 years old in primary care. The pilot programme was also extended to a total of 14 pilot areas (including the 7 pilot areas that participated during the 2013 to 2014 season), targeting both primary school aged children and secondary school aged children, 11 to 13 years of age (school years 7 and 8). In 2015 to 2016, all healthy children of school years one and 2 (age-based academic years) in England were offered influenza vaccination with LAIV for the first time in addition to children ages 2 to 4 years in primary care. For the majority of children in school years one and 2 this was offered via a school-based programme, although in some areas vaccinations were delivered through GPs and pharmacies. At-risk children contraindicated for LAIV vaccination were largely referred to their GP to receive the quadrivalent inactivated influenza vaccine (IIV), though some areas provided this alternative vaccine on site. Additionally, 5 of the pilot areas that had piloted the school based programme since 2013 to 2014 continued to offer the vaccine to all primary school age children aged 5 to 11 years (school years 1 to 6). The programme was further extended to include children of school year 3 (ages 7 rising to 8 years) during in 2016 to 2017.

From 1 September 2017, the programme was extended to include children in reception (ages 4 rising to 5 years) and in school year 4 (ages 8 rising to 9 years). The 5 pilot areas that offered the school based programme since 2013 to 2014 offered the vaccine to children from reception to school year 6 (ages 4 rising to 11 years).

This report describes influenza vaccine uptake for children of primary school age in England from 1 September 2017 to 31 January 2018. The eligible

school cohorts under survey are children in school academic years reception, 1, 2, 3 and 4 (based on age) and additional school ages to age 11 years vaccinated in the 5 pilot areas during the 2017 to 2018 influenza vaccination programme in England.

Methods

Screening and immunisation teams throughout England are given a standard protocol, describing the inclusion criteria and method of collecting the data. Data providers must use a suitable data source or more if appropriate to identify eligible school cohorts in the locality. Single doses of the vaccine are required for the purpose of this surveillance. Eligible children in clinical at-risk groups without prior vaccination history receiving 2 doses should be counted as one vaccination in the numerator.

Cumulative data on seasonal influenza vaccine uptake were collected for all Local Authorities (LA) between 1 September 2017 to 31 January 2018 using the ImmForm website hosted by Infomax Ltd. ImmForm provides a secure online platform for vaccine uptake data collection for several immunisation surveys, including the seasonal influenza vaccine uptake collections.

End-of-season programme uptake was calculated based on the number of children in the target population who reported having received the influenza vaccine during the campaign period. Therefore, the vaccine coverage ideally reflects all eligible children in years reception, 1, 2, 3 and 4 that have been vaccinated with influenza vaccine (LAIV or IIV) between 1 September 2017 and 31 January 2018.

Eligible population

The target population for the national primary school age childhood influenza vaccination programme is defined by school age cohorts born between 1 September 2009 and 31 August 2013, as defined by child age on 1 September 2017 (Table 1). This season all children in reception (aged 4 rising to 5 years), year 1 (aged 5 rising to 6 years), year 2 (aged 6 rising to 7 years), year 3 (aged 7 rising to 8 years) and year 4 (aged 8 rising to 9 years) were offered the vaccine.

The target population for the 5 primary school pilot areas vaccinating all academic age children is defined as all children in reception to year 6 (aged 4-10 years, but not 11 or older) born between 1 September 2006 and 31 August 2013, as defined by child age on 1 September 2017 (Table 1). These areas are: Cumbria, Northumberland, Tyne and Wear, Essex, Greater Manchester, Leicestershire and Lincolnshire and London.

Table 1. Year group cohort definitions

| Academic group | Age range on 1 September 2017 | Birth date | |
|----------------|-------------------------------|----------------|--------------|
| | | Born from date | Born to date |
| Reception | Aged 4-5 years | 01/09/2012 | 31/08/2013 |
| 1 | Aged 5-6 years | 01/09/2011 | 31/08/2012 |
| 2 | Aged 6-7 years | 01/09/2010 | 31/08/2011 |
| 3 | Aged 7-8 years | 01/09/2009 | 31/08/2010 |
| 4 | Aged 8-9 years | 01/09/2008 | 31/08/2009 |
| 5 | Aged 9-10 years | 01/09/2007 | 31/08/2008 |
| 6 | Aged 10-11 years | 01/09/2006 | 31/08/2007 |

For the 152 LAs where the programme was delivered through a school model, the denominator was based on all eligible children in schoolsⁱ in the LA geography AND children educated out of school in the LA geography, defined by child age at 1 September 2017 using routine data sources, for example the local education authority (LEA) school registers. Data was submitted by data providers and/or screening and immunisation coordinators at the LA level. Data were submitted on the ImmForm reporting website via manual upload.

For the Kernow LA, the majority of children were offered the vaccine through school delivery programmes, with the exception of the Isles of Scilly, where the programme was delivered through GPs. The denominators for the Isles of Scilly were derived from GP systems that are based on the number of patients registered with a GP practice located within the LAs geographical boundary, as defined by a child's age at 1 September 2017. Data was submitted on the ImmForm reporting website either via an automated extraction (XML bulk upload or a web service) provided by GP IT software suppliers who extract data directly from GP computer systems². Data were submitted at GP practice level and then aggregated at LA level by GP postcode for reporting purposes.

Apart from delivery models based on GPs, the school child flu vaccination surveillance is a school based collection. Children resident in one locality attending schools in neighbouring localities would be captured by the schools in the neighbouring locality thus avoiding double counting. Data providers can use single or multiple sources as appropriate to identify their eligible population.

ⁱAll state funded primary schools, special schools, academies, faith schools, free schools, pupil referral units, and independent schools.

This report presents data aggregated at PHE Centre, NHS England Local Team, former Area Team and Local Authority levels for comparison with past and future reports. This will be the last season that data will be presented by geographical boundaries for Area Teams.

Due to the reformulation of regional teams in 2017 to 2018, this report will be using the 14 NHS England Local Teams as the basis for grouping LAs. These new regional level boundaries will be used as the basis for comparison in future reports.

Data limitations

It is important to note there may not be full data coverage in some LAs, as not all data providers were able to access information on additional children that had been vaccinated by their registered GP in addition to the local delivery model used by a particular area. The majority of these children are at-risk children that have been called in by their GP to receive vaccination. Healthy children in school years reception, 1, 2, 3 and 4 (these are children not in a clinical risk group) should not have been offered vaccination by their GP unless the local vaccination programme was a GP delivery model or designated GPs were commissioned to vaccinate these children in mop up clinics, which are accounted for.

Where data providers have indicated they have included additional children that were vaccinated by their GP, it should be noted that the completeness of these figures may vary between GP practices as the IT systems used to extract this information may vary from IT suppliers to another.

Some of the school data providers will only be indicating those children that have returned information on their vaccination status in consent forms (those who have already received the vaccine at the GP). Also it may be necessary that others providers use multiple data sources to identify eligible school age cohorts (for example, the school roll and the local Child Health Information Services (CHIS) system) to determine the eligible school age cohorts depending on the characteristics of the local school age population. This may be valid for one locality and not for others. The extent of enumerating the eligible population may differ between localities depending on data sources consulted although each locality must be satisfied with its own methodology identifying its school age population. Some caution is advised when making direct comparisons of coverage between localities for these reasons.

Also when assessing the local trends changes could reflect changes in the quality of data reported as well as real changes in vaccination coverage. While this issue will be more apparent at a local level, any impact on the national figures is likely to be minimal.

Finally, where the denominators (total number of children eligible for the influenza vaccine) were not amended, denominators from the school census survey from January 2017 were used³.

Throughout the 2017 to 2018 season, provisional uptake data by school year cohort were published on PHE's website on a cumulative monthly basis. Following the end of the vaccine data collection period (31 January 2018), providers were contacted so that they can check their figures as correct.

Results

Full data tables showing final influenza vaccine uptake for children in school years reception, 1, 2, 3 and 4 at LA, former AT level, and LA level data by PHE centre are described in this section and appendix of this report. Data are also available using the following link: www.gov.uk/government/collections/vaccine-uptake

152 of the 153 LAs confirmed that their vaccination campaign had been completed and the data were final up until 31 January 2018. Due to data provider issues, there is no data for Sunderland.

National uptake

An estimated 1,998,538 children in school years reception, 1, 2, 3 and 4 in England received the influenza vaccine from 1 September 2017 to 31 January 2018. Uptake in children in school years reception, 1, 2, 3 and 4 was 62.6% , 61.0%, 60.4%, 57.6% and 55.8% respectively (Table 2). The median uptake for children in school years reception, 1, 2, 3 and 4 was 64.3% (IQR 55.3% to 69.8%), 61.9% (IQR 53.9% to 67.9%), 61.3 (IQR 53.0% to 67.0%), 58.2% (IQR 50.1% to 64.6%) and 56.4% (IQR 48.1% to 63.0%), respectively.

Between 2016 to 2017 and 2017 to 2018, an increase was observed in the uptake figures for children in school years 1, 2 and 3 (4.3% higher in 2017 to 2018 than in 2016 to 2017) (Table 2).

Table 2. Total number of children in school years reception, 1, 2, 3 and 4 eligible for influenza vaccination, total number of children who received influenza vaccination, and the total vaccine uptake in England from 1 September 2017 to 31 January 2018 and in 2016 to 2017ⁱⁱ

| School year | 2017 to 2018 | | 2016 to 2017 | |
|-------------|--|---|------------------------------|---|
| | Total no. of eligible children in the LA geography | Total no. of children vaccinated with influenza vaccine | Influenza vaccine uptake (%) | Influenza vaccine uptake (%) ¹ |
| Reception | 656,533 | 410,946 | 62.6 | 33.9 |
| 1 | 680,565 | 414,923 | 61.0 | 57.6 |
| 2 | 682,104 | 411,938 | 60.4 | 55.4 |
| 3 | 673,744 | 388,247 | 57.6 | 53.3 |
| 4 | 668,051 | 372,484 | 55.8 | - |

ⁱⁱ 4 year old children in reception were vaccinated in GP clinics during the 2016 to 2017 season and via school delivery programmes during the 2017 to 2018 season.

Local NHS England team

Based on combined data for the target populations, the overall influenza vaccine uptake was 59.5% (1,998,538/ 3,360,997) (Table 3). Variation in vaccine uptake was observed between 14 NHS England Local Teams, ranging from 47.8% (London) to 70.7% (Wessex) (Figure 1).

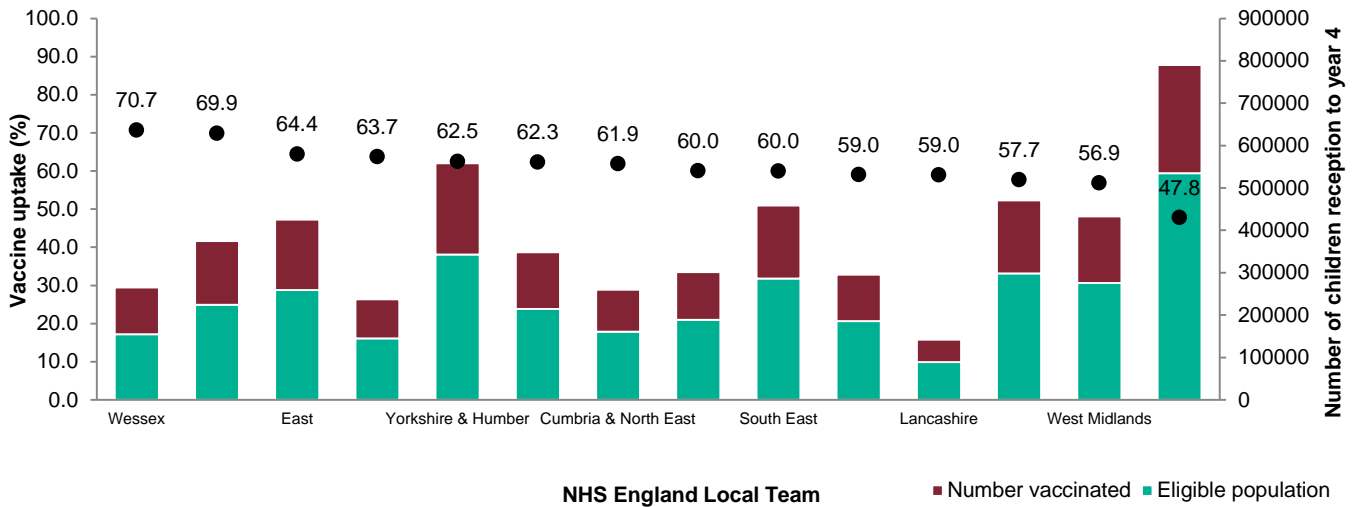
Data for 2017 to 2018 using NHS England local teams are shown in Table 3 and will be used as the basis for comparison in future reports.

Table 3. Estimated number and proportion of children in school years reception, 1, 2, 3 and 4 who were vaccinated with influenza vaccine by local NHS England team from 1 September 2017 to 31 January 2018ⁱⁱⁱ

| Local NHS England team | No. of children eligible for vaccination | No. of children vaccinated with at least 1 dose of influenza vaccine | Vaccine uptake (%) |
|----------------------------|--|--|--------------------|
| North | 926,318 | 572,104 | 61.8 |
| Cumbria & North East | 160,570 | 99,455 | 61.9 |
| Lancashire | 89,300 | 52,669 | 59.0 |
| Greater Manchester | 188,459 | 113,136 | 60.0 |
| Yorkshire & Humber | 343,260 | 214,619 | 62.5 |
| Cheshire & Merseyside | 144,729 | 92,225 | 63.7 |
| Midlands & East | 1,047,683 | 629,432 | 60.1 |
| North Midlands | 214,504 | 133,634 | 62.3 |
| Central Midlands | 298,343 | 172,032 | 57.7 |
| West Midlands | 276,058 | 157,027 | 56.9 |
| East | 258,778 | 166,739 | 64.4 |
| London | 534,755 | 255,418 | 47.8 |
| London | 534,755 | 255,418 | 47.8 |
| South | 852,241 | 541,584 | 63.5 |
| South Central | 224,631 | 150,323 | 69.9 |
| South West | 185,936 | 109,739 | 59.0 |
| Wessex | 155,074 | 109,679 | 70.7 |
| South East | 286,600 | 171,843 | 60.0 |
| Total | 3,360,997 | 1,998,538 | 59.5 |

ⁱⁱⁱ Data for Bassetlaw, an LA district of Nottinghamshire UA, was collected independently. Bassetlaw uptake figures are reported under Yorkshire and Humber NHS England team.

Figure 1. Number and estimated proportion of children in school years reception, 1, 2, 3 and 4 vaccinated with influenza vaccine by local NHS England team 1 September 2017 to 31 January 2018ⁱⁱⁱ



PHE centres

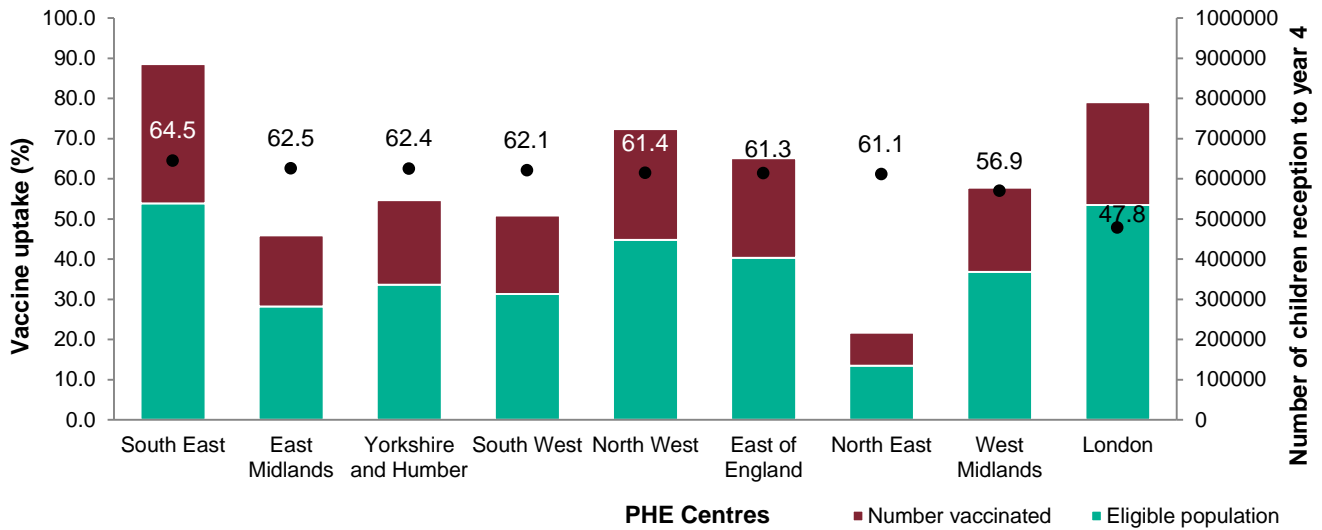
Results based on 9 PHE centres are broadly comparable to the results obtained for the 14 NHS England Local Teams. Variation in vaccine uptake was observed between PHE centres, for combined data for children in school years reception, 1, 2, 3 and 4, ranging from 47.8% (London) to 64.4% (South East) (Table 4, Figure 2).

Table 4. Influenza vaccine uptake (%) for children in school years reception, 1, 2, 3 and 4 in the 9 PHE Centres, England 1 September 2017 to 31 January 2018^{iv}

| PHE Centre | Vaccine uptake (%) | | | | | |
|--------------------------|--------------------|-------------|-------------|-------------|-------------|------------------------------|
| | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Years Reception - 4 combined |
| East Midlands | 64.7 | 64.7 | 63.7 | 60.8 | 58.9 | 62.5 |
| East of England | 65.3 | 62.9 | 62.1 | 59.2 | 57.2 | 61.3 |
| London | 51.6 | 49.6 | 48.2 | 45.6 | 43.8 | 47.8 |
| North East | 62.5 | 61.1 | 62.3 | 60.8 | 58.7 | 61.1 |
| North West | 64.7 | 62.6 | 62.3 | 59.4 | 58.0 | 61.4 |
| South East | 66.9 | 66.2 | 66.1 | 62.4 | 60.5 | 64.4 |
| South West | 67.7 | 64.5 | 62.6 | 59.6 | 56.1 | 62.1 |
| West Midlands | 59.6 | 57.7 | 57.7 | 55.4 | 54.2 | 56.9 |
| Yorkshire and the Humber | 64.3 | 63.4 | 63.5 | 61.3 | 59.7 | 62.4 |
| Total | 62.6 | 61.0 | 60.4 | 57.6 | 55.8 | 59.5 |

^{iv} Data for Bassetlaw, an LA district of Nottinghamshire UA, was collected independently. Bassetlaw uptake figures are included with Nottinghamshire LA under East Midlands PHE Centre.

Figure 2. Number and estimated proportion of children in school years reception, 1, 2, 3 and 4 who were vaccinated with influenza vaccine by PHE Centre, 1 September 2017 to 31 January 2018^v

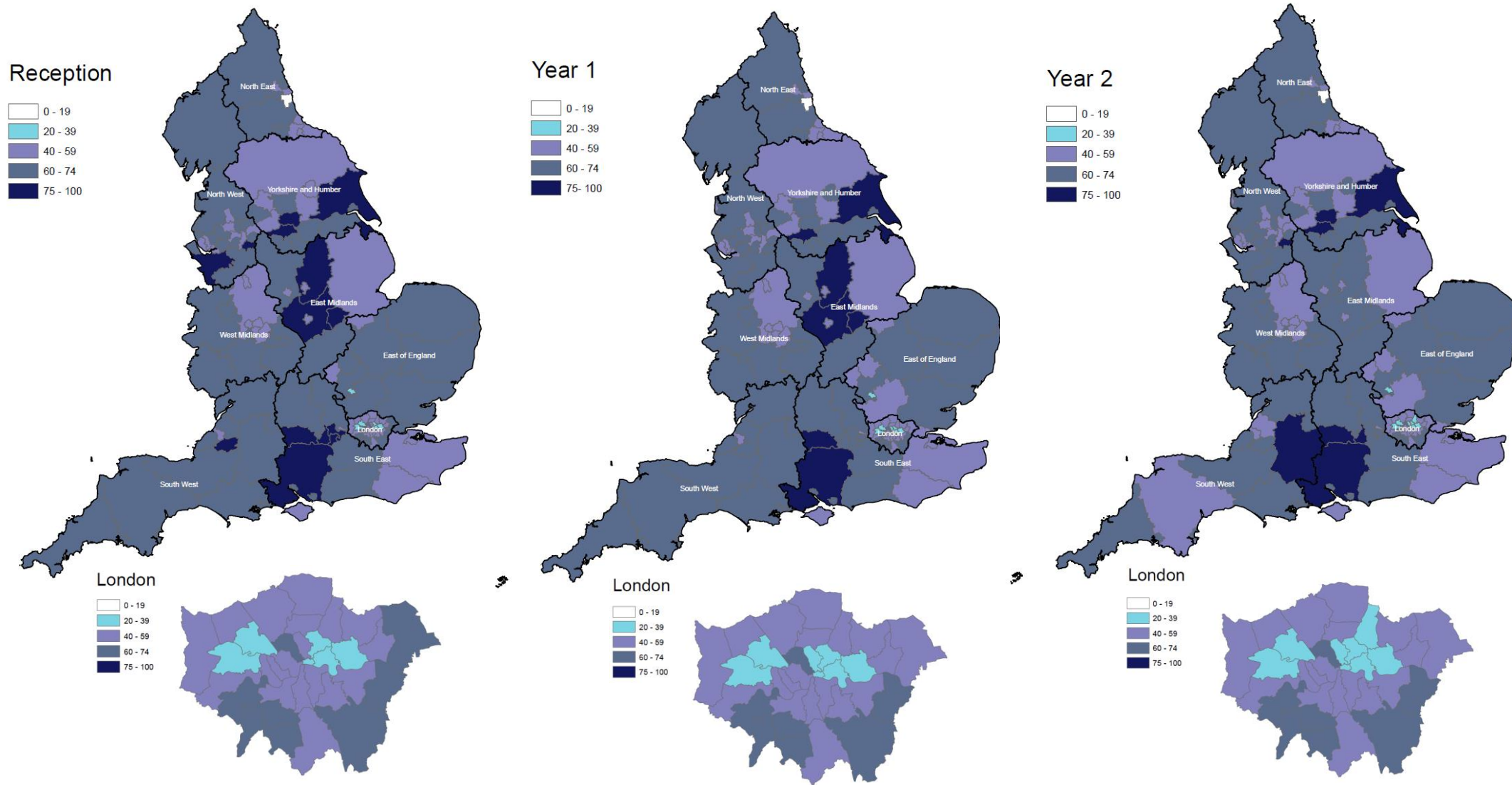


Local authority

Overall uptake for children in school years reception, 1, 2, 3 and 4 combined by LA ranged from 26.0% in Brent to 79.3% in Wakefield. Uptake by year group by LA ranged from 30.5% to 82.3% for children in reception, 29.6% to 80.0% for children in school year 1, from 24.2% to 81.6% for children in school year 2, from 22.6% to 81.6 for children in school year 3 and from 22.1% to 79.4% for children in school year 4 (Figure 3, Figure 4, Appendix A). Vaccine uptake using former area team boundaries for the 2017 to 2018 season is available in Appendix B.

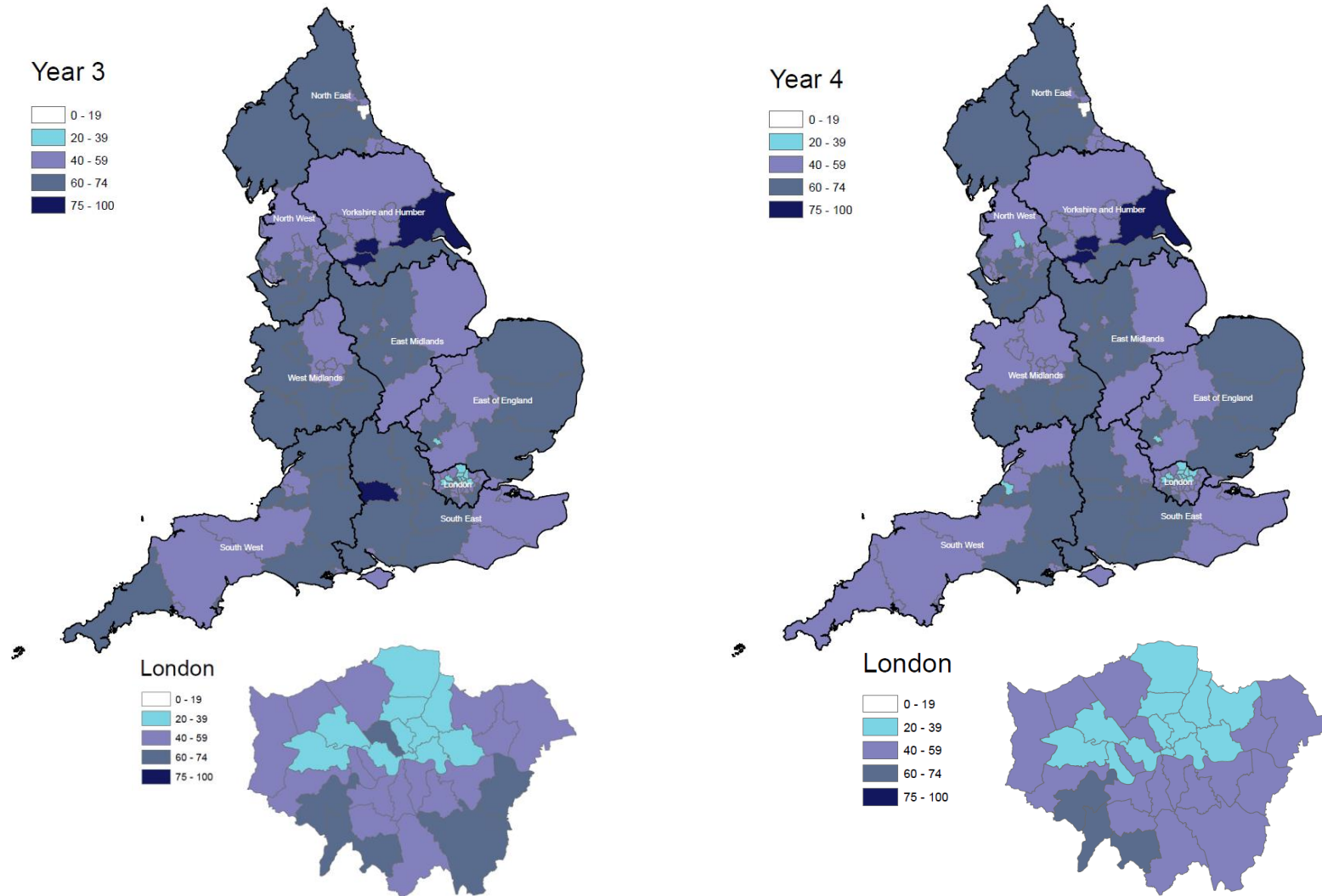
^v Data for Bassetlaw, an LA district of Nottinghamshire UA, was collected independently. Bassetlaw uptake figures are included with Nottinghamshire LA under East Midlands PHE Centre.

Figure 3: Vaccine uptake (%) by 152 LAs and 9 PHE centres, England, 1 September 2017 to 31 January 2018^{vi}



^{vi} Data for Bassetlaw, an LA district of Nottinghamshire UA, was collected independently. Data for Sunderland was left blank. Contains Ordnance Survey data © Crown copyright and database right 2018. Contains National Statistics data © Crown copyright and database right 2018.

Figure 4: Vaccine uptake (%) by 152 LAs and 9PHE centres, England, 1 September 2017 to 31 January 2018^{vii}



^{vii} Data for Bassetlaw, an LA district of Nottinghamshire UA, was collected independently. Data for Sunderland was left blank. Contains Ordnance Survey data © Crown copyright and database right 2018. Contains National Statistics data © Crown copyright and database right 2018.

Overall vaccine uptake for children in reception to year 4 was reported as being lower than 40% in 8 LAs, all of which are located in London. Seven out of the 8 LAs located within London reporting an uptake lower than 40% also ranked within the top 10% (35/348) of unitary authorities and LA districts in England with the highest Muslim populations⁴. These results are consistent with previous work from 2013 to 2014 onwards which have shown that deprivation and Muslim religion are independent predictors of lower uptake^{5, 6}. Despite being low in these 8 London LAs, an improvement was observed in 2017 to 2018 compared to the 2015 to 2016 and 2016 to 2017 seasons^{7, 8}.

It may be worth noting that none of the LAs reporting a vaccine uptake less than 40% included data on additional data on children that may have been vaccinated by their GPs or via other community settings such as pharmacies. The additional data may have resulted in a higher vaccine uptake for these localities.

Pilot uptake

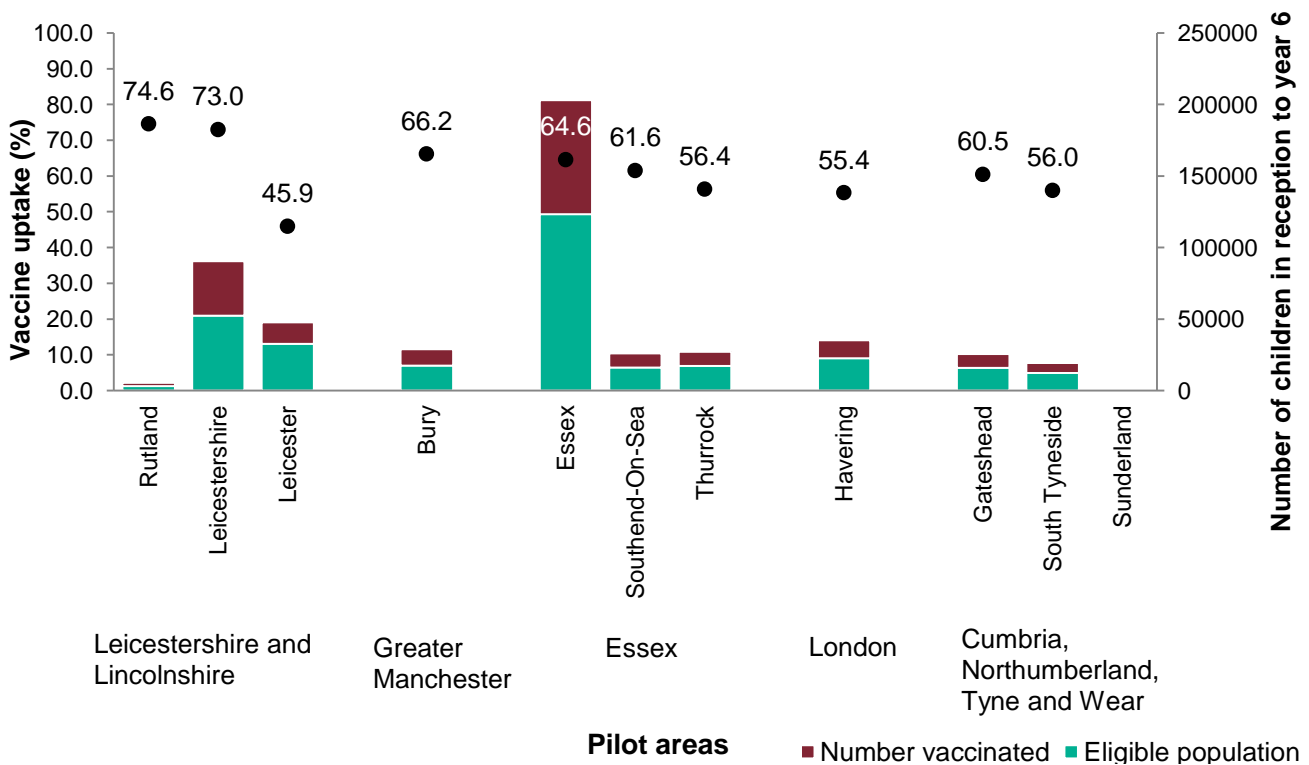
An estimated 195,185 primary school children aged 4 to 11 years in 5 pilot areas received the influenza vaccine during the period 1 September 2017 to 31 January 2018 (Table 5). With an estimated total target population of 312,697, this results in an overall uptake of 62.4% (median, 61.0%, IQR 55.8% to 67.9%). Vaccine uptake by LA ranged from 45.9% in Leicester to 74.6% in Rutland (Table 5, Figure 5)

Among children in school year 1 to school year 6 in pilot areas (5 to 11 years old), vaccine uptake was 61.7% (Appendix C). Comparison on vaccine uptake in 2017 to 2018 with previous years is therefore restricted to data collected for school years 1 to 6 (please refer Appendix C).

Table 5. Estimated number and proportion of children aged 4-11 years who were vaccinated with influenza vaccine during the 2017 to 2018 influenza season in pilot areas across England

| Area Team | Local Authority | 2017/18 | | |
|--------------------------------------|-----------------|---|--|--------------------|
| | | Estimated total number of children eligible for vaccination | No. of children vaccinated with at least 1 dose of influenza vaccine | Vaccine uptake (%) |
| Cumbria, Northumberland, Tyne & Wear | Gateshead | 15,845 | 9,585 | 60.5 |
| | South Tyneside | 12,332 | 6,905 | 56.0 |
| | Sunderland | - | - | - |
| Essex | Essex | 123,262 | 79,641 | 64.6 |
| | Southend-On-Sea | 16,020 | 9,861 | 61.6 |
| | Thurrock | 17,260 | 9,732 | 56.4 |
| Greater Manchester | Bury | 17,380 | 11,513 | 66.2 |
| Leicestershire and Lincolnshire | Leicester | 32,661 | 14,998 | 45.9 |
| | Leicestershire | 52,256 | 38,145 | 73.0 |
| | Rutland | 3,061 | 2,283 | 74.6 |
| London | Havering | 22,620 | 12,522 | 55.4 |
| TOTAL | | 312,697 | 195,185 | 62.4 |

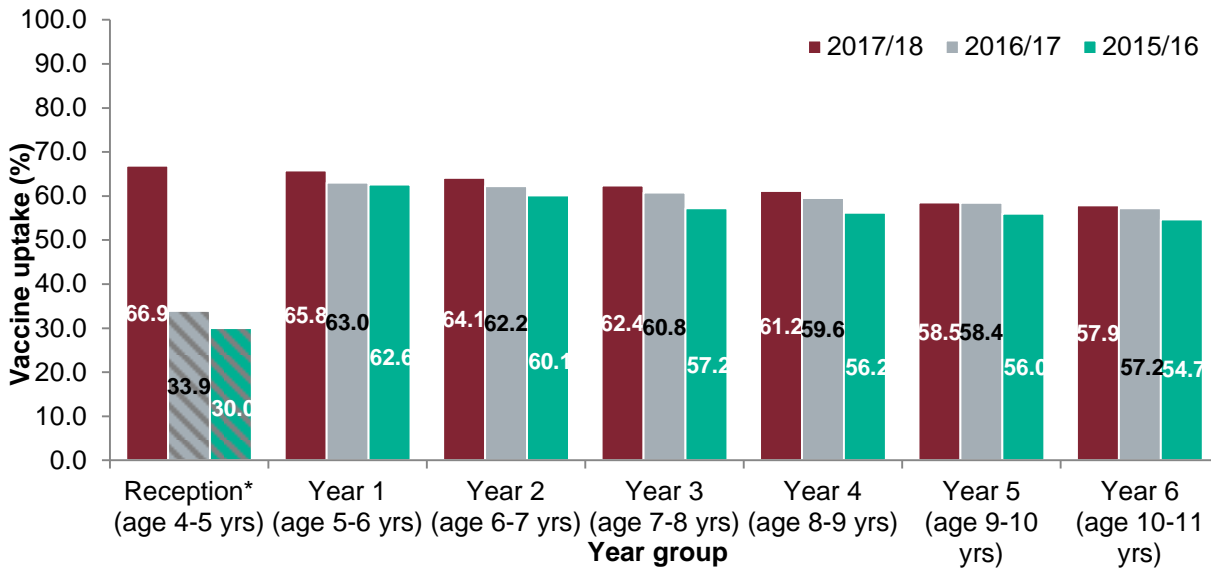
Figure 5. Estimated number and proportion of children aged 4-11 years who were vaccinated with influenza vaccine by pilot area, England, 1 September 2017 to 31 January 2018^{VIII}



^{VIII} Due to data provider issues, there is no data for Sunderland.

A 1.4% increase in vaccine uptake was observed since the 2016 to 2017 season in the pilot areas (Appendix Table 2). Vaccine uptake ranged from 66.9% in reception to 57.9% in year 6 (Figure 6).

Figure 6. Estimated proportion of children aged 4 to 11 years who were vaccinated with influenza vaccine by school year group, 2017 to 2018 vs. 2016 to 2017 and 2015 to 2016 in pilot areas across England^{ix}



^{ix} Children ages 4 to 5 years old were vaccinated in GP practices during the 2016/17 and 2015/16 seasons.

Discussion

This is the third year for reporting on the uptake results for national childhood influenza primary school vaccination programme across England. The 2017 to 2018 winter season saw the successful further roll out of the national childhood influenza vaccination programme to children in school years reception, 1, 2, 3 and 4 in England. From September 2017, in addition to children 2 to 3 years of age being vaccinated in GP practices, all healthy children in reception to school year 4 in England were offered influenza vaccination with LAIV. For the majority of children this was offered via a school-based programme, although one area offered the vaccination through GP practices.

Uptake levels of 50% or higher were achieved across most of England, demonstrating the success of the national roll out of the programme. London achieved vaccine uptake slightly lower than 50% which may indicate continuing challenges that should be further explored. The national uptake children in reception to school year 4 was 59.5% which meets the 40% to 65% national ambition highlighted in the Flu Plan for winter 2017 to 2018⁹, although there was considerable variation in uptake across the country.

For the first time, children in reception were offered the vaccine through school delivery model. Uptake was the highest among this age cohort compared to the other school groups and compared to vaccine uptake among 4 year old children vaccinated in GP clinics last season. This increased vaccine uptake may be a result of the change in delivery mode and being exposed to the primary school age programme for the first time, leading to more inclination for vaccine uptake.

It is important that uptake ambitions in target groups of the national influenza vaccination programme are met in order to provide optimal direct and indirect protection against influenza infection.

Uptake levels within the 5 pilot areas was 62.4% among children in reception to year 6 combined and is within the expected uptake level (40 to 65%)⁷. Pilot data shows that the overall vaccine uptake for combined school years 1 to 6 was higher than corresponding cohorts in in 2016 to 2017 and 2015 to 2016. The data shows an overall pattern of increasing uptake with younger age, which will be important to monitor with the on-going roll out of the national programme. With the uptake levels achieved this year, it will be important to continue to build on this and improve uptake further in forthcoming seasons.

Based on data collected in 2017 to 2018 for all eligible groups under survey, the highest uptake was observed among children in reception (62.6% for the national collection and 66.9% for the pilot collection). This could be partly due to the effect of

children being exposed to the school based delivery programme for the first time with more inclination for uptake. It is also possible that the higher uptake may be in part due to the children at risk without prior vaccination history getting 2 doses although this should be given by the GP. The at risk group requiring 2 doses could be more prevalent in the reception cohort if they did not have the opportunity to receive the vaccine in a community setting.

The results show encouraging levels of influenza vaccine uptake in children from reception to school year 4 in England via the school delivery programme. It is important to build on this and continue to monitor uptake in all all current groups under survey and in additional cohorts as the programme expands in England. In 2018 to 2019, the school delivery programme will be extended to include children in school year 5 (ages 9 rising to 10 years) and results of this this will be included in next year's report.

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

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Appendices

Appendix A. Estimated number and proportion of children in school years reception, 1, 2, 3 and 4 age who were vaccinated with influenza by LA and PHE Centre, England, 1 September 2017 to 31 January 2018

| PHE Centre | Local Authority | Response Rate | | | Reception (age 4-5 yrs) | | | Year 1 (age 5-6 yrs) | | | Year 2 (age 6-7 yrs) | | | Year 3 (age 7-8 yrs) | | | Year 4 (age 8-9 yrs) | | |
|-----------------|----------------------------|----------------------|--------------------------------------|-------------------------------|--|--|------------------|--|--|------------------|--|--|------------------|--|--|------------------|--|--|------------------|
| | | No. of Organisations | No. of Organisations making a return | % of organisations responding | Estimated total number of children eligible for vaccination ¹ | Estimated total number of children vaccinated with influenza vaccine | % Vaccine Uptake | Estimated total number of children eligible for vaccination ¹ | Estimated total number of children vaccinated with influenza vaccine | % Vaccine Uptake | Estimated total number of children eligible for vaccination ¹ | Estimated total number of children vaccinated with influenza vaccine | % Vaccine Uptake | Estimated total number of children eligible for vaccination ¹ | Estimated total number of children vaccinated with influenza vaccine | % Vaccine Uptake | Estimated total number of children eligible for vaccination ¹ | Estimated total number of children vaccinated with influenza vaccine | % Vaccine Uptake |
| East Midlands | Northamptonshire | 1 | 1 | 100 | 9,557 | 5,949 | 62.2 | 9,682 | 5,964 | 61.6 | 9,798 | 6,087 | 62.1 | 9,800 | 5,820 | 59.4 | 9,749 | 5,667 | 58.1 |
| | Leicester | 1 | 1 | 100 | 4,191 | 2,166 | 51.7 | 4,611 | 2,306 | 50.0 | 4,875 | 2,380 | 48.8 | 4,868 | 2,078 | 42.7 | 4,761 | 2,111 | 44.3 |
| | Leicestershire and Rutland | 2 | 2 | 100 | 7,716 | 8,052 | 76.6 | 8,052 | 6,043 | 75.0 | 8,209 | 6,047 | 73.7 | 7,988 | 5,794 | 72.5 | 7,787 | 5,645 | 72.5 |
| | Lincolnshire | 1 | 1 | 100 | 7,986 | 3,826 | 47.9 | 8,447 | 4,643 | 55.0 | 8,562 | 4,597 | 53.7 | 8,468 | 4,230 | 50.0 | 8,449 | 3,878 | 45.9 |
| | Derby | 1 | 1 | 100 | 3,318 | 1,748 | 52.7 | 3,530 | 1,751 | 49.6 | 3,444 | 1,661 | 48.2 | 3,455 | 1,553 | 44.9 | 3,514 | 1,546 | 44.0 |
| | Derbyshire | 1 | 1 | 100 | 8,579 | 6,396 | 74.6 | 8,897 | 6,535 | 73.5 | 9,061 | 6,597 | 72.8 | 8,910 | 6,196 | 69.5 | 8,814 | 5,885 | 66.8 |
| | Nottingham | 1 | 1 | 100 | 3,842 | 2,132 | 55.5 | 3,942 | 2,049 | 52.0 | 4,061 | 2,112 | 52.0 | 3,896 | 1,876 | 48.2 | 3,938 | 1,866 | 47.4 |
| | Nottinghamshire | 1 | 1 | 100 | 8,194 | 6,380 | 77.9 | 8,459 | 6,517 | 77.0 | 8,501 | 6,431 | 75.6 | 7,824 | 5,977 | 76.4 | 8,084 | 5,790 | 71.6 |
| | Bassettlaw (Lower Tier LA) | 1 | 1 | 100 | 1,277 | 882 | 69.1 | 1,398 | 975 | 69.7 | 1,342 | 925 | 68.9 | 1,352 | 863 | 63.8 | 1,309 | 809 | 61.8 |
| | Seaford | 1 | 1 | 100 | 2,337 | 1,423 | 60.9 | 2,374 | 1,385 | 58.3 | 2,394 | 1,338 | 55.9 | 2,472 | 1,345 | 54.4 | 2,436 | 1,327 | 54.5 |
| East of England | Central Bedfordshire | 1 | 1 | 100 | 3,554 | 2,452 | 69.0 | 3,554 | 2,417 | 67.4 | 3,612 | 2,424 | 67.1 | 3,500 | 2,269 | 64.8 | 3,407 | 2,178 | 63.9 |
| | Hertfordshire | 1 | 1 | 100 | 14,880 | 9,231 | 62.0 | 15,869 | 9,354 | 58.9 | 16,166 | 9,426 | 58.3 | 15,827 | 8,845 | 55.9 | 15,545 | 8,290 | 53.3 |
| | Luton | 1 | 1 | 100 | 3,256 | 1,266 | 38.9 | 3,389 | 1,281 | 37.8 | 3,460 | 1,250 | 36.1 | 3,362 | 1,089 | 32.4 | 3,339 | 1,080 | 32.3 |
| | Milton Keynes | 1 | 1 | 100 | 3,924 | 2,341 | 59.7 | 4,018 | 2,341 | 58.3 | 4,120 | 2,350 | 57.0 | 3,981 | 2,051 | 51.5 | 3,981 | 2,047 | 51.4 |
| | Cambridgeshire | 1 | 1 | 100 | 7,511 | 5,075 | 67.6 | 7,921 | 5,063 | 63.9 | 7,953 | 5,152 | 64.8 | 8,110 | 4,761 | 58.7 | 7,668 | 4,430 | 57.8 |
| | Norfolk | 1 | 1 | 100 | 9,528 | 7,029 | 73.8 | 9,528 | 7,029 | 73.8 | 9,712 | 6,910 | 71.1 | 9,479 | 6,437 | 67.9 | 9,340 | 6,091 | 65.2 |
| | Peterborough | 1 | 1 | 100 | 3,094 | 1,526 | 49.3 | 3,262 | 1,519 | 46.6 | 3,169 | 1,485 | 46.9 | 3,295 | 1,350 | 41.0 | 3,081 | 1,278 | 41.5 |
| | Suffolk | 1 | 1 | 100 | 8,079 | 5,719 | 70.8 | 8,654 | 5,812 | 67.2 | 8,895 | 5,866 | 65.9 | 8,636 | 5,426 | 62.8 | 8,711 | 5,241 | 60.1 |
| | Essex | 1 | 1 | 100 | 17,580 | 12,214 | 69.5 | 17,934 | 12,307 | 68.6 | 17,944 | 11,871 | 66.5 | 17,847 | 11,746 | 65.8 | 17,511 | 10,970 | 62.6 |
| | Southeast-On-Sea | 1 | 1 | 100 | 2,214 | 1,441 | 65.1 | 2,270 | 1,467 | 64.6 | 2,358 | 1,490 | 63.2 | 2,339 | 1,444 | 61.7 | 2,338 | 1,404 | 60.1 |
| Thurrock | 1 | 1 | 100 | 2,478 | 1,509 | 60.9 | 2,595 | 1,513 | 58.3 | 2,527 | 1,458 | 57.7 | 2,440 | 1,381 | 56.6 | 2,444 | 1,325 | 54.2 | |
| London | Barking And Dagenham | 1 | 1 | 100 | 3,606 | 1,632 | 45.3 | 3,842 | 1,624 | 42.3 | 3,753 | 1,585 | 42.2 | 3,696 | 1,539 | 41.6 | 3,623 | 1,482 | 40.9 |
| | Barnet | 1 | 1 | 100 | 4,615 | 2,535 | 54.9 | 4,903 | 2,666 | 54.4 | 4,820 | 2,581 | 53.5 | 4,625 | 2,368 | 51.2 | 4,561 | 2,203 | 48.3 |
| | Bexley | 1 | 1 | 100 | 3,192 | 2,187 | 68.5 | 3,392 | 2,274 | 67.0 | 3,425 | 2,250 | 65.7 | 3,382 | 2,098 | 62.0 | 3,251 | 1,909 | 58.7 |
| | Brent | 1 | 1 | 100 | 3,929 | 1,197 | 30.5 | 3,929 | 1,200 | 30.5 | 4,016 | 972 | 24.2 | 3,961 | 896 | 22.6 | 3,830 | 846 | 22.1 |
| | Bromley | 1 | 1 | 100 | 4,212 | 2,913 | 69.2 | 4,316 | 2,859 | 66.2 | 4,367 | 2,785 | 63.8 | 4,367 | 2,731 | 62.5 | 4,136 | 2,438 | 58.9 |
| | Camden | 1 | 1 | 100 | 1,609 | 1,018 | 63.3 | 1,722 | 1,289 | 74.9 | 1,800 | 1,194 | 66.3 | 1,741 | 1,138 | 65.4 | 1,983 | 1,162 | 58.6 |
| | City and Hackney | 2 | 2 | 100 | 2,807 | 1,107 | 39.4 | 2,936 | 1,036 | 35.3 | 2,920 | 1,005 | 34.4 | 2,955 | 1,001 | 33.9 | 2,811 | 985 | 35.0 |
| | Croydon | 1 | 1 | 100 | 4,999 | 2,616 | 52.4 | 5,131 | 2,738 | 53.4 | 5,029 | 2,596 | 51.6 | 4,857 | 2,378 | 49.0 | 4,667 | 2,281 | 48.4 |
| | Ealing | 1 | 1 | 100 | 4,013 | 1,551 | 38.6 | 4,145 | 1,469 | 35.4 | 4,255 | 1,374 | 32.3 | 4,260 | 1,282 | 30.1 | 4,174 | 1,139 | 27.4 |
| | Enfield | 1 | 1 | 100 | 4,520 | 2,039 | 45.1 | 4,763 | 1,999 | 42.0 | 4,715 | 1,905 | 40.3 | 4,829 | 1,833 | 38.0 | 4,652 | 1,652 | 35.5 |
| | Greenwich | 1 | 1 | 100 | 3,920 | 2,187 | 55.8 | 3,930 | 2,123 | 54.0 | 3,930 | 2,021 | 51.4 | 3,796 | 1,861 | 49.0 | 3,635 | 1,688 | 46.4 |
| | Hammersmith And Fulham | 1 | 1 | 100 | 1,482 | 734 | 49.5 | 1,482 | 610 | 41.2 | 1,493 | 646 | 43.3 | 1,475 | 639 | 43.3 | 1,479 | 559 | 37.8 |
| | Haringey | 1 | 1 | 100 | 3,049 | 1,326 | 43.5 | 3,138 | 1,323 | 42.2 | 3,212 | 1,328 | 41.3 | 3,266 | 1,286 | 39.4 | 3,188 | 1,188 | 37.3 |
| | Harrow | 1 | 1 | 100 | 3,264 | 1,849 | 56.6 | 3,198 | 1,751 | 54.8 | 3,255 | 1,752 | 53.8 | 3,268 | 1,636 | 50.1 | 3,146 | 1,568 | 49.8 |
| | Havering | 1 | 1 | 100 | 3,404 | 2,065 | 60.7 | 3,362 | 1,959 | 58.3 | 3,276 | 1,895 | 57.8 | 3,137 | 1,718 | 54.8 | 3,167 | 1,750 | 55.3 |
| | Hillingdon | 1 | 1 | 100 | 3,795 | 1,846 | 49.1 | 3,691 | 1,855 | 50.3 | 3,671 | 1,743 | 47.5 | 3,736 | 1,755 | 47.0 | 3,847 | 1,586 | 41.2 |
| | Hounslow | 1 | 1 | 100 | 3,482 | 1,918 | 55.1 | 3,664 | 1,941 | 53.0 | 3,485 | 1,844 | 52.9 | 3,405 | 1,625 | 47.7 | 3,506 | 1,606 | 45.8 |
| | Islington | 1 | 1 | 100 | 2,031 | 881 | 43.4 | 1,986 | 752 | 37.9 | 2,117 | 824 | 38.9 | 2,117 | 671 | 31.7 | 1,954 | 625 | 32.0 |
| | Kensington And Chelsea | 1 | 1 | 100 | 1,305 | 567 | 43.4 | 1,298 | 524 | 40.4 | 1,223 | 560 | 45.8 | 1,120 | 449 | 40.1 | 1,063 | 448 | 42.1 |
| | Kingston Upon Thames | 1 | 1 | 100 | 2,184 | 1,561 | 71.5 | 2,216 | 1,546 | 69.8 | 2,179 | 1,516 | 69.6 | 2,147 | 1,434 | 66.8 | 2,204 | 1,461 | 66.3 |
| | Lambeth | 1 | 1 | 100 | 3,466 | 1,704 | 49.2 | 3,545 | 1,711 | 48.3 | 3,495 | 1,562 | 44.7 | 3,434 | 1,472 | 42.9 | 3,328 | 1,360 | 40.9 |
| | Lewisham | 1 | 1 | 100 | 3,805 | 1,995 | 52.4 | 3,763 | 1,908 | 50.7 | 3,891 | 1,947 | 50.0 | 3,774 | 1,844 | 48.9 | 3,643 | 1,574 | 43.2 |
| | Merton | 1 | 1 | 100 | 2,766 | 1,744 | 63.1 | 2,811 | 1,727 | 61.4 | 2,876 | 1,741 | 60.5 | 2,813 | 1,651 | 58.7 | 2,743 | 1,560 | 56.9 |
| | Newham | 1 | 1 | 100 | 4,847 | 1,912 | 39.4 | 5,041 | 1,880 | 37.3 | 5,009 | 1,822 | 36.4 | 4,945 | 1,598 | 32.3 | 4,895 | 1,554 | 31.7 |
| | Redbridge | 1 | 1 | 100 | 4,480 | 2,028 | 45.3 | 4,704 | 1,970 | 41.9 | 4,467 | 1,901 | 42.4 | 4,480 | 1,843 | 41.1 | 4,197 | 1,649 | 39.3 |
| | Richmond Upon Thames | 1 | 1 | 100 | 2,321 | 1,170 | 50.4 | 2,321 | 1,170 | 50.4 | 2,176 | 2,096 | 96.3 | 2,128 | 2,138 | 100.4 | 2,138 | 2,096 | 97.6 |
| | Southwark | 1 | 1 | 100 | 3,703 | 1,916 | 51.7 | 3,822 | 1,943 | 50.8 | 3,827 | 1,887 | 49.3 | 3,706 | 1,721 | 46.4 | 3,664 | 1,703 | 46.5 |
| | Sutton | 1 | 1 | 100 | 2,581 | 1,811 | 70.2 | 2,719 | 1,797 | 66.1 | 2,670 | 1,778 | 66.6 | 2,667 | 1,676 | 62.8 | 2,690 | 1,728 | 64.2 |
| | Tower Hamlets | 1 | 1 | 100 | 3,462 | 1,148 | 33.2 | 3,660 | 1,062 | 29.6 | 3,463 | 1,066 | 30.8 | 3,428 | 916 | 26.7 | 3,386 | 835 | 24.7 |
| | Waltham Forest | 1 | 1 | 100 | 3,705 | 1,631 | 44.0 | 3,781 | 1,554 | 41.1 | 3,725 | 1,419 | 38.1 | 3,581 | 1,334 | 37.3 | 3,539 | 1,235 | 34.9 |
| Wandsworth | 1 | 1 | 100 | 3,617 | 2,170 | 59.7 | 3,682 | 2,087 | 56.7 | 3,560 | 1,922 | 54.0 | 3,549 | 1,780 | 50.2 | 3,386 | 1,614 | 47.7 | |
| Westminster | 1 | 1 | 100 | 1,155 | 593 | 51.3 | 1,246 | 584 | 46.9 | 1,390 | 635 | 45.7 | 1,394 | 454 | 32.6 | 1,411 | 524 | 37.1 | |

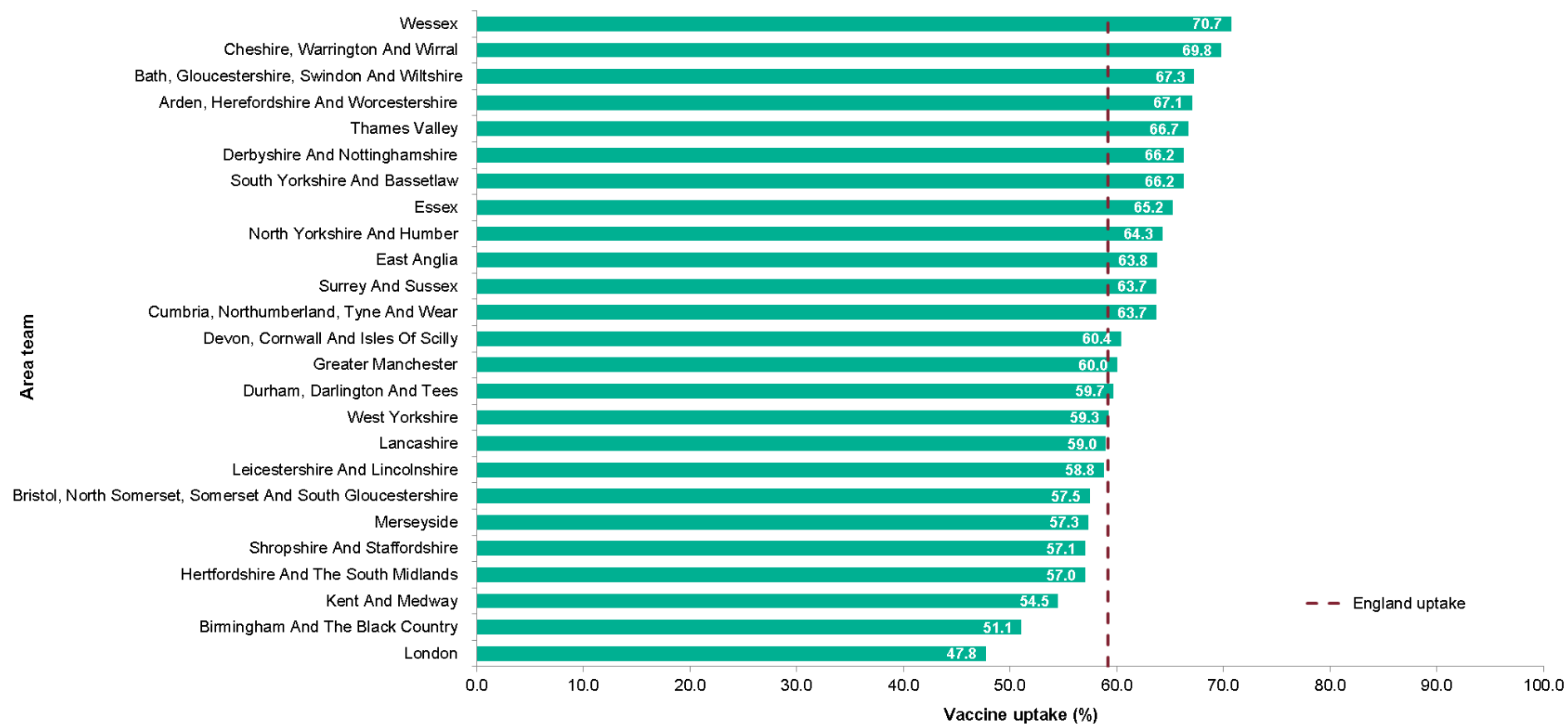
Seasonal influenza vaccine uptake in children of primary school age

| PHE Centre | Local Authority | Response Rate | | | Reception (age 4-5 yrs) | | | Year 1 (age 5-6 yrs) | | | Year 2 (age 6-7 yrs) | | | Year 3 (age 7-8 yrs) | | | Year 4 (age 8-9 yrs) | | | |
|------------------------|---------------------------|----------------------|-------------------------------------|-------------------------------|--|--|------------------|--|--|------------------|--|--|------------------|--|--|------------------|--|--|------------------|------|
| | | No. of Organisations | No. of Organisation making a return | % of organisations responding | Estimated total number of children eligible for vaccination ¹ | Estimated total number of children vaccinated with influenza vaccine | % Vaccine Uptake | Estimated total number of children eligible for vaccination ¹ | Estimated total number of children vaccinated with influenza vaccine | % Vaccine Uptake | Estimated total number of children eligible for vaccination ¹ | Estimated total number of children vaccinated with influenza vaccine | % Vaccine Uptake | Estimated total number of children eligible for vaccination ¹ | Estimated total number of children vaccinated with influenza vaccine | % Vaccine Uptake | Estimated total number of children eligible for vaccination ¹ | Estimated total number of children vaccinated with influenza vaccine | % Vaccine Uptake | |
| North East | Gateshead | 1 | 1 | 100 | 2,204 | 1,381 | 62.7 | 2,239 | 1,395 | 62.3 | 2,326 | 1,483 | 63.8 | 2,217 | 1,382 | 62.3 | 2,269 | 1,375 | 60.6 | |
| | Newcastle Upon Tyne | 1 | 1 | 100 | 2,962 | 1,773 | 59.9 | 2,946 | 1,675 | 56.9 | 3,137 | 1,943 | 62.0 | 3,032 | 1,738 | 57.3 | 2,994 | 1,649 | 55.1 | |
| | North Tyneside | 1 | 1 | 100 | 2,360 | 1,652 | 70.0 | 2,340 | 1,647 | 70.4 | 2,345 | 1,702 | 72.6 | 2,410 | 1,681 | 69.8 | 2,340 | 1,567 | 67.0 | |
| | Northumberland | 1 | 1 | 100 | 3,288 | 2,145 | 65.2 | 3,547 | 2,379 | 67.1 | 3,426 | 2,242 | 65.4 | 3,372 | 2,215 | 65.7 | 3,380 | 2,114 | 62.5 | |
| | South Tyneside | 1 | 1 | 100 | 1,753 | 1,043 | 59.5 | 1,831 | 1,069 | 58.4 | 1,732 | 964 | 55.7 | 1,700 | 991 | 58.4 | 1,786 | 992 | 55.5 | |
| | Sunderland | 1 | 0 | 0 | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | |
| | County Durham | 1 | 1 | 100 | 5,562 | 3,826 | 68.8 | 5,660 | 3,668 | 64.8 | 5,435 | 3,736 | 68.7 | 5,799 | 3,699 | 63.8 | 5,454 | 3,393 | 62.2 | |
| | Darlington | 1 | 1 | 100 | 1,183 | 776 | 65.6 | 1,270 | 792 | 62.4 | 1,245 | 779 | 62.6 | 1,272 | 788 | 61.9 | 1,267 | 762 | 60.1 | |
| | Hartlepool | 1 | 1 | 100 | 1,190 | 659 | 55.4 | 1,190 | 689 | 57.9 | 1,206 | 740 | 61.4 | 1,175 | 718 | 61.1 | 1,189 | 668 | 56.2 | |
| | Middlesbrough | 1 | 1 | 100 | 1,963 | 1,114 | 56.7 | 1,963 | 1,019 | 51.9 | 2,066 | 1,087 | 52.6 | 1,936 | 1,016 | 52.5 | 1,864 | 955 | 51.2 | |
| North West | Redcar And Cleveland | 1 | 1 | 100 | 1,726 | 879 | 50.9 | 1,726 | 951 | 55.1 | 1,687 | 895 | 53.1 | 1,639 | 880 | 53.7 | 1,535 | 778 | 50.7 | |
| | Stockport-Cheshire | 1 | 1 | 100 | 2,532 | 1,459 | 57.6 | 2,532 | 1,360 | 53.7 | 2,555 | 1,449 | 56.7 | 2,556 | 1,433 | 56.1 | 2,403 | 1,302 | 54.2 | |
| | Cheshire East | 1 | 1 | 100 | 4,061 | 3,020 | 74.4 | 4,419 | 3,162 | 71.6 | 4,439 | 3,172 | 71.5 | 4,307 | 3,045 | 69.3 | 4,309 | 2,933 | 68.0 | |
| | Cheshire West And Chester | 1 | 1 | 100 | 3,972 | 2,986 | 75.2 | 4,139 | 2,890 | 69.6 | 4,172 | 2,984 | 71.5 | 4,141 | 2,829 | 68.3 | 4,036 | 2,687 | 66.6 | |
| | Warrington | 1 | 1 | 100 | 2,499 | 1,769 | 70.8 | 2,610 | 1,769 | 67.8 | 2,654 | 1,759 | 66.3 | 2,650 | 1,677 | 63.3 | 2,571 | 1,606 | 62.5 | |
| | Wirral | 1 | 1 | 100 | 3,725 | 2,705 | 72.6 | 4,005 | 2,882 | 72.0 | 3,899 | 2,871 | 73.6 | 3,845 | 2,647 | 68.8 | 3,841 | 2,527 | 65.8 | |
| | Halton | 1 | 1 | 100 | 1,543 | 885 | 57.4 | 1,565 | 913 | 58.3 | 1,539 | 825 | 53.6 | 1,645 | 891 | 54.2 | 1,496 | 752 | 50.3 | |
| | Knowsley | 1 | 1 | 100 | 1,891 | 1,092 | 57.7 | 1,946 | 1,106 | 56.8 | 1,907 | 1,103 | 57.8 | 1,891 | 975 | 51.6 | 1,850 | 1,000 | 54.1 | |
| | Liverpool | 1 | 1 | 100 | 5,415 | 2,928 | 54.1 | 5,733 | 2,895 | 50.5 | 5,598 | 2,958 | 52.8 | 5,301 | 2,611 | 49.3 | 5,293 | 2,582 | 48.8 | |
| | Selton | 1 | 1 | 100 | 2,886 | 1,978 | 68.5 | 3,041 | 2,013 | 66.2 | 2,964 | 1,996 | 67.4 | 3,041 | 1,891 | 62.2 | 3,121 | 2,037 | 65.3 | |
| North West | St. Helens | 1 | 1 | 100 | 2,118 | 1,452 | 68.6 | 2,191 | 1,462 | 66.7 | 2,130 | 1,383 | 64.9 | 2,140 | 1,367 | 63.9 | 2,100 | 1,321 | 62.9 | |
| | Cumbria | 1 | 1 | 100 | 5,068 | 3,539 | 69.8 | 5,001 | 3,460 | 69.2 | 5,161 | 3,433 | 66.5 | 5,254 | 3,355 | 63.9 | 5,280 | 3,302 | 62.5 | |
| | Bolton | 1 | 1 | 100 | 3,902 | 2,326 | 59.6 | 4,172 | 2,315 | 55.5 | 4,034 | 2,308 | 57.2 | 4,143 | 2,198 | 53.1 | 4,186 | 2,199 | 52.5 | |
| | Bury | 1 | 1 | 100 | 2,458 | 1,689 | 68.7 | 2,522 | 1,750 | 69.4 | 2,524 | 1,689 | 66.9 | 2,482 | 1,613 | 65.0 | 2,500 | 1,684 | 67.4 | |
| | Manchester | 1 | 1 | 100 | 7,237 | 3,885 | 53.7 | 7,271 | 3,754 | 51.6 | 7,312 | 3,752 | 51.3 | 7,319 | 3,538 | 48.3 | 7,205 | 3,348 | 46.5 | |
| | Oldham | 1 | 1 | 100 | 3,487 | 2,035 | 58.2 | 3,438 | 1,930 | 56.1 | 3,569 | 2,000 | 56.0 | 3,605 | 1,882 | 52.2 | 3,594 | 1,891 | 52.6 | |
| | Rochdale | 1 | 1 | 100 | 3,081 | 1,970 | 63.9 | 3,105 | 1,934 | 62.3 | 3,069 | 1,811 | 59.0 | 3,045 | 1,755 | 57.6 | 3,106 | 1,730 | 55.7 | |
| | Salford | 1 | 1 | 100 | 3,358 | 1,900 | 56.6 | 3,386 | 1,918 | 56.6 | 3,418 | 1,890 | 55.3 | 3,275 | 1,736 | 53.0 | 3,233 | 1,691 | 52.3 | |
| | Stockport | 1 | 1 | 100 | 3,735 | 2,867 | 76.8 | 3,814 | 2,822 | 74.0 | 3,733 | 2,808 | 75.2 | 3,666 | 2,596 | 70.8 | 3,741 | 2,605 | 69.6 | |
| | Tameside | 1 | 1 | 100 | 3,003 | 2,059 | 68.6 | 3,118 | 2,039 | 65.4 | 3,054 | 1,950 | 63.9 | 3,175 | 2,024 | 63.7 | 2,985 | 1,798 | 60.2 | |
| North West | Tarford | 1 | 1 | 100 | 3,028 | 2,143 | 70.8 | 3,246 | 2,204 | 67.9 | 3,255 | 2,157 | 66.3 | 3,190 | 2,117 | 66.4 | 3,233 | 2,096 | 63.9 | |
| | Wigan | 1 | 1 | 100 | 3,778 | 2,554 | 67.7 | 3,851 | 2,550 | 66.2 | 4,010 | 2,709 | 67.6 | 3,902 | 2,520 | 64.6 | 3,899 | 2,427 | 62.2 | |
| | Blackburn With Darwen | 1 | 1 | 100 | 2,047 | 975 | 47.6 | 2,079 | 1,010 | 48.6 | 2,153 | 978 | 45.4 | 2,058 | 869 | 42.2 | 2,243 | 897 | 40.0 | |
| | Blackpool | 1 | 1 | 100 | 1,685 | 1,024 | 60.8 | 1,718 | 1,021 | 59.4 | 1,681 | 964 | 57.3 | 1,721 | 972 | 56.5 | 1,665 | 924 | 55.5 | |
| | Lancashire | 1 | 1 | 100 | 13,770 | 9,028 | 65.6 | 14,066 | 8,799 | 62.6 | 14,066 | 8,851 | 62.9 | 14,076 | 8,311 | 59.0 | 14,272 | 8,046 | 56.4 | |
| | South East | Bracknell Forest | 1 | 1 | 100 | 1,402 | 1,110 | 79.2 | 1,610 | 1,179 | 73.2 | 1,557 | 1,159 | 74.4 | 1,598 | 1,093 | 68.4 | 1,624 | 1,081 | 66.6 |
| | | Buckinghamshire | 1 | 1 | 100 | 6,742 | 4,593 | 68.1 | 6,988 | 4,574 | 65.5 | 7,154 | 4,714 | 65.9 | 7,081 | 4,306 | 60.8 | 6,933 | 4,067 | 58.7 |
| | | Oxfordshire | 1 | 1 | 100 | 7,914 | 5,833 | 73.7 | 8,228 | 5,857 | 71.2 | 8,539 | 6,147 | 72.0 | 8,187 | 5,561 | 67.9 | 7,873 | 5,145 | 65.3 |
| | | Reading | 1 | 1 | 100 | 1,906 | 1,330 | 69.8 | 2,084 | 1,297 | 62.2 | 2,081 | 1,314 | 63.1 | 2,036 | 1,206 | 59.2 | 1,995 | 1,155 | 57.9 |
| | | Slough | 1 | 1 | 100 | 2,164 | 1,157 | 53.5 | 2,504 | 1,132 | 45.2 | 2,515 | 1,177 | 46.8 | 2,495 | 1,079 | 43.2 | 2,452 | 1,031 | 42.0 |
| West Berkshire | | 1 | 1 | 100 | 1,981 | 1,575 | 79.5 | 2,026 | 1,620 | 80.0 | 2,098 | 1,627 | 77.6 | 2,051 | 1,539 | 75.0 | 2,010 | 1,492 | 74.2 | |
| Windsor And Maidenhead | | 1 | 1 | 100 | 1,665 | 1,370 | 82.3 | 1,944 | 1,325 | 68.2 | 1,944 | 1,309 | 67.7 | 1,989 | 1,275 | 64.1 | 1,975 | 1,222 | 61.9 | |
| Wokingham | | 1 | 1 | 100 | 2,315 | 1,820 | 78.6 | 2,400 | 1,799 | 75.0 | 2,282 | 1,756 | 77.0 | 2,373 | 1,745 | 73.5 | 2,262 | 1,606 | 71.0 | |
| Kent | | 1 | 1 | 100 | 18,136 | 8,955 | 49.4 | 20,104 | 11,784 | 58.6 | 19,598 | 11,297 | 57.6 | 19,736 | 10,783 | 54.6 | 19,633 | 10,584 | 53.9 | |
| Medway | | 1 | 1 | 100 | 3,690 | 1,726 | 46.8 | 4,052 | 2,264 | 55.9 | 3,947 | 2,177 | 55.2 | 3,856 | 2,028 | 52.6 | 3,908 | 2,000 | 51.2 | |
| South East | Brighton And Hove | 1 | 1 | 100 | 2,668 | 1,786 | 66.9 | 2,832 | 1,815 | 64.1 | 2,852 | 1,754 | 61.5 | 2,947 | 1,676 | 56.9 | 2,879 | 1,581 | 54.9 | |
| | East Sussex | 1 | 1 | 100 | 6,046 | 3,432 | 56.8 | 6,138 | 3,263 | 53.2 | 6,261 | 3,295 | 52.6 | 6,042 | 3,079 | 51.0 | 6,041 | 2,891 | 47.9 | |
| | Surrey | 1 | 1 | 100 | 14,404 | 10,321 | 71.7 | 15,185 | 10,543 | 69.4 | 15,274 | 10,552 | 69.1 | 15,122 | 9,992 | 66.1 | 14,775 | 9,332 | 63.2 | |
| | West Sussex | 1 | 1 | 100 | 9,812 | 6,949 | 69.8 | 10,288 | 6,878 | 66.9 | 10,213 | 6,767 | 66.3 | 10,063 | 6,286 | 62.5 | 10,098 | 6,153 | 60.9 | |
| | Hampshire | 1 | 1 | 100 | 15,656 | 12,668 | 80.9 | 16,527 | 12,953 | 78.4 | 16,548 | 13,092 | 79.1 | 16,139 | 12,038 | 74.6 | 15,839 | 11,596 | 73.2 | |
| | Isle Of Wight | 1 | 1 | 100 | 1,401 | 804 | 57.4 | 1,388 | 802 | 57.8 | 1,361 | 777 | 57.1 | 1,344 | 697 | 51.9 | 1,335 | 593 | 44.4 | |
| | Portsmouth | 1 | 1 | 100 | 2,559 | 1,893 | 74.0 | 2,514 | 1,745 | 69.4 | 2,469 | 1,781 | 72.1 | 2,508 | 1,710 | 68.2 | 2,411 | 1,571 | 65.2 | |
| | Southampton | 1 | 1 | 100 | 2,953 | 1,912 | 64.7 | 3,050 | 1,884 | 61.8 | 3,169 | 1,942 | 61.3 | 2,969 | 1,679 | 56.6 | 2,859 | 1,604 | 56.1 | |

Seasonal influenza vaccine uptake in children of primary school age

| PHE Centre | Local Authority | Response Rate | | | Reception (age 4-5 yrs) | | | Year 1 (age 5-6 yrs) | | | Year 2 (age 6-7 yrs) | | | Year 3 (age 7-8 yrs) | | | Year 4 (age 8-9 yrs) | | |
|-----------------------------|-------------------------------------|--------------------------|-------------------------------------|-------------------------------|--|--|------------------|--|--|------------------|--|--|------------------|--|--|------------------|--|--|------------------|
| | | No. of Organisations | No. of Organisation making a return | % of organisations responding | Estimated total number of children eligible for vaccination ¹ | Estimated total number of children vaccinated with influenza vaccine | % Vaccine Uptake | Estimated total number of children eligible for vaccination ¹ | Estimated total number of children vaccinated with influenza vaccine | % Vaccine Uptake | Estimated total number of children eligible for vaccination ¹ | Estimated total number of children vaccinated with influenza vaccine | % Vaccine Uptake | Estimated total number of children eligible for vaccination ¹ | Estimated total number of children vaccinated with influenza vaccine | % Vaccine Uptake | Estimated total number of children eligible for vaccination ¹ | Estimated total number of children vaccinated with influenza vaccine | % Vaccine Uptake |
| South West | Bath And North East Somerset | 1 | 1 | 100 | 1,938 | 1,481 | 76.4 | 2,016 | 1,452 | 72.0 | 1,956 | 1,416 | 72.4 | 1,971 | 1,424 | 72.2 | 1,959 | 1,338 | 68.3 |
| | Gloucestershire | 1 | 1 | 100 | 6,816 | 4,471 | 65.6 | 6,980 | 4,486 | 64.4 | 6,940 | 4,317 | 62.2 | 6,936 | 4,174 | 60.2 | 6,710 | 3,924 | 58.5 |
| | Swindon | 1 | 1 | 100 | 2,903 | 2,037 | 70.2 | 3,135 | 2,117 | 67.5 | 3,010 | 1,952 | 64.9 | 2,948 | 1,831 | 62.1 | 2,838 | 1,747 | 61.6 |
| | Wiltshire | 1 | 1 | 100 | 5,566 | 4,146 | 74.5 | 5,702 | 4,216 | 73.9 | 5,924 | 4,451 | 75.1 | 5,899 | 4,102 | 69.5 | 5,488 | 3,854 | 70.2 |
| | North Somerset | 1 | 1 | 100 | 2,472 | 1,789 | 72.4 | 2,515 | 1,824 | 72.5 | 2,603 | 1,833 | 70.4 | 2,535 | 1,769 | 69.8 | 2,480 | 1,658 | 66.9 |
| | Somerset | 1 | 1 | 100 | 5,990 | 3,706 | 61.9 | 6,018 | 3,760 | 62.5 | 6,119 | 3,691 | 60.3 | 6,255 | 3,588 | 57.4 | 6,107 | 3,532 | 57.8 |
| | Bristol, City Of | 1 | 1 | 100 | 5,545 | 3,105 | 56.0 | 5,617 | 2,832 | 50.4 | 5,547 | 2,611 | 47.1 | 5,403 | 2,409 | 44.6 | 6,314 | 2,444 | 38.7 |
| | South Gloucestershire | 1 | 1 | 100 | 3,592 | 2,484 | 69.2 | 3,619 | 2,326 | 64.3 | 3,594 | 2,150 | 59.8 | 3,473 | 2,000 | 57.0 | 3,769 | 2,000 | 53.1 |
| | Kernow (Cornwall & Isles of Scilly) | 2 | 2 | 100 | 5,867 | 4,094 | 69.8 | 6,042 | 3,949 | 65.4 | 6,216 | 3,939 | 63.4 | 5,870 | 3,597 | 61.3 | 5,909 | 3,463 | 58.6 |
| | Devon | 1 | 1 | 100 | 8,116 | 5,636 | 69.4 | 8,377 | 5,233 | 62.5 | 8,499 | 4,869 | 57.3 | 8,340 | 4,480 | 53.7 | 9,520 | 4,537 | 47.7 |
| | Plymouth | 1 | 1 | 100 | 3,084 | 1,990 | 64.5 | 3,219 | 1,966 | 61.1 | 3,202 | 1,997 | 62.4 | 3,123 | 1,815 | 58.1 | 3,714 | 1,894 | 51.0 |
| | Torbay | 1 | 1 | 100 | 1,428 | 1,008 | 70.6 | 1,478 | 1,022 | 69.1 | 1,465 | 992 | 67.7 | 1,455 | 926 | 63.6 | 1,435 | 838 | 58.4 |
| | Bournemouth | 1 | 1 | 100 | 2,018 | 1,309 | 64.9 | 2,107 | 1,273 | 60.4 | 2,113 | 1,292 | 61.1 | 2,030 | 1,174 | 57.8 | 2,055 | 1,125 | 54.7 |
| | Dorset | 1 | 1 | 100 | 4,115 | 2,960 | 71.9 | 4,282 | 2,905 | 67.8 | 4,343 | 2,928 | 67.4 | 4,443 | 2,840 | 63.9 | 4,483 | 2,845 | 63.5 |
| | Poole | 1 | 1 | 100 | 1,448 | 1,034 | 71.4 | 1,701 | 1,137 | 66.8 | 1,679 | 1,107 | 65.9 | 1,690 | 1,087 | 64.3 | 1,568 | 922 | 58.8 |
| West Midlands | Shropshire | 1 | 1 | 100 | 3,105 | 2,165 | 69.7 | 3,209 | 2,134 | 66.5 | 3,190 | 2,151 | 67.4 | 3,263 | 2,025 | 62.1 | 3,350 | 2,009 | 60.0 |
| | Staffordshire | 1 | 1 | 100 | 9,531 | 5,670 | 59.5 | 9,601 | 5,500 | 57.3 | 9,753 | 5,644 | 57.9 | 9,943 | 4,917 | 50.0 | 9,381 | 5,124 | 54.6 |
| | Stoke-On-Trent | 1 | 1 | 100 | 3,343 | 1,563 | 46.8 | 3,405 | 1,593 | 46.8 | 3,475 | 1,676 | 48.2 | 3,303 | 1,600 | 48.4 | 3,339 | 1,531 | 45.9 |
| | Telford And Wrekin | 1 | 1 | 100 | 2,447 | 1,587 | 64.9 | 2,340 | 1,416 | 60.5 | 2,461 | 1,493 | 60.7 | 2,393 | 1,466 | 61.3 | 2,409 | 1,372 | 57.0 |
| | Coventry | 1 | 1 | 100 | 4,575 | 3,121 | 68.2 | 4,689 | 3,158 | 67.3 | 4,752 | 3,181 | 66.9 | 4,708 | 3,089 | 65.6 | 4,521 | 2,898 | 64.1 |
| | Hertfordshire, County Of | 1 | 1 | 100 | 2,007 | 1,398 | 69.7 | 1,999 | 1,366 | 68.3 | 2,094 | 1,437 | 68.6 | 2,038 | 1,370 | 67.2 | 1,998 | 1,341 | 67.1 |
| | Warwickshire | 1 | 1 | 100 | 6,654 | 4,810 | 72.3 | 6,789 | 4,686 | 69.0 | 6,909 | 4,739 | 68.6 | 6,641 | 4,455 | 67.1 | 6,612 | 4,362 | 66.0 |
| | Worcestershire | 1 | 1 | 100 | 6,615 | 4,502 | 68.1 | 6,825 | 4,505 | 66.0 | 6,713 | 4,432 | 66.0 | 6,628 | 4,267 | 64.4 | 6,510 | 4,132 | 63.5 |
| | Birmingham | 1 | 1 | 100 | 16,371 | 7,711 | 47.1 | 16,551 | 7,639 | 46.2 | 16,593 | 7,603 | 45.8 | 16,201 | 6,980 | 43.1 | 16,237 | 6,779 | 41.8 |
| | Dudley | 1 | 1 | 100 | 4,033 | 2,482 | 61.5 | 4,120 | 2,466 | 59.9 | 3,937 | 2,379 | 60.4 | 3,942 | 2,189 | 55.5 | 3,829 | 2,088 | 54.5 |
| | Sandwell | 1 | 1 | 100 | 4,832 | 2,784 | 57.6 | 4,707 | 2,644 | 56.2 | 4,707 | 2,644 | 56.2 | 4,530 | 2,444 | 54.0 | 4,501 | 2,341 | 52.0 |
| | Solihull | 1 | 1 | 100 | 2,822 | 1,926 | 68.2 | 2,951 | 1,946 | 65.9 | 2,951 | 1,964 | 66.6 | 2,773 | 1,774 | 64.0 | 2,769 | 1,717 | 62.0 |
| | Walsall | 1 | 1 | 100 | 3,579 | 1,994 | 55.7 | 3,784 | 1,970 | 52.1 | 3,781 | 1,943 | 51.4 | 3,726 | 1,783 | 47.9 | 3,743 | 1,861 | 49.7 |
| | Wolverhampton | 1 | 1 | 100 | 3,361 | 1,991 | 59.2 | 3,621 | 2,033 | 56.1 | 3,780 | 2,024 | 53.5 | 3,573 | 1,879 | 52.6 | 3,476 | 1,800 | 51.8 |
| | Yorkshire and The Humber | East Riding Of Yorkshire | 1 | 1 | 100 | 3,476 | 2,818 | 81.1 | 3,600 | 2,978 | 82.7 | 3,592 | 2,796 | 77.8 | 3,610 | 2,737 | 75.8 | 3,552 | 2,678 |
| Kingston Upon Hull, City Of | | 1 | 1 | 100 | 3,373 | 2,286 | 67.8 | 3,576 | 2,338 | 65.4 | 3,400 | 2,203 | 64.8 | 3,300 | 2,112 | 64.0 | 3,289 | 2,069 | 62.9 |
| North East Lincolnshire | | 1 | 1 | 100 | 1,979 | 1,511 | 76.4 | 2,015 | 1,518 | 75.3 | 2,054 | 1,574 | 76.6 | 2,006 | 1,430 | 71.3 | 1,958 | 1,397 | 71.3 |
| North Lincolnshire | | 1 | 1 | 100 | 1,926 | 1,327 | 68.9 | 2,001 | 1,318 | 65.9 | 2,026 | 1,364 | 67.3 | 2,001 | 1,292 | 64.6 | 2,042 | 1,254 | 61.4 |
| North Yorkshire | | 1 | 1 | 100 | 6,332 | 3,499 | 55.3 | 6,207 | 3,474 | 56.0 | 6,302 | 3,569 | 56.6 | 6,539 | 3,443 | 52.7 | 6,262 | 3,247 | 51.9 |
| York | | 1 | 1 | 100 | 2,050 | 1,155 | 56.3 | 2,021 | 1,246 | 61.7 | 2,083 | 1,291 | 62.0 | 2,062 | 1,192 | 57.8 | 2,084 | 1,224 | 58.7 |
| Barnsley | | 1 | 1 | 100 | 2,852 | 2,300 | 80.6 | 3,001 | 2,327 | 77.5 | 3,012 | 2,342 | 77.8 | 2,904 | 2,214 | 76.2 | 2,781 | 2,104 | 75.7 |
| Doncaster | | 1 | 1 | 100 | 3,708 | 2,648 | 71.4 | 3,729 | 2,596 | 69.6 | 3,869 | 2,647 | 68.4 | 3,783 | 2,551 | 67.4 | 3,824 | 2,478 | 64.8 |
| Rotherham | | 1 | 1 | 100 | 3,253 | 2,249 | 69.1 | 3,392 | 2,338 | 68.9 | 3,355 | 2,306 | 68.7 | 3,421 | 2,223 | 65.0 | 3,363 | 2,162 | 64.3 |
| Sheffield | | 1 | 1 | 100 | 6,508 | 3,963 | 61.2 | 6,763 | 4,195 | 61.9 | 6,674 | 4,015 | 60.2 | 6,598 | 3,843 | 58.2 | 6,656 | 3,740 | 56.2 |
| Bradford | | 1 | 1 | 100 | 7,679 | 3,643 | 47.4 | 7,990 | 3,877 | 48.5 | 8,266 | 3,999 | 48.4 | 8,411 | 3,863 | 45.9 | 8,273 | 3,561 | 43.0 |
| Calderdale | | 1 | 1 | 100 | 2,789 | 1,806 | 64.8 | 2,947 | 1,829 | 62.1 | 2,836 | 1,779 | 62.7 | 2,933 | 1,780 | 60.7 | 2,821 | 1,726 | 61.2 |
| Kirkcaldie | | 1 | 1 | 100 | 5,583 | 3,285 | 58.8 | 5,752 | 3,427 | 59.6 | 5,909 | 3,426 | 58.0 | 5,744 | 3,303 | 57.6 | 5,744 | 3,194 | 55.6 |
| Leeds | | 1 | 1 | 100 | 9,888 | 6,367 | 64.4 | 10,497 | 6,436 | 61.3 | 10,273 | 6,294 | 61.3 | 10,392 | 6,188 | 59.5 | 10,029 | 5,765 | 57.5 |
| Wakefield | | 1 | 1 | 100 | 4,181 | 3,298 | 78.9 | 4,285 | 3,206 | 74.8 | 4,372 | 3,567 | 81.6 | 4,430 | 3,614 | 81.6 | 4,203 | 3,339 | 79.4 |
| Total | | 153 | 152 | 99.3 | 656,533 | 410,946 | 62.6 | 680,565 | 414,923 | 61.0 | 682,104 | 411,938 | 60.4 | 673,744 | 388,247 | 57.6 | 668,051 | 372,484 | 55.8 |

Appendix B. Estimated proportion of children in school years reception, 1, 2, 3 and 4 who were vaccinated with influenza vaccine by former AT, England, 1 September 2017 to 31 January 2018



Appendix C. Estimated number and proportion of children aged 5 to 11 years who were vaccinated with influenza vaccine in 2017 to 2018 vs. 2016 to 2017 and 2015 to 2016 in pilot areas across England^x

| Area Team | Local Authority | 2017/18 | | 2016/17 | 2015/16 |
|--------------------------------------|-----------------|---|--|--------------------|--------------------|
| | | Estimated total number of children eligible for vaccination | No. of children vaccinated with at least 1 dose of influenza vaccine | Vaccine uptake (%) | Vaccine uptake (%) |
| Cumbria, Northumberland, Tyne & Wear | Gateshead | 13,641 | 8,204 | 60.1 | 56.9 |
| | South Tyneside | 10,579 | 5,862 | 55.4 | 52.7 |
| | Sunderland | - | - | - | 52.5 |
| Essex | Essex | 105,682 | 67,427 | 63.8 | 58.5 |
| | Southend-On-Sea | 13,806 | 8,420 | 61.0 | 59.4 |
| | Thurrock | 14,782 | 8,223 | 55.6 | 54.1 |
| Greater Manchester | Bury | 14,922 | 9,824 | 65.8 | 65.2 |
| Leicestershire and Lincolnshire | Leicester | 28,470 | 12,832 | 45.1 | 43.6 |
| | Leicestershire | 44,918 | 32,550 | 72.5 | 68.4 |
| London | Rutland | 2,683 | 1,966 | 73.3 | 72.0 |
| | Havering | 19,216 | 10,457 | 54.4 | 52.1 |
| TOTAL | | 268,699 | 165,765 | 61.7 | 57.9 |

^x Excluding 2016 to 2017 London boroughs that vaccinated children in special schools only.