

Insert Title of NHS Board Paper Here

IMMUNISATION PROGRAMMES IN NHS GREATER GLASGOW AND CLYDE 2015-2016

Recommendation:-

The NHS Board is asked to receive the report from the Director of Public Health and note the content of the report, in particular:

1. Uptake rates across a number of immunisation programmes
2. The new delivery model being implemented in NHSGGC to deliver school immunisation programmes

Purpose of Paper:-

The paper is to provide NHSGGC Board with an overview of immunisation uptake rates and the new delivery model for school immunisation programmes in NHSGGC.

Key Issues to be considered:-

To note performance of local immunisation programmes in line with national policy; continuing efforts to improve and sustain uptake rates.

Any Patient Safety /Patient Experience Issues:-

Increasing expertise in the delivery of school immunisation programmes supports improved patient experience.

Any Financial Implications from this Paper:-

No

Any Staffing Implications from this Paper:-

No

Any Equality Implications from this Paper:-

No

Any Health Inequalities Implications from this Paper:-

No

Has a Risk Assessment been carried out for this issue? If yes, please detail the outcome:-

No

Highlight the Corporate Plan priorities to which your paper relates:-

Preventing ill health and early intervention
Improving quality, efficiency and effectiveness

Director of Public Health

**IMMUNISATION PROGRAMMES IN
NHS GREATER GLASGOW AND CLYDE 2015-2016**

RECOMMENDATIONS:

The NHS Board is asked to receive the report from the Director of Public Health and note the content of the report, in particular:

1. Uptake rates across a number of immunisation programmes
2. The new delivery model being implemented in NHSGGC to deliver school immunisation programmes

1.0 Context and Background

Immunisation programmes aim to protect the individual as well as prevent the spread of these illnesses within the population through 'herd immunity'. As a public health measure, immunisations are very effective in reducing the burden of disease.

Immunisation policy in the UK is determined by UK Health Ministers and Devolved Administrations with advice from the independent expert advisory group, the Joint Committee on Vaccination and Immunisation (JCVI).

Since 2013 there have been significant changes to the Scottish Immunisation Programme, namely:

- Adding Rotavirus vaccination to the routine childhood immunisation programme from July 2013
- Offering a meningococcal C vaccine to adolescents (replaced by Men ACWY from Aug 2015) with a concomitant decrease in the number of doses offered to infants from two to one (from 5th Sept no infant doses will be offered); including a short-term catch-up programme for first time university entrants who would otherwise miss out on the programme
- Introducing Herpes Zoster (shingles) vaccine for all those aged 70 years, with a catch up for 71-79 year olds from September 2013
- Extending the seasonal flu immunisation programme to include pre-school and primary school aged children from 2013 onwards
- Changing the Human papillomavirus (HPV) immunisation schedule from a 3 dose to a 2 dose schedule from September 2014
- Adding meningococcal group B (MenB) vaccination to the routine childhood immunisation programme from September 2015

These developments have had wide ranging implications for the NHS Scotland and NHS GGC, with the number of people being offered vaccination each year in Scotland doubling from approximately one million to two million between 2012 and 2013.

A key performance measure of any immunisation programme is monitoring uptake rates. Immunisation uptake refers to the proportion of the eligible population who have received the recommended doses of the relevant vaccines. Uptake rates are important as if immunisation rates fall the possibility of disease transmission increases and any complications arising from outbreaks of infectious diseases.

In Scotland the target for the routine childhood immunisation programme is for 95% of children to have complete courses by 24 months of age. An additional national target of 95% uptake of one dose of Measles, Mumps and Rubella (MMR) vaccine by five years of age was introduced in 2006 to focus efforts on reducing the number of susceptible children starting primary school.

National statistics on both uptake rates for HPV immunisation and uptake rates for teenage booster immunisations are published annually by Information Services Division (ISD), with the former available in September and the latter in December for the previous school year.

Flu vaccine uptake rates are published by Health Protection Scotland (HPS) in HPS National Influenza Reports. Since the phased introduction of the primary school flu immunisation programme in 2013, NHS Boards record and monitor uptake rates by school to inform future planning.

Uptake across all programmes is shared with key stakeholders, by Health and Social Care Partnership and GP practices on a regular basis to try and encourage continuing efforts to improve uptake.

2.0 Immunisation programmes and uptake

2.1 Routine childhood immunisation programme

The Routine Childhood Immunisation Programme covers the recommended immunisations for children and young people aged 0 to 18 years. The programme comprises routine immunisations which are offered to all children and young people at specified ages, as well as selective or non-routine immunisations which are targeted to children at higher risk from certain diseases. To view the poster associated with this programme, please [click on this link](#).

Uptake rates for NHS GGC in 2015/2016 by 12 months of age are just below the Scottish average (DTP/Pol/Hib 97.2%, Men C 97.5%, PCV 97.1% and Rotavirus 92.9%); by 24 months of age uptake is comparable to the average for Scotland (95%-97%). 97% of children by five years of age had received one dose of MMR. See appendices 1-4.

Future childhood immunisation statistics will include the new Men B vaccine, given to babies at two and four months of age, introduced in September 2015.

2.2 HPV immunisation programme

The HPV immunisation programme in NHSGGC is delivered in a school setting and aims to protect girls from the two types of HPV that cause around 75% of cases of cervical cancer. The HPV vaccine does not protect against all cervical cancers, so regular cervical screening is still important.

Appendix 5 shows the uptake rate by Health Board for the first dose of HPV for S1 and S2 girls in 2014/15, 92.8% and 92.9%, with NHSGGC exceeding the average for Scotland in both cohorts. Uptake of the second dose for both cohorts, delivered in 2015/16, will be reported by ISD in autumn 2016.

Due to the changes in the HPV immunisation programme from September 2014, the rates for 2014/15 are not directly comparable with uptake rates published for previous years of the programme.

2.3 Teenage booster immunisations

Under the routine childhood immunisation programme teenagers are offered two booster immunisations at around 14 years of age as follows:

- The teenage Td/IPV booster vaccine which boosts protection against three diseases: tetanus, diphtheria and polio.
- The teenage Men C booster vaccine (replaced by the Men ACWY vaccine in August 2015).

In Scotland the teenage booster vaccines are routinely offered to pupils in year three of secondary school (S3), through a school-based programme. Pupils who miss the routine teenage booster immunisation session in S3 are offered subsequent catch-up opportunities in S4-S6.

Appendix 6 shows the uptake rates in NHSGGC during the academic year 2014/15, with both exceeding the average for Scotland.

The Men C vaccine was replaced by the MenACWY vaccine from August 2015 in response to an outbreak of meningococcal W. The Men ACWY vaccine protects against meningitis and septicaemia caused by four strains of meningococcal bacteria – meningococcal (Men) group A, C, W and Y.

2.4 Seasonal flu vaccination

Pre school (2 – 5 years)

In 2013 the seasonal flu vaccination programme was extended to include children, through a phased approach over three years. In 2013/14 all 2 and 3 year old children across Scotland were invited to attend their GP practice for flu vaccination. From 2014/15 onwards this was extended to all 2 to 5 year old children not yet in school.

Appendix 7 shows uptake by NHS board in 2014/15 and 2015/16. Public Health are working with both local and national colleagues in an effort to improve flu immunisation uptake across this age group

Primary school flu immunisation programme

Pilots to test delivery models targeting primary school aged children were held and evaluated across Scotland in 2013/14. NHSGGC piloted the delivery of flu immunisation to P1-P7 aged children in a whole school approach across 103 primary schools. The following year this was extended to include every primary school aged child, approximately 85,000 children in 343 primary schools across Greater Glasgow and Clyde.

Appendix 8 shows flu immunisation uptake in primary schools from 2013/14 to 2015/16. During the pilot year NHSGGC achieved an uptake of 65%, increasing to 73.5% the following year achieved through a combination of delivery in schools and additional community clinics. In 2015/16, 61,599 primary school aged children were immunised over an eight week period at school through the programme, an uptake of 71.2%. In addition, 3,997 attended 'mop up' appointments through primary care, totalling 86,486 (75.8%) primary school aged children in NHSGGC immunised against flu.

Adults over 65 and all at risk groups

Flu vaccine is routinely offered to people who are either at risk of severe complications from flu or those who are most likely to come into contact with vulnerable people at risk of infection or complications. Annual vaccination is carried out between October – January before the onset of the flu season, although available until end March, and is offered to all those aged 65 years and over, people suffering from various chronic diseases, as well as pregnant women and health and social care staff.

Uptake of the vaccine amongst those aged 65 years and over is usually in line with the national target of 75%, although as appendix 9 shows uptake across Scotland in 2015/16 was just short of this target (74.5%). This may be due to the press regarding the mismatched vaccine the previous year although research conducted by Scottish Government suggests that a decrease in uptake may be due to the seriousness of flu being underestimated.

For those in 'at risk' groups, uptake was significantly lower at 48.5% in NHSGGC, similar to 48% nationally. Moreover, uptake between different "at risk" groups varies from 66.3% in diabetic patients to 50.4% in patients with chronic respiratory disease, this is not unique to NHSGGC.

2.5 Herpes zoster (shingles) vaccination

From September 2013, shingles vaccination was introduced for all those aged 70 years, with a phased catch up for 71-79 year olds.

Uptake of the shingles vaccine continues to slowly increase, with latest data showing for the current year (1 September 2015 – 30 June 2016) uptake in NHSSGC is:

- 51.7% for the age 70 cohort (compared to 52.9% Scotland average)
- 45.8% for the age 78 cohort (compared to 49.7% Scotland average)

3.0 Future delivery of school immunisation programmes

NHSSGC's uptake across immunisation programmes delivered in a school setting (both primary and secondary) is to be celebrated. However, a number of national developments including [CEL 13 \(2013\)](#) which set out the requirement for NHS Boards to refocus existing Health Visiting and School Nursing roles, services and interventions by April 2014, the above major changes to the Scottish Immunisation Programme in 2013/14 and a depleting school nursing workforce has led to the need for health boards across Scotland to review delivery models for school immunisation programmes.

Following piloting self administration of the flu nasal spray in 2013/14 and the use of healthcare support workers to administer the flu nasal spray in 2014/15, a school immunisation team was piloted in East Renfrewshire and South Glasgow Health and Social Care Partnerships (HSCPs) in 2015/16. The pilot generated extremely useful learning that is now informing full implementation across NHSSGC. This approach has and is being implemented/considered by a number of other health boards across Scotland.

Public Health is leading on the recruitment and implementation of four dedicated school immunisation teams that will deliver the primary school flu, HPV and teenage booster immunisation programmes, with the teams hosted by Glasgow City HSCP.

The implementation of dedicated school immunisation teams in NHSSGC, with the continued support of staff from Child Health, Public Health Pharmacy, Public Health and the Nurse Bank (limited) will:

- Address issues relating to school nursing workforce capacity
- Realise capacity of existing school nursing workforce to focus on school nursing role
- Develop and increase immunisation expertise
- Significantly reduce the reliance on bank staff to deliver school immunisation programmes

Appendix 1: Primary Immunisation Uptake Rates by 12 months of age (born 1 April 2014 to 31 March 2015), by NHS Board, 1 April 2015 to 31 March 2016

NHS Board of residence	Number in Cohort	% completed primary course by 12 months							
		DTP/Pol/Hib		MenC		PCV		Rotavirus	
		No.	%	No.	%	No.	%	No.	%
NHS Ayrshire and Arran	3,678	3,621	98.5	3,644	99.1	3,623	98.5	3,445	93.7
NHS Borders	967	942	97.4	948	98.0	940	97.2	909	94.0
NHS Dumfries & Galloway	1,299	1,279	98.5	1,282	98.7	1,277	98.3	1,249	96.2
NHS Fife	3,875	3,759	97.0	3,791	97.8	3,755	96.9	3,656	94.3
NHS Forth Valley	3,153	3,053	96.8	3,069	97.3	3,051	96.8	2,960	93.9
NHS Grampian	6,212	6,033	97.1	6,036	97.2	6,006	96.7	5,699	91.7
NHS Greater Glasgow & Clyde	12,581	12,167	96.7	12,194	96.9	12,167	96.7	11,559	91.9
NHS Highland	3,111	2,977	95.7	3,014	96.9	2,982	95.9	2,843	91.4
NHS Lanarkshire	7,238	7,101	98.1	7,135	98.6	7,114	98.3	6,794	93.9
NHS Lothian	9,488	9,214	97.1	9,212	97.1	9,209	97.1	8,818	92.9
NHS Orkney ^{3,4}	189	168	88.9	173	91.5	169	89.4	165	87.3
NHS Shetland ³	251	240	95.6	246	98.0	239	95.2	232	92.4
NHS Tayside	4,198	4,090	97.4	4,094	97.5	4,074	97.0	3,942	93.9
NHS Western Isles ³	217	206	94.9	207	95.4	207	95.4	199	91.7
NHS Board unknown	6	..	..	..	..	..	..	..	..
Scotland	56,463	54,855	97.2	55,050	97.5	54,818	97.1	52,475	92.9

Source: ISD

Appendix 2: Primary and Booster Immunisation Uptake Rates by 24 months of age (born 1 April 2013 to 31 March 2014), by NHS Board, 1 April 2015 to 31 March 2016

NHS Board of residence	Number in Cohort	% completed primary and booster course by 24 months							
		DTP/Pol/Hib		MMR1		Hib/MenC		PCVB	
		No.	%	No.	%	No.	%	No.	%
NHS Ayrshire and Arran	3,625	3,577	98.7	3,497	96.5	3,513	96.9	3,503	96.6
NHS Borders	1,129	1,112	98.5	1,097	97.2	1,096	97.1	1,098	97.3
NHS Dumfries & Galloway	1,355	1,339	98.8	1,324	97.7	1,329	98.1	1,328	98.0
NHS Fife	4,000	3,910	97.8	3,756	93.9	3,762	94.1	3,758	94.0
NHS Forth Valley	3,181	3,128	98.3	3,057	96.1	3,062	96.3	3,061	96.2
NHS Grampian	6,275	6,130	97.7	5,948	94.8	5,921	94.4	5,898	94.0
NHS Greater Glasgow & Clyde	12,556	12,230	97.4	11,950	95.2	11,954	95.2	11,940	95.1
NHS Highland	3,073	2,977	96.9	2,883	93.8	2,876	93.6	2,871	93.4
NHS Lanarkshire	7,047	6,925	98.3	6,794	96.4	6,852	97.2	6,856	97.3
NHS Lothian	9,767	9,547	97.7	9,276	95.0	9,251	94.7	9,220	94.4
NHS Orkney ³	191	186	97.4	185	96.9	183	95.8	184	96.3
NHS Shetland ³	251	241	96.0	223	88.8	230	91.6	230	91.6
NHS Tayside	4,057	4,005	98.7	3,898	96.1	3,897	96.1	3,892	95.9
NHS Western Isles ³	253	247	97.6	236	93.3	237	93.7	235	92.9
NHS Board unknown	11	..	..	..	..	..	..	..	..
Scotland	56,771	55,565	97.9	54,135	95.4	54,174	95.4	54,085	95.3

Source: ISD

Appendix 3: Primary and Booster Immunisation Uptake Rates by 5 years of age (born 1 April 2010 to 31 March 2011), by NHS Board, 1 April 2015 to 31 March 2016

NHS Board of residence	Number in Cohort	% completed primary and booster course by 5 years									
		DTP/Pol/Hib		MMR1		Hib/MenC		DTP/Pol		MMR2	
		No.	%	No.	%	No.	%	No.	%	No.	%
NHS Ayrshire and Arran	4,070	4,034	99.1	3,990	98.0	3,997	98.2	3,863	94.9	3,846	94.5
NHS Borders	1,170	1,153	98.5	1,141	97.5	1,136	97.1	1,133	96.8	1,128	96.4
NHS Dumfries & Galloway	1,509	1,487	98.5	1,461	96.8	1,463	97.0	1,467	97.2	1,458	96.6
NHS Fife	4,320	4,244	98.2	4,193	97.1	4,168	96.5	3,945	91.3	3,931	91.0
NHS Forth Valley	3,332	3,299	99.0	3,265	98.0	3,251	97.6	3,149	94.5	3,134	94.1
NHS Grampian	6,469	6,314	97.6	6,259	96.8	6,022	93.1	6,130	94.8	6,086	94.1
NHS Greater Glasgow & Clyde	12,835	12,547	97.8	12,445	97.0	12,255	95.5	11,969	93.3	11,896	92.7
NHS Highland	3,295	3,209	97.4	3,153	95.7	3,132	95.1	3,052	92.6	3,014	91.5
NHS Lanarkshire	7,584	7,437	98.1	7,349	96.9	7,368	97.2	7,209	95.1	7,118	93.9
NHS Lothian	9,621	9,444	98.2	9,362	97.3	9,298	96.6	8,901	92.5	8,853	92.0
NHS Orkney ³	222	211	95.0	208	93.7	205	92.3	196	88.3	194	87.4
NHS Shetland ³	271	259	95.6	258	95.2	250	92.3	220	81.2	221	81.5
NHS Tayside	4,355	4,320	99.2	4,278	98.2	4,270	98.0	4,115	94.5	4,087	93.8
NHS Western Isles ³	260	255	98.1	250	96.2	247	95.0	246	94.6	243	93.5
NHS Board unknown	18	..	..	..	..	..	..	..	..	..	..
Scotland	59,331	58,229	98.1	57,628	97.1	57,078	96.2	55,610	93.7	55,224	93.1

Source: ISD

Appendix 4: Primary and Booster Immunisation Uptake Rates by 6 years of age (born 1 April 2009 to 31 March 2010), by NHS Board, 1 April 2015 to 31 March 2016

NHS Board of residence	Number in Cohort	% completed primary and booster course by 6 years					
		MMR1		DTP/Pol		MMR2	
		No.	%	No.	%	No.	%
NHS Ayrshire and Arran	3,946	3,874	98.2	3,811	96.6	3,776	95.7
NHS Borders	1,154	1,132	98.1	1,124	97.4	1,115	96.6
NHS Dumfries & Galloway	1,574	1,539	97.8	1,533	97.4	1,525	96.9
NHS Fife	4,382	4,242	96.8	4,110	93.8	4,087	93.3
NHS Forth Valley	3,519	3,458	98.3	3,407	96.8	3,385	96.2
NHS Grampian	6,649	6,424	96.6	6,329	95.2	6,276	94.4
NHS Greater Glasgow & Clyde	12,871	12,386	96.2	12,178	94.6	12,084	93.9
NHS Highland	3,346	3,203	95.7	3,147	94.1	3,122	93.3
NHS Lanarkshire	7,778	7,547	97.0	7,498	96.4	7,420	95.4
NHS Lothian	9,606	9,261	96.4	9,061	94.3	8,987	93.6
NHS Orkney ³	232	218	94.0	218	94.0	214	92.2
NHS Shetland ³	287	269	93.7	263	91.6	253	88.2
NHS Tayside	4,372	4,220	96.5	4,177	95.5	4,144	94.8
NHS Western Isles ³	259	250	96.5	250	96.5	247	95.4
NHS Board unknown	25	..	..	..	..	..	..
Scotland	60,000	58,048	96.7	57,129	95.2	56,658	94.4

Source: ISD

Appendix 5: Annual HPV immunisation uptake rates by the end of the school year for girls in S1 and S2 by NHS Board of school, in school year 2014/15

NHS Board of school	Dose 1 (S1 girls)			Dose 1 (S2 girls)		
	Number eligible	Number immunised	% Uptake	Number eligible	Number immunised	% Uptake
Ayrshire and Arran	..	..	..	1,830	1,723	94.2
Borders	527	473	89.8	594	541	91.1
Dumfries and Galloway	678	625	92.2	647	587	90.7
Fife	1,491	1,225	82.2	1,579	1,379	87.3
Forth Valley	1,461	1,306	89.4	1,521	1,434	94.3
Grampian	2,706	2,468	91.2	2,576	2,427	94.2
Greater Glasgow & Clyde	5,459	5,064	92.8	5,543	5,148	92.9
Highland	1,510	1,303	86.3	1,572	1,357	86.3
Lanarkshire	3,419	2,936	85.9	3,377	3,164	93.7
Lothian	3,888	3,377	86.9	4,152	3,617	87.1
Orkney	..	..	..	115	101	87.8
Shetland	116	96	82.8	118	110	93.2
Tayside	1,979	1,798	90.9	2,091	1,916	91.6
Western Isles	..	..	..	122	106	86.9
Scotland	23,234	20,671	89.0	25,837	23,610	91.4

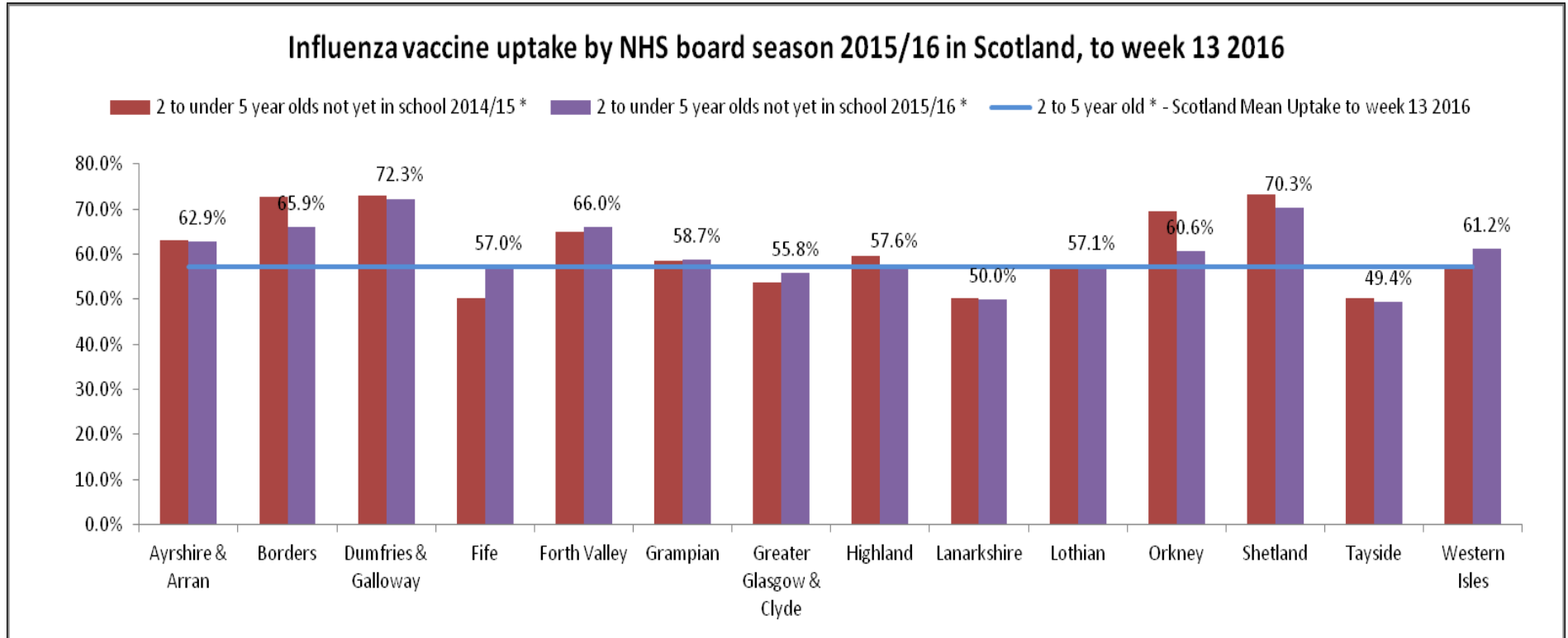
Source: CHSP School/SIRS

Appendix 6. Teenage booster immunisation uptake rates by NHS Board of school, pupils in S3 in school year 2014/15

NHS Board of school	Data completeness			Uptake rates				
	Number in S3 cohort on CHSP School	Number in S3 cohort excluded from uptake statistics due to incomplete data entry for school	% of cohort excluded from the calculation of uptake rates	Number in S3 cohort included in the calculation of uptake rates	Teenage Td/IPV booster		Teenage Men C booster	
					Number immunised by end of school year 2014/15	Uptake rate by end of school year 2014/15 (%)	Number immunised by end of school year 2014/15	Uptake rate by end of school year 2014/15 (%)
Ayrshire & Arran	3,877	85	2.2	3,792	3,202	84.4	3,184	84.0
Borders	1,201	21	1.7	1,180	1,012	85.8	1,010	85.6
Dumfries & Galloway	1,444	1	0.1	1,443	1,238	85.8	1,239	85.9
Fife	3,666	49	1.3	3,617	2,802	77.5	2,795	77.3
Forth Valley	3,301	141	4.3	3,160	2,763	87.4	2,763	87.4
Grampian	5,771	96	1.7	5,675	4,917	86.6	4,926	86.8
Greater Glasgow & Clyde	11,839	200	1.7	11,639	9,955	85.5	9,948	85.5
Highland	3,237	73	2.3	3,164	2,480	78.4	2,477	78.3
Lanarkshire	7,023	117	1.7	6,906	5,478	79.3	5,482	79.4
Lothian	8,297	180	2.2	8,117	6,045	74.5	6,052	74.6
Orkney	184	184	100.0	..	..	..	..	..
Shetland	240	240	100.0	..	..	..	..	..
Tayside	4,243	159	3.7	4,084	3,369	82.5	3,353	82.1
Western Isles	264	264	100.0	..	..	..	..	..
Scotland	54,587	1,810	3.3	52,777	43,261	82.0	43,229	81.9

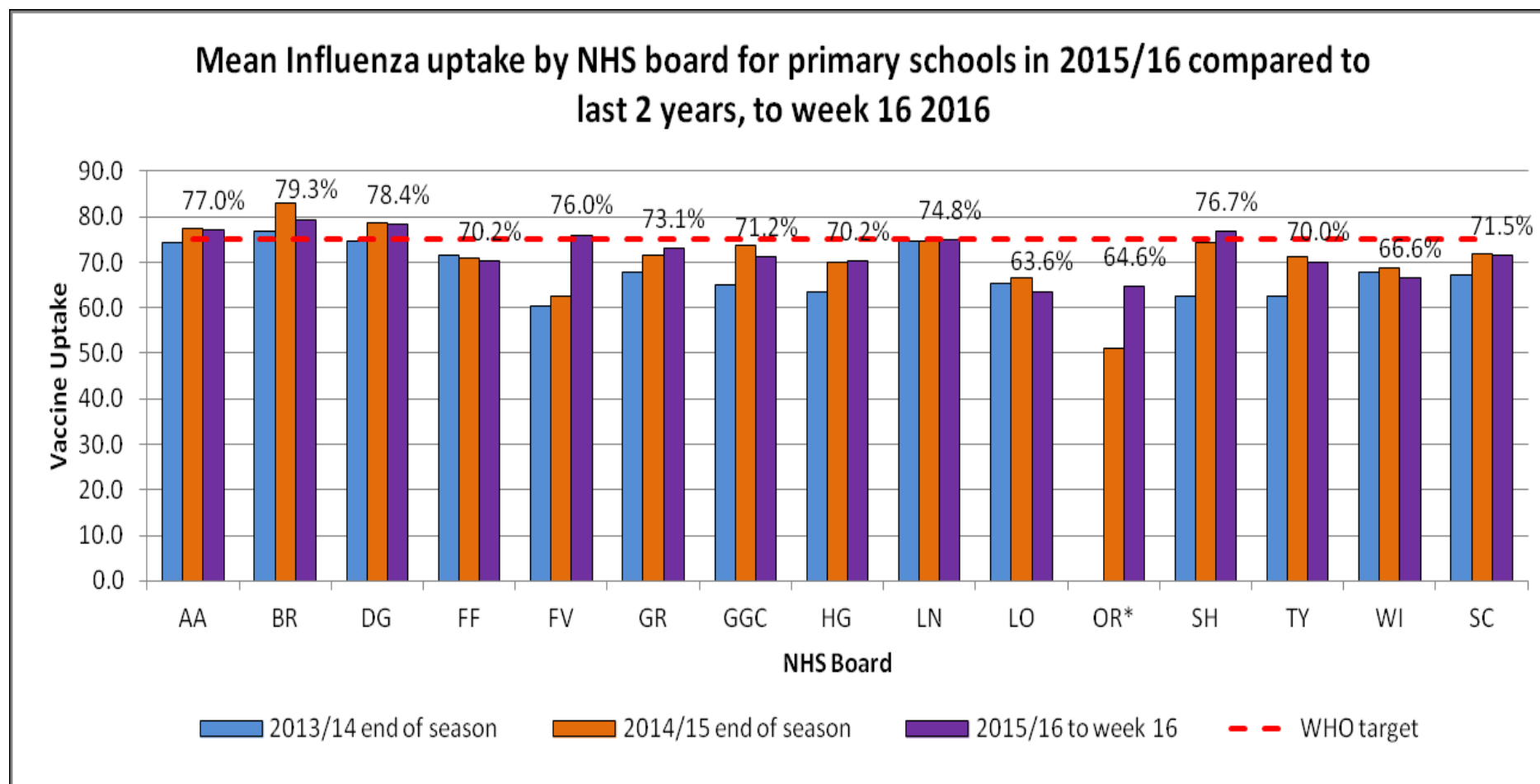
Source: CHSP School/SIRS

Appendix 7: Pre-school (2 – 5 years old and not in school) by NHS Board



Source: SIRS

Appendix 8: Primary school flu immunisation programme uptake 2015/16 by NHS Board



Source: HPS

Appendix 9: Adult Seasonal Flu Vaccination Uptake 2015/16 by NHS Board

NHS Board Weekly Vaccine Uptake - 2015 - 2016 (Week - 13)									
				Risk Group: Over 65			Risk Group: All at risk (exc. healthy pregnant women and carers)		
Health Board	Number of GP Practices	No of Practices submitting data Over65	% Practices Submitting Data	Population Over 65	Cumulative Total Vaccinations	Cumulative % Uptake	Population All Risk	Cumulative Total Vaccinations	Cumulative % Uptake
Ayrshire & Arran	56	55	98.2%	80,036	59,341	74.1%	53,368	25,811	48.4%
Borders	23	23	100.0%	27,235	20,635	75.8%	15,066	7,640	50.7%
Dumfries & Galloway	34	34	100.0%	36,984	28,110	76.0%	21,055	10,638	50.5%
Fife	58	58	100.0%	72,552	54,191	74.7%	50,731	22,424	44.2%
Forth Valley	55	55	100.0%	57,187	44,048	77.0%	40,847	20,580	50.4%
Grampian	77	77	100.0%	101,750	74,495	73.2%	71,869	33,282	46.3%
Greater Glasgow & Clyde	243	243	100.0%	191,838	142,777	74.4%	168,492	81,799	48.6%
Highland	100	100	100.0%	69,901	50,236	71.9%	41,052	20,372	49.6%
Lanarkshire	107	107	100.0%	114,453	83,985	73.4%	93,358	44,380	47.5%
Lothian	124	124	100.0%	141,186	107,286	76.0%	108,863	53,093	48.8%
Orkney	7	7	100.0%	4,696	3,535	75.3%	2,629	1,333	50.7%
Shetland	10	10	100.0%	4,373	3,180	72.7%	3,262	1,605	49.2%
Tayside	66	65	98.5%	85,422	64,333	75.3%	52,990	24,477	46.2%
Western Isles	9	9	100.0%	6,435	4,251	66.1%	3,722	1,830	49.2%
Scotland	969	967	99.8%	994,048	740,403	74.5%	727,304	349,264	48.0%

Source: HPS

Appendix 10: Herpes Zoster Vaccine Uptake 1 September 2015 – 30 June 2016 by NHS Board

Herpes Zoster Vaccine Uptake Rates: by Gender, NHS Board of Residence and age						
Cumulative data from 1 September 2015						
	Age this Season					
	70			78		
	Cohort	Dose 1 HZ (number)	% Dose 1 HZ	Cohort	Dose 1 HZ (number)	% Dose 1 HZ
Health Board	Age 70	Age 70 Dose 1	Age 70 Dose 1%	Age 78	Age 78 Dose 1	Age78 Dose 1%
Ayrshire & Arran	4075	1934	47.46	2716	1125	41.42
Borders	1336	720	53.89	930	456	49.03
Dumfries & Galloway	1854	1076	58.04	1320	789	59.77
Fife	3697	2163	58.51	2459	1360	55.31
Forth Valley	2797	1571	56.17	2009	1061	52.81
Grampian	4780	2551	53.37	3413	1704	49.93
Greater Glasgow & Clyde	9072	4696	51.76	6670	3055	45.80
Highland	3464	1909	55.11	2353	1343	57.08
Lanarkshire	5619	2645	47.07	3954	1705	43.12
Lothian	6764	3428	50.68	4828	2378	49.25
Orkney	231	158	68.40	155	109	70.32
Shetland	235	156	66.38	144	69	47.92
Tayside	4089	2412	58.99	2993	1696	56.67
Western Isles	283	150	53.00	225	121	53.78
Scotland	48296	25569	52.9	34169	16971	49.7

Source: HPS