

## 1.2 Measles

### Summary

Number of cases, 2010: 403  
 Number of confirmed cases, 2010: 299  
 Crude incidence rate, 2010: 9.5/100,000  
 Crude confirmed incidence rate, 2010: 7.1/100,000

In 2010, there were 403 measles cases (9.5/100,000) notified in Ireland. This is a 2.5-fold increase compared to 2009 when 162 cases were notified and a seven-fold increase compared to 2008 when 55 cases were notified. This increase is a result of a national measles outbreak that was first identified in August 2009 and continued into early May 2010. Measles cases by week and month of notification from July 2009 to December 2010 are shown in figure 1. Eighty-one percent (n=328/403) of cases in 2010 were notified between January and early May (Weeks 1-18).

In Week 31 2009 (week ending 8<sup>th</sup> August 2009), a confirmed measles case, in an adult who worked in a

general practice, was notified in the HSE-S. In Week 33 2009, a measles case in a Roma child was notified in the same Area, this case's general practitioner worked in the same building as the previous case. In Week 37, 2009, two measles cases, one in a child from the Irish Traveller community and one in a hospital contact of this case, were notified in the HSE-S. During Weeks 38 and 39, six cases in Irish Travellers were notified in the HSE-S. From then on measles continued to circulate and spread to other HSE Areas. The measles outbreak continued into early May 2010.

At the start of the outbreak, a national outbreak control team was convened, which included health professionals from the departments of public health in the HSE Areas, HSE-Health Protection Surveillance Centre, HSE-National Immunisation Office, HSE Population Health, HSE Social Inclusion, the Institute of Obstetricians and Gynaecologists, the National Virus Reference Laboratory and the field of Paediatric Infectious Disease. This group agreed public health strategies (vaccination and management of cases and close contacts, awareness-

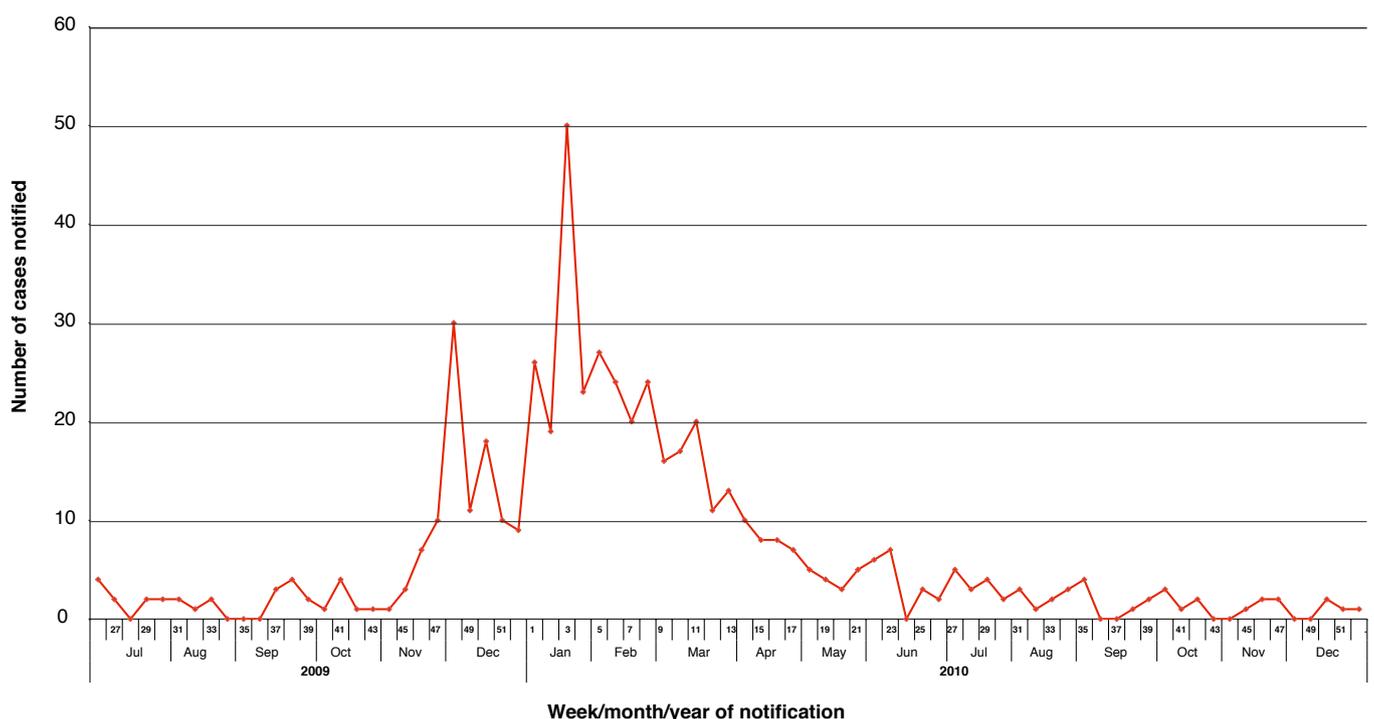


Figure 1. Number of measles cases notified by week and month July 2009 to December 2010

raising among clinicians and in the community) to control the outbreak at national and local level.

Of the 403 measles cases notified in 2010, 26% (n=104) were classified as possible while 74% (n=299) were classified as confirmed, giving a crude confirmed incidence rate of 7.1 per 100,000 population. Of the confirmed cases, it was known that 76% (n=228) were laboratory confirmed and 24% (n=71) were only epidemiologically linked to a laboratory confirmed case.

The largest number of cases notified in 2010 was in the HSE-E while the highest crude incidence rate was in the HSE-S (table 1).

In 2010, measles cases ranged in age from one month to 50 years. The number of cases by age group and the age specific incidence rates are shown in figures 2 and 3. The highest age specific incidence rate was in those aged <1 year (figure 3). Of the 403 measles cases 50% (n=203) were male and 50% (n=200) were female.

Laboratory results were provided for 272 (67%, n=272/403) cases in 2010. Two hundred and twenty eight cases (57%, n=228/403) were laboratory positive for measles. Two further cases were laboratory positive (based on serology) for measles, however, the positive results may have represented responses to recent vaccinations. The laboratory results for eight cases were recorded as inconclusive. Thirty-four cases were laboratory negative for measles, however, for 29 of these the specimens were not taken at the optimal time following disease onset or the date of specimen collection in relation to disease onset was unknown (the optimal time following disease onset for collecting oral fluid specimens for measles IgM testing is greater than seven days to two months and the optimal time for collecting serum specimens for measles IgM testing is greater than four days to two-three months). The five cases that were laboratory negative for measles and were known to have a specimen collected at the optimal time were classified as possible cases.

Measles vaccine in Ireland is available as part of the combined measles-mumps-rubella (MMR) vaccine. In Ireland, vaccination with the first dose of MMR is routinely recommended at twelve months of age and the second dose at four to five years of age.

Vaccination data were reported for 82% (n=332/403) of measles cases in 2010. Sixty-four percent (n=257/403) of cases were unvaccinated; only 28% (n=73/257) of these were less than 12 months of age.

Sixteen percent (n=64/403) had one dose of MMR vaccine; 81% (n=52/64) of these were less than six years of age. Fifty-two percent (n=33/64) of those reported to have one dose of MMR were classified as confirmed. Seventy-five percent (n=48/64) with one dose of MMR had a vaccination date reported, 29% (n=14/48) of these were vaccinated  $\leq 16$  days before onset of illness and were probably incubating measles at the time of vaccination.

Three percent (n=11/403) were reported as having received two doses of MMR. Only four of these cases were laboratory confirmed and only one of these four laboratory confirmed cases had both vaccination dates reported.

One hundred and eight cases were reported as hospitalised, representing 27% (n=108/403) of all cases. The hospitalised cases ranged in age from one month to 50 years with 94% (n=101/108) classified as confirmed cases and six percent (n=7/108) classified as possible cases. Length of hospitalisation was reported for 71% (n=77/108) with a median duration of stay of three days (range one to nineteen days); 18% (n=14/77) were reported as hospitalised for one day. Of the 108 hospitalised cases, 22% (n=24) had no MMR details reported while 68% (n=73) were unvaccinated. Nine percent (n=10/108) were reported to have one dose of MMR; 60% (n=6/10) of these had a vaccination date recorded, 50% (n=3/6) of these were vaccinated less than 10 days prior to onset and may have been incubating measles at the time of vaccination. The remaining hospitalised case (1%) was reported to have

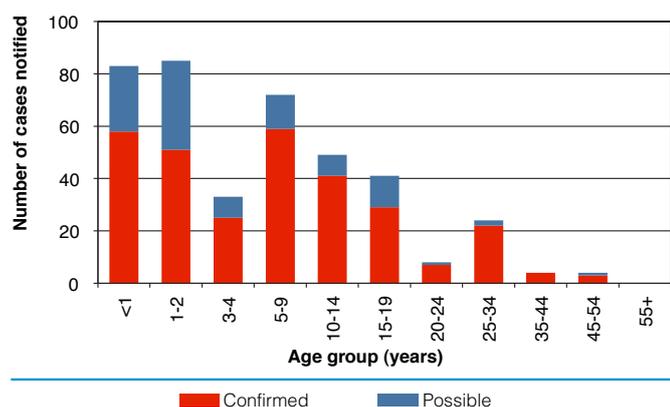


Figure 2. Number of notified measles cases in 2010 by age group and case classification

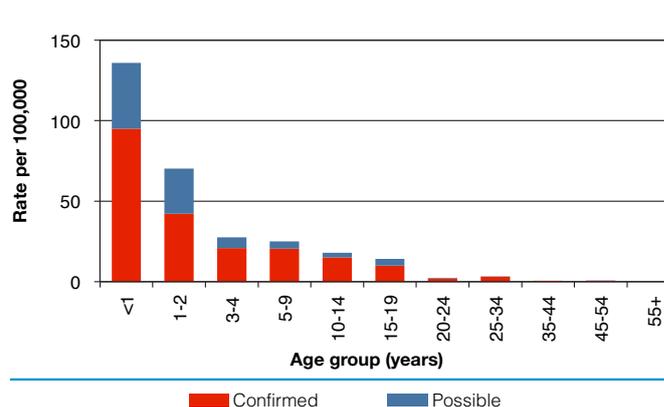


Figure 3. The age specific incidence rate (per 100,000) of notified measles cases in 2010 by case classification

had two doses of MMR; however the vaccination dates and other vaccination details were only reported for one of the doses.

Information on measles associated complications was reported for 52% (n=208/403) of cases. Complications included pneumonia (n=14), otitis media (n=2), tonsillitis (n=2; one of these was also reported to have pneumonia), chest infection (n=1), dehydration (n=1), dehydration /nausea/vomiting (n=1), lower respiratory tract infection (n=1), pharyngitis (n=1) and seizures (n=1). The remaining 185 cases had no complications.

The setting where the case most likely acquired measles was reported as home (n=105, 26%), school (n=30, 7%), daycare/pre-school (n=17, 4%), prison (n=7, 2%), hospital in-patient/hospital out-patient (n=5, 1%), work (n=5, 1%), overseas (n=2, 0.5%), third level (n=1, 0.2%) and was unknown/unreported for the remainder (n=231, 57%). For an additional two cases where the case most likely acquired measles was recorded as unknown but hospitalisation was considered a possible risk factor as both attended hospital prior to onset and during the incubation period.

Although ethnicity is not routinely collected as part of notification data and may be difficult to establish and report on, it was evident in the early stages of the outbreak that a substantial number of cases were linked to the Irish Traveller community. Based on available data, 16% (n=54/328) of the cases notified from week 1 to week 18 2010 were recorded as Irish Travellers while 1.8% (n=6/328) belonged to the Roma community. In contrast, only 0.5% of the population of Ireland are Irish Travellers and approximately 0.1% belongs to the Roma community. Although information on objectors to vaccination is not routinely collected there were reports from the HSE-S that highlighted transmission was also among children whose parents objected to vaccination, either for perceived safety reasons or for philosophical reasons. During the course of the outbreak a small number of cases were also reported in other citizens from Eastern Europe and Russia.

Forty localised measles outbreaks were notified during 2010, with 149 associated cases of illness. The outbreak locations included 21 private houses (with 63 ill), three community outbreaks (with 19 ill), four crèche outbreaks (with 17 ill), three outbreaks occurring among extended families (with 10 ill), one outbreak in a residential institution (with nine ill), one hospital outbreak (with four ill), six school outbreaks (with 25 ill) and one outbreak associated with day care (with two ill).

The figures presented in this summary are based on data extracted from the Computerised Infectious Disease Reporting (CIDR) system. These figures may differ slightly from those published previously due to ongoing updating of notification data on CIDR.

Table 1. Number of measles cases notified and the crude incidence rate per 100,000 population (CIR) by HSE Area in 2010

HSE Area	Number	CIR
HSE-E	150	10.0
HSE-M	6	2.4
HSE-MW	51	14.1
HSE-NE	6	1.5
HSE-NW	12	5.1
HSE-SE	12	2.6
HSE-S	117	18.8
HSE-W	49	11.8
<b>Total</b>	<b>403</b>	<b>9.5</b>