

Report on Immunisation Services in the Borough of Harrow

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Presented to: Harrow Health Scrutiny Committee

June 2023

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Aims

This paper provides an overview of Section 7a immunisation programmes in the London Borough of Harrow. This paper focuses on childhood immunisations.

It covers the vaccine uptake for each programme and an account of what NHS England London Region are doing to improve uptake.

Members of the Harrow Health Scrutiny Committee are asked to note and support the work that system partners across London, including NHSE (London), the Local Authority and the Integrated Care Board (ICB) are doing to increase vaccination uptake in Harrow.

Background

The World Health Organization (WHO) states that vaccinations are one of the public health interventions that have had the greatest impact on the world's health. Vaccination is also one of the most cost-effective public health interventions. High immunisation rates are key to preventing the spread of infectious disease, protecting from complications and deaths. 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.

Section 7a immunisation programmes are population based, publicly funded immunisation programmes that cover the life-course and include:

- Routine Childhood Immunisation Programme for 0-5 years
- School age vaccinations
- Adult vaccinations
- COVID-19 vaccination programme

Routine Childhood Immunisation Programme for 0-5 years

Diphtheria, Tetanus, Pertussis (whooping cough), Polio, Haemophilus influenza type b and Hepatitis B (given as the '6 in 1' DTaP/IPV/Hib/HepB vaccine)
Pneumococcal disease, (PCV)
Meningococcal group C disease (Men C)
Meningococcal group B disease
Measles, Mumps and Rubella (MMR)

Age Due	Diseases protected against
8 weeks	Diphtheria, tetanus, pertussis (whooping cough), polio, Haemophilus influenzae type b (Hib) and hepatitis B
	Meningococcal group B (MenB)
	Rotavirus gastroenteritis
12 weeks	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B
	Pneumococcal (13 serotypes)
	Rotavirus
16 weeks	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B
	MenB
1 year	Hib and Meningococcal group C (MenC)
	Pneumococcal
	Measles, mumps and rubella (German measles)
	MenB
Eligible paediatric age groups	Influenza (each year from September)
Three years four months	Diphtheria, tetanus, pertussis and polio
	Measles, mumps and rubella

The full immunisation schedule can be found in the [Green Book](#). Changes to this schedule are regularly reviewed and recommendations made at the UK Joint Committee on Vaccination and Immunisation (JCVI).

The European Region of the World Health Organization (WHO) currently recommends that 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.

There is an expectation that UK coverage rates of all routine childhood immunisations up to 5 years of age achieve 95%.

Roles and responsibilities

The Department of Health and Social Care (DHSC) provides national strategic oversight of vaccination policy in England, with advice from the independent Joint Committee on Vaccination and Immunisation (JCVI) and the Commission on Human Medicines. They also set performance targets.

NHS England is responsible for commissioning national immunisation programmes in England under the terms of the Section 7a agreement, National Health Service Act 2006. NHS England is accountable for ensuring that local providers of services deliver against the national service specifications and meet agreed population uptake & coverage levels. NHS England is also responsible for monitoring providers' performance and for supporting providers in delivering improvements in quality and changes in the programmes when required.

The UK Health Security Agency (UKHSA) undertakes surveillance of vaccine-preventable diseases and leads the response to outbreaks of vaccine preventable disease. They provide expert advice to NHSE immunisation teams in cases of immunisation incidents.

Integrated Care Systems (ICSs) have a duty of quality improvement, and this extends to primary medical care services. ICBs provide opportunities for improved partnership working across NHSE (London), local authorities, voluntary and community sector partners to improve immunisation uptake and reach underserved areas and populations. NHSE (London), alongside ICBs, local authorities and others, will work to progress delegated commissioning for vaccination and screening. The structures and resources have not yet been confirmed but it is anticipated that the first wave of delegation of the commissioning of immunisation services will be in Spring 2024.

Local authority public health teams deliver population health initiatives including improving access to health and engagement and promotion of immunisations overall.

Pre-school and adult vaccinations are usually delivered by GP surgeries. They are commissioned through the NHS GP contract. Five core GP contractual standards have been introduced to underpin the delivery of immunisation services: a named lead for vaccination service, provision of sufficient convenient appointments, standards for call/recall programmes and opportunistic vaccination offers, participation in national agreed catch-up campaigns, and standards for record-keeping and reporting. One of the five Quality and Outcomes Framework domains is childhood vaccinations and shingles vaccination, rewarding GP practices for good practice.

School age immunisations are commissioned by the seven regional NHS England teams and delivered through School Age Immunisation Services (SAIS).

Vaccinations are also provided by maternity services, some outreach services and community pharmacies.

Inclusion and Equity

The problem is not just overall coverage but the variation in coverage across groups, which can increase the likelihood of preventable outbreaks locally. Groups with lower coverage include migrants, urban communities, more deprived communities, and certain ethnic groups.

People migrating to the UK can have different vaccination schedules or lower vaccination rates overall. This may be due to different national vaccination schedules, missed vaccinations in the country of origin, or missed opportunities for vaccination after arrival to the UK.

Geographic vaccine coverage varies, with lower coverage in urban areas and London, compared to England as a whole.

At a national level, there are some small inequalities by socioeconomic status, with coverage being slightly lower in lower socio-economic groups.

For the routine childhood vaccinations there is no simple relationship between ethnicity and coverage. The relationship varies by immunisation programme and by area. However, coverage does 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. Some ethnic groups, notably South Asian ethnicities, tended to enjoy similar or higher vaccination coverage than White children. For MMR these relationships were less consistent, in that coverage in children of White ethnicity could be lower or the same as other non-White groups, thought to perhaps reflect differences with respect to awareness of the MMR controversy. For HPV, lower indicators of coverage were consistently seen for non-White ethnic groups.²

Data Nationally

Overall, coverage for most vaccines in England is high and comparable with other high-income countries although there has been a small but steady decline in the last few years. Nationally, in 21-22, vaccine coverage decreased by 0.2% to 1.1% depending on the vaccine. No vaccines met the 95% target. Coverage for the 6-in1 at 5 years decreased from 95.2% in 2020-21 to 94.4% in 2021-22.

Data Regionally

Historically and currently, London performs lower than national (England) average across all the immunisation programmes. Uptake in London has also fallen over the past 6 years and has fallen further than elsewhere in the country.

Every borough in London is below the 95% WHO target. For some vaccines such as MMR, all London boroughs have an uptake below 90%. Two thirds of all measles cases in 2023 in England were in London.

London has a highly mobile population, a large migrant population, and areas of high deprivation. In London, vaccine uptake is lower in areas of higher deprivation compared with areas of low deprivation across all ethnicities.

Data for Harrow

Immunisation	England	London	NWL	Brent	Ealing	Hammersmith and Fulham	Harrow	Hillingdon	Hounslow	Kensington and Chelsea	Westminster
12m_DTaPIPvHib3	↓ 91.9%	↓ 87.9%	↓ 87.8%	↓ 85.2%	↓ 92.3%	↓ 86.3%	↑ 85.9%	↓ 90.8%	↓ 88.8%	↑ 81.7%	↑ 88.1%
12m_MenB	↓ 91.6%	↓ 87.4%	↓ 87.4%	↓ 85.7%	↑ 92.2%	↓ 85.9%	↑ 85.7%	↓ 91.1%	↓ 87.7%	↑ 80.7%	↓ 84.4%
12m_PCV	↓ 94.0%	↑ 90.5%	↑ 92.0%	↓ 90.1%	↑ 94.9%	↓ 90.3%	↑ 90.0%	↑ 95.1%	↓ 92.9%	↑ 87.5%	↑ 92.8%
12m_Rota	↑ 89.3%	↑ 85.9%	↑ 86.7%	↓ 84.6%	↑ 91.3%	↓ 82.6%	↑ 84.1%	↑ 89.8%	↓ 89.3%	↑ 81.3%	↑ 85.1%
24m_DTaPIPvHib3_Primary	↑ 93.0%	↑ 88.8%	↑ 89.8%	↑ 88.4%	↑ 92.3%	↑ 89.6%	↑ 88.0%	↑ 91.3%	↓ 90.5%	↓ 85.2%	↑ 91.9%
24m_HibMenC_Booster	↓ 88.9%	↓ 81.6%	↑ 84.2%	↑ 82.3%	↓ 86.3%	↓ 79.9%	↑ 83.3%	↑ 88.6%	↓ 85.8%	↓ 77.6%	↑ 85.3%
24m_MenB_Booster	↓ 87.8%	↓ 80.0%	↓ 80.1%	↑ 79.4%	↓ 81.0%	↓ 77.7%	↑ 80.1%	↑ 85.4%	↓ 80.4%	↓ 71.2%	↑ 80.9%
24m_MMR1	↓ 89.0%	↓ 82.2%	↑ 84.4%	↑ 82.2%	↓ 85.9%	↑ 81.9%	↑ 83.9%	↑ 87.9%	↓ 86.1%	↓ 78.4%	↑ 85.3%
24m_PCV_Booster	↓ 88.5%	↓ 80.6%	↑ 82.3%	↑ 79.9%	↓ 85.2%	↑ 81.9%	↓ 79.7%	↑ 86.0%	↓ 84.1%	↓ 74.7%	↑ 82.7%
5y_DTaPIPv_Booster	↑ 84.0%	↑ 74.7%	↑ 76.9%	↑ 75.8%	↑ 81.5%	↓ 66.4%	↑ 80.0%	↑ 81.9%	↑ 77.8%	↑ 66.0%	↑ 70.4%
5y_DTaPIPvHib3_Primary	↑ 93.5%	↑ 89.0%	↑ 87.8%	↓ 86.3%	↑ 90.1%	↓ 84.9%	↑ 88.3%	↑ 90.2%	↑ 87.8%	↑ 83.9%	↑ 86.0%
5y_HibMenC_Booster	↓ 91.0%	↑ 85.5%	↑ 85.2%	↓ 84.0%	↑ 87.6%	↓ 80.2%	↑ 86.7%	↑ 89.3%	↓ 84.5%	↑ 78.7%	↑ 82.5%
5y_MMR1	↑ 92.9%	↑ 87.5%	↑ 87.0%	↓ 85.2%	↑ 88.9%	↓ 82.8%	↑ 87.9%	↑ 90.2%	↓ 87.5%	↑ 82.7%	↑ 85.5%
5y_MMR2_Booster	↑ 85.2%	↑ 75.2%	↑ 75.9%	↑ 75.5%	↑ 80.6%	↓ 65.8%	↑ 79.6%	↑ 80.6%	↑ 75.8%	↑ 64.6%	↑ 69.6%

Cover of vaccination evaluated rapidly (COVER) Programme 21-22. Date Jan 22- March 22

Key

>90% coverage

80-90% coverage

<80% coverage

↑ Increase from previous quarter

↓ Decrease from previous quarter

The latest quarterly data shows an increase in uptake in Harrow for all childhood vaccinations on the previous quarter.

Overall, Harrow has similar uptake for childhood vaccinations to London and a higher uptake of the DTaP/IPV booster and MMR2 booster. Uptake is slightly lower in Harrow for vaccinations before 12 months of age.

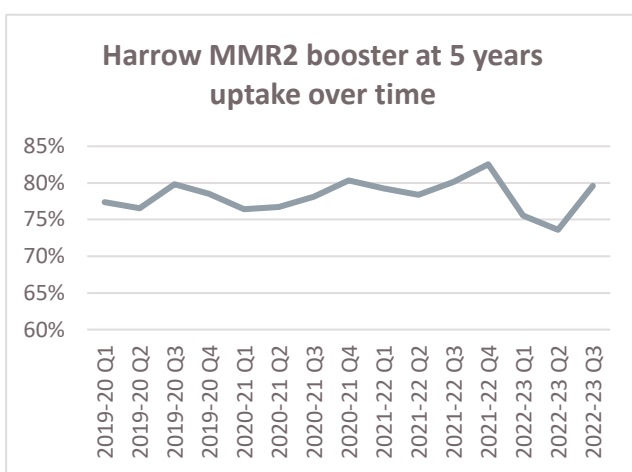
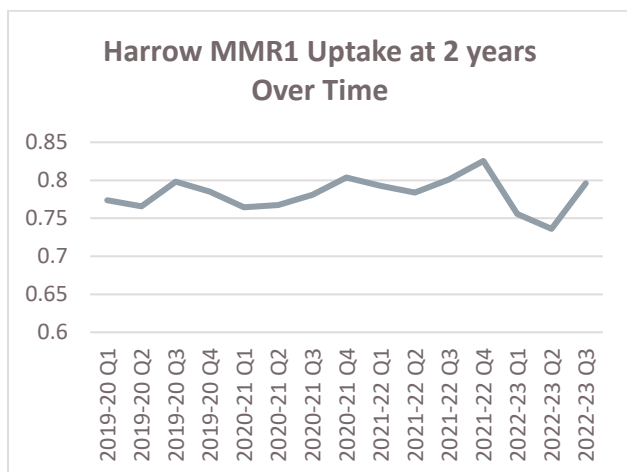
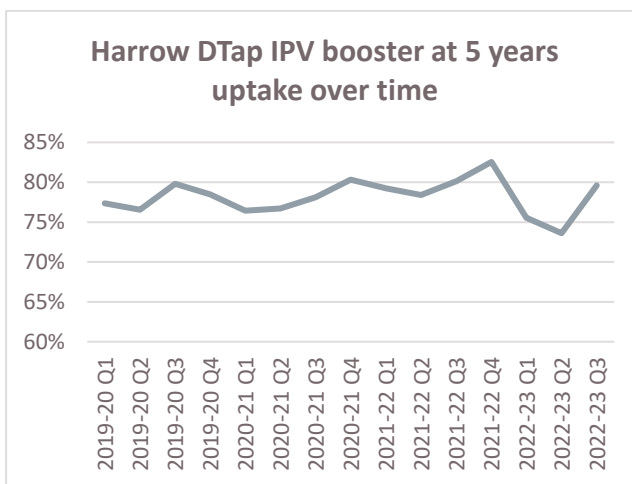
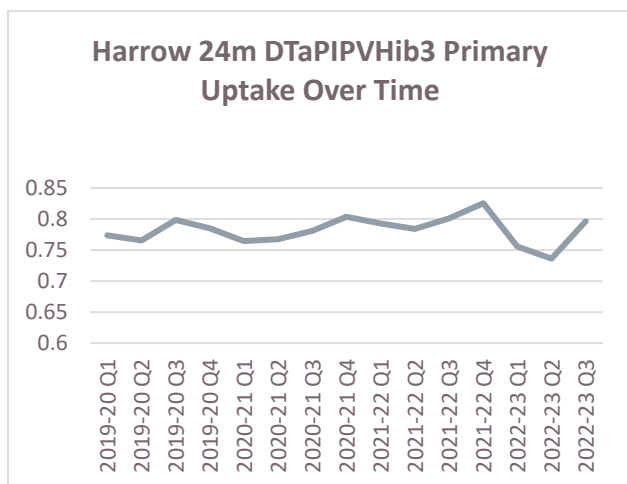
Harrow coverage of the 6 in 1 primary dose at 2 years (86%) is lower than the London average (88%)

Uptake for the booster dose of DTaP/IPV is slightly lower in Harrow (88%) than the London average of 88.8%.

Uptake for MMR1 at 2 years is higher in Harrow (84%) than the London average (82%) and in line with North West London Region (84%).

Uptake of MMR2 at 5 years in Harrow (80%) is higher than the North West London average (76%) and the London Average (75%).

Trend over time



There was a drop in uptake in Harrow in April to September 2022, but the most recent uptake is in line with previous quarters. Overall, uptake has remained approximately the same over the last 3.5 years.

Challenges

System

- Covid-19: pausing some programmes, redeployment of workforce and introduction of the Covid-19 vaccination programme.
- Complexities in data collection: some data is not recorded, not uploaded, not correctly cleansed, or the denominator population may be inaccurate.
- Access to appointments: wider pressures on GP services and limited workforce.
- Inconsistent reminder systems- call/ recall.

Community

- London's high population mobility affects data collection and accuracy. There is a 20-40% annual turnover on GP patient lists which affects the accuracy of the denominator for COVER data submissions. An audit showed that by the age of 12 months, 33% of infants moved address at least once.
- Large numbers of underserved populations who are associated with lower uptake of vaccinations than the wider population.
- Large migrant population who may not have their past immunisation history accurately recorded.

Individual

- Lack of trust or confidence in vaccines or other health service or complacency
- Saturation of vaccine offer post the COVID-19 pandemic and Covid-19 vaccination programme.
- Increasing disinformation
- Lack of awareness of the immunisation schedule

Actions

Increasing vaccination uptake is complex and requires a suite of interventions. Work is ongoing at a national, regional, system, and place level to increase uptake in Harrow.

National and Regional

- A London Immunisation Strategy is currently being developed to both improve vaccination uptake and reduce inequalities.
- NHSE London funds local Immunisation Coordinators across the region.
- A national NHS England MMR vaccination call and recall service was implemented between September and December 2022. This promoted the take-up of the MMR vaccine amongst individuals between the ages of 1 to 25 years through letters and texts.
- NHSE has commissioned UKHSA to deliver immunisation training to all vaccinators in London. Confident and competent staff are crucial to building and maintaining trust and delivering a high-quality service. This includes listening to parental concerns or reservations and preventing any vaccine incidents.
- Vaccinations have been added to the Making Every Contact Count London [resource hub](#) to facilitate using every available opportunity to engage with the public to increase vaccination.
- A regional communications campaign took place across London in March 2023 to encourage the uptake of missed MMR doses. This included media, social media, health ambassadors, translated materials, and attendance at local events and community groups.
- In a concentrated effort to reach all missed children and ensure London remains polio-free, a funded regional catch-up programme through the School Age Immunisation Service and GP practices is underway to provide DTaP catch-up, MMR catch-up and full-schedule catch-up.
- The London Immunisation Board, The Mayors Health Board, and SW London Integrated Care Board have all agreed on the 10 principles for London vaccination. Action will now focus on developing this into a comprehensive delivery approach tailored to community needs and building on Borough-led health initiatives.

10 Principles for London Vaccination Programmes



These principles were developed for the London Health Board building on existing work and evidence and with a focus on reducing inequalities. They have been collectively written and agreed by UKHSA, London Councils, ADHP London, GLA, OHID and NHS to identify areas for collaborative working and system leadership and to underpin the next phase of partnership and delivery of all London Vaccination.

Diversity and Inclusion



1. Focus on equity at all stages of the programme (design, delivery, monitoring and evaluation) focusing on hyper-local models with equality as central to the mission as volume



2. Building strength through diversity bringing diversity and community voices around the table, including the workforce as they cannot and should not be separated from the communities they are a part of.

Community centered: Population Health approach



3. Committing to Community First and Community Driven approaches: putting communities into the core of programmes, particularly marginalised groups, hearing their voices, engaging with them, co-producing activities and building culturally competent campaigns.



4. Placing people at the centre of delivery: improving access for those targeted for vaccinations as well as thinking more holistically around vaccination messaging and engaging with communities around their health and health services more generally.

Spotlight on the early years



5. A focus on improving childhood immunisation uptake: acting early in the life course and with a partnership commitment to emphasise promotion of childhood vaccinations making every contact count across all settings and opportunities and identifying children with missed immunisations or those who are unregistered.

Ways of working: Embedding sustainability and leveraging opportunities



6. Ensure immunisations as part of every conversation on health, being integral to health and well-being and not a standalone agenda for our residents and their families.



7. Working to one goal with one voice: a multi-system pan London approach working with partners across organisational boundaries and in collaboration with the clear beat that we all need to work together to increase vaccination rates for London.



8. Permission for and encouragement of innovation and creativity: to continue working in new ways and thinking more holistically about vaccination for whole communities.



9. Freedom and funding to explore different hyper-local approaches: This might include, for example, vaccines in new spaces, models of delivery for the school-aged population or the housebound.



10. Amplifying impact through an evidence approach: a commitment to continue to collect, evaluate and share outputs, to ensure, and be able to evidence equitable access of uptake, value for money and best use of our skilled workforce.

What Harrow Borough is doing to improve uptake

Harrow Borough works with system partners including NHSE, London Region and the community and voluntary sectors to improve immunisation uptake across all areas. We recognise that effective partnerships are the cornerstone of improved vaccination uptake.

There is a strong focus on improving partnerships, developing new and strengthened relationships at the hyperlocal, borough, and sub-regional level (North West London Integrated Care Board) to identify missed communities, improve uptake and reduce health inequalities. There is an established Harrow Immunisations Working Group, which meets on a monthly basis with representatives from each of the PCN's, School Nursing Team, NHS England, Local Authority Public Health, Community Pharmacy NWL Communication Team and the Borough team. The Group overall responsibility is to work together to improve vaccination uptake across all age cohorts.

All Practices have a named lead for vaccination and immunisations. Each Practice has the responsibility for ensuring that the core standards and contractual requirements are met and that opportunities for vaccination are maximised.

Local actions to support vaccine hesitancy

- Harrow Borough receives supporting documents and communication material from the NWL Primary Care Team to support the promotion of best

practice in primary care and promote the benefits of immunisation to the general public

- The Harrow Borough Effective Resource Management Scheme (ERM) requires Primary Care Networks to have a named Immunisation Co-ordinator and evidence engagement with the Programme and NWL Immunisation Co-ordinator. ERM also requires PCN's to identify and work with specific identified communities to improve vaccination uptake within those communities. Also s part of ERM 2022/2023 PCN's undertook the following activities to increase uptake:
 - Virtual group consultations for mums who had not had their children vaccinated
 - New patient information Leaflets
 - New Immunisation uptake protocols including App's that were designed with the help of a Paediatric GP/ Nurse (Immunisation Lead) for parents who decline immunisation.
 - Partnership working with Health Visitors and School Nurses
- Harrow Borough continuously engages with GP Practices, PCN Clinical Directors and Practice Managers to ensure that their call, recall and opportunistic offers are being made in line with the national standards. NWL also engage with practices to ensure they are coding immunisations correctly in their GP systems and uploading data onto the ImmForm system. The GP reporting system also flags any potential missing immunisations. Practices also provide text –based reminders to their patients regarding their appointments

The NWL Immunisation Co-ordinator for Harrow works across the Borough with multiple stakeholders to increase immunisation uptake. Their work includes the following: -

- Working with practices to support their adherence to the GP Core Contractual Standards, ensuring effective and various methods of call/recall are being used. Looking at how to optimise addressing barriers to uptake with patients.
- Works with practices ensuring practices are receiving lists of children who are due and overdue vaccinations from CHIS,
- Encouraging practices to use High Hub Dashboard as part of Health Intelligence which can highlight children who are overdue or missing vaccinations.
- Encouraging all practice staff to feel confident discussing childhood immunisations with their patient population and understand the benefit of increasing uptake and sign posting
- Supporting vaccine hesitancy i.e. opportunities for vaccine promotion and feedback, e.g. patient participation groups, SMS messaging ideas, links to websites (which can be translated into other community languages

The NWL Immunisation Co-ordinators community engagement work includes the following areas:

- RCCT Romanian group leaflet drop, immunisation stall and open engagement at the Warm Hub in May, and in June.
 - Online Make Every Contact Count (MECC) training Early Years offered in Feb, April and May on Children's immunisation awareness.
 - Community Touchpoint meeting in April. - Communication and Engagement sessions to place with local community groups.
 - North Harrow Community Library engagement event to take place in June/July, in partnership with North Harrow Library, GP from Harrow and will have with PCN support.
 - Early Years Children's Centres Staff - immunisation awareness sessions January and February. Immunisation resources in local community languages distributed to all the centres and staff encouraged to distribute to parent groups.
- Practice Visits Project - Public Health has 2 GP Trainees attached to the Department as part of their training scheme. The two GP trainees are working with the Borough Based Partnership Medical Director to phone parents and carers of unvaccinated children to understand how or why they have not come forward for vaccination. The results will inform further action.
 - Practices participate in the national campaigns to increase uptake. An example of this is the Polio Campaign. Harrow GP's become a fundamental part in supporting the delivery of the polio vaccine from August 2022 making sure children who required the vaccine were offered a vaccine by late September. Due to the urgency and pressures on general practice additional capacity at all practices was offered to support the delivery. Targeted outreach included activities to reach under-vaccinated and unregistered communities. A Polio Static site set up at Harrow Civic Centre for the 5-9-year cohort running 2 clinics per week from October 2022 until the end of December 2022 which proved to be very successful with each clinic running at full capacity. Harrow Borough was one of the best performing boroughs achieving an overall uptake of over 40% against the NWL final uptake at 33.8% based on January 2023 figures.
 - A robust communication and engagement plan was developed by Public Health in collaboration with other partners as part of an immunisation working group. The plan has supported targeted work to improve access to vaccinations, and combat any vaccine hesitancy. The NWL Immunisation Coordinator has enabled highly specific and expert knowledge to be delivered to a range of target audiences;

- Looked After Children through the designated Nurse Safeguarding Children and Looked After Children (Harrow)
 - Home Schooled children, of which there is an increasing number in Harrow
 - Ethnic groups including the Romanian Hub RCCT, and the Somali group HASVO
 - Libraries, Faith Groups, Parenting forum, Community Connex, Baby Bank Wealdstone
 - Early Support Hubs (children’s centres), Hill view and Cedars
 - 0-19 services, health visitors and school nurses
 - Education including schools and all PVI and Childminders
- Public health has offered focussed training on immunisations through Making Every Contact Count (MECC) for front line staff and professionals that come into contact with families on a regular basis to support opportunistic conversations about vaccinations.
 - Harrow Council has worked with NWL communication and engagement team to launch a campaign to promote immunisations to local schools “Aggie the Alien”
 - Harrow Council successfully bid for £26k from the NWL ICS to offer community grants to particular community groups with low immunisation uptake. Each groups receives support and training to work with their members and their attitudes to immunisation are recorded before and after the process. The groups also receive the relevant national promotion materials in various languages.

Appendix 1: Immunisation schedule

Routine childhood immunisations				
Age Due	Diseases protected against	Vaccine given	Trade name	Usual Site
8 weeks	Diphtheria, tetanus, pertussis (whooping cough), polio, Haemophilus influenzae type b (Hib) and hepatitis B	DTaP/IPV/Hib/HepB	Infanrix hexa or Vaxelis	Thigh
	Meningococcal group B (MenB)	MenB	Bexsero	Left thigh
	Rotavirus gastroenteritis	Rotavirus	Rotarix	By mouth
12 weeks	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B	DTaP/IPV/Hib/HepB	Infanrix hexa or Vaxelis	Thigh
	Pneumococcal (13 serotypes)	PCV	Prevenar 13	Thigh
	Rotavirus	Rotavirus	Rotarix	By mouth
16 weeks	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B	DTaP/IPV/Hib/HepB	Infanrix hexa or Vaxelis	Thigh
	MenB	MenB	Bexsero	Left thigh
1 year	Hib and Meningococcal group C (MenC)	Hib/MenC	Menitorix	Upper arm/thigh
	Pneumococcal	PCV booster	Prevenar 13	Upper arm/thigh

	Measles, mumps and rubella (German measles)	MMR	MMRvaxPro or Priorix	Upper arm/thigh
	MenB	MenB booster	Bexsero	Left thigh
Eligible paediatric age groups	Influenza (each year from September)	Live attenuated influenza vaccine LAIV	Fluenz Tetra	Both nostrils
Three years four months	Diphtheria, tetanus, pertussis and polio	dTaP/IPV	Boostrix-IPV	Upper arm
	Measles, mumps and rubella	MMR (check first dose given)	MMRvaxPro or Priorix	Upper arm
12-13 years	Cancers and genital warts caused by specific human papillomavirus (HPV) types	HPV (2 doses 6 to 24 months apart)	Gardasil	Upper arm
14 years Year 9	Tetanus, diphtheria and polio	Td/IPV (check MMR status)	Revaxis	Upper arm
	Meningococcal groups A, C, W and Y	MenACWY	Nimenrix	Upper arm

Selective childhood immunisation programmes

Target group	Age and schedule	Disease	Vaccines required
Babies born to hepatitis B infected mothers	At birth, 4 weeks and 12 months old	Hepatitis B	Hepatitis B (Engerix B/HBvaxPRO)
Infants in areas of the country with tuberculosis (TB) incidence \geq 40/100,000	Around 28 days old	Tuberculosis	BCG
Infants with a parent or grandparent born in a high incidence country	Around 28 days old	Tuberculosis	BCG
Children in a clinical risk group	From 6 months to 17 years of age	Influenza	LAIV or inactivated flu vaccine if contraindicated to LAIV or under 2 years of age

Adult Immunisation Programme

65 years old	Pneumococcal (23 serotypes)	Pneumococcal Polysaccharide Vaccine (PPV)	Pneumovax 23
65 years of age and older	Influenza (each year from September)	Inactivated influenza vaccine	Multiple
70 to 79 years of age	Shingles	Shingles	Zostavax3 (or Shingrix if Zostavax contraindicated)
Pregnant women	At any stage of pregnancy during flu season	Influenza	Inactivated flu vaccine
	From 16 weeks gestation	Pertussis	dTaP/IPV (Boostrix-IPV)

The complete routine immunisation schedule from February 2022
(publishing.service.gov.uk)

Appendix 2: Data Collection

Data is uploaded into Child Health Information Service (CHIS) from GP practice records via a data linkage system. The CHIS provides quarterly and annual submissions to the UKHSA for their publication of statistics on 0-5s childhood immunisation programmes. This is known as Cohort of Vaccination Evaluated Rapidly (COVER) and these are the official statistics. Annual data is more complete and should be used to look at longer term trends.

COVER monitors immunisation coverage data for children in UK who reach their first, second or fifth birthday during each quarter. Children having their first birthday in the quarter should have been vaccinated at 2, 3 and 4 months, those turning 2 should have been vaccinated at 12/13 months and those who are having their 5th birthday should have been vaccinated before 5 years, ideally 3 years 3 months to 4 years.

There are known complexities in collecting data on childhood immunisations. Indeed, since 2013, London's COVER data is usually published with caveats and drops in reported rates may be due to data collection or collation issues for that quarter.

Production of COVER statistics in London involves a range of individuals and organisations with different roles and responsibilities. London has four CHIS Hubs – North East London (provider is North East London Foundation Trust, NELFT), South East London (provider is Health Intelligence), South West London (provider is Your Healthcare CIC) and North-West London (provider is Health Intelligence). These Hubs are commissioned by NHSE to compile and report London's quarterly and annual submissions to UKSA for COVER.

A 'script' or algorithm is utilised to electronically extract anonymous data from the relevant data fields to compile the reports for COVER within the caveats specified. For example, for first dose of MMR, any child who had their MMR vaccination before their first birthday are not included and so appear unvaccinated.

CHIS Hubs are commissioned to check the reports run and are expected to refresh the reports before final submission to UKHSA. CHIS Hubs are also commissioned to 'clean' the denominator by routinely undertaking 'movers in and movers out' reports. This is to ensure the denominator is up-to-date with the children currently resident in London. They are also expected to account for the vaccinations of unregistered children in London. There are ongoing issues with CHIS Hubs keeping up-to-date with movers in and removals which is picked up in contract performance meetings with the NHSE (London) commissioners.

Immunisation data is extracted from London's general practices' IT systems and uploaded onto the CHIS systems. This isn't done directly by the CHIS Hubs. Instead data linkage systems provided by three different providers provide the interface between general practices and CHIS. Two of these providers – QMS and

Health Intelligence – are commissioned by NHSE whilst 4 boroughs in outer North-East London commission a separate system.

NHS (London) Immunisation Commissioning Team receives data linkage reports from QMS and Health Intelligence. This provides a breakdown by general practice of the uptake of vaccinations in accordance to the COVER cohorts and cohorts for Exeter (for payments). This information is utilized by the team as part of the 'COVER SOP', to check against the COVER submissions by CHIS to question variations or discrepancies.

While data linkage systems provide an automated solution to manual contact between CHIS and General Practices, data linkage does not extract raw data. General practices have to prepare the data for extraction every month. This will vary between practices how automated the process is but it can be dependent upon one person to compile the data in time for the extraction by the data linkage system providers and should this person be on annual or sick leave, there will be missing data.

General practices have to prepare data for four immunisation data systems – COVER, ImmForm (although this is largely done by their IT provider of Vision, EMIS or TPP SystemOne, all of whom are commissioned by their ICS), CQRS (the payments system run by NHS England for the payment of administration of the vaccine) and Exeter (payments system, whereby practices receive targeted payments for achieving 70% or 90% uptake of their cohorts – these cohorts are different to the COVER cohorts of children). Preparation of data for the systems again will vary between practices but this can be time and resource intensive. There is also an array of codes that can be used to code the vaccination (if a code different to what the data linkage system recognises is utilised, it results in the child looking unvaccinated) and there are difficulties with coding children who received their vaccinations abroad or delays in information on vaccinations given elsewhere in UK being uploaded onto the system in time for the data extraction.

Whilst NHSE (London) immunisation commissioning team verify and pay administration of vaccines that are part of the Section 7a immunisation programmes, they do not commission General Practices directly. Vaccination services, including call/recall (patient invite and reminder systems) are contracted under the General Medical Services (GMS) contract. This contract is held by primary care commissioning directorates of NHSE.

For most newer vaccine programmes and for those targeting people older than 5 years vaccination and population data is extracted directly from general practice systems using ImmForm, an online platform.

Appendix 3: Contacts

Name, Role	Contact
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