NHS Middlesbrough

Uptake of childhood immunisation programmes in Middlesbrough

Purpose of report

1. To update Middlesbrough Council Health scrutiny on the uptake rates for childhood immunisation in Middlesbrough. The data used in this report is from the annual returns to Health Protection Agency (2009 – 2011) and the most recent local data for Q1 and Q2 2012/2013 (April – September 2012).

Background

2. Immunisation is one of the most effective, safe and cost-effective public health interventions. Vaccination protects individuals and communities from the risks of infectious diseases. Community protection is achieved by high levels of immunisation coverage to create 'herd immunity'. The whole community is protected when 'herd immunity' levels of vaccination coverage are achieved. For most diseases, this is usually around 95% coverage. This level is sufficiently high to prevent any sustained circulation of infections, protecting everyone in the population whether they have been immunised or not. Vaccine coverage is the best indicator of the level of protection a population will have against vaccine preventable communicable diseases.

3. Childhood immunisation programme is an integral component of the UK immunisation programme. The aim of the childhood immunisation programme is to eradicate, eliminate or contain disease. Children are routinely offered protection against ten infectious diseases, all of which can cause serious disease and can occasionally be fatal.

4. The World Health Organisation (WHO) recommends that, on a national basis ***at least 95%*** of all children three primary doses within the first year of life to provide immunisation for: Diphtheria, Tetanus, Polio and Pertussis. WHO recommend that ***over 95%*** of children also receive one primary dose by their second birthday to immunise for the following: Measles, Mumps and Rubella

5. National evidence shows that inequalities in immunisation uptake have been persistent and result in lower coverage in children and young people from disadvantaged families and communities. Unimmunised, or only partially immunised children, are more likely to live in disadvantaged areas and are less likely to use primary care services. There are variations in uptake of childhood vaccinations across the population with lower uptake in the following groups:
   - Babies of pregnant women who are not immunised against rubella or who are carriers of hepatitis B virus.
   - Asylum seekers.
   - Homeless families.
   - Looked after children/children in care.
   - Children with physical or learning difficulties.
   - Children of teenage or lone parents.

- Children not registered with a GP.
- Younger children from large families.
- Children who are hospitalised.
- Some ethnic groups - however the relationship between ethnicity, social class, deprivation and level of immunisation uptake is complex.

6. The UK childhood immunisation programme provides the WHO recommended immunisations plus additional immunisations as identified by the Department of Health. The overall aim of the routine childhood immunisation programme is to protect all children against the following preventable childhood infections: diphtheria, tetanus, pertussis (whooping cough), *Haemophilus influenzae* type b (Hib), polio, meningococcal serogroup C (MenC), measles, mumps, rubella and pneumococcal. The table below (Table 1) outlines the full range of immunisations provided by the UK childhood immunisation programme.

Table 1: Routine childhood immunisation schedule

When to immunise	What vaccine is given	How it is given
Two months old	Diphtheria, tetanus, pertussis (whooping cough), polio and Hib (DTaP/IPV/Hib)	One injection
	Pneumococcal (PCV)	One injection
Three months old	Diphtheria, tetanus, pertussis (whooping cough), polio and Hib (DTaP/IPV/Hib)	One injection
	MenC	One injection
Four months old	Diphtheria, tetanus, pertussis (whooping cough), polio and Hib (DTaP/IPV/Hib)	One injection
	MenC	One injection
	PCV	One injection
Twelve months old	Hib/MenC	One injection
Around 13 months old	Measles, mumps and rubella (MMR)	One injection
	PCV	One injection
Three years four months to five years old	Diphtheria, tetanus, pertussis and polio (DTaP/IPV or dTaP/IPV)	One injection
	Measles, mumps and rubella (MMR)	One injection
Thirteen to 18 years old	Tetanus, diphtheria and polio (Td/IPV)	One injection

Childhood vaccination and immunisation uptake rates Middlesbrough

7. Childhood immunisation rates have tended to be higher in Middlesbrough than the national average (except for DTaP/IVP/Hib at 12 months), however lower than the North East average and lower than the recommended level of 95% cover necessary for herd immunity and to prevent outbreaks.

Table 2: Vaccine Coverage Comparing Middlesbrough, Regional and National Rates 2009-2011

	12 Month	24 Month	5 years	
	Immunisations			
	DTaP/IVP/Hib	MMR (1)	DTaP/IPV	MMR (2 Doses)
Middlesbrough				
2009/2010	90.5%	84.0%	Not Available	87.4%
2010/2011	91.7%	86.4%		88.0%
North East				
2009/2010	95.7%	91.1%	91.2%	89.1%
2010/2011	95.9%	91.4%	90.5%	88.7%
England				
2009/2010	93.6%	82.2%	84.8%	82.7%
2010/2011	94.2%	89.1%	85.9%	84.2%

8. Most recent figures show that there is an increase in uptake of immunisation in Middlesbrough in line with the national and regional trends. Where previously Middlesbrough had achieved higher coverage rates than the national average, this gap is narrowing and for some immunisations Middlesbrough is now below both the regional and national average. The following sets of tables present the most recent data set in more detail.

9. The most recent returns for 1st birthday vaccination coverage shows that Middlesbrough is below both regional and national averages for DTaP/IVP/Hib, Men C and PCV (Table 3 below). The coverage is also below the 95% coverage recommended by WHO.

Table 3: Vaccination Coverage 1st Birthday Middlesbrough PCT Q2 2012/13

Vaccination	% Middlesbrough	% North East	% England
DtaP/IPV/Hib	**94.74**	**96.4**	**94.6**
Men C	**92.73**	**95.8**	**94.0**
PCV	**93.69**	**96.3**	**94.4**

10. Middlesbrough's immunisation cover rates achieved by 2nd birthday (table 4) are more varied with the coverage for primary diphtheria, tetanus and polio reaching the 95% WHO recommended level. MMR1 coverage remains below 90%.

Table 4: Vaccination Coverage 2nd Birthday Middlesbrough PCT Q2 2012/13

Vaccination	% Middlesbrough	% North East	% England
Primary Diphtheria Primary Tetanus Primary Polio	**95.01**	**Not Available**	
Primary Pertussis	**94.83**		
DtaP/IPV/Hib Primary HiB	**94.65**	**97.8**	**96.3**
MMR1	**89.66**	**94.1**	**92.2**
Men C	**90.55**	**96.6**	**95.2**
HiB/Men C	**92.16**	**95.1**	**92.6**
PCV Booster	**90.02**	**94.3**	**92.4**

11. Vaccine coverage at 5th birthday continues to improve as the number of vaccinations that meet the 95% cover has increased from the previous return. PCV primary and booster remain a challenge with coverage under 90%.

Table 5: Vaccination Coverage 5th Birthday Middlesbrough PCT Q2 2012/13

Vaccination	% Middlesbrough	% North East	% England
Diphtheria/Polio HiB	**95.34**	**98.0**	**95.9**
Pertussis	**95.55**	**Not Available**	
DtaP/IPV	**93.64**	**92.8**	**88.6**
MMR1	**95.76**	**96.2**	**93.9**
MMR2	**91.53**	**91.5**	**87.5**
Men C	**90.04**	**96.3**	**93.5**
HiB/Men C	**92.58**	**93.5**	**91.3**
Primary PCV	**89.62**	**93.0**	**89.7**
PCV Booster	**87.29**		

Vaccination Coverage Across Middlesbrough Wards

The following figures 1-3 present immunisation coverage rates at 1st birthday for the Q1 and Q2 data 2012/2013 (April – September 2012)

Figure 1: Primary Diphtheria, Primary Pertussis, Primary Tetanus, Primary Polio & DtaP/IPV/Hib Coverage at 1st Birthday.

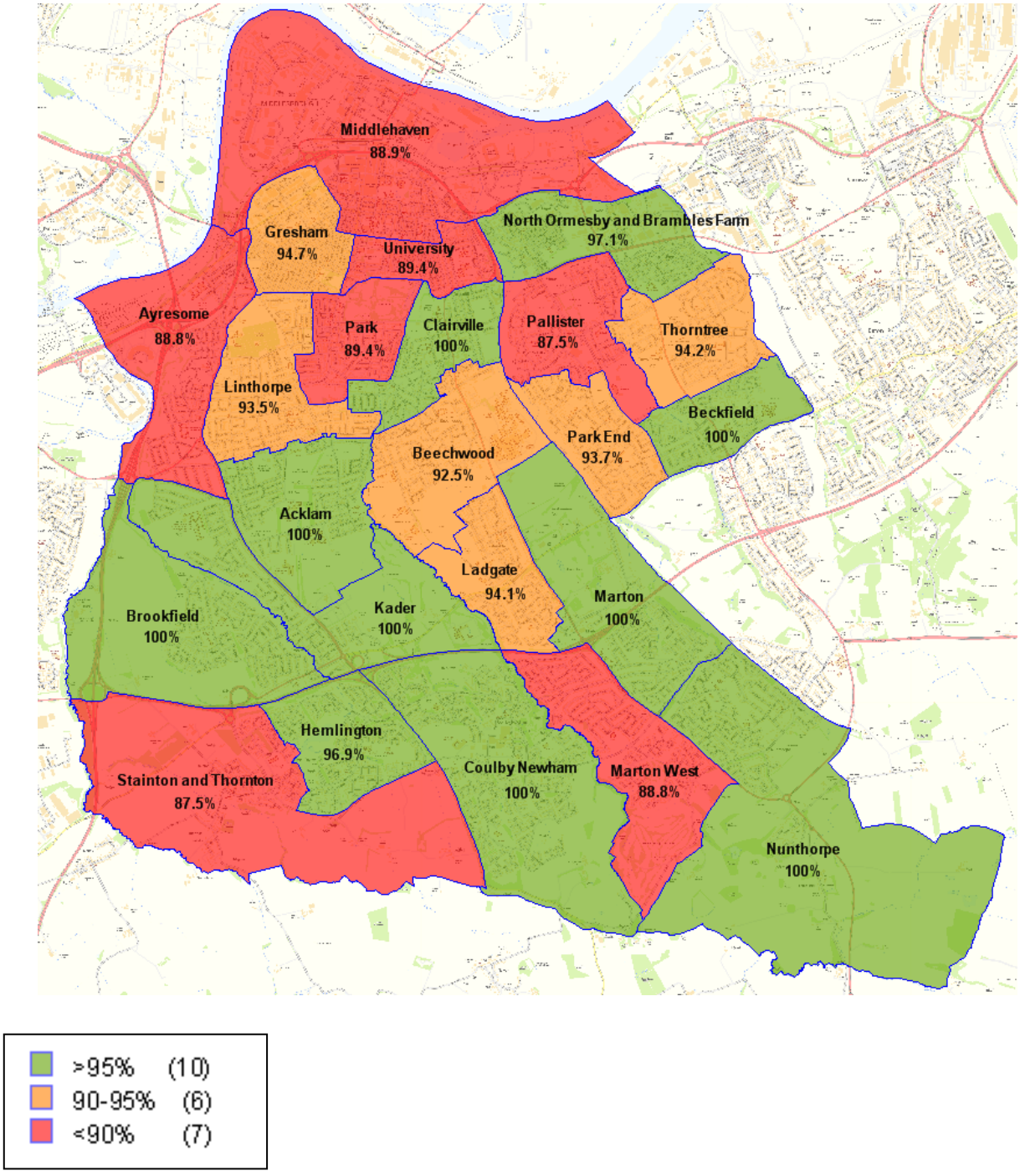


Figure 2: Men C Coverage at 1st Birthday

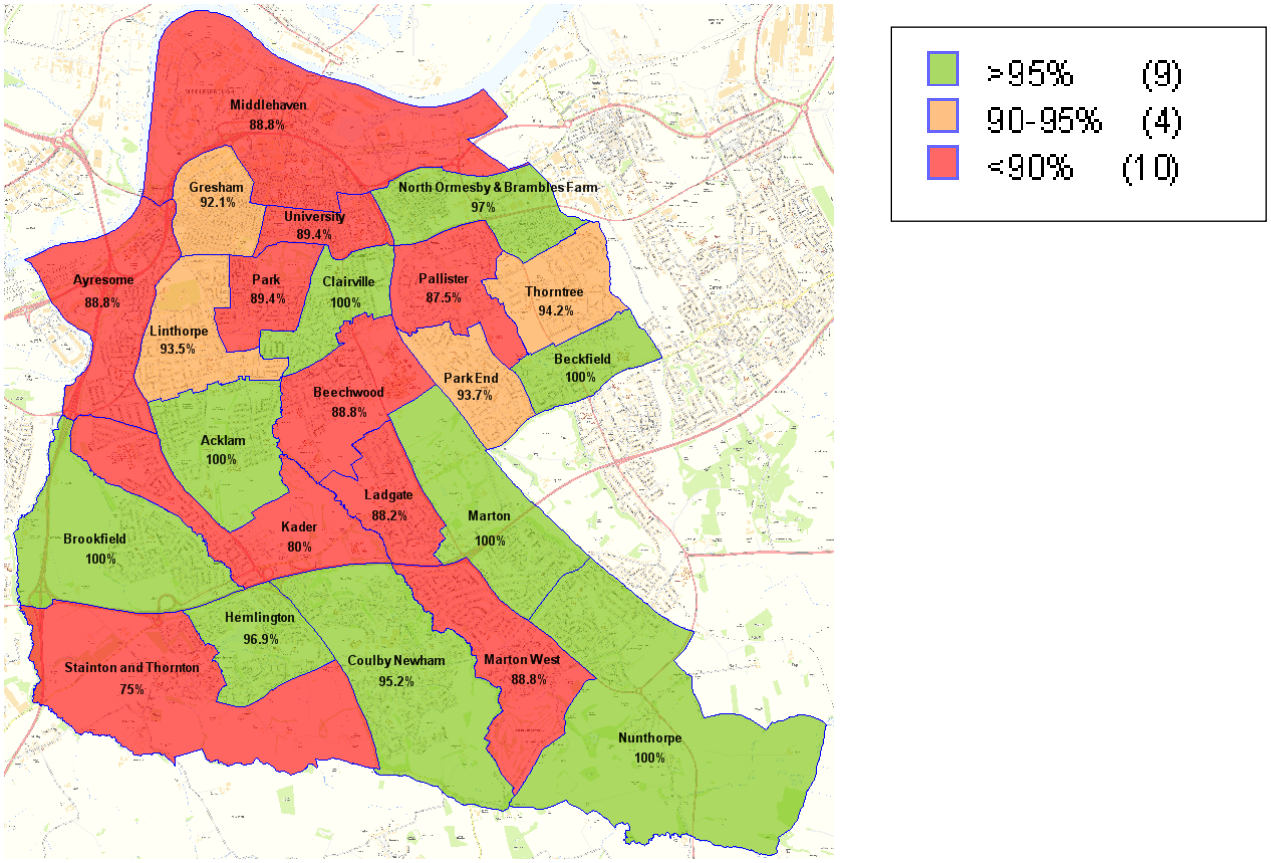
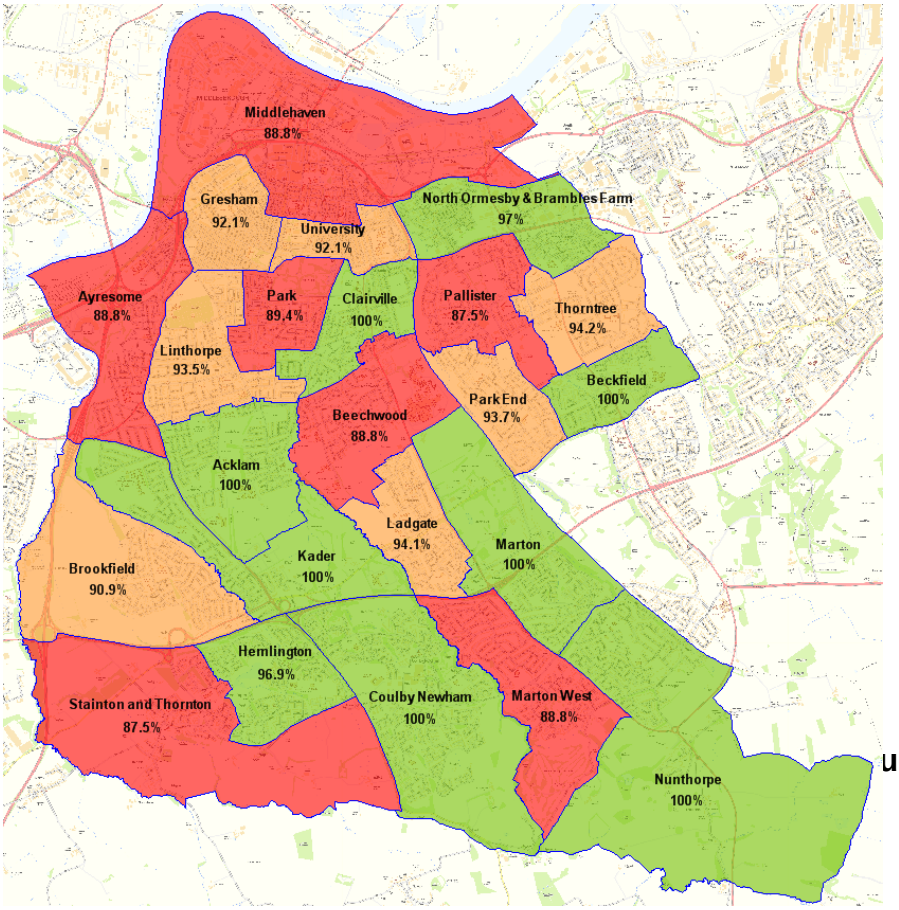


Figure 3: PCV Coverage at 1st Birthday



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Immunisation programme delivery

12. Bringing commissioning and delivery of vaccination programmes to be in line with NICE and professional guidance. Services need to be more flexible and accessible to maximize uptake.

Opportunistic vaccination

13. Every effort should be made to vaccinate individual with a focus on improving the offer and availability of immunisation services for vulnerable groups through collaborative efforts primary care, schools, community health services and children's centres.

Community engagement and awareness raising

14. There is need for community engagement especially with vulnerable and high risk groups using social marketing approaches to promote and raise awareness of immunisation programmes. Public health transition into local authorities provides opportunities for greater community engagement on public health issues through the roles of elected members, community leaders and other existing community engagement mechanisms.

Surveillance systems and data management

15. Work is ongoing to improve the quality of data and information sharing between primary care, universal children's services and other relevant sources especially for children in at risk groups to support opportunistic vaccination and immunisation.

Public health transition

16. As the health economy undergoes radical reforms it is important that a seamless transition is achieved for immunization and vaccination programme with service continuity and organizational memory being preserved. To ensure that immunisation uptake remains a priority the health and well-being board will need to be assured that the new NHS and public health arrangements are addressing the lowest coverage areas and vulnerable groups.

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Further Reading:

HPA North East Immunisation Report 2011
http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1317135602508
HPA North East Immunisation Report 2010
http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1309968870193
NICE Public Health Guidance 21: Reducing difference in the uptake of immunisations (including targeted vaccines) among children and young people aged under 19 years. 2009
http://www.nice.org.uk/nicemedia/pdf/PH21Guidance.pdf