

SECTION 5: IMMUNISATION

Why is immunisation important?

At the turn of the 20th Century it was common for families to lose half their children from infectious disease. Infectious disease has killed more people than War, Famine and Pestilence put together.

No other measure taken by man, apart from the provision of safe drinking water has saved more lives than immunisation. Immunisation is the only medical intervention to have eradicated any disease i.e. smallpox.

Immunisation is one of the most effective activities Health Professionals undertake. It protects the individual, prevents epidemics and can even help eliminate some diseases.

How do vaccines work?

Vaccines work by making us produce antibodies to fight disease without actually infecting us with the disease. If the vaccinated person then comes into contact with the disease itself, their immune system will recognise it and immediately produce the antibodies they need to fight it.

When a vaccination programme against a disease begins, the number of people catching the disease goes down. As the threat decreases, it's important to keep vaccinating, otherwise the disease can start to spread again.

If enough people in a community are vaccinated, it's harder for a disease to pass between people who have not been vaccinated and the risk of outbreaks is reduced. This is called herd immunity. Herd immunity is particularly important for protecting people who are not vaccinated either because they're too young, ill, have a damaged immune system or have not had the scheduled vaccinations.

The more infectious the disease, the greater the number of people who have to be vaccinated to keep the disease under control. Measles for instance, is highly infectious. If vaccination rates go down, measles will quickly spread again. At least 90% of children have to be immune to stop the disease from spreading. If 95% of children are protected by MMR, it's possible to eliminate not just measles, but mumps and rubella as well.

How does a vaccination programme work?

When a vaccination programme is introduced, everyone in the population of a certain age or risk group is offered a specific vaccine to try to reduce the number of cases of the disease.

Vaccination programmes aim to protect people for life. They often concentrate on young children, as they are particularly vulnerable to many potentially dangerous infections.

In the UK, there is a schedule of vaccinations given in the first weeks, months and years of life with the overall aim to provide protection against vaccine preventable

diseases that present a risk to babies and children. The immunisation schedule of childhood vaccinations has been designed to provide early protection against infections that are most dangerous for the very young. The diseases that the vaccination schedule protects against includes diphtheria, tetanus, pertussis (whooping cough), haemophilus influenzae type b (Hib), polio, specific types of meningococcal disease, measles, mumps, rubella and specific types of pneumococcal disease.

Providing subsequent immunisations and booster doses as scheduled should ensure continued protection. Further vaccinations are offered at other points throughout life to provide protection against infections when individuals reach an age when they become at increased risk from certain vaccine-preventable diseases.

It is therefore vitally important that children especially receive the correct immunisations at the correct time in the schedule. Failure to do so will put the child at a real risk of harm or even death from contracting a vaccine preventable disease.

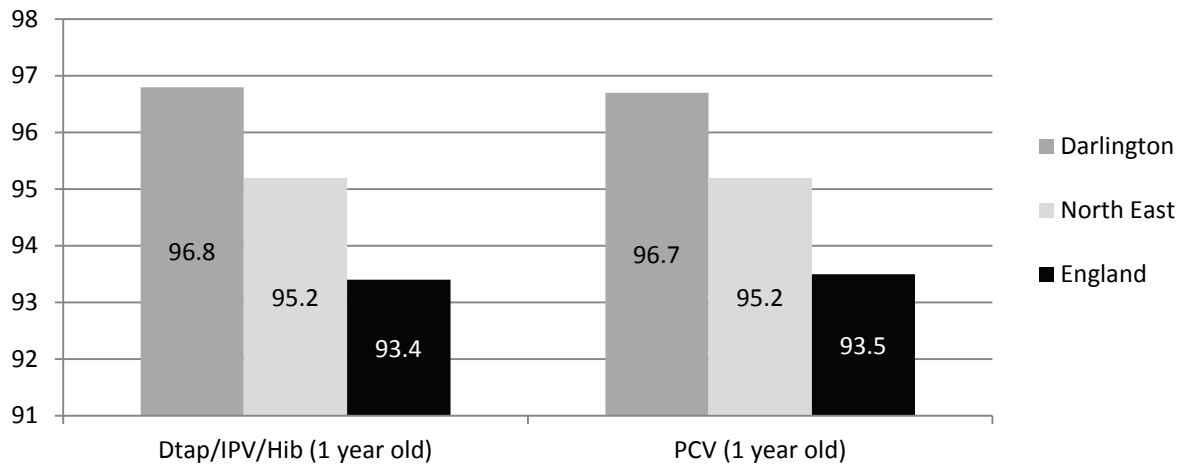
Proportion of children who complete immunisation by recommended ages

The schedule for routine immunisations starts at eight weeks following birth and continues throughout life, including vaccinations into adult life including immunisations for Influenza and pneumococcal disease. There is a concentration of vaccinations in the first five years of life as this is the period with the greatest risk to children from a range of life threatening disease. The UK Schedule of Vaccinations Immunisation includes around 16 separate vaccinations or boosters to be given from a child being eight weeks old. As many of these immunisations are given at the same time throughout this period the immunisation coverage in the population is measured at three stages in a child's life:-

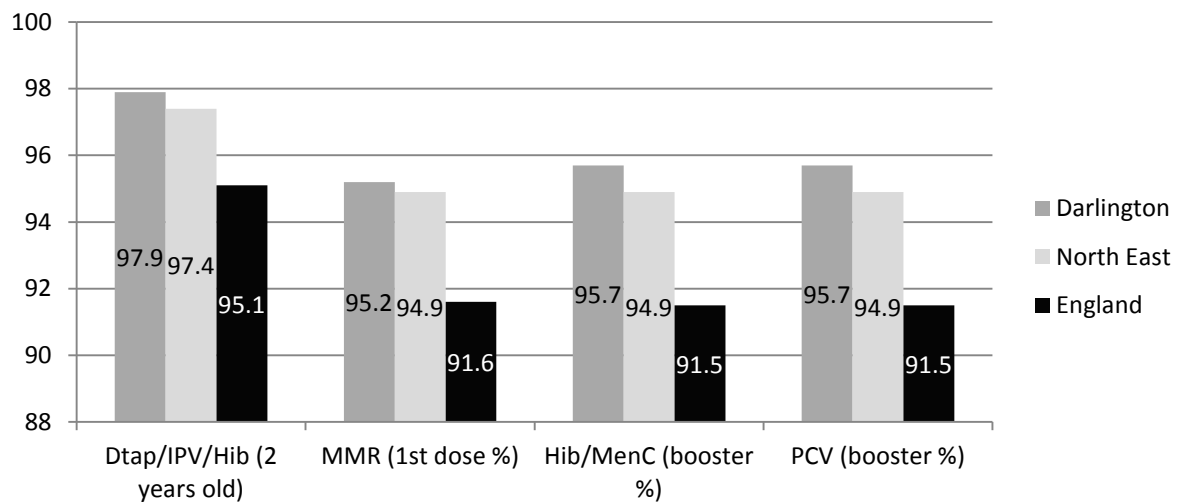
- 12 months,
- age two
- age five

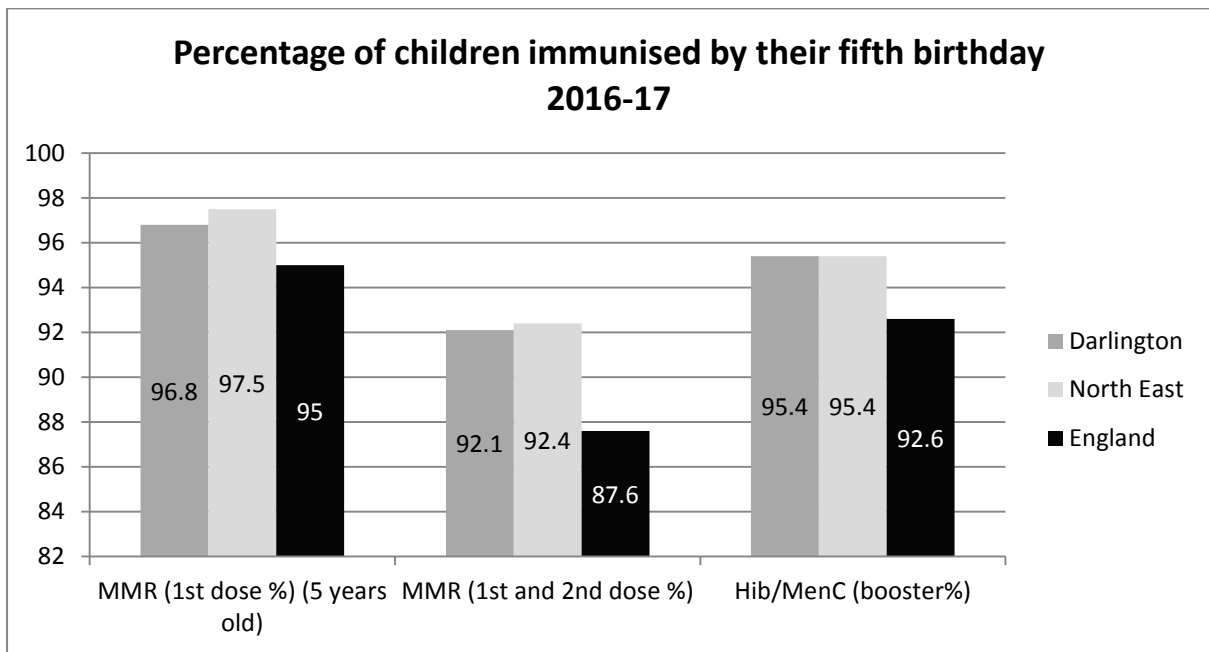
The charts below show the coverage of key vaccinations at each of these three key measured stages in a child's life for Darlington, compared to the average for England and the North East Region.

Percentage of children immunised by their first birthday 2016-17



Percentage of children immunised by their second birthday 2016-17

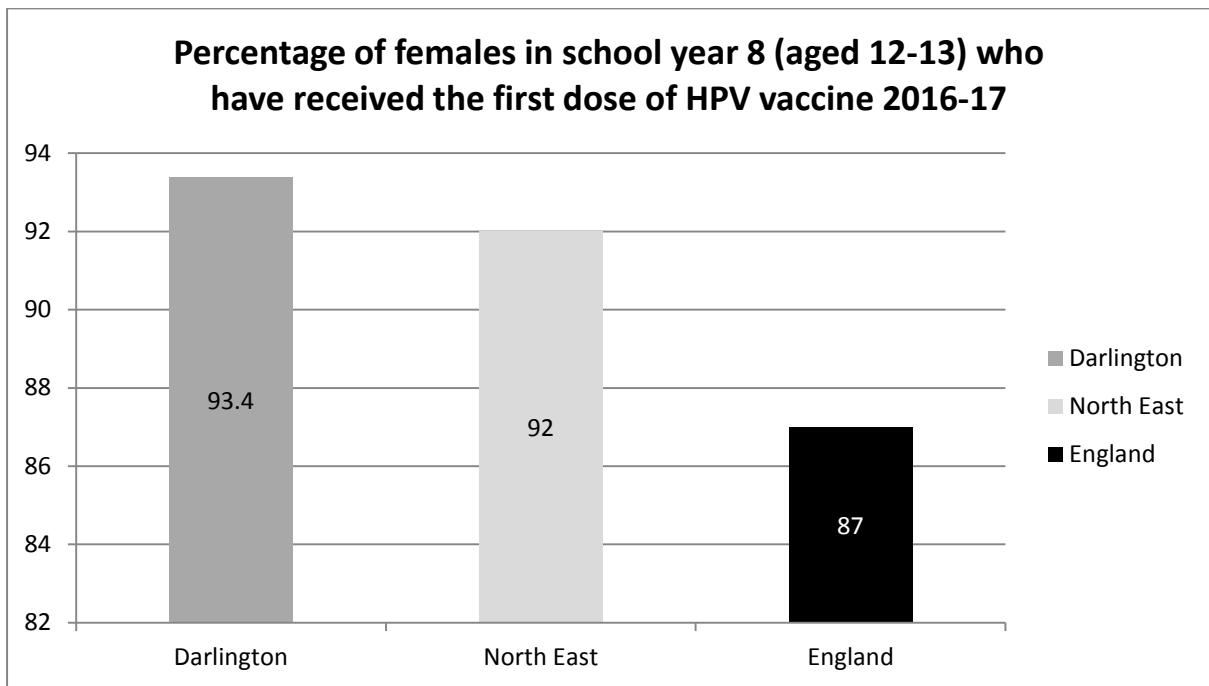




School Aged Vaccinations.

As described above the UK schedule for routine immunisations continues throughout life and changes in response to those vaccine preventable diseases that present the greatest risk or danger at different points and ages. The Human Papillomavirus (HPV) is a common infection that has been shown to be a significant contributor to the development of Cervical Cancer in adult women. There is an effective vaccine that prevents infection from the specific strains of HPV that are implicated in contributing to the development of Cervical Cancer.

The national HPV immunisation programme was introduced in 2008 and is offered in secondary schools to girls in year 8 who are aged 12 to 13 years to protect them against HPV before they are likely to be exposed. Vaccination significantly reduces their risk of developing Cervical Cancer as an adult. The first HPV vaccine dose is usually offered to females in Year 8 (aged 12–13 years). The graph below shows the percentage of girls aged 12-13 years in Darlington who have received their first dose of HPV vaccine in 2015-16.



Conclusion

Overall, Darlington has sustained levels of immunisations which ensure herd immunity and protect the whole population. Although the levels for the whole population are high there are pockets of poor uptake in specific communities within Darlington that have a differential impact from the effects of vaccine preventable diseases compared to children in the wider population. More needs to be done to understand the reasons for the problems in uptake in these communities and what barriers exist to children being provided the protection from preventable disease and harm that immunisation offers.