



Public Health  
England

Protecting and improving the nation's health

# Laboratory confirmed cases of measles, mumps and rubella, England: April to June 2017

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# Laboratory confirmed cases of measles, mumps and rubella, England: April to June 2017

Measles, rubella and mumps are notifiable diseases and healthcare professionals are legally required to inform their [local Health Protection Team](#) (HPT) of all suspected cases. National enhanced surveillance including oral fluid (OF) testing of all suspected cases is provided through the Virus Reference Department (VRD) at Colindale to support and monitor progress towards WHO measles and rubella elimination targets.

The two key WHO indicators for measuring the performance of national measles and rubella surveillance systems are the rate of laboratory investigations (at least 80% of suspected cases) and the rate of discarded cases (at least two per 100,000 population). In order to achieve these targets it is important to ensure that all suspected cases are appropriately tested. IgM serology testing and oral fluid testing are the only two tests considered adequate by WHO for confirming and importantly discarding suspected measles and rubella cases. Recent infection is confirmed by measuring the presence of IgM antibodies or detecting viral RNA (by PCR) in these samples.

Samples that have been confirmed positive for measles or rubella are further sequenced and entered on the WHO global Measles Nucleotide Surveillance (MeaNS) or the Rubella Nucleotide Surveillance (RubeNS) system respectively which are hosted at the National Reference Laboratory. Genotyping and further characterisation of measles and rubella is used to support investigation of transmission pathways and sources of infection.

Data presented here are for the second quarter of 2017 (ie April to June). Analyses are done by date of onset of rash/symptoms and regional breakdown figures relate to Government Office Regions.

Historical annual and quarterly measles, rubella and mumps epidemiological data are available here from 2013 onwards:

<https://www.gov.uk/government/publications/measles-confirmed-cases>

<https://www.gov.uk/government/publications/mumps-confirmed-cases>

<https://www.gov.uk/government/publications/rubella-confirmed-cases>

Results from all samples tested at Colindale are reported on the MOLIS/LIMS system and reported back to the patient's GP and local HPT. HPTs can also access the results of samples which have been processed by the VRD in the previous 100 days through the [MrEP site](#).

**Table 1. Total suspected cases of measles, rubella and mumps reported to Health Protection Teams with breakdown of: a) proportion tested by Oral Fluid (OF); b) cases confirmed (all tests) nationally at the Virus Reference Department (VRD), Colindale, and at local NHS hospital and private laboratories; c) discard rate (all tests): weeks 14-26/2017**

Total suspected cases*		Number (%) tested by OF Target: 80%	Number of confirmed infections					Discard rate** based on negative tests per 100,000 population (all samples)
			Samples tested at VRD			Samples tested locally	Total	
			OF IgM positive samples	OF PCR positive samples	All other positive samples			
<b>Measles</b>	597	352 (59%)	30	2	31	1	<b>64</b>	1.05
<b>Rubella</b>	152	62 (41%)	–	–	–	–	<b>0</b>	0.84
<b>Mumps</b>	2958	1485(50%)	709	81	44	17	<b>851</b>	N/A

\* This represents all cases reported to HPTs in England i.e. possible, probable, confirmed and discarded cases on HPZone.

\*\* The rate of suspected measles or rubella cases investigated and discarded as non-measles or non-rubella cases using laboratory testing in a proficient laboratory. The annual discard rate target set by WHO is 2 cases per 100,000 population. We present quarterly rates here with an equivalent target of 0.5 per 100,000 population

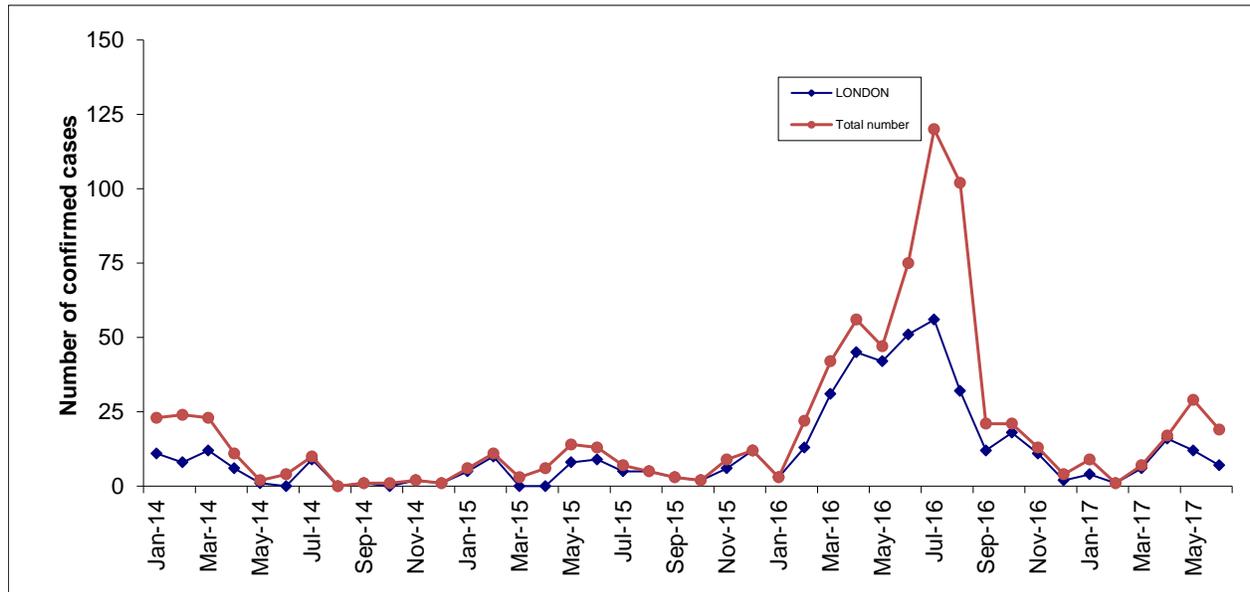
## Measles

In England, 64 new measles infections were confirmed in the second quarter of 2017 compared to 17 in the period between January and March 2017 (figure1) [1]. Scotland reported one case this quarter while Wales [2] and Northern Ireland [3] both reported small outbreaks linked to importations from Romania.

The majority (34/64, 53%) of the England measles cases reported this quarter were in London residents and most were linked to small family clusters and importations (table 2). In keeping with recent epidemiology the majority (29/64, 45%) of the cases were in teenagers and young adults. Five cases reported having two MMR doses, three of these confirmed re-infections

(secondary vaccine failures) were in healthcare workers exposed in a health care setting. The hospitalisation rate this quarter was 37%.

**Figure 1. Laboratory confirmed cases of measles by month of onset of rash/symptoms reported, London and England: Jan 2014 June 2017**



In England, 10 (15%) infections this quarter were associated with recent travel: Saudi Arabia (2 cases), Somalia (2 cases), Thailand, (1 case), Bangladesh (1 case), Romania (2 cases), and two cases from Western Europe.

Where typing was possible all the measles cases this quarter were either B3 or D8 genotype. There are currently several large measles outbreaks across Europe with Romania (genotype B3) and Italy (genotypes B3 and D8) being the worst affected countries [4]. The World Health Organization (WHO) Regional Office for Europe has warned that this threatens progress towards elimination and urged national authorities to maximize efforts to achieve and/or sustain at least 95% coverage with two doses of Measles Mumps Rubella (MMR) vaccine to prevent circulation in the event of an importation. In response, NaTHNaC issued a reminder to travellers to ensure they are up to date with their MMR vaccination [4].

In order to monitor importations and chains of transmission it is essential that every suspected case is tested with an Oral Fluid Test (OFT); this includes cases that are confirmed locally.

This quarter an oral fluid sample was taken on only 59% of all suspected measles cases, well below the 80% WHO target (table 1).

PHE Health Protection Teams (HPTs) should be aware that the revised National Measles Guidelines [5] and the Guidelines on Post-exposure Prophylaxis for Measles [6] have now been published. HPTs are also reminded to use the congregation context “Measles 2017” for all measles cases reported from 1 January 2017.

**Table 2. Laboratory confirmed cases of measles by age group and region, England: weeks 14-26/2017**

<b>Region</b>	<b>&lt;1yr</b>	<b>1-4 yrs</b>	<b>5-9 yrs</b>	<b>10-14 yrs</b>	<b>15-19 yrs</b>	<b>20-24 yrs</b>	<b>25-29 yrs</b>	<b>30-34 yrs</b>	<b>&gt;35 yrs</b>	<b>Total</b>
North East	–	–	–	–	–	–	–	–	–	<b>0</b>
North West	–	2	–	–	–	–	–	–	1	<b>3</b>
Yorks/Humber	–	–	1	2	–	–	–	–	2	<b>5</b>
East Midlands	–	–	–	–	–	–	–	–	–	<b>0</b>
West Mids.	–	–	–	1	–	2	3	–	2	<b>8</b>
East of England	1	3	–	1	1	–	–	–	–	<b>6</b>
London	3	6	1	1	5	4	3	5	6	<b>34</b>
South East	–	1	–	–	–	–	–	–	1	<b>2</b>
South West	1	1	2	–	–	1	–	–	1	<b>6</b>
<b>Total</b>	<b>5</b>	<b>13</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>6</b>	<b>5</b>	<b>13</b>	<b>64</b>

## Rubella

No new infections were identified in England in the first half of 2017. However, one case was reported in Scotland in an adult male with recent travel to India.

## Mumps

An increase in mumps activity has been noted this quarter and there were 851 laboratory confirmed mumps infections in England compared to 165 in the same period last year (figure 2). Activity is in keeping with longer term trends which show cyclical peaks every three to four years [4]. Mumps cases were reported in all regions of England this quarter (table 3) predominantly in young adults aged 16 to 30 years (657/851, 77%) and we are aware of a number of outbreaks linked to colleges and Universities. This is not unusual as transmission is usually fuelled by close contact, for example in halls of residence, events and parties. Well over half (490/851, 58%) of the cases this quarter were either in unvaccinated or incompletely vaccinated individuals. Although mumps in fully vaccinated individuals can occur, due to secondary vaccine failure, it is less likely to lead to complications requiring hospitalisation such as orchitis and meningitis.

**Table 3. Laboratory confirmed cases of mumps by age group and region, England: weeks 14-26/2017**

Region	<1yr	1-4 yrs	5-9 yrs	10-14 yrs	15-19 yrs	20-24 yrs	25-29 yrs	30-34 yrs	>35 yrs	Total
North East	1	1	5	4	56	59	61	–	1	<b>187</b>
North West	–	–	1	7	39	43	21	–	–	<b>111</b>
Yorks/Humber	–	–	2	–	33	37	18	–	–	<b>90</b>
East Midlands	–	–	2	2	14	27	13	–	–	<b>58</b>
West Mids.	–	1	1	1	22	27	9	1	–	<b>62</b>
East of Eng/d	–	–	1	2	6	21	14	–	–	<b>44</b>
London	–	1	6	4	13	36	46	–	–	<b>106</b>
South East	–	1	1	11	47	53	34	–	–	<b>147</b>
South West	–	–	3	1	12	17	13	–	–	<b>46</b>
<b>Total</b>	<b>1</b>	<b>4</b>	<b>22</b>	<b>32</b>	<b>242</b>	<b>320</b>	<b>229</b>	<b>1</b>	<b>1</b>	<b>851</b>



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### *About Health Protection Report*

*Health Protection Report* is a national public health bulletin for England and Wales, published by Public Health England. It is PHE's principal channel for the dissemination of laboratory data relating to pathogens and infections/communicable diseases of public health significance and of reports on outbreaks, incidents and ongoing investigations.

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