



Public Health  
England

Protecting and improving the nation's health

# Laboratory confirmed cases of measles, rubella and mumps, England: April to June 2019

Health Protection Report  
Volume 13 Number 31  
6 September 2019

Advanced Access report published 30 August 2019

# Laboratory confirmed cases of measles, rubella and mumps, England: April to June 2019

This week the World Health Organization announced that, based on the number of cases in 2018, the UK has lost its “measles elimination” status. The government has signalled a new commitment to the UK measles and rubella elimination strategy that was published in January 2019 aiming to achieve a future without endemic measles, rubella and congenital rubella [1]. The strategy focuses on four core components required to achieve and maintain elimination of measles and rubella:

- achieving and sustaining  $\geq 95\%$  coverage in the routine childhood programme;
- achieving  $\geq 95\%$  coverage with two doses of MMR vaccine in older-age cohorts through opportunistic and targeted catch-up;
- strengthening measles and rubella surveillance;
- ensuring easy access to high-quality, evidence-based information.

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 the 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 2019 (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 / 2019.

	Total suspected cases*	Number (%) tested by OF. <b>Target: 80%</b>	Number of confirmed infections					Total	** Discard rate based on negative tests per 100,000 population (all samples)
			Samples tested at VRD			Samples tested locally			
			OF IgM positive samples	OF PCR positive samples	All other positive samples				
Measles	1503	946 (63%)	192	65	27	17	301	1.2	
Rubella	103	89 (86%)	–	–	1	–	1	0.3	
Mumps	6842	3629 (53%)	1750	142	136	–	2028	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

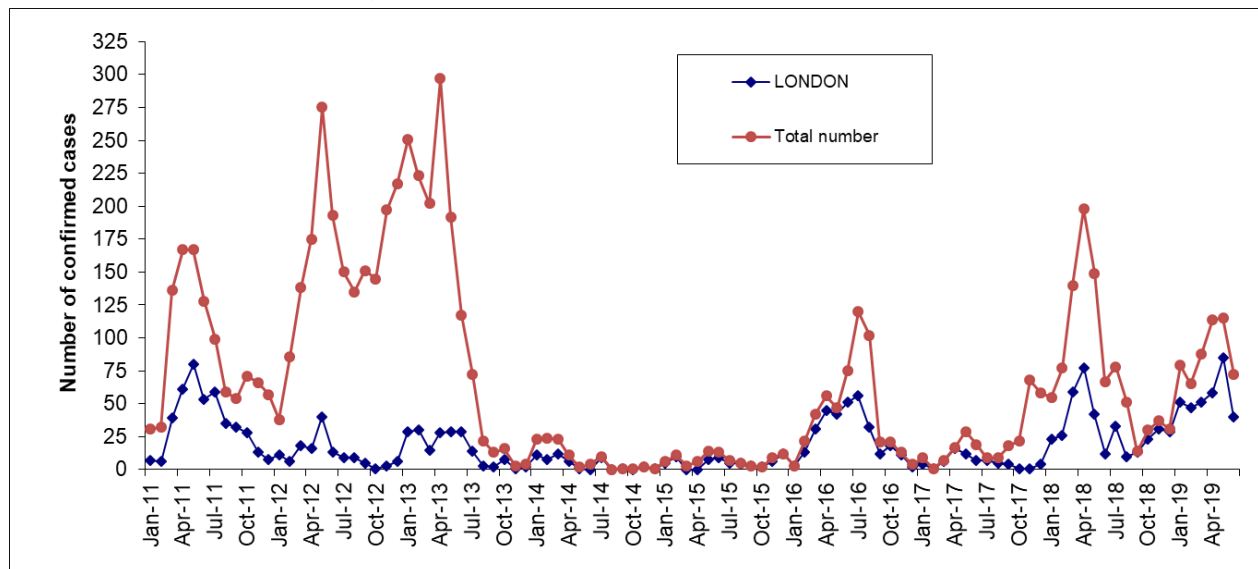
In England, 301 new measles infections were confirmed in the period between April and June 2019 compared to 231 in the first quarter of 2019 [2] (figure1).

Cases this quarter continue to be associated with an outbreak in London linked to an under-vaccinated religious community with spread into the wider community and outbreaks in a number of schools (table 2). Cases outside London were associated with small outbreaks in traveller communities, hospitals and schools.

In total this quarter, there were 43 cases (14%) associated with recent travel abroad. The majority of these infections (23/43,53%) were associated with recent travel to Europe, 13 were to Asia, three to the Americas, two to Africa and two to Australasia.

There has been change in the age distribution of confirmed cases this quarter with majority (56%; 169/301) aged 15 years and over compared to 34% in the first quarter of 2019. The hospitalisation rate (31%) is higher in comparison with previous quarter (20%). Fourteen cases reported receiving one dose of measles containing vaccine while 21 individuals reported two doses.

Figure 1. Laboratory confirmed cases of measles by month of onset of rash/symptoms reported, London and England: January 2014 – June 2019



All the measles cases that had genotyping information available (192/301, 64%) this quarter were either B3 or D8. Earlier this month the European Centre for Disease and

Control (ECDC) published its monthly report with information to June 2019 with continuous increases in cases observed across Europe – most notably in France, Italy, Romania and Poland: in the 12 months up to June 2019, 13,102 cases of measles were reported to ECDC [3]. As in England, the majority of these cases (53%) were aged 15 years and over.

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 63% of all suspected measles cases, well below the 80% WHO target (table 1).

No new cases of measles were reported from Wales and Northern Ireland this quarter. Scotland identified two new cases.

Health Protection Teams are advised to add the congregation context “Measles2019” to all measles cases reported from 1 January this year.

Table 2. Laboratory confirmed cases of measles by age group and region, England: weeks 14-26 / 2019

Region	Under 1 year	1-4 years	5-9 years	10-14 years	15-19 years	20-24 years	25-29 years	30-34 years	>35 years	Total
East Midlands	1	1	–	1	1	–	5	3	10	22
East of England	1	17	9	3	1	3	2	2	7	45
London	3	32	17	21	21	22	17	21	29	183
North East	–	–	–	–	–	–	–	–	–	0
North West	1	3	–	–	–	–	–	–	1	5
South East	–	1	5	1	7	5	1	2	3	25
South West	–	–	–	–	–	–	–	–	1	1
West Midlands	–	1	3	3	1	1	1	–	–	10
Yorkshire & Humber	1	4	1	2	–	1	–	1	–	10
<b>Total</b>	<b>7</b>	<b>59</b>	<b>35</b>	<b>31</b>	<b>31</b>	<b>32</b>	<b>26</b>	<b>29</b>	<b>51</b>	<b>301</b>

## Rubella

One new case of rubella re-infection in a pregnant woman was reported in the period between April and June 2019.

ECDC reported that in June 2019 majority of the rubella cases were reported from Poland although Germany, Italy and Austria also identified cases. In the 12 months up to June 2019, 483 rubella cases were reported across the EU countries with the majority reported in Poland, Germany, Italy, Spain and Romania [3].

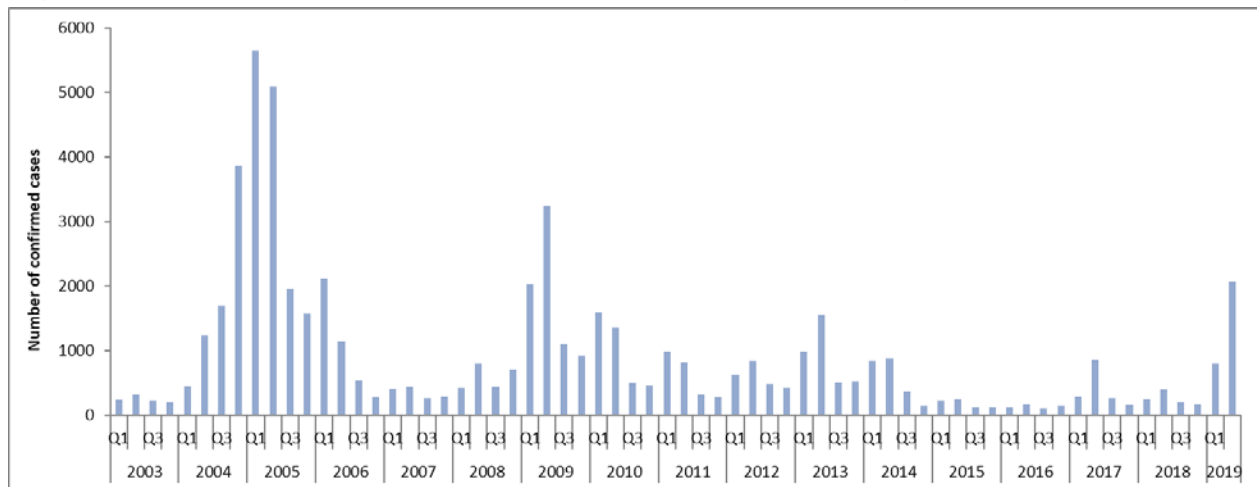
## Mumps

A total of 2,028 cases of mumps were confirmed in the second quarter of 2019, continuing the increase seen in the first quarter of 2019 (795 cases) [2] (figure 2). This is the highest quarterly figure for mumps cases since 2009. Mumps cases were reported in all regions of England (table 3), predominantly in young adults aged 15 to 34 years (1669/202, 82%). Some of the cases confirmed this month were associated with outbreaks linked to Universities across England. Nearly half (998/2028, 49%) 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. Laboratory confirmed cases of mumps by age group and region, England: weeks 14-26/2019

Region	<1	1-4	5-9	10-14	15-19	20-24	25+	NK	Total
North East	–	–	–	2	12	38	13	–	65
North West	1	3	3	32	91	171	156	–	457
Yorkshire & Humber	–	–	4	6	45	78	61	–	194
East Midlands	–	2	–	3	59	166	76	–	306
West Midlands	–	–	1	11	43	64	46	–	165
East of England	–	–	1	7	31	58	51	–	148
London	–	3	2	7	32	69	100	–	213
South East	–	–	1	3	65	110	74	–	253
South West	–	1	2	1	70	94	59	–	227
<b>Total</b>	<b>1</b>	<b>9</b>	<b>14</b>	<b>72</b>	<b>448</b>	<b>848</b>	<b>636</b>	<b>–</b>	<b>2028</b>

Figure 2. Laboratory confirmed cases of mumps by quarter, England: 2003-2019



## References

1. Measles and rubella elimination UK strategy 2019:  
<https://www.gov.uk/government/publications/measles-and-rubella-elimination-uk-strategy>.
2. PHE (2019). Laboratory confirmed cases of measles, mumps and rubella, England: January to March 2019. *HPR* 13(18): immunisation:  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/804024/hpr1819\\_mmr2.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/804024/hpr1819_mmr2.pdf).
3. ECDC (August 2019). Monthly measles and rubella monitoring report:  
<https://ecdc.europa.eu/sites/portal/files/documents/measles-monthly-report-august-2019.pdf>.
4. PHE (2019). Internal Briefing Note: Update on mumps epidemiology in England.

# 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, research, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health 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.

Public Health England, Wellington House, 133-155 Waterloo Road, London SE1 8UG

Tel: 020 7654 8000 [www.gov.uk/phe](http://www.gov.uk/phe)

Twitter: [@PHE\\_uk](https://twitter.com/PHE_uk) Facebook: [www.facebook.com/PublicHealthEngland](https://www.facebook.com/PublicHealthEngland)

Queries relating to this document should be directed to: the Immunisation, Hepatitis and Blood Safety Department, National Infection Service, 61 Colindale Avenue, London NW9 5EQ.

[immunisation@phe.gov.uk](mailto:immunisation@phe.gov.uk)



© Crown copyright 2019

You may re-use this information (excluding logos) free of charge in any format or medium, under the terms of the Open Government Licence v3.0. To view this licence, visit [OGL](https://www.ogp.gov.uk). Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned.

Published: **August 2019**

PHE publications

gateway number: **2019043**

PHE supports the UN

Sustainable Development Goals

