North Tyneside
Joint strategic needs assessment
Childhood immunisations
December 2023

North Tyneside Council

1. Introduction

Immunisation is the process whereby a person is made resistant or immune to an infectious disease, typically by the administration of a vaccine[1]. Vaccines teach your immune system how to create antibodies that protect you from diseases. It is much safer for your immune system to learn this through vaccination than by catching the diseases and treating them. Once your immune system knows how to fight a disease, it can often protect you for many years[2].

Vaccination is the most important thing we can do to protect ourselves and our children against ill health. They prevent up to 3 million deaths worldwide every year. Since vaccines were introduced in the UK, diseases like smallpox, polio and tetanus that used to kill or disable millions of people are either gone or seen very rarely. Other diseases like measles and diphtheria have been reduced by up to 99.9% since their vaccines were introduced. However, if people stop having vaccines, it is possible for infectious diseases to quickly spread again[2].

Having a vaccine also benefits your whole community through "herd immunity". If enough people are vaccinated, it is harder for the disease to spread to those people who cannot have vaccines. For example, people who are ill or have a weakened immune system. All vaccines are thoroughly tested to make sure they will not harm you or your child[2].

Children's 0-5 years immunisations are given in primary care usually by the practice nurse. Immunisations due in older childhood are usually given in school by the immunisation team. Immunisation rates are often referred to as coverage, this is because vaccination coverage is the best indicator of the level of protection a population will have against vaccine preventable diseases. Coverage tells us how many people in that specific cohort have received the vaccination by a point in time for example how many children have had both MMR vaccines by the time they turn five. Vaccination uptake is also referenced, which is the number of people vaccinated in a certain time such as how many two-year-olds received the flu vaccine that winter.

The NHS Constitution advises that individuals have the right to receive the vaccinations that the Joint Committee on Vaccination and Immunisation recommends that you should receive under an NHS-provided national immunisation programme[3]. The Director of Public Health role for immunisation

programmes includes providing the appropriate challenge and to advocate for an emphasis on reducing health inequalities and improving access in underserved groups in the work of commissioners, providers, and other key stakeholders[4].

Setting the foundations for health and wellbeing during pregnancy and the early years is crucial to ensure we give every child the very best start in life as possible. Childhood immunisation in particular helps to prevent disease and promote child health from infancy, creating opportunities for children to thrive and get the best start in life[5]. This JSNA topic will focus on childhood immunisations administered to preschool and adolescent children and young people in the UK in accordance with the NHS vaccination schedule[6]. Table 1 lists the childhood immunisation programmes.

Table 1: Childhood immunisation schedule and the diseases they protect against

Age due	Vaccine given	Diseases protected against
Eight weeks old	DTaP/IPV/Hib/HepB	Diphtheria, tetanus, pertussis (whooping cough), polio, Haemophilus influenzae type B (Hib) and hepatitis B
	Men B	Meningococcal group B (MenB)
	Rotavirus	Rotavirus gastroenteritis
Twelve weeks old	DTaP/IPV/Hib/HepB	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B
	Pneumococcal conjugate vaccine (PCV)	Pneumococcal (13 serotypes)
	Rotavirus	Rotavirus
Sixteen weeks old	DTaP/IPV/Hib/HepB	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B
	Men B	Men B
One year old (on or after the child's first birthday)	Hib/Men C	Hib and Men C
	PCV booster	Pneumococcal
	MMR	Measles, mumps and rubella (German measles)
	Men B booster	Men B
Three years fourth months old or soon after	DTaP/IPV	Diphtheria, tetanus, pertussis, and polio
	MMR	Measles, mumps, and rubella
Boys and girls aged twelve to thirteen years	HPV (two doses 6-24 months apart)	Cancers and genital warts caused by specific human papillomavirus (HPV) types
	Td/IPV	Tetanus, diphtheria, and polio

Fourteen years old (school Year 9)	**Men ACWY**	**Meningococcal groups A, C, W and Y**
Children aged 2, 3 years, all primary school (reception to year 6), all year 7 to year 11 children in secondary school, children aged between 6months and 17 years with long term health conditions	**Flu vaccine injection or nasal spray flu vaccine depending on eligibility**	**Flu**

2. Key Issues

- **North Tyneside are achieving 95% and over coverage rates for all immunisations by the time the child turns one and two years of age and for most immunisations by the time the child turns five.** Rotavirus has slightly lower coverage than the other primary immunisations. There is practice level variation – this means not every practice in North Tyneside are achieving 95% and over coverage rates.
- **Men B vaccination coverage –** practice level data indicates coverage is lower for this vaccination than others by the time the child is one year of age.
- **MMR –** North Tyneside are not achieving the 95% coverage target for MMR dose two by the time the child turns five (94.5%).
- **There is currently no data available for the neonatal BCG immunisation programme which has recently moved to a 28-day immunisation programme.** The BCG vaccine is a live attenuated vaccine and is not given as part of the routine vaccination schedule but only when a child is at increased risk of coming into contact with Tuberculosis (TB). The BCG vaccine had been offered to eligible babies soon after birth, often whilst the baby is still in hospital. However due to the addition of the evaluation for Severe Combined Immunodeficiency Screening (SCID) to the routine newborn screening test when the baby is five days of age, it has been necessary to move the BCG vaccination when a SCID screening outcome will be available, which will be by 28 days of age. This is to ensure that babies with SCID are not given the live attenuated BCG vaccine which is contraindicated in these babies.

- **Flu vaccination –** in the 2021/22 flu season North Tyneside saw a decline in uptake compared to the previous year for those aged two and three years. This is in line with national and local trends. North Tyneside achieved lower than the national average for secondary school flu vaccination.
- **Adolescent Immunisations –** Uptake of the first dose of HPV in year eight females and males is an outlier in terms of North Tyneside performance in other immunisations but does recover by the time the young people are in year 9 and receive a second offer.

Future concerns – Nationally nine out of 13, 0-5 years immunisation programmes have seen a decrease in coverage on the annual 2020/21 data review. North Tyneside has seen a decrease in four programmes. On the most recent quarterly data (Q3 2021/22) North Tyneside have seen an improvement in 10 out of 13 immunisation programmes. Continuing inequalities in the vaccination programme remains a concern for those that continue to be unvaccinated.

3. High Level Priorities

The goal for North Tyneside is to achieve vaccination coverage levels that protect as many individuals as possible and to achieve effective herd immunity. To do this we need to tackle the inequalities in vaccine uptake.

North Tyneside should understand what action high achieving practices are taking to share positive learning across the borough.

Data indicates that timeliness of offer may be an issue within North Tyneside, and this should be considered. Timely immunisation is important to get the best immune response and to give protection at the right time.

Focused support in line with the evidence should be given to practices that are not achieving the 95% coverage levels.

There should be an understanding as to why the local/national uptake declined for flu vaccination in two- and three-year-olds to improve uptake for winter 2022/23.

North Tyneside should understand from Child Health if there are children not registered with a GP within the borough and if there is outstanding immunisation needs.

North Tyneside should understand what action the School Aged Immunisation Service are taking to reduce inequalities and improve uptake of the school aged programmes.

Consideration should be given to seek parent, carer, and young person views as to how to improve vaccine acceptance within the borough.

There is no published data available for the BCG vaccination or selective Hepatitis B programme and assurance should be sought from NHS England and Improvement as the commissioner of the service.

More broadly, North Tyneside aspires to meet the World Health Organisation international targets for immunisation:

- High coverage rates[7]
- Equitable coverage rates[7]
- 90% coverage for HPV vaccination[7]
- The World Health Organization (WHO) currently recommends that on a national basis at least 95% of children are immunised against diseases preventable by immunisation and targeted for elimination or control (specifically, diphtheria, neonatal tetanus, pertussis, polio, Haemophilus influenzae type b (Hib), Hepatitis B, measles, mumps, and congenital rubella)[8].

4. Those at Risk

Immunisation protects individuals and populations from many serious and potentially deadly diseases[2]. High vaccination rates provide increased probability of immunity throughout the population (herd immunity), which is particularly important for protecting individuals who cannot be vaccinated and can also lead to the elimination of some diseases. Even when a disease is no longer common in the UK, without sustained high rates of vaccination it is possible for these diseases to return as demonstrated by the 2019 measles outbreaks[9].

Public Health England data showed that, although coverage remains high, children's vaccine uptake has been slowly decreasing since 2012-13[10]. This means that some children have missed out and may remain vulnerable to serious or even fatal infections that are vaccine preventable[10].

National evidence suggests that in general, lower socioeconomic status was associated with lower coverage as well as later attainment of vaccination, and completion of primary and booster courses[5].

North Tyneside are achieving high levels of immunisation when viewed borough wide. However, we know that there is practice level variation resulting in pockets of children within the borough who are unvaccinated. These children may go to the same school or socialise closely increasing the risk of local outbreaks of disease.

Evidence nationally, suggests that there is no simple relationship between ethnicity and coverage. However, coverage did appear to be more consistently lower than White-British children in certain ethnic groups, for example Black Caribbean, Somali, White Irish, and White Polish populations[5].

Nationally children with learning disability were less likely to be fully immunised than their peers in the general population. There is limited evidence around vaccine coverage among looked after children (LAC) nationally, but what is available suggests these children are less likely to be vaccinated[5].

Inadequate vaccine coverage in under-vaccinated groups is often demonstrated by outbreaks among these communities. There have been measles outbreaks in Europe between 2005 and 2008 in Roma & Sinti, Traveller, and Steiner communities. It is difficult to determine vaccination coverage levels in traveller populations, as many may face barriers to engagement with health services. Estimated uptake rates for MMR and polio vaccines among Gypsy Travellers in 2010 suggested far lower rates than in the England population; possibly below 50% in some areas[5].

Migrant communities also exhibit more outbreaks of vaccine-preventable disease, suggesting inadequate coverage. In a recent measles outbreak in West Yorkshire, there were more cases in areas with a higher density of new migrants[5].

Though relatively few in number, studies have consistently shown that children of lone parents were less likely to receive or complete childhood primary vaccinations. Having a large family reduces the likelihood of vaccination against MMR or the primary course for younger children, independent of lone parent status where this was also adjusted for[5].

The Millennium Cohort Study also provided evidence of vaccination inequality for young and old mothers. Having a mother aged under 20 at birth, was significantly associated with being unimmunised against MMR [30], while having a mother aged at least 40 years old was associated with being unimmunised with the primary course (2,3,4 months), although their children were less likely to be partially immunised[5].

5. Level of Need

Data shows that North Tyneside consistently achieve higher rates than the England average and, in most cases, higher than the North East regional average.

0-5 Childhood Immunisations

0-5 coverage	12m denominator	12m DTaPIPVHibHepB%	12m MenB%	12m PCV1%	12m Rota%	24m Denominator	24m DTaP/IPV/Hib %	24m MMR1%	24m Hib/MenC %	24m PCV Booster%	24m MenB Booster%	5y Denominator	5y DTaP/IPV/Hib%	5y Hib/MenC%	5y DTaPIPV%	5y MMR1%	5y MMR2%
North Tyneside Q2 2021/22	515	97.3	97.5	97.5	96.3	561	98.2	97	97	96.6	96.6	628	93.5	96.2	93.5	97.1	94.4
North East Q2 2021/22	6,519	95.7	96	97.3	94.2	6,880	96.6	94.5	94.7	94.5	94.1	7,784	96.9	95.1	90.7	96.9	92.1
England Q2 2021/22	151,502	91.3	91.5	93.3	89.2	160,838	93.4	88.6	89	88.3	88.1	178,424	94.6	92	84	93.7	85.5
North Tyneside Q3 2021/22	520	97.7	97.9	98.1	96.2	507	97.8	97.2	97.2	96.8	97	581	97.6	95.7	92.4	97.6	94.5
North East Q3 2021/22	6,290	96	96	97.3	94.8	6,295	96	94.6	94.7	94.5	94	7,344	96.8	95.1	91	96.6	92.1
England Q3 2021/22	145,098	92	92	94.1	90.4	153,378	93	88.9	89.1	88.3	88.1	169,957	94.6	92	84.2	93.5	85.5

Childhood Flu Vaccination

Flu Vaccine Uptake	2 year olds %	3 yr olds %	4-12 yr olds	
North Tyneside 2020/21	63.6	66.2	67.1	
North East 2020/21	58.7	62.2	-	
England 2020/21	55.3	58	61.7	
North Tyneside 2021/22	57.5	60.1	**Primary School**	**Secondary School**
			63.4	34.8
North East 2021/22	52.6	55.6	-	-
England 2021/22	48.7	51.4	57.2	43.3

Td/IPV (Teenage Booster) adolescent vaccine coverage programme, England, September 2020 to August 2021						
Local Authority	Td/IPV Cohort 7 Born between 1 September 2005 and 31 August 2006			Td/IPV Cohort 8 Born between 1 September 2006 and 31 August 2007		
	School year 10 in 2020 to 2021 (14 to 15 year olds)			School year 9 in 2020 to 2021 (13 to 14 year olds)		
	Number of adolescents	Number vaccinated with Td/IPV up to 31 August 2021	% uptake	Number of adolescents	Number vaccinated with Td/IPV up to 31 August 2021	% uptake
County Durham Local Authority [C]	5,926	5,029	84.9	6,075	4,149	68.3
Darlington Local Authority [C]	1,333	1,143	85.7	1,302	894	68.7
Gateshead Local Authority	2,086	1,968	94.3	2,144	1,948	90.9
Hartlepool Local Authority	1,133	731	64.5	1,133	698	61.6
Middlesbrough Local Authority [C]	1,620	1,149	70.9	1,636	746	45.6
Newcastle Upon Tyne Local Authority	3,144	2,455	78.1	3,144	2,455	78.1
North Tyneside Local Authority	2,318	2,003	86.4	2,326	2,079	89.4
Northumberland Local Authority	3,338	2,985	89.4	3,327	2,881	86.6
Redcar And Cleveland Local Authority [C]	1,762	1,343	76.2	1,687	1,145	67.9
South Tyneside Local Authority	1,612	1,418	88.0	1,674	1,359	81.2
Stockton-On-Tees Local Authority [C]	2,518	1,881	74.7	2,518	1,861	73.9
Sunderland Local Authority	2,968	2,656	89.5	3,091	2,409	77.9
Vaccine coverage (England)	625,379	502,247	80.3	648,500	495,234	76.3

Adolescent Immunisations

MenACWY adolescent vaccine coverage data by local authority, England, September 2020 to August 2021						
Local Authority	MenACWY Cohort 7 Born between 1 September 2005 and 31 August 2006			MenACWY Cohort 8 Born between 1 September 2006 and 31 August 2007		
	School Year 10 in 2020 to 2021 (14 to 15 year olds)			School Year 9 in 2020 to 2021 (13 to 14 year olds)		
	Number of adolescents	**Number vaccinated with MenACWY up to 31 August 2021**	**% uptake**	**Number of adolescents**	**Number vaccinated with MenACWY up to 31 August 2021**	**% uptake**
County Durham Local Authority	5,926	4,971	83.9	6,075	4,121	67.8
Darlington Local Authority	1,333	1,154	86.6	1,302	894	68.7
Gateshead Local Authority	2,086	1,980	94.9	2,144	1,949	90.9
Hartlepool Local Authority	1,133	743	65.6	1,133	707	62.4
Middlesbrough Local Authority	1,620	1,164	71.9	1,636	761	46.5
Newcastle Upon Tyne Local Authority	3,144	2,488	79.1	3,144	2,488	79.1
North Tyneside Local Authority	2,318	2,026	87.4	2,326	2,093	90.0
Northumberland Local Authority	3,338	2,882	86.3	3,327	2,887	86.8
Redcar And Cleveland Local Authority	1,762	1,355	76.9	1,687	1,117	66.2
South Tyneside Local Authority	1,612	1,430	88.7	1,674	1,352	80.8
Stockton-On-Tees Local Authority	2,518	1,895	75.3	2,518	1,880	74.7
Sunderland Local Authority	2,968	2,670	90.0	3,091	2,420	78.3
Vaccine coverage (England)	617,782	499,900	80.9	648,500	495,909	76.4

HPV - Girls Programme Annual Coverage Data by Local Authority, England, September 2020 to August 2021										
Local Authority	Females cohort 18: 12 to 13 year olds (Year 8) birth cohort: 1 September 2006 to 31 August 2007					Females cohort 17: 13 to 14 year olds (Year 9) birth cohort: 1 September 2005 to 31 August 2006				
	Number of females in Cohort 18 (Year 8)	Number vaccinated with at least one dose by 31/08/2021	%	Number vaccinated with 2 doses by 31/08/2021	%	Number of females in Cohort 17 (Year 9)	Number vaccinated with at least one dose by 31/08/2021	%	Number vaccinated with 2 doses by 31/08/2021	%
County Durham Local Authority	3,075	2,034	66.1	12	0.4	2993	2603	87	2073	69.3
Darlington Local Authority	679	432	63.6	7	1	654	555	84.9	458	70
Gateshead Local Authority	1,033	829	80.3	0	0	1076	1033	96	900	83.6
Hartlepool Local Authority	579	258	44.6	DS	0.3	556	433	77.9	337	60.6
Middlesbrough Local Authority	907	290	32	0	0	817	537	65.7	507	62.1
Newcastle Upon Tyne Local Authority	1,578	1,167	74	0	0	1583	1257	79.4	1112	70.2
North Tyneside Local Authority	1,388	1,068	76.9	0	0	995	923	92.8	774	77.8
Northumberland Local Authority	1,607	1,450	90.2	0	0	1599	1446	90.4	1278	79.9
Redcar And Cleveland Local Authority	838	418	49.9	0	0	812	659	81.2	504	62.1
South Tyneside Local Authority	895	715	79.9	0	0	843	753	89.3	647	76.7
Stockton-On-Tees Local Authority	1,336	795	59.5	12	0.9	1260	1127	89.4	929	73.7
Sunderland Local Authority	1,567	1,239	79.1	0	0	1502	1335	88.9	1193	79.4
Vaccine coverage (England)	335,054	256,851	76.7	42,611	12.7	320711	262500	81.8	194423	60.6

HPV - Boys Programme Annual Coverage Data by Local Authority, England, September 2020 to August 2021										
Local Authority	Males cohort 2: 12 to 13 year olds (Year 8) birth cohort: 1 September 2006 to 31 August 2007					Males cohort 1: 13 to 14 year olds (Year 9) birth cohort: 1 September 2005 to 31 August 2006				
	Number of males in Cohort 2 (Year 8)	Number vaccinated with at least one dose by 31/08/2021	%	Number vaccinated with 2 doses by 31/08/2021	%	Number of males in Cohort 1 (Year 9)	Number vaccinated with at least one dose by 31/08/2021	%	Number vaccinated with 2 doses by 31/08/2021	%
County Durham Local Authority	3,108	1,762	56.7	DS	0.1	3,146	2,573	81.8	1,898	60.3
Darlington Local Authority	686	379	55.2	0	0	647	542	83.8	388	60
Gateshead Local Authority	1,139	806	70.8	0	0	1,068	928	86.9	812	76
Hartlepool Local Authority	602	227	37.7	0	0	593	406	68.5	294	49.6
Middlesbrough Local Authority	844	275	32.6	0	0	819	496	60.6	414	50.5
Newcastle Upon Tyne Local Authority	1,593	1,199	75.3	0	0	1,611	1,164	72.3	965	59.9
North Tyneside Local Authority	1,545	1,063	68.8	0	0	1,148	1,024	89.2	854	74.4
Northumberland Local Authority	1699	1460	85.9	0	0	1,735	1,545	89	1,290	74.4
Redcar And Cleveland Local Authority	854	349	40.9	0	0	875	636	72.7	440	50.3
South Tyneside Local Authority	864	608	70.4	0	0	831	654	78.7	550	66.2
Stockton-On-Tees Local Authority	1,274	665	52.2	12	0.9	1,284	1,043	81.2	806	62.8
Sunderland Local Authority	1,600	1,152	72	0	0	1,589	1,335	84	1,095	68.9
Vaccine coverage (England)	347,836	247,049	71	41,385	11.9	333,439	257,646	77.3	182,519	54.7

Published experimental data at practice level demonstrates practice variation which indicates that in some areas in North Tyneside we have high levels of vaccination coverage and in some areas, we have lower levels resulting in an increased risk of local outbreaks. This data indicates that uptake is low for children whose GP is unknown. These children are resident within North Tyneside [8,11,12,13]. Table 2 demonstrates the level of practice variation observed.

Immunisation Programme	Lowest coverage reported %	Highest coverage reported %
12mDTaPIPVHibHepB	83.3%	100%
12m Men B	91.7%	100%
12m PCV1	91.7%	100%
12m Rota	88%	100%
24mDTaP/IPV/Hib(Hep)	85.7%	100%
24m MMR1	86.7%	100%
24m Hib/MenC	88.9%	100%
24m PCV Booster	83.3%	100%
24m MenB Booster	85.7%	100%
5yDTaP/IPV/Hib	87%	100%
5y Hib/MenC	87%	100%
5y DTaP/IPV	73.9%	100%
5y MMR1	88%	100%
5y MMR2	87%	100%

6. Unmet Needs

North Tyneside are meeting the 95% coverage target for most immunisations however there is practice level variation and therefore suggests there is unmet need within the borough. However, the unmet need is generally only for small

numbers of children. For example, within North Tyneside, to achieve 100% coverage in children having both MMR vaccines by the time they are five years old currently there are only 32 children that require vaccination. The risk however is if these numbers continue to increase, if each quarter 32 children are outstanding vaccination the longer term result will be larger numbers of children and adults unimmunised. A further risk is that if the children and adults who are not immunised socialise together the chance of outbreaks increases.

Targeted public health messaging should take causes of inequalities in vaccine uptake into account; for example, ethnicity, deprivation, geography and religious belief[7]. For example, a practice in the third most deprived area of the borough achieved 73.9% coverage for their preschool booster where a practice in the least deprived area achieved 100%. Additionally, there are other groups including unregistered children, younger children from large families, children with learning difficulties, looked after children and those from non-English speaking families that are more likely to not be fully immunised[9]. Additional work would be required to assess these needs fully.

Parental confidence in the national immunisation programme is at an all-time high and national work showed that parents trusted the information they got on vaccination from their healthcare professionals over and above any other channel. Some major reasons for the decline in coverage were thought to therefore be related to how people can best access and use local services[10].

In 2018, a report by the Royal Society of Public Health undertook a survey to identify barriers to vaccination across the life course[9]. The report stated that accessibility and convenience of vaccination services can be important determinants of vaccine uptake, and this may be particularly true for parents who are not explicitly anti-vaccination, but perhaps are more questioning, as reassurance from a healthcare professional (usually a nurse) is the most effective way of encouraging them to vaccinate[10].

Based on that survey, the most common barriers to getting vaccinated were[10]:

- timing of appointments (49%)
- availability of appointments (46%)
- childcare duties (29%)

7. Projected Need and Demand

As babies continue to be born and children move into North Tyneside there will be an ongoing need for high quality immunisation services within the borough to protect the individual and the population from vaccine preventable disease. National evidence indicates that overall immunisation rates are on a downward trend suggesting an increase in need and risk. Whilst North Tyneside have not seen the same trend, this may become a concern for the borough at some point and should be considered.

Data from the ONS indicates that North Tyneside birth rate is on a slight downward trend therefore it is unlikely there will be a significant increase in demand[14].

North Tyneside	Total Number of Live Births
2022	1,898
2021	2,013
2020	2,008
2019	2,113
2018	2,194
2017	2,227
2016	2,254

8. Community Assets and Services

A whole system approach is required to improve vaccine uptake[9]. An effective immunisation programme needs to consider the important role of services, such as health visiting and school nursing, who are ideally placed to contribute to a "whole system" approach to improving immunisation uptake[9]. Youth services, schools and primary care should also be included[9]. Evidence suggests that children who are more likely to be not fully immunised will have had several contacts with professionals. Immunisation needs to be on every professional's agenda to support children and young people to access timely immunisation.

9. Evidence for Interventions

Several interventions have been associated with improving immunisation acceptance and increasing coverage. Successful interventions related to processes include sending invites and reminders, checking children's immunisation status at all opportunities, using IT software to flag those that have missed out, recording vaccinations with the appropriate codes. Offering flexible appointments, planning sufficient time for appointments, and not holding waiting lists alongside local promotion of immunisations were also found to be successful. Clinicians offering call backs for anyone unsure about immunisation and feeling confident to speak about vaccines also featured within the evidence[10].

Making every contact count is an embedded model of practice and should be followed for immunisations[15,16]. Practitioners should take every opportunity to enquire about vaccination history, and to counsel families and carers, or young people, of the importance of vaccination. Where possible, vaccinations should be offered during consultations[10].

10. Views

11. Additional Needs Assessments Required

A needs assessment to explore and understand adult immunisation will support an overall view of immunisation in North Tyneside.

12. Key Contacts

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References

1. Vaccines and Immunization [Internet]. Who.int. 2022. Available from: https://www.who.int/westernpacific/health-topics/vaccines-and-immunization
2. Why vaccination is safe and important [Internet]. nhs.uk. 2019. Available from: https://www.nhs.uk/conditions/vaccinations/why-vaccination-is-safe-and-important/
3. The NHS Constitution for England [Internet]. GOV.UK. 2021. Available from: https://www.gov.uk/government/publications/the-nhs-constitution-for-england/the-nhs-constitution-for-england
4. Directors of Public Health in Local Government. Gov.uk. 2020.
5. PHE immunisation inequalities strategy [Internet]. GOV.UK. 2021. Available from: https://www.gov.uk/government/publications/phe-immunisation-inequalities-strategy
6. Complete routine immunisation schedule [Internet]. GOV.UK. 2022. Available from: https://www.gov.uk/government/publications/the-complete-routine-immunisation-schedule
7. Immunization coverage [Internet]. Who.int. 2021. Available from: https://www.who.int/news-room/fact-sheets/detail/immunization-coverage
8. Childhood Vaccination Coverage Statistics - 2020-21 [Internet]. NHS Digital. 2021. Available from: https://digital.nhs.uk/data-and-information/publications/statistical/nhs-immunisation-statistics/england---2020-21/introduction
9. Royal College of Paediatrics and Child Health (2020) State of Child Health. London: RCPCH. [Available at: stateofchildhealth.rcpch.ac.uk]
10. Kassianos G, Ramsay M. Increasing vaccine uptake: Strategies for addressing barriers in primary care - UK Health Security Agency [Internet]. Ukhsa.blog.gov.uk. 2019. Available from: https://ukhsa.blog.gov.uk/2019/05/16/increasing-vaccine-uptake-strategies-for-addressing-barriers-in-primary-care/
11. Seasonal flu vaccine uptake in children of school age: monthly data, 2021 to 2022 [Internet]. GOV.UK. 2022. Available from: https://www.gov.uk/government/statistics/seasonal-flu-vaccine-uptake-in-children-of-school-age-monthly-data-2021-to-2022
12. Seasonal flu vaccine uptake in GP patients: monthly data, 2021 to 2022 [Internet]. GOV.UK. 2022. Available from: https://www.gov.uk/government/statistics/seasonal-flu-vaccine-uptake-in-gp-patients-monthly-data-2021-to-2022
13. Research and statistics [Internet]. GOV.UK. 2022. Available from: https://www.gov.uk/search/research-and-statistics?parent=/health-and-

social-care/health-protection-immunisation&content_store_document_type=statistics_published&topic=43d071e7-a450-4bb6-b34a-c4ed256a226d&order=updated-newest

14. Live births - Office for National Statistics [Internet]. Ons.gov.uk. 2022. Available from: https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/livebirths
15. NHS England » Making Every Contact Count (MECC): Consensus statement [Internet]. England.nhs.uk. 2017. Available from: https://www.england.nhs.uk/publication/making-every-contact-count-mecc-consensus-statement/
16. Bennett V. Vaccination is a lifelong benefit – make every contact count - UK Health Security Agency [Internet]. Ukhsa.blog.gov.uk. 2016. Available from: https://ukhsa.blog.gov.uk/2016/04/28/vaccination-is-a-lifelong-benefit-make-every-contact-count/