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England

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Seasonal influenza vaccine uptake in children of primary school age: winter season 2016 to 2017

Final data for 1 September 2016 to 31 January 2017

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Executive summary

This document describes the final influenza vaccine uptake for the paediatric influenza vaccination programme targeted at children of primary school age in England from 2016 to 2017.

Providers returned data for a total of 153^{i,ii} Local Authorities (LA) in England, covering all 13 Local NHS England teams on cumulative influenza vaccinations administered from 1 September 2016 to end of 31 January 2017.

Vaccine uptake

The percentages for national vaccine uptake are:

- 57.6% (394,273/ 684,646) in children school years 1 age (aged 5 rising to 6 years)
- 55.4% (373,835/675,273) in children school years 2 age (aged 6 rising to 7 years)
- 53.3% (355,119/666,261) in children school years 3 age (aged 7 rising to 8 years)
- 55.4% (1,123,227/ 2,026,180) in children school years 1, 2, and 3 age combined
- 55.7%(1,113,046/ 1,996,813) in children school years 1, 2, and 3 age in LAs vaccinating through a school delivery model
- 34.7% (10,181/ 29,367) in children school years 1,2, and 3 age in LAs vaccinating through a GP delivery modelⁱ

The percentages for the pilot programme vaccine uptake are:

- 60.3% (172,175 / 285,735) overall in children school years 1 to 6 age (aged 5-10 years, but not 11 or older)
- Ranging from 63.0% (31,002 / 49, 209) in school year group 1 (aged 5 rising to 6 years) to 57.2% (25,818 / 45,114) in school year group 6 (aged 10 rising to 11 years)

The results show encouraging levels of uptake for the second year of vaccinating all children of school years 1 and 2 age and first year of vaccinating all children of school year 3 in England. In 2017 to 2018, the school-age programme will include all children aged 2 to 8 (but not 9 years or older) on 31 August 2017. Additionally, the school delivery model will be extended to include children in reception year (children aged 4-5 year) and to children in school year 4 (children aged 8 -9 years).

ⁱ Data for three LAs (Isles of Scilly, Swindon, and Gloucestershire) were commissioned by GP delivery only. The denominators were derived from the number of patients registered in all GP practices within each of the three LA geographical boundaries.

ⁱⁱ Data for Bassetlaw, an LA district of Nottinghamshire UA, was collected independently. Bassetlaw uptake figures are reported under Yorkshire and Humber NHS England team and included with Nottinghamshire LA under East Midlands PHE Centre.

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 two and three years in primary care. An additional pilot programme was introduced to seven geographically discrete areas that were commissioned to vaccinate children 4-11 years of age (reception to school year 6 age) in order to inform the optimal delivery mechanism.

In 2014 to 2015, the national programme was extended to include all children two to four years of age in primary care. The pilot programme was also extended to a total of 14 pilot areas (including the seven pilot areas that participated during the 2013 to 2014 season), targeting both primary school aged children and secondary school aged children, 11-13 years of age (school years 7 and 8 age).

In 2015 to 2016, all healthy children of school years one and two age in England were offered influenza vaccination with LAIV for the first time in addition to children ages two to four years in primary care. For the majority of children 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, five 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 5-11 years (school years 1 to 6 age).

From 1 September 2016, the programme was extended to children of school year three (ages 7 rising to 8 years), in addition to children of school years 1 and 2 (ages 5 rising to 6 years and 6 rising to 7 years) and children ages two to four years in primary care. Most areas used the school delivery model, while the remaining areas delivered their school age programmes through general practices. Finally, the five pilot areas that had piloted the school based programme in 2015 to 2016 continued to offer the vaccine to all primary school age children aged 5-11 years (school years 1 to 6 age).

This report describes the uptake of influenza vaccine amongst children in school years one, two and three age and additional ages vaccinated in the five pilot areas during the 2016 to 2017 influenza vaccination programme in England.

Methods

Cumulative data on seasonal influenza vaccine uptake were collected for all Local Authorities (LA) between 1 September 2016 to 31 January 2017 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 at least one dose of influenza vaccine during the campaign period. Therefore, the vaccine coverage ideally reflects all eligible children of school years 1, 2, and 3 age that have been vaccinated with influenza vaccine (LAIV or IIV) between 1 September 2016 and 31 January 2017.

Eligible population

The target population for the national primary school age childhood influenza vaccination programme is defined as all children school year 1 (aged 5 rising to 6 years), year 2 (aged 6 rising to 7 years), and year 3 (aged 7 rising to 8 years), born between 1 September 2008 and 31 August 2011, as defined by child age on 1 September 2016 (Table 1).

The target population for the five primary school pilot areas vaccinating all primary school age children is defined as all children school years 1 to 6 age (aged 5-10 years, but not 11 or older) born between 1 September 2005 and 31 August 2011, as defined by child age on 1 September 2016 (Table 1).

Table 1. Year group cohort definitions

Academic Year Group	Age range on 1st September 2016	Birth date range	
		Born From Date	Born To Date
1	Aged 5-6 years	01/09/2010	31/08/2011
2	Aged 6-7 years	01/09/2009	31/08/2010
3	Aged 7-8 years	01/09/2008	31/08/2009
4	Aged 8-9 years	01/09/2007	31/08/2008
5	Aged 9-10 years	01/09/2006	31/08/2007
6	Aged 10-11 years	01/09/2005	31/08/2006

Depending on the type of delivery method run locally, final denominators for each cohort were derived from the following two models:

1. School delivery model

For the 150 LAs where the programme was delivered through a school model, the denominator was based on all eligible children in schoolsⁱⁱⁱ in the LA geography AND children educated out of school in the LA geography, defined by child age at 1 September 2016 using local education authority (LEA) population figures (ie school roll). 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.

2. GP delivery model

For the remaining three LAs, the programme was delivered through GPs. The denominators 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 2016.

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.

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

Data limitations

It is important to note that coverage figures are not consistent across all LAs, as not all data providers were able to access information on additional children that had been vaccinated by their registered GP instead of 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 of school years 1, 2, and 3 age (ie 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 these figures may be incomplete as the IT systems used to extract this information vary from provider to provider. Some providers will only be indicating those children that have returned information on their previous vaccination status in consent forms, others providers have reported vaccinated children where records have been found on the local Child Health Information Services (CHIS) systems. As a result caution should be exercised when comparing coverage figures. Apparent trends 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.

The breakdown of LAIV and IIV vaccine uptake was not mandatory for non-pilot areas. As a result, it is not possible to accurately compare LAIV and IIV vaccine uptake in the non-pilot areas. In some cases the number of LAIV and IIV vaccines did not add up to the total number of vaccines inputted at the LA level.

Results

Full data tables showing final influenza vaccine uptake for children school years 1, 2, and 3 age at LA, former AT level, and by PHE centre are described in the results section and appendix of this report, as well as available to access at 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 2017.

National uptake

Overall uptake

An estimated 1,123,227 children of school years 1, 2 and 3 age in England received at least one dose of influenza vaccine from 1 September 2016 to 31 January 2017. Total uptake in children of school years 1, 2 and 3 age were 57.6%, 55.4% and 53.3% respectively (Table 2).

The overall influenza vaccine uptake for children school year 1 age was 3.2% higher in 2016 to 2017 than in 2015 to 2016, whilst the overall influenza vaccine uptake for children school year 2 age was 2.5% higher in 2016 to 2017 than in 2015 to 2016 (Table 2).

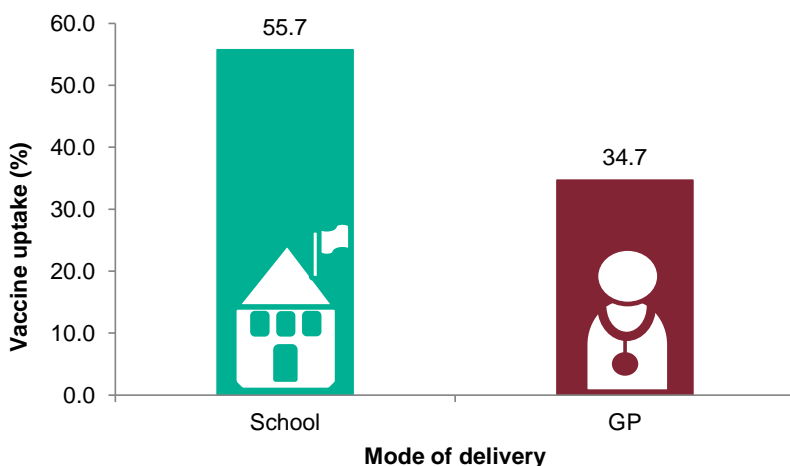
Table 2: Total number of children school years 1, 2 and 3 age eligible for influenza vaccination, total number of children who received influenza vaccination, and the total vaccine uptake, England from 1 September 2016 to 31 January 2017

School	2016 to 2017		2015 to 2016	
	Total no. of eligible children in the LA geography (ACTUAL)	Total no. of children vaccinated with influenza vaccine	Influenza vaccine uptake (%)	Influenza vaccine uptake (%)
Year 1	684,646	394,273	57.6	54.4
Year 2	675,273	373,835	55.4	52.9
Year3	666,261	355,119	53.3	-

Mode of delivery

Vaccine uptake was highest in areas using a school delivery model, with an overall vaccine uptake of 55.7%, whilst the GP delivery model resulted in an overall vaccine uptake of 34.7% (Figure 1). These results are consistent with findings from 2015 to 2016 which also concluded that school-based delivery models achieved the highest levels of coverage³.

Figure 1. Estimated proportion of children school years 1 and 2 and 3 age who were vaccinated with influenza vaccine by delivery method, England, 1 September 2016 to 31 January 2017



Local NHS England team

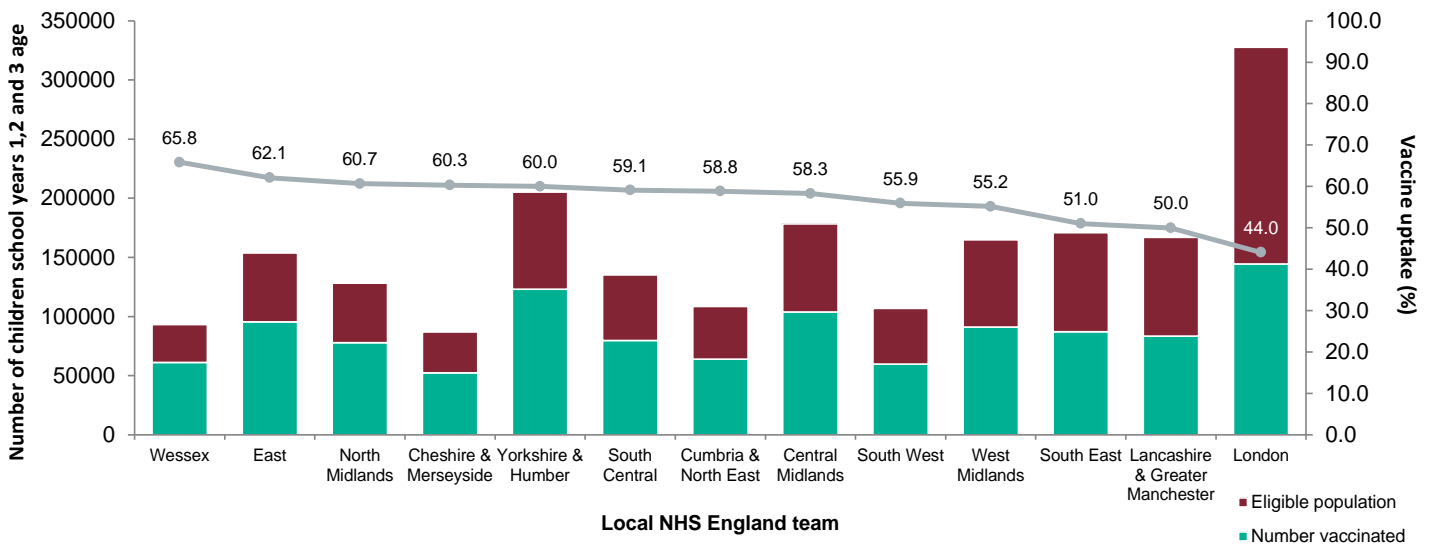
With an estimated total target population of 2,026,180, the overall influenza vaccine uptake was 55.4% (Table 3). Uptake among the four NHS regions ranged from 58.9% to 44.0% with the highest uptake reported in the Midlands and East and lowest uptake reported in London (Figure 2).

Table 3. Estimated number and proportion of children of school years 1, 2 and 3 age who were vaccinated with influenza vaccine by local NHS England team from 1 September 2016 to 31 January 2017^{iv}

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	567,565	322,790	56.9
Cumbria & North East	108,557	63,864	58.8
Lancashire & Greater Manchestere	166,971	83,407	50.0
Yorkshire & Humber	205,222	123,159	60.0
Cheshire & Merseyside	86,815	52,360	60.3
Midlands & East	625,091	368,094	58.9
North Midlands	128,256	77,826	60.7
Central Midlands	178,177	103,820	58.3
West Midlands	164,934	91,002	55.2
East	153,724	95,446	62.1
London	327,711	144,345	44.0
London	327,711	144,345	44.0
South	505,813	287,998	56.9
South Central	135,074	79,816	59.1
South West	106,933	59,785	55.9
Wessex	93,042	61,255	65.8
South East	170,764	87,142	51.0
Total	2,026,180	1,123,227	55.4

^{iv} 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 2. Number and estimated proportion of children of school years 1, 2, and 3 age vaccinated with influenza vaccine by local NHS England team 1 September 2016 to 31 January 2017^v



PHE centres

Results for the nine PHE centres are comparable to the results obtained for the 13 NHS Centres. Vaccine uptake for children of school years 1, 2 and 3 age combined ranged from 61.1% to 44.0% with the highest uptake reported in the East Midlands and lowest uptake reported in London (Table 4, Figure 3).

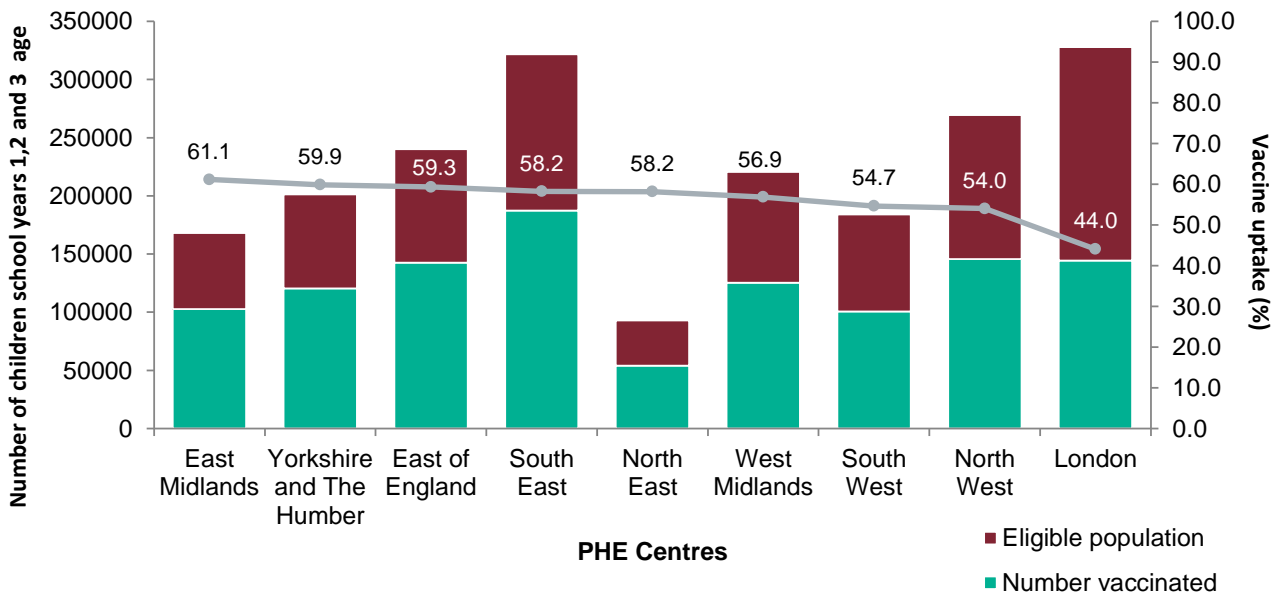
Table 4. Influenza vaccine uptake (%) for children of school years 1, 2 and 3 age in the nine PHE Centres, England 1 September 2016 to 31 January 2017^{vi}

PHE Centre	Vaccine uptake (%)			
	Year 1	Year 2	Year 3	Years 1, 2 and 3 combined
East Midlands	62.4	60.5	60.6	61.1
East of England	61.7	59.6	56.5	59.3
London	46.0	43.9	42.1	44.0
North East	59.3	58.4	56.9	58.2
North West	56.1	54.2	51.7	54.0
South East	61.3	57.9	55.5	58.2
South West	58.4	53.9	51.7	54.6
West Midlands	58.3	56.9	55.4	56.8
Yorkshire and the Humber	61.4	60.5	57.8	59.9
Total	57.6	55.4	53.3	55.4

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

^{vi} 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. Number and estimated proportion of children of school years 1, 2, and 3 age who were vaccinated with influenza vaccine by PHE Centre, 1 September 2016 to 31 January 2017^{vii}



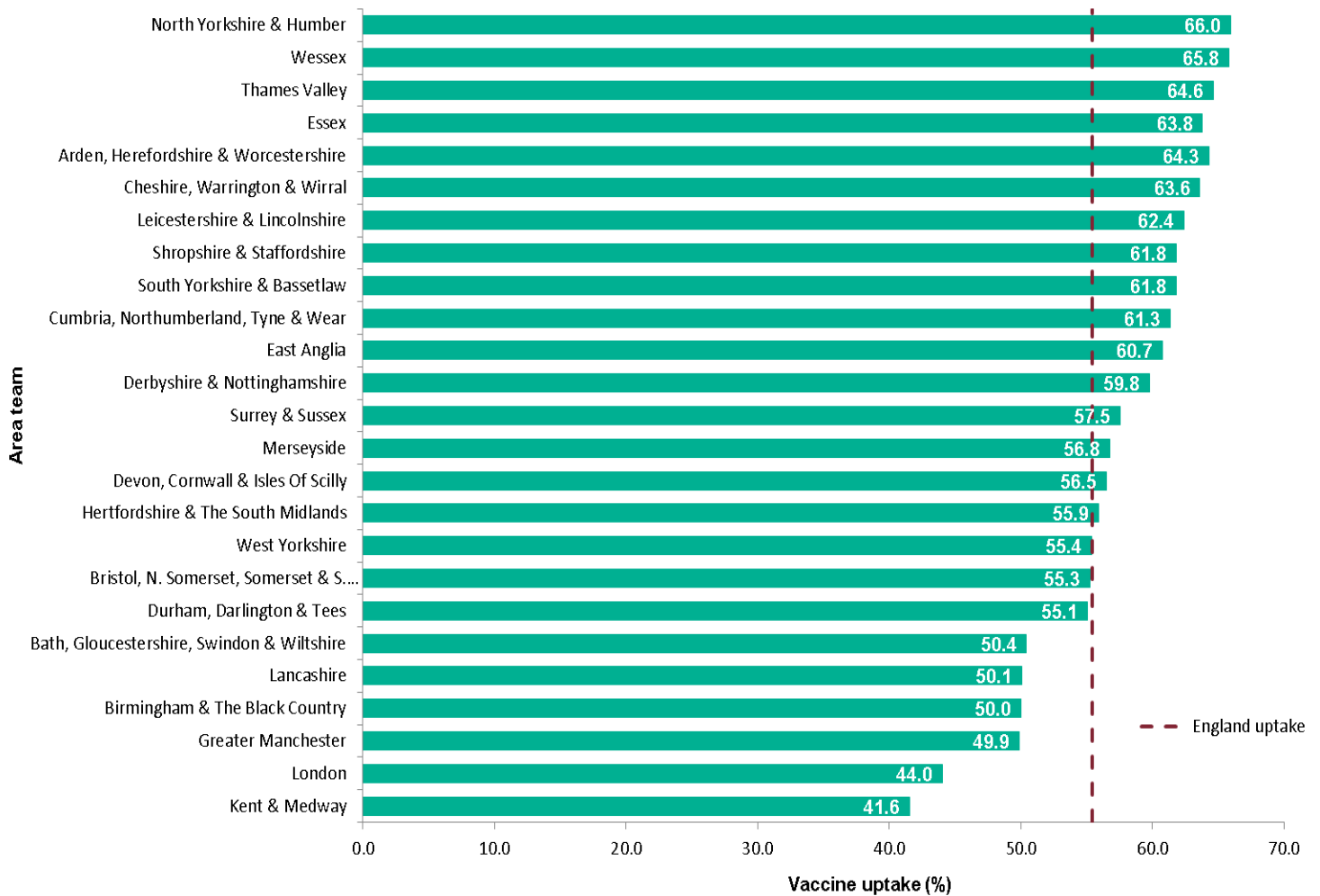
Former Area Team (AT)

The highest influenza vaccine uptake by former AT was reported in North Yorkshire and Humber at 66.0%, while the lowest reported uptake was in Kent and Medway at 41.6% (Figure 4).

Vaccine uptake increased in 14 of the 25 ATs compared to the 2015 to 2016 season. Vaccine uptake increased by more than 10% in four areas. Upon further enquiry, areas with the greatest increase in vaccine uptake attribute these increases to switching from a pharmacy or GP delivery model to a school based model.

^{vii} 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.

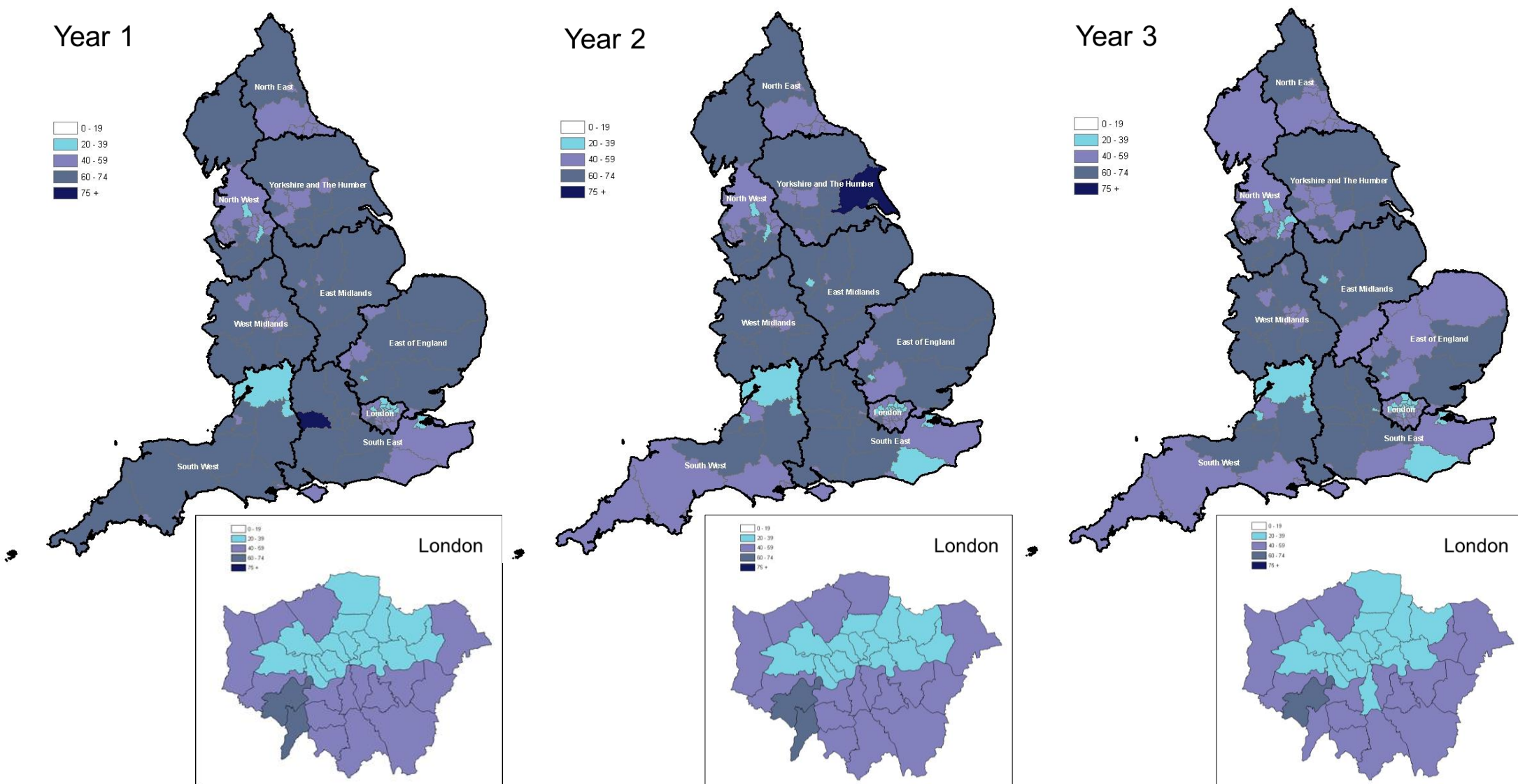
Figure 4. Estimated proportion of children school years 1, 2 and 3 age who were vaccinated with influenza vaccine by former AT, England, 1 September 2016 to 31 January 2017



Local authority

Overall uptake for children of school years 1, 2 and 3 age by LA ranged from 74.3% in West Berkshire to 25.1% in Tower Hamlets. Uptake by year group by LA ranged from 77.1% to 28.1% for children of school year 1 age, 75.1% to 23.9% for children of school year 2 age, and from 72.6% to 23.3% in school year 3 age (Figure 5, Appendix Table 1).

Figure 5: Vaccine uptake (%) for 153 LAs within each of the 9 PHE centres, England, 1 September 2016 to 31 January 2017^{viii}



^{viii} Data for Bassetlaw, an LA district of Nottinghamshire UA, was collected independently.

Vaccine uptake was reported as being lower than 40% in 22 LAs of which 63.6% (14/22) are located in London. Thirteen out of the 14 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 2014 to 2015 and 2013 to 2014, which have shown that deprivation and Muslim religion are independent predictors of lower uptake^{5,6}.

Additionally, three of the LAs outside of London that reported a vaccine uptake lower than 40% are also amongst the top 10% of unitary authorities and LA districts in England with the highest Muslim populations⁴.

The remaining five LAs outside of London with uptake lower than 40% did not fall within the top 10% unitary authorities with the highest Muslim populations. Two of these LAs used the GP delivery model only.

However, it is also important to note that only 9.1% (2/22) of the LAs reporting a vaccine uptake less than 40% included data on additional children that may have been vaccinated by their GPs and not through school delivery, thus conceivably resulting in a higher vaccine uptake.

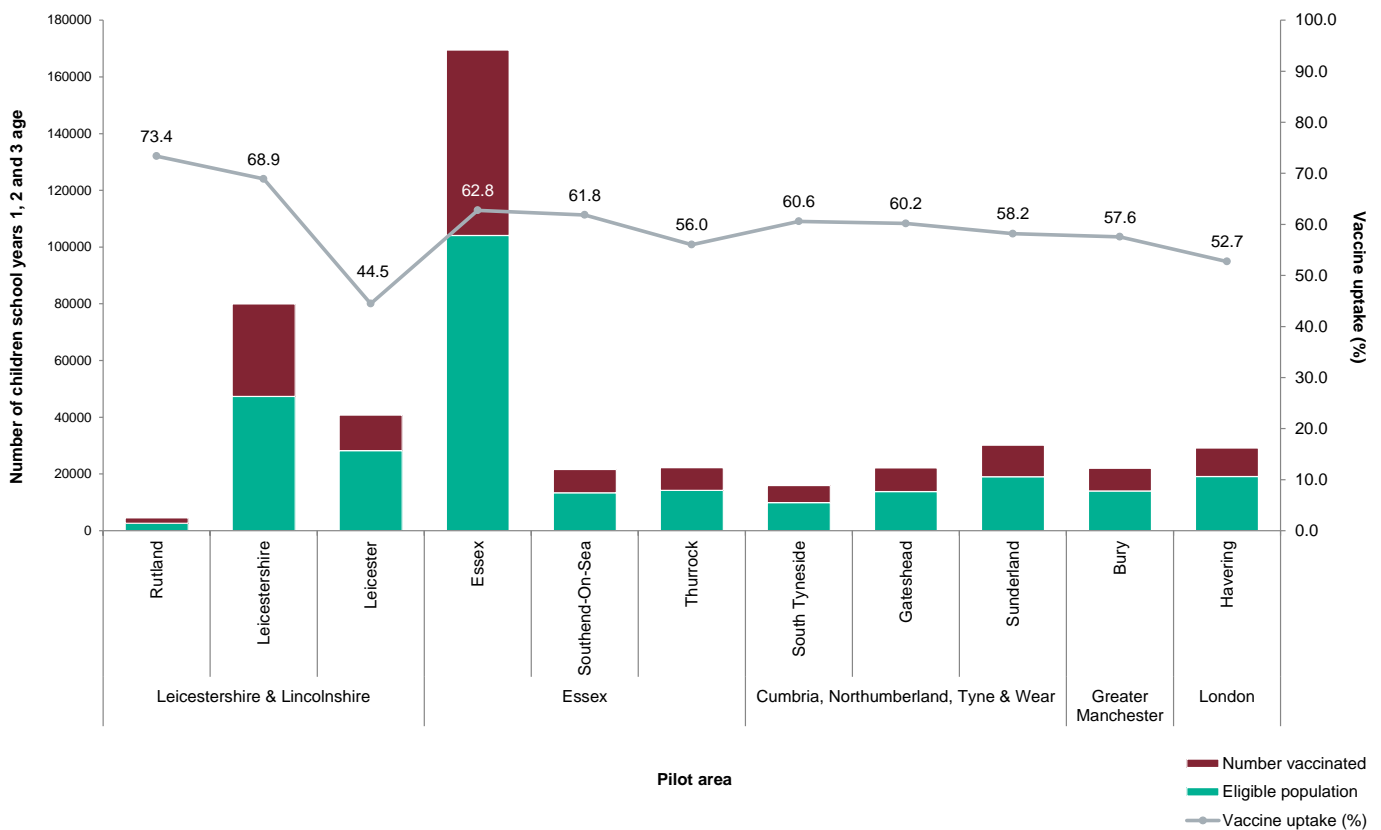
Pilot uptake

An estimated 172,175 primary school children aged 5-11 years in five pilot areas received at least one dose of influenza vaccine during the period 1 September 2016 to 31 January 2017 (Table 5). With an estimated total target population of 285,735, this results in an overall uptake of 60.3%. Vaccine uptake by LA ranges from 73.4% in Rutland to 44.5% in Leicester (Table 5, Figure 6)

Table 5. Estimated number and proportion of children aged 5-11 years who were vaccinated with influenza vaccine in 2016 to 2017 vs. 2015 to 2016 and 2014 to 2015 in pilot areas across England⁹

Area Team	Local Authority	Estimated total number of children eligible for vaccination	No. of children vaccinated with at least 1 dose of influenza vaccine	2016/17 Vaccine uptake (%)	2015/16 Vaccine uptake (%)	2014/15 ^{1,2} Vaccine uptake (%)
Cumbria, Northumberland, Tyne & Wear	Gateshead	13,807	8,309	60.2	56.9	58.1
	South Tyneside	9,926	6,014	60.6	52.7	61.4
	Sunderland	19,054	11,083	58.2	52.5	57.6
Essex	Essex	104,123	65,349	62.8	58.5	62.3
	Southend-On-Sea	13,352	8,257	61.8	59.4	62.5
	Thurrock	14,248	7,983	56.0	54.1	58.3
Greater Manchester	Bury	13,979	8,046	57.6	65.2	61.8
Leicestershire and Lincolnshire	Leicester	28,233	12,554	44.5	43.6	42.6
	Leicestershire	47,332	32,612	68.9	68.4	68.2
	Rutland	2,602	1,909	73.4	72.0	73.0
London	Havering	19,079	10,059	52.7	52.1	56.5
TOTAL		285,735	172,175	60.3	57.9	60.4

Figure 6. Estimated number and proportion of children aged 5-11 years who were vaccinated with influenza vaccine by pilot area, England, 1 September 2016 to 31 January 2017

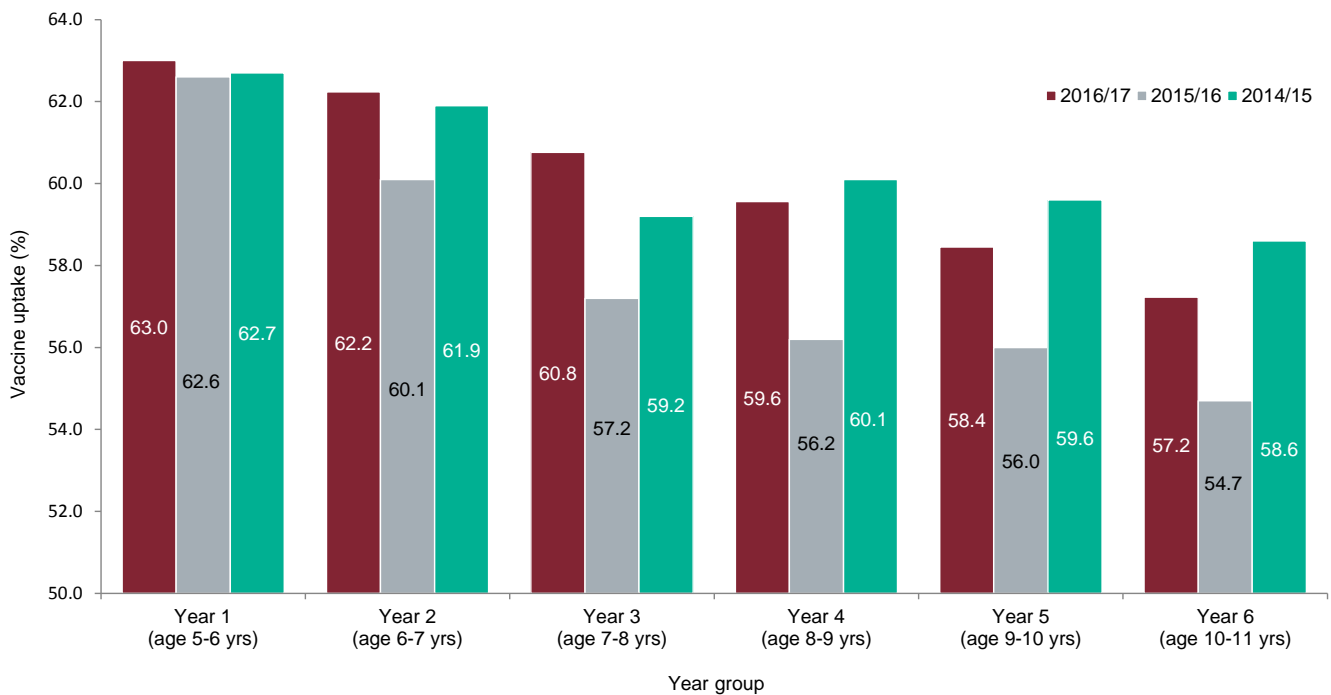


⁹ Excluding children in reception class (aged 4 rising to 5 years) offered vaccination in schools in Essex
Excluding the 2016 to 2017 London boroughs that vaccinated children in special schools only.

Overall there was a 5.9% increase in the total number of children of school years 1 to 6 age vaccinated and a 2.0% increase in the estimated number of children eligible for vaccination since 2015 to 2016 in England. As a result a 2.4% increase in vaccine uptake was observed since the 2015 to 2016 season in the five pilot areas.

Vaccine uptake by year group ranged from 63.0% in year group 1 to 57.2% in year group 6 compared to 62.6% to 54.7% in 2015 to 2016 for comparable pilot areas. The data shows an overall pattern of decreasing uptake with increasing age (Figure 7).

Figure 7. Estimated proportion of children aged 5-11 years who were vaccinated with influenza vaccine by school year group, 2016 to 2017 vs. 2014 to 2015 and 2015 to 2016 in pilot areas across England



Discussion

The 2016 to 2017 winter season saw the successful further roll out of the national childhood influenza vaccination programme to children school years 1, 2 and 3 age. From September 2016, in addition to children two to four years of age vaccinated at GP practice, all healthy children of school years 1, 2 and 3 age in England were offered influenza vaccination with LAIV. For the majority of children this was offered via a school-based programme, although in a few areas vaccinations were delivered through GP practices.

High uptake levels were achieved across England, demonstrating the success of the national roll out of the programme. The overall uptake for years 1, 2 and 3 was 55.7%

which meets the 40% to 65% national ambition highlighted in the Flu Plan for winter 2016 to 2017⁷, although there was considerable variation in uptake across the country.

Similar to the results observed in previous seasons, influenza vaccine uptake varied by programme delivery. The overall vaccine uptake was higher in areas delivering the vaccination programme through a school based delivery model compared to a GP delivery model.

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.

Uptake levels within the five pilot areas were higher than in 2015 to 2016 and are within the expected uptake level (40-65%)⁷. 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.

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- all those who participated in and supported the childhood influenza vaccination programme uptake collection for 2016 to 2017, principally data providers and NHS England colleagues (ie screening and immunisation influenza coordinators, child influenza taskforce, and others)
- the ImmForm helpdesk and development team that provided and supported the online survey
- the GIS department at Public Health England for producing the choropleth maps

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Appendix

Table 1. Estimated number and proportion of children of school years 1, 2 and 3 age who were vaccinated with influenza by LA and PHE Centre, England, 1 September 2016 to 31 January 2017

PHE Centre	Local Authority	Response Rate			Year 1 (age 5-6 yrs)			Year 2 (age 6-7 yrs)			Year 3 (age 7-8 yrs)		
		No. of Organisations	No. of Organisation making a retrun	% 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
Arden, Herefordshire and Worcestershire	Coventry	1	1	100	4,698	3079	65.5	4,627	3,073	66.4	4,455	2,919	65.5
	Herefordshire, County Of	1	1	100	2,044	1291	63.2	2,036	1,249	61.3	1,987	1,220	61.4
	Warwickshire	1	1	100	6,846	4535	66.2	6,552	4,304	65.7	6,509	4,276	65.7
	Worcestershire	1	1	100	6,885	4252	63.6	6,587	4,079	61.9	6,505	3,990	61.3
Bath, Gloucestershire, Swindon and Wiltshire	Bath And North East Somerset	1	1	100	2,019	1442	71.4	2,028	1,384	68.2	2,000	1,381	68.1
	Gloucestershire	1	1	100	6,783	2710	40.0	6,886	2,444	35.5	6,747	2,156	32.0
	Swindon	1	1	100	3,027	1091	36.0	2,976	893	30.0	2,889	838	29.0
	Wiltshire	1	1	100	5,962	4374	73.1	5,805	4,084	70.4	5,573	3,813	68.4
Birmingham and the Black Country	Birmingham	1	1	100	16,688	7891	47.3	16,261	7,210	44.3	16,387	6,994	42.7
	Dudley	1	1	100	3,892	2263	58.1	3,914	2,162	55.2	3,753	2,011	53.6
	Sandwell	1	1	100	4,688	2576	54.9	4,549	2,411	53.0	4,605	2,222	48.3
	Solihull	1	1	100	3,011	2023	67.2	2,764	1,754	63.5	2,712	1,701	62.7
	Walsall	1	1	100	3,913	1934	49.4	3,796	1,796	47.3	3,870	1,791	46.3
	Wolverhampton	1	1	100	3,719	2183	58.7	3,486	1,960	56.2	3,395	1,853	54.6
Bristol, North Somerset, Somerset and South Gloucestershire	Bristol, City Of	1	1	100	5,508	2549	46.3	5,335	2,064	38.7	5,133	1,952	38.0
	North Somerset	1	1	100	2,507	1779	71.0	2,448	1,665	68.0	2,393	1,568	65.5
	Somerset	1	1	100	6,152	4000	65.0	6,064	3,795	62.6	5,796	3,562	61.5
	South Gloucestershire	1	1	100	3,428	2088	60.9	3,436	1,779	51.8	3,353	1,695	50.6
Cheshire, Warrington And Wirral	Cheshire East	1	1	100	4,429	2912	65.7	4,352	2,738	62.9	4,316	2,665	61.7
	Cheshire West And Chester	1	1	100	4,121	2729	66.2	4,095	2,672	65.3	3,990	2,538	63.6
	Warrington	1	1	100	2,632	1681	63.9	2,643	1,633	61.8	2,573	1,523	59.2
	Wirral	1	1	100	3,994	2597	65.0	3,916	2,528	64.6	3,932	2,409	61.3
Cumbria, Northumberland, Tyne and Wear	Cumbria	1	1	100	5,171	3461	66.9	5,180	3,237	62.5	5,303	3,101	58.5
	Gateshead	1	1	100	2,433	1525	62.7	2,318	1,465	63.2	2,413	1,436	59.5
	Newcastle Upon Tyne	1	1	100	3,485	1976	56.7	3,415	1,896	55.5	3,450	1,836	53.2
	North Tyneside	1	1	100	2,429	1661	68.4	2,408	1,642	68.2	2,454	1,522	62.0
	Northumberland	1	1	100	3,387	2179	64.3	3,319	2,102	63.3	3,318	2,083	62.8
	South Tyneside	1	1	100	1,683	1028	61.1	1,690	1,056	62.5	1,694	1,018	60.1
Derbyshire and Nottinghamshire	Sunderland	1	1	100	3,200	1935	60.5	3,161	1,905	60.3	3,121	1,833	58.7
	Derby	1	1	100	3,382	1424	42.1	3,486	1,243	35.7	3,504	1,191	34.0
	Derbyshire	1	1	100	8,866	6365	71.8	8,759	6,063	69.2	8,628	5,722	66.3
	Nottingham	1	1	100	3,810	1955	51.3	3,806	1,831	48.1	3,591	1,748	48.7
Devon, Cornwall And Isles Of Scilly	Nottinghamshire	1	1	100	8,412	5455	64.8	8,233	5,331	64.8	8,062	5,057	62.7
	Devon	1	1	100	8,053	4834	60.0	7,824	4,272	54.6	7,921	4,166	52.6
	Kernow (Cornw all and Isles of Scilly)	2	2	100	6,181	3790	61.3	5,877	3,409	58.0	5,918	3,302	55.8
	Plymouth	1	1	100	3,123	1861	59.6	3,013	1,676	55.6	3,113	1,562	50.2
Durham, Darlington and Tees	Torbay	1	1	100	1,472	848	57.6	1,424	811	57.0	1,461	758	51.9
	County Durham	1	1	100	5,877	3444	58.6	5,762	3,240	56.2	5,438	3,096	56.9
	Darlington	1	1	100	1,291	750	58.1	1,333	790	59.3	1,333	764	57.3
	Hartlepool	1	1	100	1,274	683	53.6	1,290	689	53.4	1,366	661	48.4
	Middlesbrough	1	1	100	2,059	1059	51.4	1,936	978	50.5	1,875	913	48.7
	Redcar And Cleveland	1	1	100	1,664	899	54.0	1,636	847	51.8	1,519	842	55.4
	Stockton-On-Tees	1	1	100	2,650	1486	56.1	2,663	1,449	54.4	2,559	1,377	53.8
	East Anglia	1	1	100	7,981	5277	66.1	7,784	4,834	62.1	7,721	4,481	58.0
Essex	Norfolk	1	1	100	9,887	6386	65.9	9,427	5,992	63.6	9,400	5,436	57.8
	Peterborough	1	1	100	3,146	1530	48.6	3,190	1,440	45.1	3,124	1,379	44.1
	Suffolk	1	1	100	8,481	5573	65.7	8,269	5,237	63.3	8,344	5,016	60.1
	Essex	1	1	100	17,779	11817	66.5	17,770	11,599	65.3	17,468	10,990	62.9
Essex	Southernd-On-Sea	1	1	100	2,271	1481	65.2	2,272	1,419	62.5	2,284	1,440	63.0
	Thurrock	1	1	100	2,495	1422	57.0	2,396	1,398	58.3	2,435	1,299	53.3

Seasonal influenza vaccine uptake in children of primary school age

PHE Centre	Local Authority	Response Rate			Year 1 (age 5-6 yrs)			Year 2 (age 6-7 yrs)			Year 3 (age 7-8 yrs)		
		No. of Organisations	No. of Organisation making a retrun	% 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
Greater Manchester	Bolton	1	1	100	4,058	1805	44.5	4,082	1,744	42.7	4,124	1,668	40.4
	Bury	1	1	100	2,432	1415	58.2	2,317	1,412	60.9	2,360	1,371	58.1
	Manchester	1	1	100	7,283	2881	39.6	7,269	2,664	36.6	7,257	2,498	34.4
	Oldham	1	1	100	3,508	1505	42.9	3,478	1,442	41.5	3,593	1,389	38.7
	Rochdale	1	1	100	2,988	1724	57.7	2,981	1,617	54.2	3,037	1,562	51.4
	Salford	1	1	100	3,343	1488	44.5	3,228	1,441	44.6	3,141	1,367	43.5
	Stockport	1	1	100	3,706	2439	65.8	3,676	2,231	60.7	3,684	2,151	58.4
	Tameside	1	1	100	2,992	1694	56.6	3,109	1,682	54.1	2,930	1,464	50.0
	Trafford	1	1	100	3,320	1990	59.9	3,245	1,968	60.6	3,194	1,847	57.8
Wigan	1	1	100	3,960	2578	65.1	3,868	2,495	64.5	3,848	2,350	61.1	
Hertfordshire and the South Midlands	Bedford	1	1	100	2,461	1131	46.0	2,461	1,177	47.8	2,478	1,140	46.0
	Central Bedfordshire	1	1	100	3,209	2249	70.1	2,999	2,034	67.8	2,894	1,824	63.0
	Hertfordshire	1	1	100	16,145	9832	60.9	15,814	9,323	59.0	15,572	8,727	56.0
	Luton	1	1	100	3,398	1110	32.7	3,299	935	28.3	3,342	896	26.8
	Milton Keynes	1	1	100	4,246	2347	55.3	4,172	2,230	53.5	4,002	2,059	51.4
	Northamptonshire	1	1	100	8,956	5637	62.9	8,808	5,395	61.3	8,832	5,159	58.4
Kent and Medway	Kent	1	1	100	19,456	8939	45.9	19,575	8,096	41.4	19,357	7,936	41.0
	Medway	1	1	100	3,751	1406	37.5	3,710	1,281	34.5	3,665	1,231	33.6
Lancashire	Blackburn With Darwen	1	1	100	2,257	789	35.0	2,182	720	33.0	2,271	693	30.5
	Blackpool	1	1	100	1,674	874	52.2	1,700	906	53.3	1,658	800	48.3
	Lancashire	1	1	100	14,539	8054	55.4	14,344	7,528	52.5	14,335	7,161	50.0
Leicestershire and Lincolnshire	Leicester	1	1	100	4,864	2324	47.8	4,776	2,181	45.7	4,742	2,184	46.1
	Leicestershire and Rutland	2	2	100	8,712	6184	71.0	8,428	5,883	69.8	8,279	5,894	71.2
	Lincolnshire	1	1	100	8,607	8,607	61.2	8,400	5,047	60.1	8,283	5,649	68.2
London	Barking and Dagenham	1	1	100	3,743	1481	39.6	3,690	1,452	39.3	3,565	1,465	41.1
	Barnet	1	1	100	4,849	2467	50.9	4,671	2,251	48.2	4,604	2,032	44.1
	Bexley	1	1	100	3,520	1951	55.4	3,387	1,866	55.1	3,300	1,620	49.1
	Brent	1	1	100	3,916	1433	36.6	3,913	1,241	31.7	3,761	1,239	32.9
	Bromley	1	1	100	4,388	2599	59.2	4,376	2,509	57.3	4,103	2,280	55.6
	Camden	1	1	100	2,036	831	40.8	1,893	706	37.3	1,875	608	32.4
	City and Hackney	2	2	100	3,016	958	31.8	2,893	905	31.3	2,786	893	32.1
	Croydon	1	1	100	5,221	2489	47.7	5,243	2,468	47.1	5,054	2,275	45.0
	Ealing	1	1	100	4,763	2024	42.5	4,849	1,879	38.8	4,752	1,828	38.5
	Enfield	1	1	100	4,853	1797	37.0	4,717	1,995	42.3	4,875	1,914	39.3
	Greenwich	1	1	100	3,970	2100	52.9	3,816	1,919	50.3	3,655	1,771	48.5
	Hammersmith and Fulham	1	1	100	1,700	643	37.8	1,667	557	33.4	1,708	570	33.4
	Haringey	1	1	100	3,180	1263	39.7	3,235	1,193	36.9	3,165	1,095	34.6
	Harrow	1	1	100	3,057	1651	54.0	3,268	1,554	47.6	3,065	1,416	46.2
	Havering	1	1	100	3,340	1871	56.0	3,218	1,770	55.0	3,313	1,767	53.3
	Hillingdon	1	1	100	4,500	2366	52.6	4,289	2,204	51.4	4,309	2,131	49.5
	Hounslow	1	1	100	3,633	1889	52.0	3,658	1,780	48.7	3,653	1,834	50.2
	Islington	1	1	100	2,092	771	36.9	2,103	727	34.6	2,140	649	30.3
	Kensington and Chelsea	1	1	100	1,042	358	34.4	1,110	358	32.3	1,080	288	26.7
	Kingston Upon Thames	1	1	100	2,383	1439	60.4	1,987	1,322	66.5	2,189	1,282	58.6
	Lambeth	1	1	100	2,921	1331	45.6	2,944	1,250	42.5	3,058	1,223	40.0
	Lewisham	1	1	100	3,944	2033	51.5	3,795	1,841	48.5	3,737	1,608	43.0
	Merton	1	1	100	2,897	1631	56.3	2,907	1,597	54.9	2,784	1,428	51.3
	Newham	1	1	100	5,210	1527	29.3	5,199	1,465	28.2	5,098	1,579	31.0
	Redbridge	1	1	100	4,572	1776	38.8	4,448	1,615	36.3	4,371	1,423	32.6
	Richmond Upon Thames	1	1	100	3,009	2032	67.5	3,082	1,997	64.8	3,046	1,888	62.0
	Southwark	1	1	100	3,820	1830	47.9	3,616	1,663	46.0	3,441	1,611	46.8
	Sutton	1	1	100	2,632	1644	62.5	2,620	1,542	58.9	2,640	1,495	56.6
	Tower Hamlets	1	1	100	3,643	1024	28.1	3,632	869	23.9	3,510	818	23.3
	Waltham Forest	1	1	100	3,841	1377	35.9	3,756	1,279	34.1	3,727	1,183	31.7
Wandsworth	1	1	100	3,789	2008	53.0	3,798	1,727	45.5	3,598	1,641	45.6	
Westminster	1	1	100	1,500	510	34.0	1,465	439	30.0	1,524	447	29.3	

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Merseyside	Halton	1	1	100	1,519	796	52.4	1,623	880	54.2	1,480	783	52.9
	Knowsley	1	1	100	1,909	1099	57.6	1,833	1,057	57.7	1,844	965	52.3
	Liverpool	1	1	100	5,487	3115	56.8	5,342	2,981	55.8	5,204	2,815	54.1
	Sefton	1	1	100	3,148	2035	64.6	3,068	1,942	63.3	3,053	1,936	63.4
	St. Helens	1	1	100	2,128	1200	56.4	2,135	1,107	51.9	2,049	1,024	50.0
North Yorkshire and Humber	East Riding of Yorkshire	1	1	100	3,540	2620	74.0	3,548	2,663	75.1	3,525	2,559	72.6
	Kingston Upon Hull, City Of	1	1	100	3,377	2114	62.6	3,307	2,025	61.2	3,237	1,886	58.3
	North East Lincolnshire	1	1	100	2,024	1474	72.8	2,001	1,367	68.3	1,943	1,335	68.7
	North Lincolnshire	1	1	100	1,989	1289	64.8	1,963	1,234	62.9	2,020	1,240	61.4
	North Yorkshire	1	1	100	6,215	4179	67.2	6,217	4,067	65.4	6,123	3,898	63.7
	York	1	1	100	2,008	1138	56.7	2,015	1,271	63.1	1,978	1,266	64.0
Shropshire and Staffordshire	Shropshire	1	1	100	3,105	2120	68.3	3,074	2,119	68.9	3,121	2,098	67.2
	Staffordshire	1	1	100	9,855	6201	62.9	9,927	6,239	62.8	9,549	5,914	61.9
	Stoke-On-Trent	1	1	100	3,486	1943	55.7	3,270	1,810	55.4	3,269	1,754	53.7
	Telford And Wrekin	1	1	100	2,357	1403	59.5	2,347	1,465	62.4	2,357	1,375	58.3
South Yorkshire and Bassetlaw	Barnsley	1	1	100	2,980	1943	65.2	2,880	1,899	65.9	2,777	1,790	64.5
	Bassetlaw (Lower Tier LA),	1	1	100	1,316	890	67.6	1,314	896	68.2	1,261	823	65.3
	Doncaster	1	1	100	4,006	2430	60.7	3,879	2,378	61.3	3,842	2,252	58.6
	Rotherham	1	1	100	3,342	2218	66.4	3,422	2,255	65.9	3,340	2,111	63.2
	Sheffield	1	1	100	6,217	3951	63.6	6,617	3,816	57.7	6,675	3,637	54.5
Surrey and Sussex	Brighton and Hove	1	1	100	2,937	1718	58.5	3,018	1,677	55.6	2,903	1,539	53.0
	East Sussex	1	1	100	6,009	2497	41.6	5,800	1,939	33.4	5,902	1,737	29.4
	Surrey	1	1	100	15,282	10339	67.7	15,015	9,771	65.1	14,663	8,937	60.9
	West Sussex	1	1	100	10,055	6345	63.1	9,841	6,026	61.2	9,825	5,728	58.3
Thames Valley	Bracknell Forest	1	1	100	1,575	1162	73.8	1,618	1,122	69.3	1,601	1,053	65.8
	Buckinghamshire	1	1	100	7,065	4793	67.8	6,981	4,489	64.3	6,711	4,259	63.5
	Oxfordshire	1	1	100	8,525	5831	68.4	8,098	5,199	64.2	7,800	4,952	63.5
	Reading	1	1	100	2,097	1403	66.9	2,068	1,266	61.2	2,011	1,212	60.3
	Slough	1	1	100	2,432	1108	45.6	2,445	1,072	43.8	2,469	987	40.0
	West Berkshire	1	1	100	2,129	1641	77.1	2,063	1,523	73.8	2,026	1,454	71.8
	Windsor And Maidenhead	1	1	100	1,937	1241	64.1	1,976	1,277	64.6	1,853	1,154	62.3
	Wokingham	1	1	100	2,316	1723	74.4	2,353	1,716	72.9	2,210	1,589	71.9
Wessex	Bournemouth	1	1	100	2,171	1259	58.0	2,068	1,116	54.0	2,121	1,063	50.1
	Dorset	1	1	100	4,249	2709	63.8	4,393	2,594	59.0	4,444	2,566	57.7
	Hampshire	1	1	100	16,301	12075	74.1	16,047	11,575	72.1	15,856	10,933	69.0
	Isle of Wight	1	1	100	1,302	755	58.0	1,326	668	50.4	1,288	556	43.2
	Poole	1	1	100	1,687	1043	61.8	1,766	1,050	59.5	1,562	870	55.7
	Portsmouth	1	1	100	2,476	1730	69.9	2,494	1,692	67.8	2,405	1,536	63.9
	Southampton	1	1	100	3,216	2004	62.3	2,995	1,791	59.8	2,875	1,670	58.1
West Yorkshire	Bradford	1	1	100	8,139	4403	54.1	8,273	4,250	51.4	8,207	3,993	48.7
	Calderdale	1	1	100	2,765	1767	63.9	2,914	1,844	63.3	2,825	1,716	60.7
	Kirklees	1	1	100	5,857	3495	59.7	5,706	3,511	61.5	5,716	3,207	56.1
	Leeds	1	1	100	10,380	5478	52.8	10,469	5,561	53.1	10,107	5,049	50.0
	Wakefield	1	1	100	4,383	2745	62.6	4,403	2,735	62.1	4,180	2,491	59.6
Total		153	153	100	684,646	394,273	57.6	675,273	373,835	55.4	666,261	355,119	53.3