



UK Health
Security
Agency

Laboratory confirmed cases of measles, rubella and mumps, England: October to December 2021

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Introduction

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 World Health Organization (WHO) measles and rubella elimination targets.

The 2 main 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 annual 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 2 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 polymerase chain reaction (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 is for the third quarter of 2021 (July to September). Analyses are done by date of onset of rash or symptoms and regional breakdown figures relate to government office regions.

Historical annual and quarterly [measles](#), [rubella](#) and [mumps](#) epidemiological data is available from 2013 onwards.

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 40 to 53 of 2021

	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	224	125 (55%)	0	0	0	0	0	0.71¥
Rubella	67	23 (34%)	0	0	0	0	0	0.48¥
Mumps	1614	1,042 (65%)	3	1	3	0	7	N/A

* This represents all cases reported to HPTs in England, that is, possible, probable, confirmed and discarded cases on HPZone.

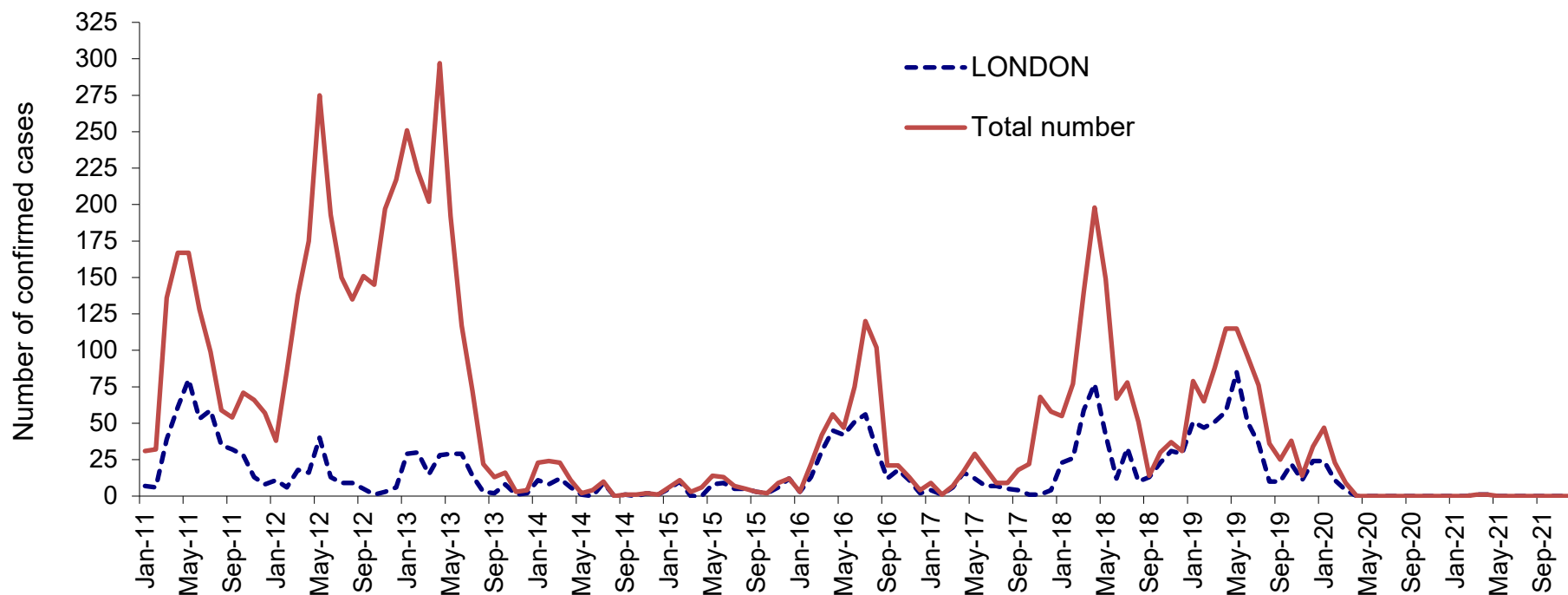
** The rate of suspected measles or rubella cases investigated and discarded as non-measles or non-rubella cases using laboratory testing in a proficient laboratory. The annual discard rate target set by WHO is 2 cases per 100,000 population. We present quarterly rates here with an equivalent target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

¥ Includes samples received as part of rash fever surveillance.

Measles

In the period between October and December 2021 there were no laboratory confirmed measles cases reported (Figure 1). There were a total of 2 laboratory confirmed measles cases in 2021.

Figure 1. Laboratory confirmed cases of measles by month of onset of rash or symptoms reported, London and England: January 2011 to December 2021



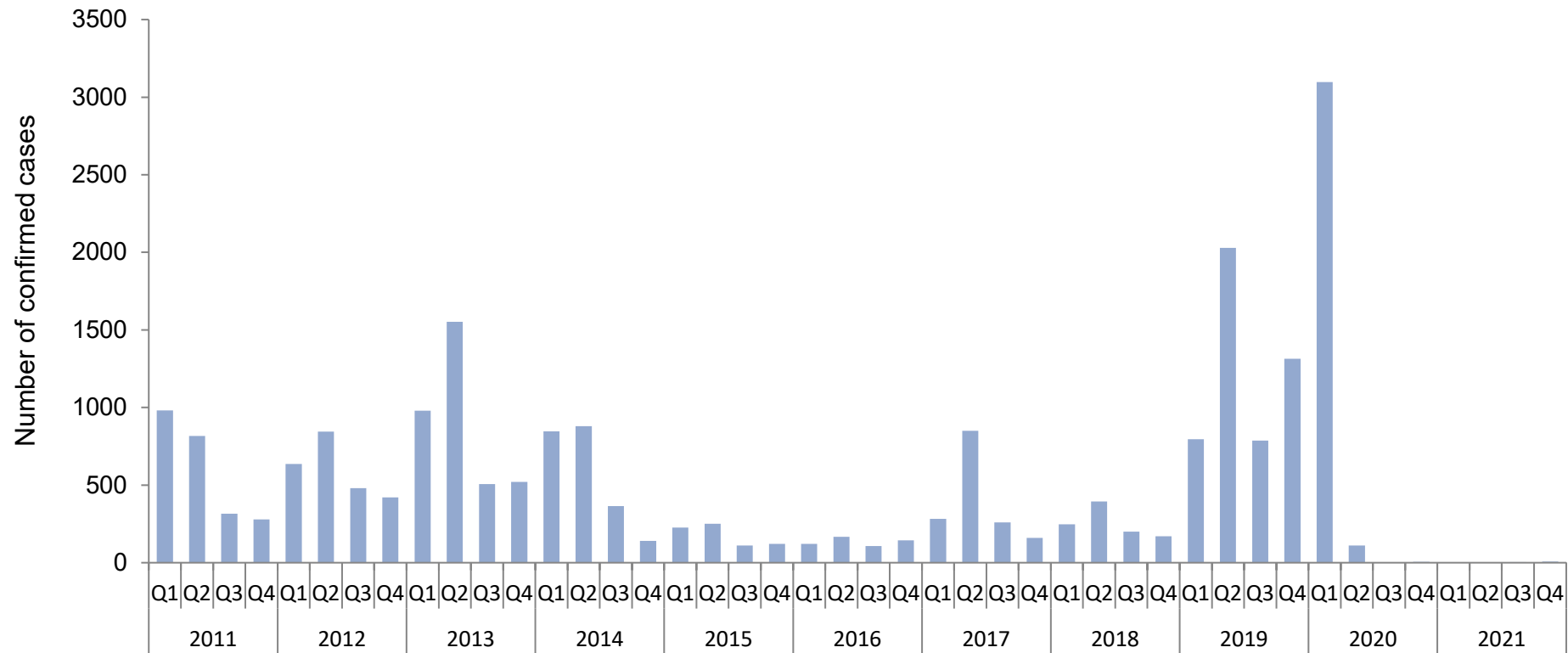
All suspected cases of measles and rubella should be reported promptly to Health Protection Teams, a risk assessment conducted, and an oral fluid kit (OFK) sent for confirmatory testing even if local diagnostic testing is underway. This quarter an oral fluid sample was taken on 65% of all suspected measles cases, well below the 80% WHO target ([Table 1](#)).

Mumps

In England, there were 7 laboratory confirmed mumps infections in the last quarter of 2021 bringing the total number of mumps confirmed cases in England in 2021 to 17 (1).

Only 65% of suspected mumps cases returned an oral fluid sample this quarter.

Figure 2. Laboratory confirmed cases of mumps by quarter, England: 2011 to 2021



Rubella

There have been no new laboratory confirmed cases of rubella reported in the UK since 2019.

Impact of the COVID-19 pandemic on measles mumps and rubella surveillance and epidemiology

The routine surveillance and epidemiology of measles and rubella in the UK have been impacted in a number of ways during the coronavirus (COVID-19) pandemic. Non-pharmaceutical interventions introduced for COVID-19 control, in particular the limitations imposed on international travel have drastically reduced the number of measles and rubella importations, providing fewer opportunities for new chains of transmission. Health-seeking behaviour during the pandemic has also changed, making it more likely that people with mild symptoms do not present to healthcare services and if they do, they may not have been seen face to face.

During this period, coverage of MMR vaccine has fallen. The latest quarterly UK Health Security Agency (UKHSA) COVER statistics (July to September 2021) show that uptake of MMR1 at 2 years in England was 88.6% and in London was 77.5%. MMR2 at 5 years is well below the 95% WHO target at 85.5% for England and 72.9% for London (2). Although some catch-up is underway it is likely that susceptibility will have increased in recent years, with potential for larger outbreaks as international travel and contact patterns resume.

On 1 February 2022, UKHSA and the NHS launched a campaign calling on parents and guardians to ensure their children are up to date with the measles, mumps and rubella (MMR) vaccine, and all other routine childhood immunisations (3).

Measles, mumps and rubella oral fluid testing and rash-fever surveillance

As previously described ([1](#), [4](#)) measles, mumps and rubella OF kits are now being dispatched through a central service commissioned by the Immunisation and Vaccine Preventable Diseases Division at Colindale. HPTs are asked to familiarise themselves with the full details of the [Measles, mumps, rubella: oral fluid testing forms and instructions](#). A video that explains how to take an oral fluid swab is available online, titled [Oral fluid test for measles, mumps and rubella kit](#).

In November 2021 the UKHSA Immunisation and Vaccine Preventable Diseases Division launched a new rash-fever surveillance scheme. The aim is to increase the number of samples tested for measles and rubella in order to meet the WHO target of testing 2 per 100,000 of the UK population ([3](#)). This involves OF kits being sent to patients notified to HPTs with scarlet fever. On a weekly basis, personal information on scarlet fever notifications is extracted from HPZone for the whole of England and sent in bulk to the UKHSA external kit supplier for dispatch. Samples received at the national reference laboratory are tested for measles and rubella antibodies.

Table 2. Weekly total number of oral fluid kits dispatched for the UKHSA rash-fever surveillance with return rates, England

Week	Number of OF kits dispatched	Return rate
19/11/2021	97	38%
22/11/2021	121	42%
30/11/2021	112	36%
06/12/2021	104	34%
13/12/2021	130	35%
20/12/2021	154	25%

References

1. UKHSA (2022). [‘Laboratory confirmed cases of measles, mumps and rubella, England: July to September 2021’](#) Health Protection Report volume 16 number 1
2. UKHSA (2022). [‘Quarterly vaccination coverage statistics for children aged up to 5 years in the UK \(COVER programme\): July to September 2021’](#) Health Protection Report volume 15 number 20
3. UKHSA (February 2022). [‘Around 1 in 10 children starting school at risk of measles’](#) (press release)
4. PHE (September 2020). ‘MMR and pertussis surveillance and oral fluid testing’ (internal briefing note 2020/031)

About the UK Health Security Agency

UKHSA is responsible for protecting every member of every community from the impact of infectious diseases, chemical, biological, radiological and nuclear incidents and other health threats. We provide intellectual, scientific and operational leadership at national and local level, as well as on the global stage, to make the nation health secure.

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For queries relating to this document, please contact immunisation@phe.gov.uk

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