



Public Health
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Laboratory-confirmed cases of measles, rubella and mumps, England: July to September 2018

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Laboratory confirmed cases of measles, rubella and mumps, England: July to September 2018

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 third quarter of 2018 (i.e. July to September). 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 27-39/2018

	Total suspected cases*	Number (%) tested by OF Target: 80%	Number of confirmed infections					Samples tested locally	Total	**Discard rate based on negative tests per 100,000 population (all samples)
			Samples tested at VRD			All other positive samples				
			OF IgM positive samples	OF PCR positive samples						
Measles	1016	657 (65%)	67	0	72	4	143	1.4		
Rubella	76	55 (72%)	1	0	0	0	1	0.3		
Mumps	1692	1012 (60%)	169	11	16	4	200	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

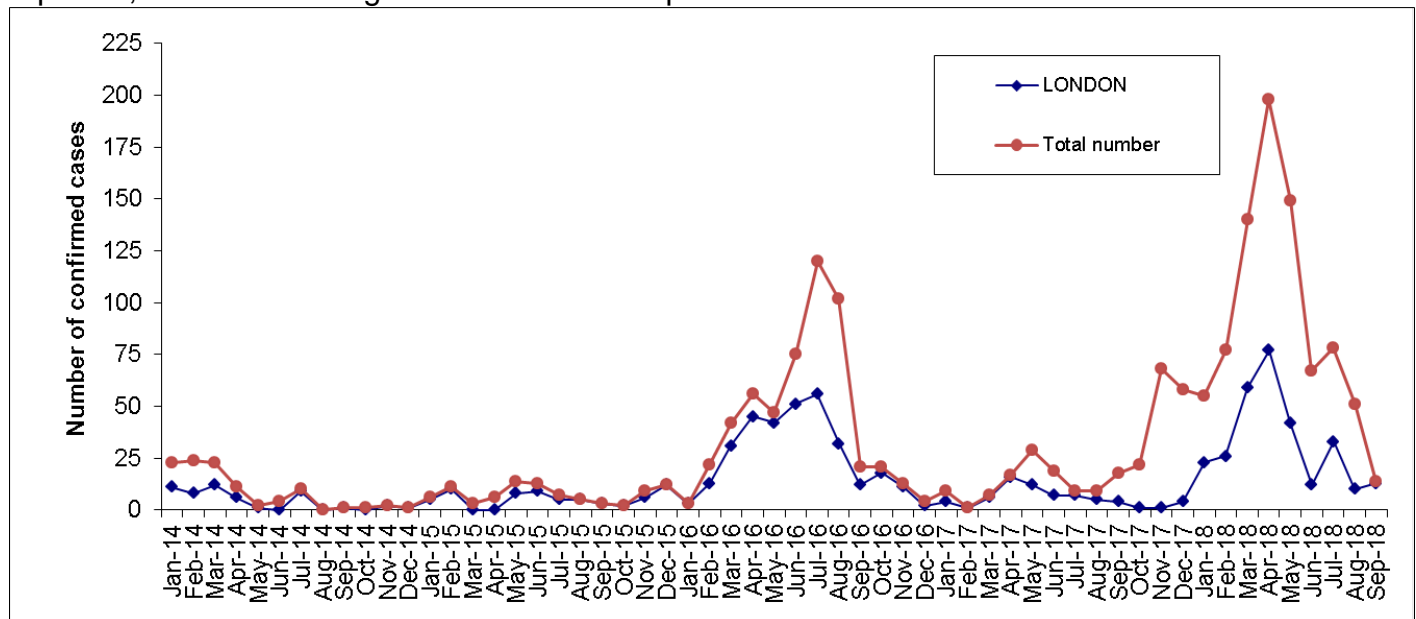
In England, 143 new measles infections were confirmed in the third quarter of 2018 compared to 421 in the period between April and June 2018 [1] (Figure1).

Most of the cases continued to be associated with outbreaks in London, the South West, South East and Yorkshire and the Humber regions.

In total this quarter there were nineteen (13%) infections associated with recent travel abroad. Fifteen cases were imported from Europe: Slovakia (3), Romania (2), Croatia (2), Cyprus (1), France (1), Greece (1), Italy (1), Latvia (1), Poland (1), Portugal (1), Spain (1), with only four cases imported from the rest of the world: Afghanistan (1), Kenya (1), Mauritius (1) and Thailand (1).

Sixty five percent of all the cases this quarter (93/143) were in young people and adults over the age of 15 years. The hospitalisation rate remained high at around 30%, likely due to the high number of cases in adults. Sixteen cases (11%) reported having at least one dose of measles containing vaccine.

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



All the measles cases that had genotyping information available (110/143, 77%) this quarter were either B3 or D8. Earlier this month the European Centre for Disease

Prevention and Control (ECDC) [2] published their monthly report with information up to the end of September 2018. Greece, France, Italy, Romania as well as the UK are among the countries reporting the highest measles incidence in the period between October 2017 and September 2018. However, there is a decreasing trend in all five countries [2].

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 65% of all suspected measles cases, well below the 80% WHO target (Table 1).

No new cases of measles were reported from Wales, Scotland or Northern Ireland this quarter.

PHE Health Protection Teams (HPTs) should be aware that the revised National Measles Guidelines [3] and the Guidelines on Post-exposure Prophylaxis for Measles [4] were published in August of last year. The congregation context “Measles2018” should be used for all measles cases reported from the 1st January of this year.

Table 2: Laboratory confirmed cases of measles by age group and region, England: Weeks 27-39/2018

Region	Under 1yr	1 to 4 yrs	5 to 9 yrs	10 to 14 yrs	15 to 19 yrs	20 to 24 yrs	25 to 29 yrs	30 to 34 yrs	over 35 yrs	Total
East Midlands							1			1
East of England		4		2	3	3	3			15
London	1	6	3	5	6	14	9	7	5	56
North East										0
North West	1	1	1		2	2	2	1		10
South East	2	2	3	1	7	2	2	2	4	25
South West		6		4	2	5	4	1		22
West Midlands				1	1					2
Yorkshire and The Humber			3	4	3	1			1	12
Total	4	19	10	17	24	27	21	11	10	143

Rubella

One new congenital rubella infection was confirmed this quarter in a baby born to a mother diagnosed with rubella infection in pregnancy earlier in the year.

ECDC reported that in the 12 months between October 2017 and September 2018, 616 laboratory confirmed rubella cases were reported across the EU countries with the majority reported in Poland, Germany, Italy and Austria [2].

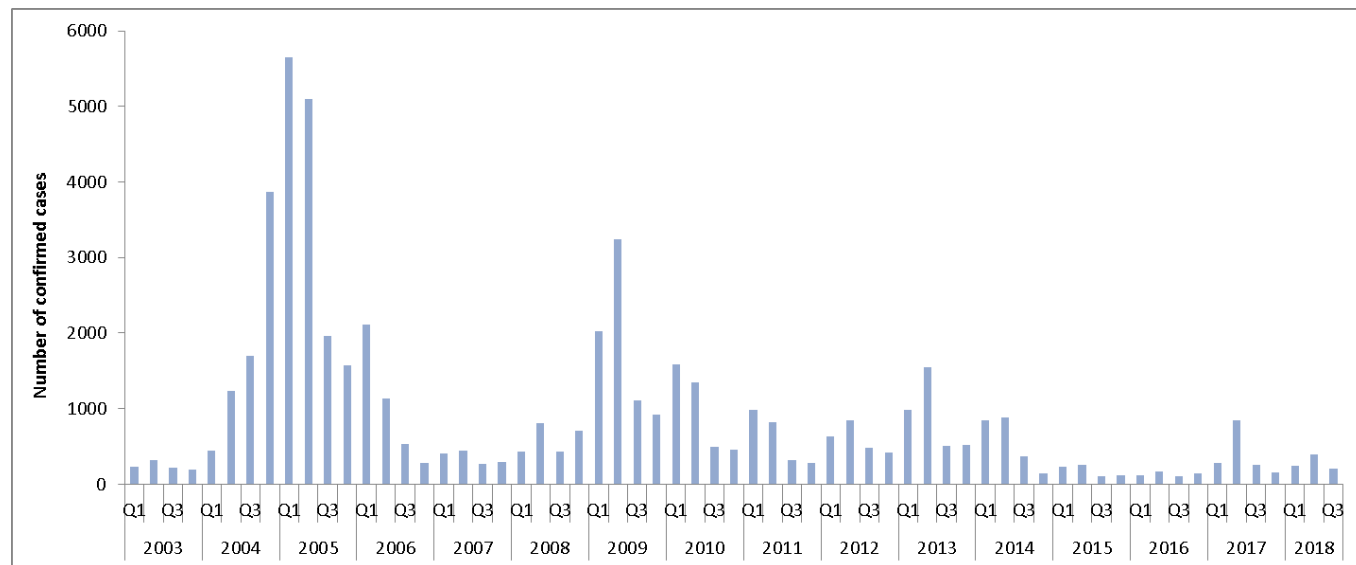
Mumps

A decrease in mumps activity was observed in England this quarter with 200 laboratory confirmed mumps infections, in line with usual seasonal trends [1] (Figure 2). Mumps cases were reported in all regions of England, (Table 3) predominantly in young adults aged 15 to 34 years (142/200, 71%). More than a half (108/200, 54%) 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 27-39/2018

Region	<1	1-4	5-9	10-14	15-19	20-24	25+	NK	Total
North East	0	0	0	1	0	3	11	0	15
North West	0	1	2	9	33	14	28	0	87
Yorkshire and the Humber	0	0	0	0	0	1	0	0	1
East Midlands	0	0	0	0	0	2	7	0	9
West Midlands	0	1	0	0	1	5	12	0	19
East of England	0	1	0	0	3	0	4	0	8
London	0	1	0	3	5	6	26	0	41
South East	0	1	0	2	1	1	8	0	13
South West	0	1	0	0	2	0	4	0	7
Total	0	6	2	15	45	32	100	0	200

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



References

1. PHE (August 2018). [Laboratory confirmed cases of measles, mumps and rubella, England: April to June 2018](#). *HPR* 12(31).
2. ECDC. [Monthly measles and rubella monitoring report November 2018](#).
3. PHE (2017). [National Measles Guidelines](#).
4. PHE (2017). [Guidance for measles post-exposure prophylaxis](#).

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.

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

Tel: 020 7654 8000 www.gov.uk/phe

Twitter: [@PHE_uk](https://twitter.com/PHE_uk) Facebook: 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

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