

Health Protection – Childhood Immunisation

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COVER Key Facts

- COVER (Cover of Vaccination Evaluated Rapidly) was established by the HPA to monitor vaccination coverage of children who reach their 1st, 2nd and 5th birthdays
- COVER data are collected by Primary Care Trusts
- Data are published quarterly in the HPA Communicable Diseases Report (CDR), and annually by the Department of Health
- Graphical and temporal trends for North West COVER data are also available on-line from the HPA North West¹

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Key Messages

- The North West is nearer to achieving the WHO recommended levels of 95% vaccination coverage than England overall.
- The percentage of children immunised falls with increased levels of deprivation. This highlights a need for improved immunisation services to reach disadvantaged groups.

Introduction

Part of the Health Protection Agency's (HPA) target is to reduce the impact of infectious diseases on public health. The first immunisation programme was implemented in 1955 against polio, and the number of programmes has increased to cover 13 diseases by 2006. In the North West (NW), coordination of childhood immunisations is carried out by Primary Care Trusts and data is collated through a network of local Health Protection Units and a region wide epidemiological service. This report looks at childhood immunisation uptake, and the problems that might occur due to a fall in uptake resulting from recent adverse publicity. The main focus of the the report will be MMR, however a number of additional vaccinations are discussed.

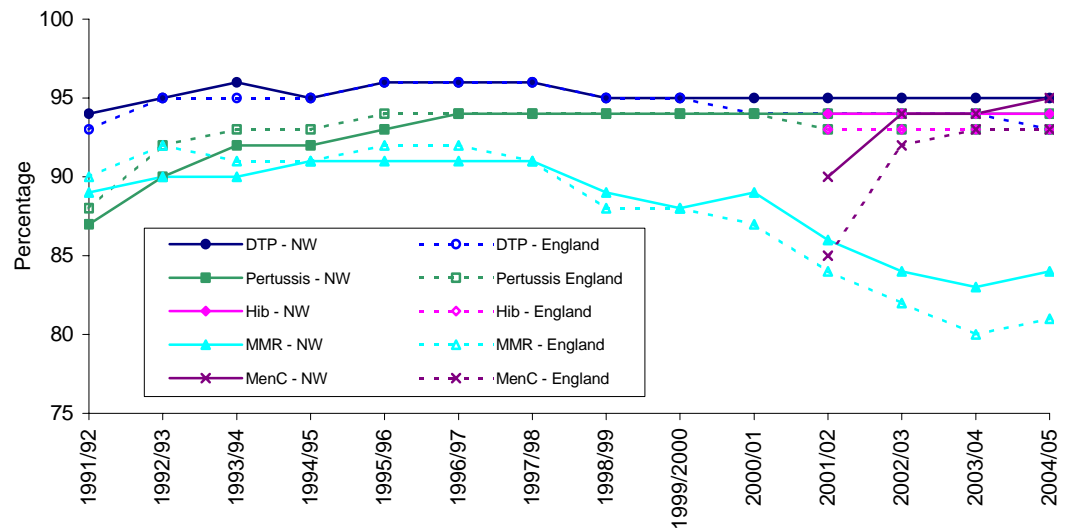


Figure 1: Percentage Immunised by 2nd birthday (1991 - 2005)

All Immunisations

The COVER dataset holds statistics on the percentage of children immunised for Diphtheria, Tetanus and Polio (DTP), Pertussis (whooping cough), Haemophilus influenzae type b (Hib), Meningitis C (MenC) and Measles, Mumps and Rubella (MMR). The percentage of children immunised for the majority of these childhood diseases has remained relatively constant over recent years. The exceptions are the percentage vaccinated with the MMR and the MenC vaccines. Figure 1 shows that since 1996/97, the North West consistently performs better than England for the majority of vaccinations, and is therefore closer to achieving the World Health Organizations (WHO) recommended levels of 95% vaccination coverage for each vaccine. Routine MenC vaccinations started in November 1999, and immunisation data has been collected since July 2000. In 2004/05 the WHO target was achieved for the MenC vaccine in the North West, whereas England achieved 93% coverage.

¹ www.hpa-nw.org.uk/InstantAtlas.htm

MMR Uptake

The MMR vaccine was introduced in October 1988 and successfully put an end to the two yearly cycles of measles that had been observed since measles became notifiable in 1940. However, Figure 1 shows that there has been a decline in the uptake of the vaccine. From 1997/98 to 2003/04, the percentage immunised dropped from 91% to 83% in the North West and 91% to 80% throughout England. This decline follows a report suggesting a link between the MMR vaccine and autism (The Lancet 1998; 351: 637-41). The allegations made in this report have since been shown to be unfounded. This decline in the uptake of MMR has prompted fears of an increase in measles cases and outbreaks. Figure 2 shows that immediately following 1998, there was a slight increase in the number of confirmed measles cases in the North West, and a considerable increase in confirmed cases occurred in 2003. During the first five months of 2006, there were almost six times as many confirmed measles cases as there were in the whole of 2005 for England and Wales (31 out of the 449 were in the North West). However, many of these outbreaks have occurred amongst disadvantaged groups such as travellers. These groups are less likely to be vaccinated due to lack of access to health services rather than the MMR scare.

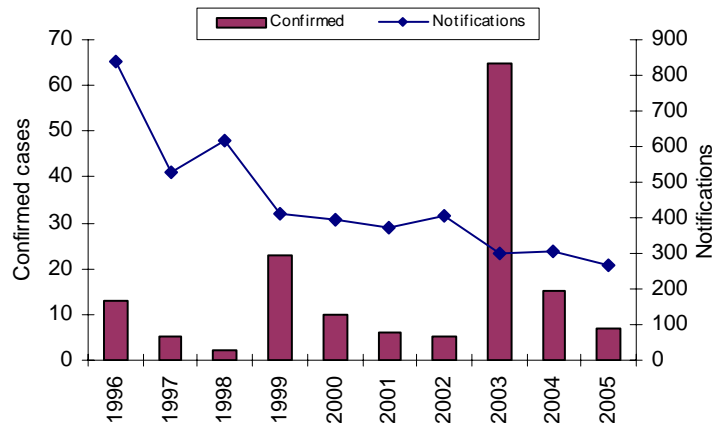


Figure 2: Notifications and Confirmed cases of Measles in the North West 1996 - 2005

Dosage of MMR

A single dose of the MMR vaccine gives about 90% protection against measles and mumps and 95-99% protection against rubella. A second dose of MMR was introduced in 1996. Adding a second dose increases the protection of all three diseases to over 99% of the population. Two doses of the vaccine are needed to achieve herd immunity and prevent any further outbreaks. Figure 3 shows that the percentage of five year olds receiving two doses of the MMR vaccine in 2004/05 is notably less than the percentage of children receiving the first dose only. This is most apparent in Cheshire and Merseyside where of the 90% of children immunised by their 5th birthday, only 82% of these receive their second dose. This is 74% of the population of children aged five years.

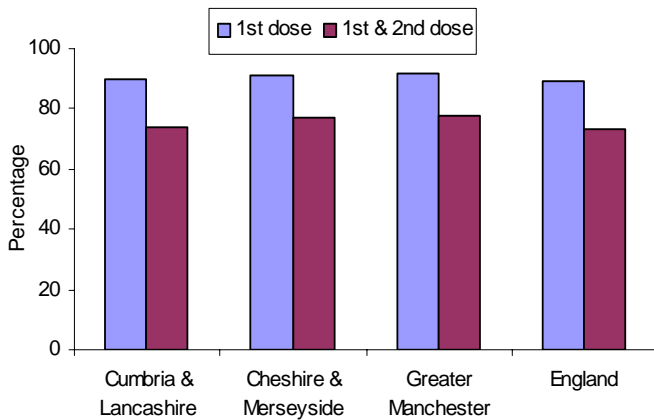


Figure 3: Percentage Immunised by 5th birthday for MMR 2004/05

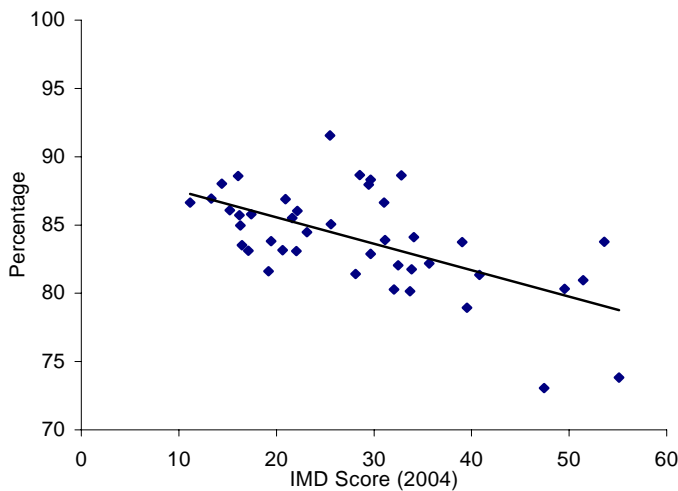


Figure 4: IMD Score (2004) vs MMR Immunisation levels by 2nd birthday

MMR and Deprivation

Through examining the Index of Multiple Deprivation (IMD) score for each PCT, it is possible to see a relationship between the deprivation of the PCT and the percentage of children immunised with the MMR vaccine. Studies have revealed that those not vaccinated, or not fully up to date with their vaccination schedule are more likely to live in disadvantaged areas and less likely to use primary care services. Figure 4 shows a negative correlation between the IMD Score (2004) and the percentage of children immunised with MMR, indicating that the more deprived areas have a lower protection against measles, mumps and rubella. Sixty one percent of the variation rate is explained by deprivation (See Table 1). Local design and delivery of immunisation services needs to be improved in order to reach disadvantaged groups effectively. Interactive maps of coverage by PCT are available on the HPA NW website¹.

Year	2002/03	2003/04	2004/05
Correlation Coefficient	-0.46	-0.47	-0.61

Table 1: Correlation between IMD (2004) and MMR Immunisation levels by 2nd birthday

All data outlined in this report for North West PCTs, and further information can be found at www.nwpho.org.uk/monthly/aug06a