



Public Health
England

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Laboratory-confirmed cases of measles, rubella and mumps, England: April to June 2018

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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 2 per 100,000 population). In order to achieve these targets our focus is on ensuring 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 2018 (i.e. 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 14-26/2018

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			
Measles	1763	1161	239	120	48	14	421	2.13
Rubella	139	73	–	–	–	–	–	0.37
Mumps	2001	1253	296	11	63	16	386	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

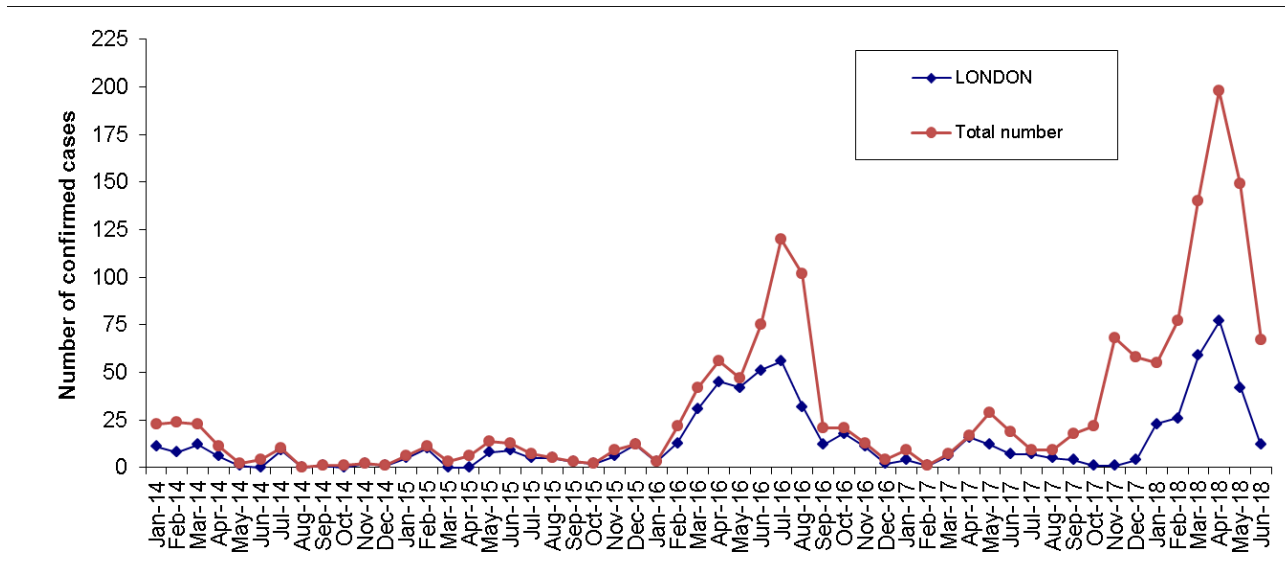
Measles

In England, 421 new measles infections were confirmed in the second quarter of 2018 compared to 265 in the period between January and March 2018, [1] bringing the total number of measles cases for the first two quarters of 2018 up to 686 (Figure1).

The increase of cases that began in the previous quarter has continued with the majority of cases in young people and adults over the age of 15 years (239/421, 57%). Most of the cases this quarter were associated with outbreaks in London, the South West, South East and Yorkshire and the Humber regions. PHE declared this a national measles incident on 2nd May.

The hospitalisation rate has remained high at around 30% and 39 cases (9%) reported having at least one dose of a measles containing vaccine.

Figure 1. Laboratory confirmed cases of measles by month of onset of rash/symptoms reported, London and England: Jan 2014 – Jun 2018



In total this quarter there were twenty eight (7%) measles cases with recent travel abroad. Fifteen cases had travelled to Europe: Slovakia (4), France (3), Ukraine (3), Romania (2), Croatia (1), Czech Republic (1), Germany (1), and 13 had travelled to Asia: Pakistan (5), India (3), Sri Lanka (2), Bangladesh (1), Indonesia (1), Turkey (1).

The European Centre for Disease Prevention and Control noted earlier this month [2] that measles continues to spread across Europe because vaccination coverage in many countries is suboptimal. If the goal of eliminating measles is to be reached, vaccination coverage for children and adults needs to reach the WHO target of 95% coverage with two doses of MMR.

All the measles cases that had genotyping information available (333/421, 79%) this quarter were either B3 or D8. 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 60% of all suspected measles cases, well below the 80% WHO target (Table 1).

Seven new cases of measles were reported from Wales this quarter, while Scotland identified only one case. Northern Ireland reported no new cases this quarter.

The World Health Organization Regional Office for Europe [3] has confirmed that the UK has maintained its measles and rubella elimination status in 2017. This is a huge achievement and a

testament to all the hard work by our health professionals in the NHS to ensure that all children and adults are fully protected with two doses of the MMR vaccine.

Recent outbreaks remind us that we cannot be complacent as we remain vulnerable to importations leading to spread among communities with low MMR coverage and in age groups with very close mixing. The only way to ensure that our elimination status is sustained going forward is to improve coverage with two doses of the MMR vaccine in children under the age of 5 years and to ensure that catch up vaccines are offered to older children and young adults who missed out. Checking MMR vaccine status is especially important before patients travel to countries with ongoing measles outbreaks, or head to large gatherings such as festivals, or before they start college and university.

Table 2. Laboratory confirmed cases of measles by age group and region, England: Weeks 14-26/ 2018

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
East Midlands	–	–	1	1	1	1	–	–	2	6
East of England	2	4	2	–	–	1	1	1	2	13
London	19	14	18	5	12	13	13	11	26	131
North East	1	–	1	–	2	–	3	–	1	8
North West	–	1	1	–	1	2	3	–	–	8
South East	6	9	6	14	16	5	6	8	24	94
South West	12	16	9	4	6	3	6	12	10	78
West Midlands	1	1	1	1	7	2	2	3	1	19
Yorks/Humber	8	14	4	6	11	10	2	2	7	64
Total	49	59	43	31	56	37	36	37	73	421

Rubella

No new rubella infections were confirmed this quarter.

Mumps

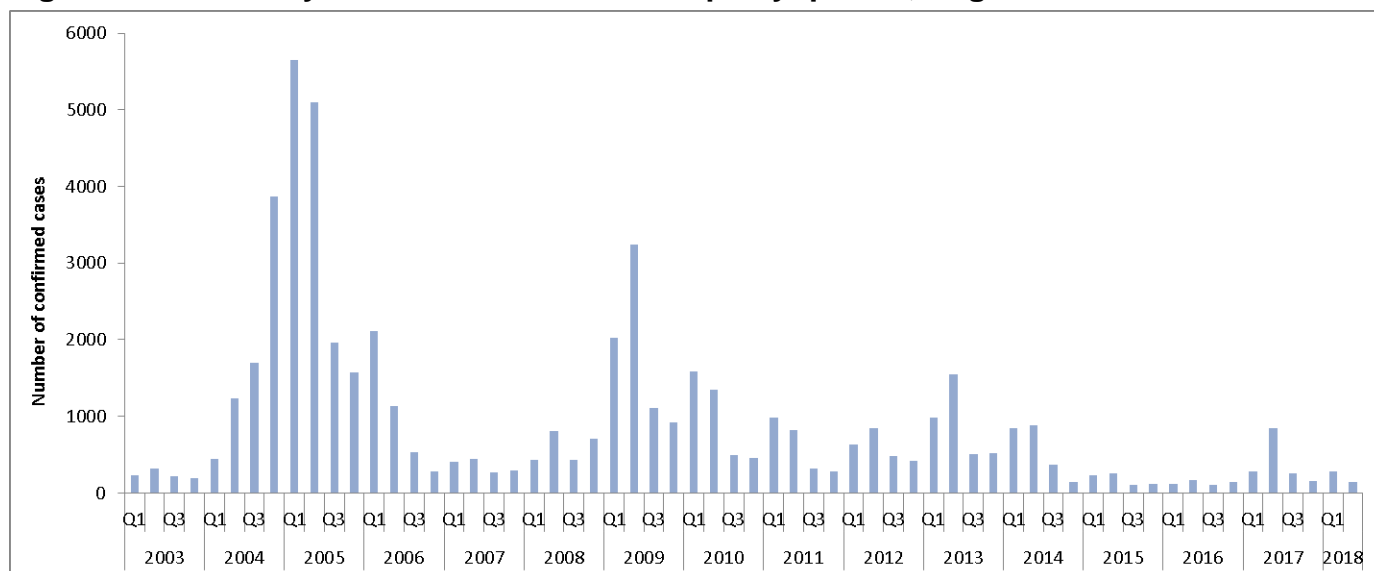
An increase in mumps activity in England was observed this quarter with 386 laboratory confirmed mumps infections compared to the 275 cases reported in the previous quarter [1] (Figure 2). Mumps cases were reported in all regions of England (Table 3) predominantly in young adults aged 15 to 34 years (296/386, 77%). More than a third (250/386, 65%) of the cases this quarter were unvaccinated. 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: Lab-confirmed cases of mumps by age group and region, England: weeks 14-26/2018*

Region	<1	1-4	5-9	10-14	15-19	20-24	25+	NK	Total
North East	–	–	1	1	2	3	–	–	7
North West	–	3	4	12	58	87	70	–	234
Yorkshire & Humber	–	1	–	–	3	2	1	–	7
East Midlands	–	–	1	1	4	6	5	–	17
West Midlands	–	1	–	1	4	3	9	–	18
East of England	–	–	–	–	3	2	8	–	13
London	1	–	–	2	4	10	31	–	48
South East	–	1	–	3	2	5	10	–	21
South West	–	–	2	2	6	2	9	–	21
Total	1	6	8	22	86	120	143	0	386

Note: Data updated, 23 November 2018

Figure 2: Laboratory confirmed cases of mumps by quarter, England - 2003-2018



References

1. PHE (May 2018). [Laboratory confirmed cases of measles, mumps and rubella, England: January to March 2018](#). *HPR* 12(19): immunisation.
2. ECDC (20 August 2018). Monthly measles and rubella monitoring report August 2018. <https://ecdc.europa.eu/sites/portal/files/documents/Monthly-Measles-Rubella-monitoring-report-August-2018.pdf>
3. “Measles cases hit record high in the European Region”, 5. WHO Regional Office for Europe press Release, 20 August 2018. <http://www.euro.who.int/en/media-centre/sections/press-releases/2018/measles-cases-hit-record-high-in-the-european-region>

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health and Social Care, and are a distinct delivery organisation with operational autonomy to advise and support government, local authorities and the NHS in a professionally independent manner.

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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