



Public Health  
England

Protecting and improving the nation's health

# Laboratory confirmed cases of measles, rubella and mumps, England: October to December 2019

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# Laboratory confirmed cases of measles, rubella and mumps, England: October to December 2019

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 last quarter of 2019 (ie October to December). 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 41-52/2019**

	Total suspected cases*	Number (%) tested by OF <b>Target: 80%</b>	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	960	697 (72%)	64	10	11	1	86	1.1
Rubella	113	91 (80%)	0	0	0	0	0	0.2
Mumps	5548	3333 (60%)	1115	102	98	0	1315	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

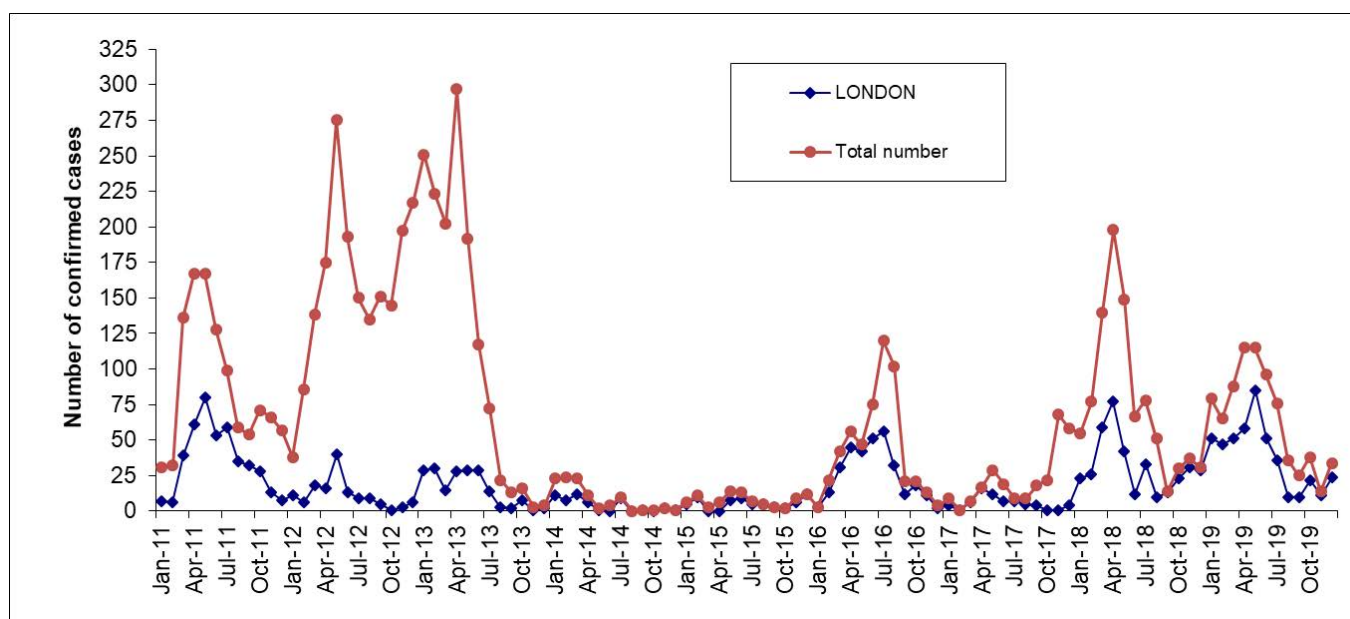
In England, 86 new measles infections were confirmed in the period between October and December 2019 compared to 135 in the previous quarter of 2019 [1] (see figure). This brings the provisional total of laboratory confirmed measles infections in England in 2019 to 793, compared to the 968 in 2018.

Sixty-six percent of the measles cases confirmed in 2019 were in London. This quarter the largest London cluster was linked to transmission in four primary and secondary schools. In addition, there have also been small clusters in the East Midlands, East of England and South East regions involving various healthcare and community settings.

In total this quarter there were three (3%) cases associated with recent travel abroad: two were associated with recent travel to Thailand and one was associated with travel to North America.

Most of the laboratory confirmed cases this quarter were in children (55%; 48/86) under the age of 16 with a hospitalisation rate of 18%. Eighty-seven percent of cases were unimmunised, four cases reported receiving one dose of a measles containing vaccine and seven individuals reported receiving two doses. All the measles cases that had genotyping information available (62/86, 72%) this quarter were either B3 or D8.

## Laboratory confirmed cases of measles by month of onset of rash/symptoms reported, London and England: Jan 2011 – Dec 2019



In the 12 months up to December 2019 Ukraine (57282 cases) and Kazakhstan (13326 cases) reported the largest number of measles cases in the WHO European region [2]. Eighty-eight percent of all cases in the region were reported by 10 countries (Ukraine, Kazakhstan, Russian Federation, Georgia, Turkey, France, Kirgizstan, North Macedonia, Romania and Uzbekistan).

In order to monitor importations and chains of transmission it is essential that every suspected case undergoes an Oral Fluid Test (OFT); this includes cases that are confirmed locally. This quarter an oral fluid sample was taken on 72% of all suspected measles cases, below the 80% WHO target (Table 1).

Wales identified four measles cases and Scotland reported three measles cases this quarter. Northern Ireland did not report any new cases.

The UK measles and rubella elimination strategy was published in January 2019 aiming to achieve a future without endemic measles, rubella and congenital rubella [3]. In September 2019 the WHO confirmed that the UK lost its measles elimination status and was once again considered to have endemic measles transmission on the basis of the evidence provided on measles cases and chains of transmission in 2018. A tripartite Measles and Rubella Elimination Board has been established to oversee the implementation of the strategy recommendations and redouble efforts to achieve and maintain measles elimination for future generations.

Health Protection Teams are advised to add the congregation context “Measles2020” to all measles cases reported from 1 January of this year.

**Table 2. Laboratory confirmed cases of measles by age group and region, England: weeks 41-52 / 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	Over 35 years	Total
East Midlands	–	4	–	–	–	–	–	–	1	5
East of England	–	–	–	2	2	–	3		2	9
London	–	9	6	19	13	2	3	2	3	57
North East	–	–	–	–	–	–	–	–	–	0
North West	–	–	–	–	1	–	–	–	–	1
South East	–	3	–	–	2	2	–	–	3	10
South West	–	–	–	–	–	–	–	–	2	2
West Midlands	–	–	–	–	–	–	–	–	1	1
Yorks. & Humber	–	–	–	–	–	–	–	–	1	1
<b>Total</b>	<b>0</b>	<b>16</b>	<b>6</b>	<b>21</b>	<b>18</b>	<b>4</b>	<b>6</b>	<b>2</b>	<b>13</b>	<b>86</b>

## Rubella

In the period between October and December 2019 in England there were no new rubella cases confirmed. In 2019 there were 3 laboratory confirmed cases of rubella in England and no cases in any of the other Devolved Administrations.

In the twelve months up to December 2019, Poland, Ukraine, Germany, Turkey and the Russian Federation reported 90% (565/628) of rubella cases across the WHO European Region [2].

# Mumps

In England, there were 1,315 laboratory confirmed mumps infections between October and December 2019 compared to 536 in the period between July and September [1]. The number of cases is higher than what was observed in the same period in the previous two years (2017- 160 cases and 2018- 170 cases) and brings the total number(provisional) of mumps cases for 2019 to 5,042 [1] (Figure 2). Mumps cases were reported in all regions of England, (Table 3) predominantly in young adults aged 15 to 34 years (1229/1315, 93%). Over half (807/1315, 61%) 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 41-52 / 2019**

Region	Under 1 year	1-4 yrs	5-9 yrs	10-14 yrs	15-19 yrs	20-24 yrs	25+ yrs	NK	Total
North East	–	1		3	53	74	53	–	<b>184</b>
North West	1	2	1	8	39	41	42	–	<b>134</b>
Yorks. & Humber	–	3	2	5	32	27	23	–	<b>92</b>
East Midlands	–	–	1	7	22	26	14	–	<b>70</b>
West Midlands	1	3	3	7	48	52	43	–	<b>157</b>
East of England	–	1	2	1	17	20	19	–	<b>60</b>
London	–	–	2	6	35	46	86	–	<b>179</b>
South East	–	–	3	11	74	111	55	–	<b>254</b>
South West	–	–	2	6	41	76	60	–	<b>185</b>
<b>Total</b>	<b>3</b>	<b>13</b>	<b>16</b>	<b>54</b>	<b>361</b>	<b>473</b>	<b>395</b>	<b>0</b>	<b>1315</b>

## References

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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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