

Start Well

Childhood Immunisation and Newborn Screening

Introduction

Immunisations are a simple and effective way of protecting children from serious infectious diseases. They not only protect individuals, but also protect the broader community by reducing spread.

The routine NHS childhood immunisation programme protects against:

- Diphtheria, Tetanus, Pertussis (whooping cough), Polio, Haemophilus influenza type b, 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)

Newborn screening programmes are a way to detect diseases/conditions early on to ensure babies receive the appropriate care they may need. Most babies are born healthy, but for those who do have a health problem, early treatment can improve their health and prevent severe disability and even death.

The routine newborn screening programmes includes:

- Newborn bloodspot (tests for 9 genetic conditions)
- Newborn hearing (tests for significant hearing loss)
- Newborn physical examination

This chapter includes a review of childhood immunisations data specifically for vaccinations given up to the age of 5 years. It does not include a review of the flu vaccinations data. In addition, this chapter also includes a review of newborn screening data.

Childhood Immunisations

In Merton, immunisation uptake at age 5 and under is higher than London with the exception of the MMR first dose by 5 years old, which is similar to the London coverage, and the pre-school booster (diphtheria, tetanus, pertussis and polio) at age 5, where coverage in Merton is lower than London¹. Vaccination rates for London are generally lower than the England average, and Merton is no exception, although for the PCV immunisations at age 2 years the Merton and England values are similar.

Out of the 11 vaccinations shown in Table 1 for Merton, coverage has only significantly worsened from 2019/20 to 2020/21 for Dtap / IPV / Hib (1 year old). Many other vaccinations listed however do not meet the World Health Organisation (WHO) targets of 95% uptake². The 95% target uptake would protect those 5% of children who may not be able to be vaccinated for a number of reasons and bring about 'herd immunity'. However, both regionally and nationally, decreases in childhood vaccination coverage have been

reported³. Disruption caused by the COVID-19 pandemic, beginning in March 2020, is likely to have caused some of the decreases in vaccine coverage seen in 2020/21 compared to 2019/20. This is most likely to be seen in the 12-month cohort, where some children would have been scheduled to receive their routine childhood immunisations from March 2020 onwards.

For the majority of children in the 24-month cohort and all of the children in the 5 year old cohort, their vaccines would have been scheduled to be given before the COVID-19 pandemic started, hence effects of the pandemic for those cohorts cannot be seen in the 2020/21 coverage data. This means when the 2021/22 data becomes available, we will start to see the true effects of the pandemic on the older cohorts.

For children living in care in Merton in 2021, 82.0% were up to date with their immunisations, which is between London at 75% and England and 86.0% respectively⁴. Additionally, in comparison to the previous year, 2020, this is a decrease from 94.0%, therefore, this indicator will need to be monitored closely to understand the impacts of the pandemic on this population.

Table 1: The (%) proportion of vaccination coverage for children in Merton, comparing 2019/20 pre-pandemic coverage with 2020/21 during the pandemic coverage. Source: OHID, Public Health Profiles⁵.

Population Vaccination Coverage (Proportion %)	Pre-pandemic (2019/20)	During pandemic (2020/21)		
		Merton	London	England
Rotavirus (Rota) (1 year old)	89.0%	88.8%	85.1%	90.2%
Meningitis B (MenB) (1 year old)	90.3%	89.4%	86.6%	92.1%
Pneumococcal (PCV) booster (2 years old)	82.6%	85.3%	81.1%	90.1%
Hib/MenC booster (2 years old)	82.9%	85.5%	82.2%	89.8%
DTaP/IPV/Hib (1 year old)	92.1%	89.9%	86.7%	92.0%
DTaP/IPV/Hib (2 years old)	91.1%	92.2%	89.4%	93.8%
DTaP/IPV booster (5 years old)	67.4%	69.3%	72.6%	85.3%
Hepatitis B (2 years old)	92.9%	88.2%	-	-
Hepatitis B (1 year old)	94.1%	95.0%	-	-
MMR for one dose (2 years old)	83.2%	85.7%	82.4%	90.3%
MMR for one dose (5 years old)	89.2%	88.8%	88.8%	94.3%
MMR for two doses (5 years old)	70.3%	72.5%	75.1%	86.6%

Figure 1 and Figure 2 show vaccinations coverage by Primary Care Networks (PCN) in Merton. GP practices located in west Merton PCNs show better performance than those located in east Merton PCNs,⁶ the exception being Morden PCN network, with GP practices located in both east and west Merton.

Figure 1: DTaP/IPV (pre-school) booster vaccination coverage (proportion, %) by age 5 in Merton PCNs aggregated from Merton GPs for 2020/21. Source: NHS Digital⁷.

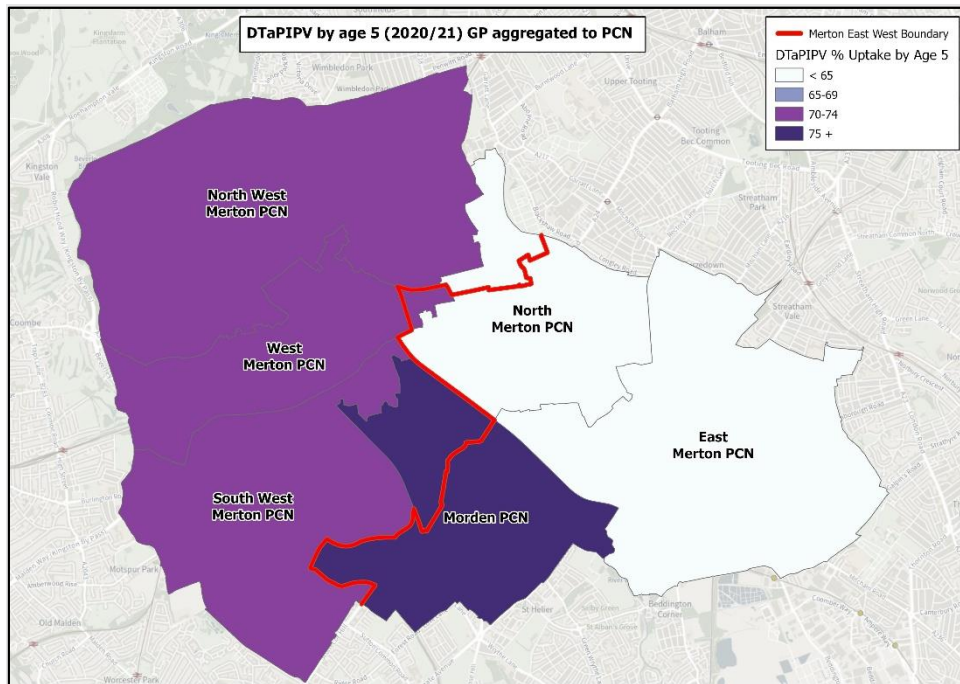
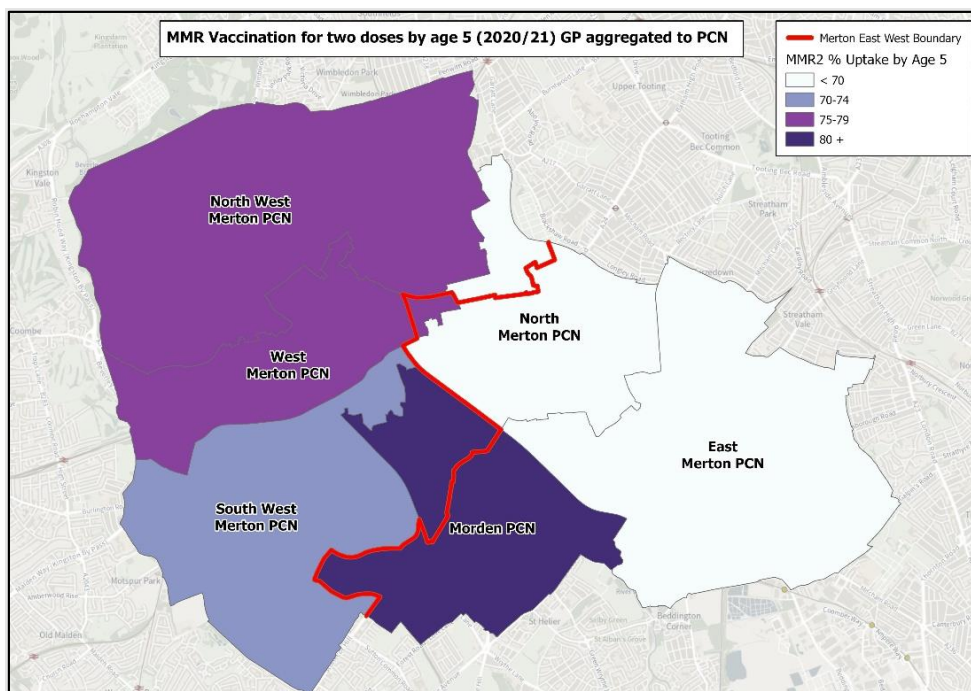


Figure 2: MMR vaccination coverage for two doses by age 5 in Merton PCNs aggregated from Merton GPs for 2020/21. Source: NHS Digital⁸.



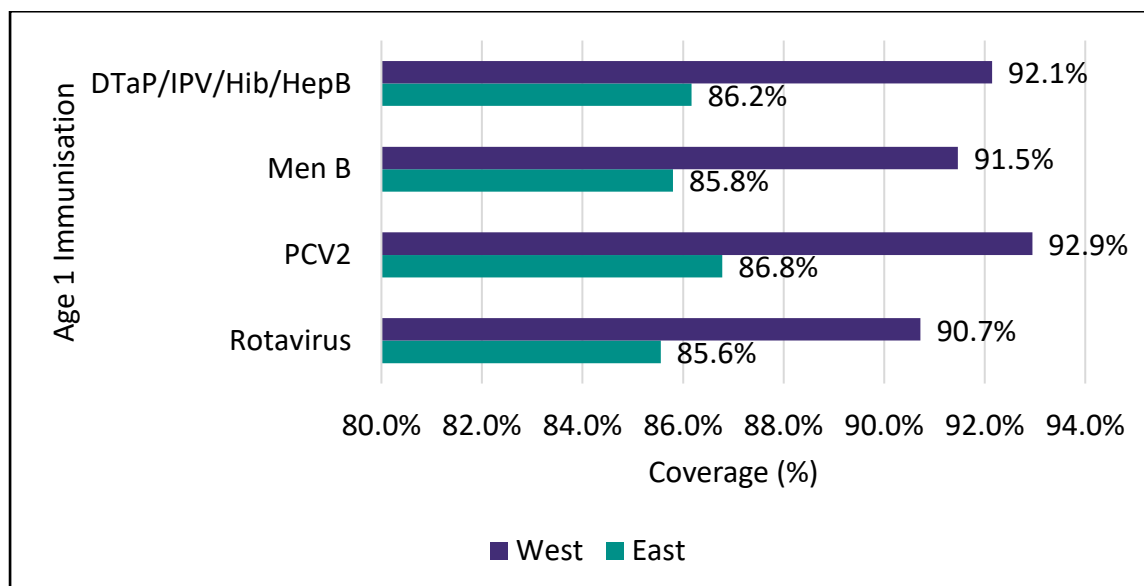
Lower Vaccine Uptake

Immunisation uptake has been shown to be lower in families from more deprived areas, those from ethnic minority groups and those who may find it more challenging to access services such as children with learning and physical disabilities. The reasons parents don't have their children immunised are complex and multi-factorial, however safety and effectiveness of vaccines is one of the main factors identified has been fuelled at times by misinformation leading to reduction of vaccine uptake.

Geographical differences in Merton

Analysis of data by the location of the GP practice (East vs West Merton) shows some difference in uptake. By calculating the numerators and denominators for all West Merton GPs and then all East Merton GPs we find vaccinations coverage is higher for GP practices in West Merton compared to East Merton (see Figure 3)⁹. The largest difference is seen in PCV2 vaccine at age 1 which shows vaccine coverage is 6.1 percentage points higher in the West compared to the East. Please note GP practices can take patients from a wide area, which means not all patients registered with a GP in East Merton would live in East Merton. However, this gives us a proxy indicator to look at the inequalities which exist between areas.

Figure 3: Child Immunisations coverage (% at age 1) by East and West Merton GP practice, April 2020 to March 2021. Source: Cover of Vaccination Evaluated Rapidly (COVER) Programme¹⁰.



Differences in Uptake by Characteristics

Although Merton data is not available, in England in 2020/21, vaccination coverage for DTap/IPV/Hib at 1 year old was lower for the most deprived areas (based on the 2019 indices of deprivation) at 89.5% coverage, in comparison to the least deprived in England at 93.3%. This trend can be found throughout the previous years and is also likely to persist in individual boroughs¹¹. East Merton is more deprived than West Merton and based on the East vs West data above by the location of GP practice, Merton is likely to see these similar trends where people living in more deprived wards would show a lower vaccine take-up.

In 2021, Public Health England released a report highlighting health equity within the National Immunisation Programme, their literature review found 5-in-1 vaccination coverage was lower for ethnic minority groups in comparison to those from a White-British ethnicity, those from a Somali and Bangladeshi ethnic minority group had a lower 3-dose completeness at 6 months, and those from a Polish, Somali, and Caribbean ethnic group were less likely to get the pre-school booster¹².

Vaccine preventable Infectious Disease

In Merton there were no cases of invasive meningococcal disease (2020/21), 2 cases of measles (2020), two cases of mumps (2018), and one case of pertussis (2020), all of which are vaccine preventable diseases¹³. The incidence rate of pertussis in Merton (2021) was 0.5 per 100,000, which is similar to England and London both at 0.1 per 100,000¹⁴.

Regional and National Comparisons

Historically and currently, London performs lower than England averages across all the immunisation programmes. Merton is affected by the same challenges that face the London region as a whole. Reasons for the low coverage include:

- Large numbers of underserved populations who are associated with lower uptake of vaccinations than the wider population (i.e. delayed vaccinations).
- Growing vaccine hesitancy (i.e. confidence in vaccine, lack of convenience and complacency).
- London's high population mobility which affects data collection and accuracy.
- Complexities in data cleansing and data collection.
- Coding discrepancies in general practice (including missing data for patients vaccinated abroad or elsewhere).
- Inconsistent patient invite/reminder (call-recall) systems across London.
- Declining vaccinating workforce and aging GP practice workforce dealing with increasing priorities and patient lists, resulting in shortages of vaccinators and appointments.
- Difficulties in accessing appointments.
- As shown earlier above, newborn screening programme coverage for Merton is above or in line with London and England coverage.

Newborn Screening

Merton does not have a local maternity unit and the majority of women have their babies at 3 local hospitals: St George’s, St Heliers and Kingston hospitals. The data presented below is derived from this hospital data which is then linked to where mothers and their babies are registered with their GP. Table 2 below shows the three newborn screening indicators. For newborn hearing screening, Merton has a 97.9% coverage for babies which is significantly higher than London at 96.4% and similar to the England coverage of 97.5%¹⁵. Merton’s coverage is just slightly under the nationally set acceptability target of 98%. Merton’s newborn and infant physical examination screening coverage is 97.8% is also significantly higher than London at 96.9% and the ‘acceptability’ target of 95%¹⁶. This value is also similar to the England coverage of 97.3% in 2020/21.

Unfortunately, the latest data for Newborn bloodspot screening for Merton is 2018/19 data (see Table 2 below). This shows uptake was high at 99.3% at the time which is higher than the acceptability target of 95%. However, we cannot say whether this has increased or decreased since that time or what the impact of COVID has been.

For newborn screening programmes, although coverage is relatively high, there are some babies who may have no record of being screened. This may be due to babies being born outside of the UK and moving in, babies not being offered or completing screening in line with national screening pathways. For those who move homes within the first year of life or move in from abroad to become responsibility of Merton, 97% had been screened by 21 days of notification of their movement in, which is higher than London (89.5%) and England (89%).¹⁸

Table 2: The (%) proportion coverage for new-born screening services in Merton, with London and England comparisons, 2020 – 2021. Source: OHID, Public Health Profiles¹⁷.

*Please Note, data taken from Maternity services and screening laboratories. New-born blood spot screening taken from Child Health Record Department, Newborn hearing screening data taken from local hearing screening providers. *New-born Blood Spot Screening Merton value taken from Public Health England 2018/19 data and refer to those who were responsibility of Merton at birth¹⁸.*

Screening Service Coverage (Proportion %)	Period	Acceptability	Merton	London	England
New-born Blood Spot Screening*	2018/19	≥ 95.0%	*99.3%	97.4%	97.8%
New-born Hearing Screening	2020/21	≥ 98.0%	97.9%	96.4%	97.5%
New-born and Infant Physical Examination Screening	2020/21	≥ 95.0%	97.8%	96.9%	97.3%

Recommendations

More detailed analysis of Merton's immunisations take up is needed to understand better where uptake is lowest to support targeted approaches to improving vaccinations.

Further data is required to monitor trends in newborn screening coverage.

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