

Measles is one of the most infectious viral diseases, it can sometimes lead to serious complications and be fatal in very rare cases. In 2017 there were 36 confirmed measles cases in the South West and 259 in England. There have already been 587 cases in England in quarter 1 of 2018, 62 of which were in the South West.

Measles is highly infectious so effective prevention relies on high uptake of a population wide vaccination program. Torbay is performing well with vaccination rates at 97.8% for one dose at 5 years (WHO target is 95%). However, there is room for improvement as vaccination rates for two doses of MMR at age 5 are 92.1% (2016/17) higher than the England average of 87.6% but lower than the 95% needed for effective herd immunity.

Why is this important?



Measles is a highly infectious viral illness that can sometimes lead to serious complications.

What is the local context?



There have been no local outbreaks of measles recently and vaccination rates are at 97.8% for one dose at 5 years (WHO target is 95%).

What should we do?



Ensure the public have had 2 doses of MMR vaccine by age 5 in line with the childhood vaccination program timetable or as a catch up for at risk adults.

Vaccination program - Before the introduction of measles vaccine in 1968, annual measles notifications ranged from 160,000 and 800,000, with peaks every two years. More than 90% of adults had evidence of previous infection and around 100 deaths from acute measles were recorded each year.

Vaccination was introduced in 1988 as part of the MMR vaccination (measles, mumps and rubella) and contains weakened versions of live measles, mumps and rubella viruses. It is routinely offered to children at 13 months with a second dose before starting school. Young babies are protected to some extent before this age through maternal antibodies passed on by a vaccinated mother. The vaccine effectiveness of a single dose of MMR is around 90% and approximately 95% for two doses.

Research in 1998, published in The Lancet, by Dr Wakefield claimed there is a link between the

MMR vaccine and autism or bowel disease. The research has been discredited and he has been struck off as a doctor in the UK. Subsequent studies in the last 9 years have found no link between the MMR vaccine and autism or bowel disease. However, the long term impact has been a decline in those protected by the MMR vaccine who were due to be part of the childhood vaccination program in the years following the Wakefield research publication.

Identification – Measles is one of the most infectious viral diseases. It has a basic reproduction number (R0) between 15 and 20. This means that, on average, one infected person would go on and infect 15 – 20 individuals in a totally susceptible population.

Measles is a notifiable disease in the UK meaning that health professionals must inform local health protection teams of suspected cases. The increase in measles circulation is mainly associated with travel to and from Europe where there are large ongoing measles outbreaks.

Between 1 January 2018 and 31 May 2018 there have been 587 laboratory confirmed measles cases in England 62 of which were in the South-West. There have been no confirmed cases reported in Devon or Torbay.

Numbers vary year on year: in 2017 there were 36 confirmed measles cases in the South West and 259 in England, whereas in 2016 there were 96 in the South West and 531 in England. The highest rates of cases are in the under 5s.

Transmission – The transmission route of measles is mostly face to face through either

MEASLES

AN OVERVIEW OF TORBAY – 2018

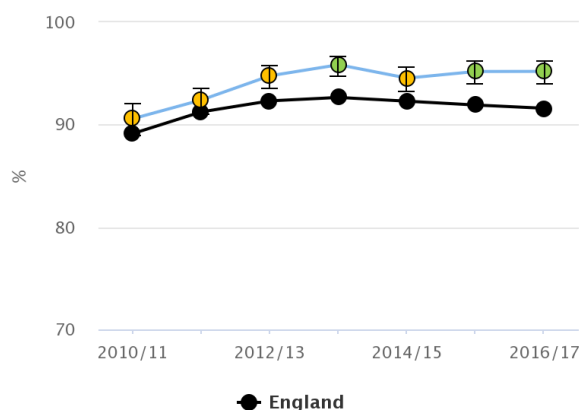
airborne droplet spread or direct contact with nasal or throat secretions of infected persons.

Much less commonly, measles may be transmitted through airborne transmission with no known face to-face contact or through contact with items freshly soiled with nose and throat secretions such as door handles.

Individuals with a new measles infection are infectious from about 4 days before rash onset until 4 full days after the rash appears. Any patient with suspected measles should avoid contact with immunosuppressed individuals and other vulnerable people (such as pregnant women and infants).

Vaccination – rates of vaccination need to be maintained in the population to maintain herd immunity and protect those who for reasons of age or ill health are unable to be vaccinated. Rates of vaccination for first dose MMR by age 2 95.2% (fig 1) are significantly better than the England rates 91.6% and are over the 95% target for herd immunity.

Figure 1: Vaccination coverage in Torbay (MMR one dose by age 2)



Vaccination rates for two doses of MMR at age 5 are 92.1% (2016/17) higher than the England average of 87.6% but lower than the 95% needed for effective herd immunity.

Geography – In 2017 the World Health Organization declared that the UK eliminated measles. Elimination means that measles is no longer native to the UK. However, it does not mean that measles has disappeared as cases are brought in every year from abroad.

These imported cases can lead to outbreaks when they are introduced in to areas where the vaccination rate is less than the 95% needed to sustain herd immunity. In 2018 there have been large outbreaks in Romania and Italy.

Deprivation – Children living in deprived neighbourhoods are the least likely to have received either a first or second MMR vaccination and more likely than those in the least deprived areas to contract measles in the event of outbreaks (Hungerford *et al.* 2016).

Age – Measles can be particularly debilitating in very young infants and immunosuppressed adults, who are more likely to develop complications and require hospitalisation. Measles can be severe in pregnant women and leads to an increased risk of prematurity and miscarriage. Infants are at high risk of complications such as pneumonia, otitis media, and, in extremely rare cases, of brain swelling and death.

References and further information:

Torbay JSNA www.southdevonandtorbay.info
Confirmed cases of measles in England and Wales by region and age: 2012 to 2017

<https://www.gov.uk/government/publications/measles-confirmed-cases/confirmed-cases-of-measles-in-england-and-wales-by-region-and-age-2012-to-2014>

Cover of vaccination evaluated rapidly (COVER) programme 2017 to 2018: quarterly data

<https://www.gov.uk/government/statistics/cover-of-vaccination-evaluated-rapidly-cover-programme-2017-to-2018-quarterly-data>

Cover of vaccination evaluated rapidly (COVER) programme: annual data

<https://www.gov.uk/government/publications/cover-of-vaccination-evaluated-rapidly-cover-programme-annual-data>

Hungerford, D., Macpherson, P., Farmer, S., Ghebrehewet, S., Seddon, D., Vivancos, R. and Keenan, A. (2016) Effect of socioeconomic deprivation on uptake of measles, mumps and rubella vaccination in Liverpool, UK over 16 years: a longitudinal ecological study. *Epidemiology & Infection*, 144(6), pp.1201-1211.

PHE National Measles Guidance (2017)

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/637338/PHE_Measles_guidance_August_2017.pdf