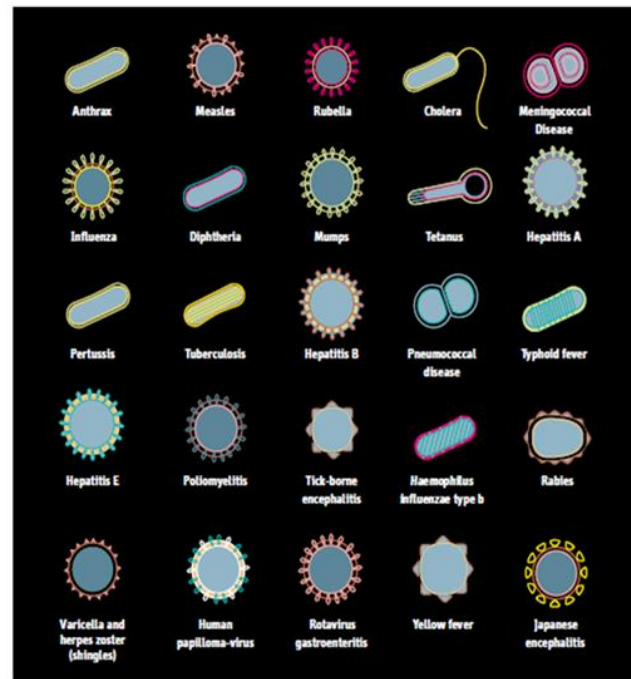


Annual Vaccine Preventable Diseases Report for Northern Ireland 2021

An analysis of data for the calendar year 2020



Notes

The figures presented for 2020 are much lower than expected. This may be due to the infection control measures put in place as a response to the COVID-19 pandemic.



Summary

Invasive Meningococcal Disease

- There were 4 clinically suspected notifications, with 3 (75%) laboratory confirmed cases; a significant decrease of 90% since 2019 (41 notifications; 31 confirmed cases)
- Age-specific incidence was highest in children 4 years of age and under (1.7 per 100,000 population)
- Of the 3 laboratory confirmed cases, all were serotype B

Summary

Invasive Pneumococcal Disease

- There were 56 laboratory confirmed cases, a decrease of 65% when compared to 2019 (159)
- Cases over 45 years of age accounted for 71% of cases, with the majority of these over 65 years (46%)
- Of the 30 laboratory confirmed cases with typing, 27 of the cases were due to strains not included in the pneumococcal conjugate vaccine (PCV13)

Summary

Invasive Haemophilus Influenzae Disease

- There were 6 laboratory confirmed cases; a decrease of 79% when compared to 2019 (29)
- 33% were aged over 65
- Of the 2 cases with typing both were non-capsulated strains



Summary

Pertussis

- There were 34 laboratory confirmed cases; an 81% decrease when compared to 2019 (179)
- Almost one third (32%) of the cases were in those aged 1-4 and around one quarter (26%) were in those aged >25



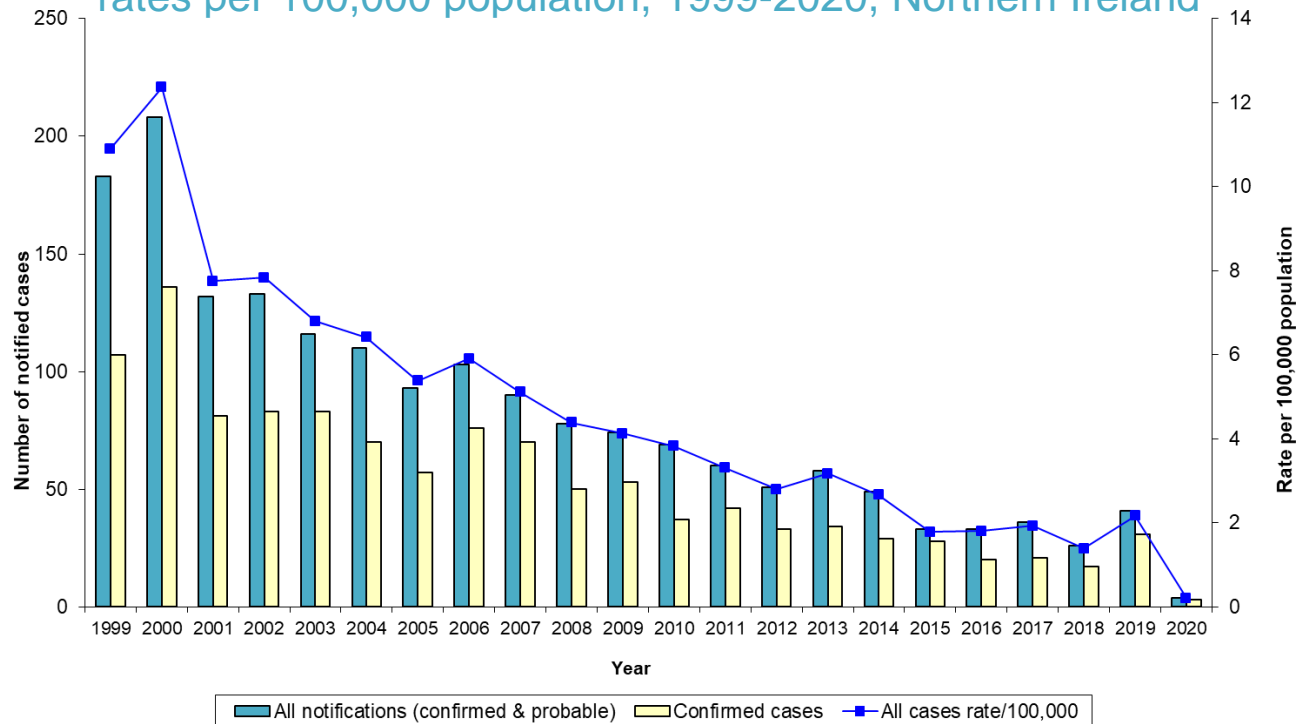
Summary

Measles, Mumps, Rubella

- The PHA received 10 notifications of clinically suspected measles. Of these, 8 were discarded on measles testing and no result was received for the other 2 notifications
- There was one notification of clinically suspected rubella that was discarded after laboratory testing
- There were 296 laboratory confirmed cases of mumps (notified between weeks 1-12), a 45% decrease compared with 2019 (543). Over two thirds (69%) of cases were aged 15-24 and 90% were fully vaccinated with MMR vaccine

Meningococcal Disease

Number of notified and confirmed cases of IMD and overall rates per 100,000 population, 1999-2020, Northern Ireland



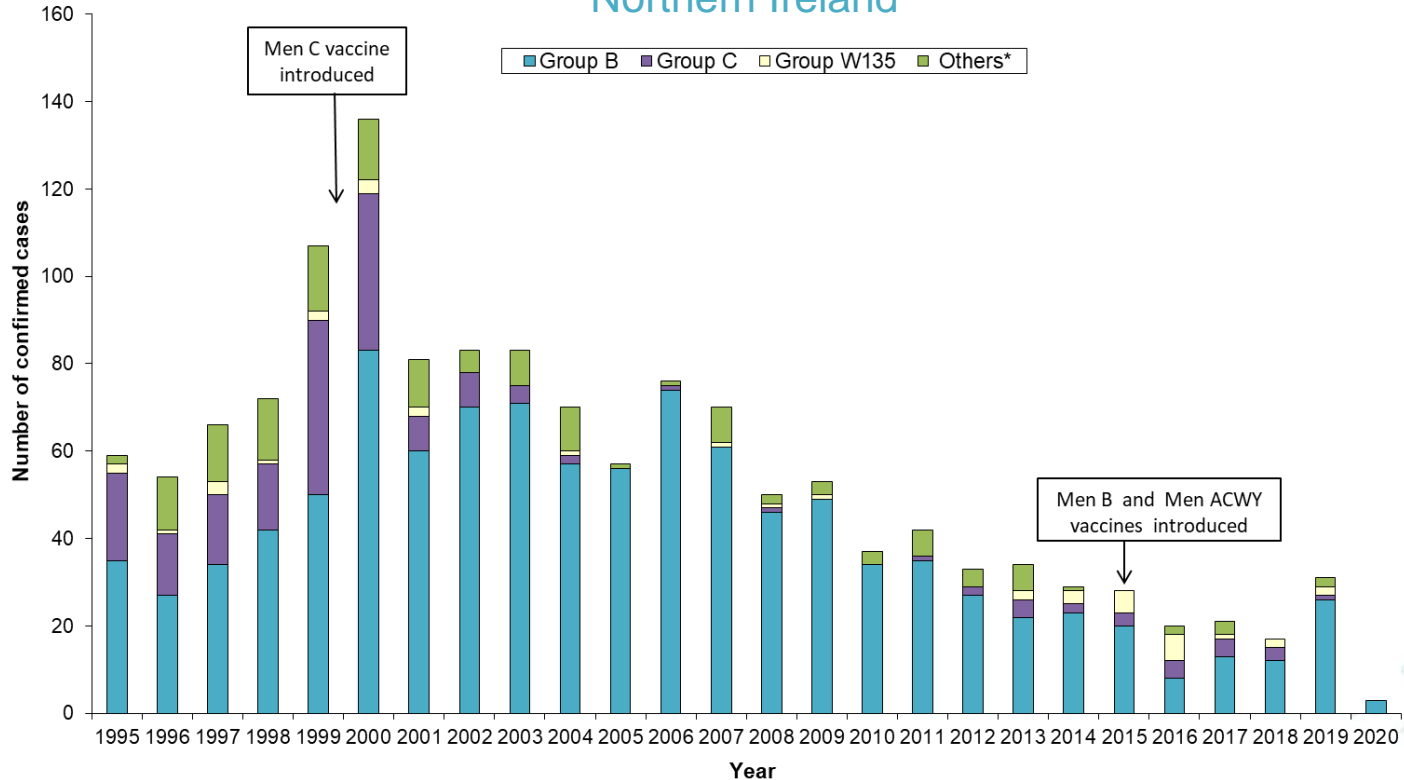
Source: Enhanced Surveillance of Meningococcal Disease (ESMD) in Northern Ireland.

Epidemiological situation

There were 4 notifications of clinically suspected invasive meningococcal disease (IMD), notification rate of 0.2 per 100,000 population. The notification rate has fallen by 98% from a peak of 12.4 per 100,000 in 2000. Of the notifications in 2020, 3 (75%) were laboratory confirmed cases and the incidence rate was 0.16 per 100,000 population observed. These are the lowest numbers reported since enhanced surveillance commenced in 1999.

Meningococcal Disease

Laboratory confirmed cases of IMD by serogroup, 1995-2020, Northern Ireland



Source: Enhanced Surveillance of Meningococcal Disease (ESMD) in Northern Ireland.

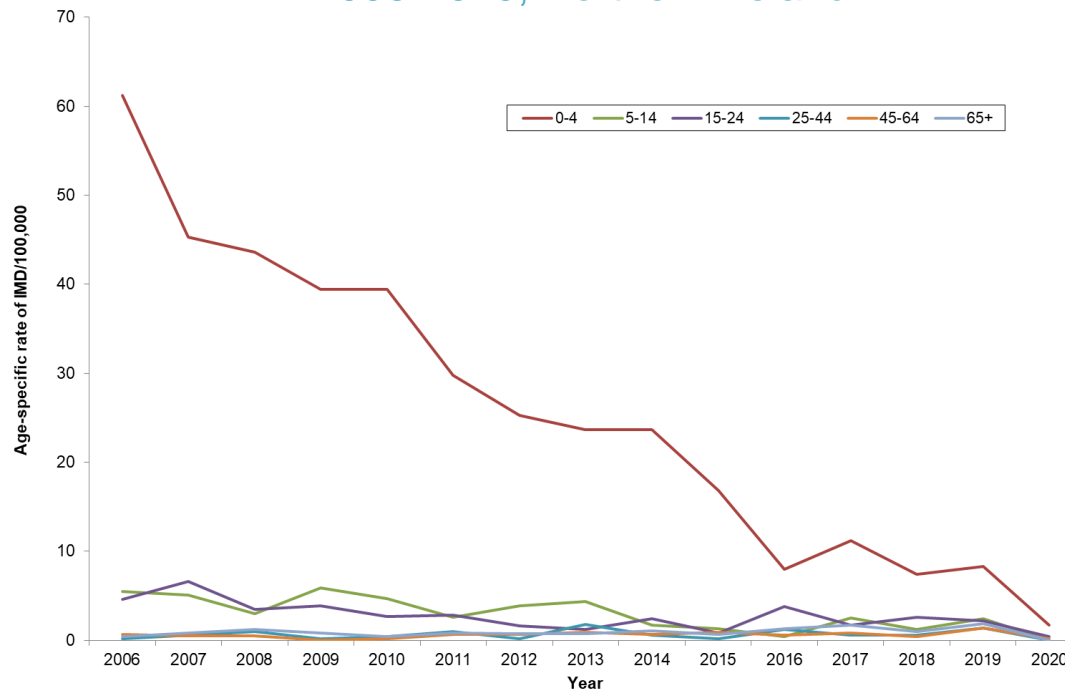
*Others include serogroups Y, Z and cases that are not groupable for various reasons.

Serotypes

Cases were confirmed by either the Regional Virus Laboratory (RVL) or Manchester Reference Unit (MRU). Serogroup B remains the most common serotype as in previous years, accounting for all 3 confirmed cases in 2020.

Meningococcal Disease

Age-specific incidence rates of IMD per 100,000 population,
2006-2020, Northern Ireland



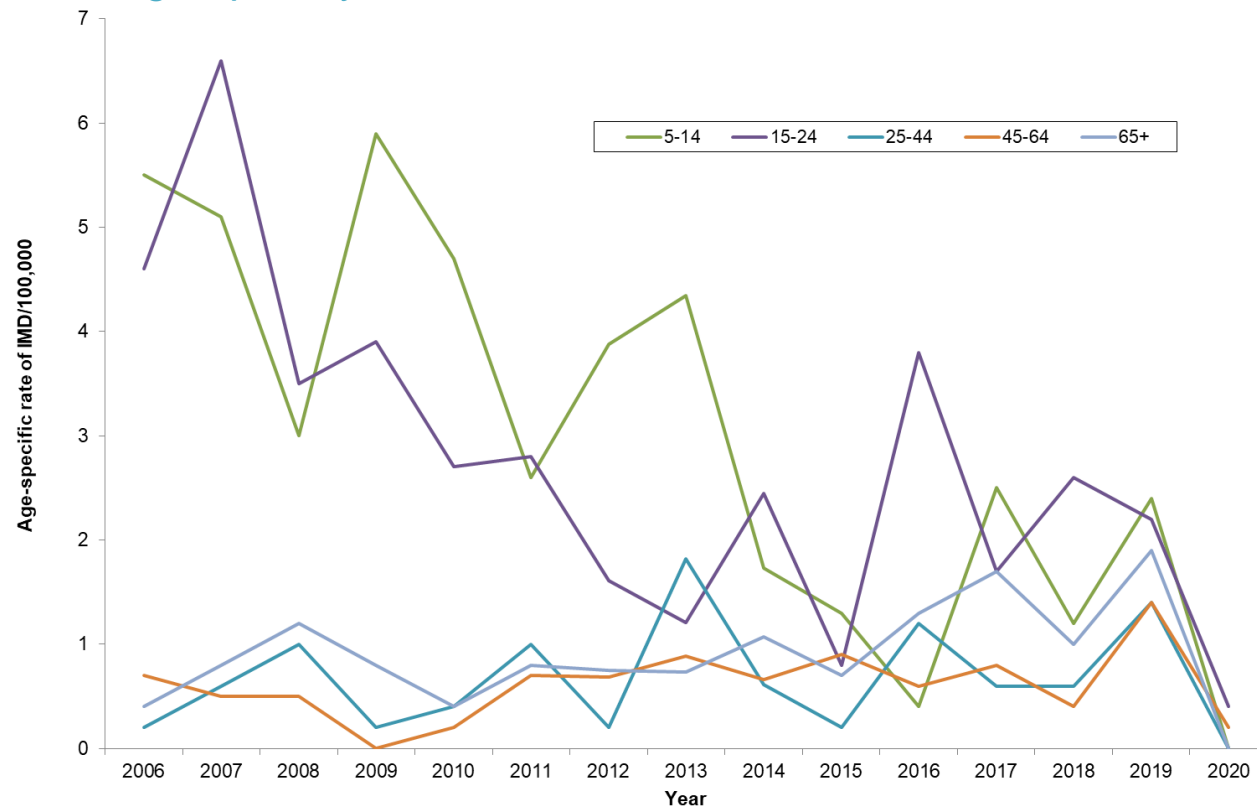
Source: Enhanced Surveillance of Meningococcal Disease (ESMD) in Northern Ireland.

Age

Consistent with previous years, age-specific incidence was highest in infants and young children under 5 (1.7 per 100,000). The incidence rate in this age group is over thirty six times lower in 2020 compared to 2006 (61.2/100,000), showing a dramatic decrease between 2006 and 2016 and a further decrease in 2020.

Meningococcal Disease

Age-specific incidence rates of IMD per 100,000 population, with age group 0-4 years removed, 2006-2020, Northern Ireland



Source: Enhanced Surveillance of Meningococcal Disease (ESMD) in Northern Ireland.

The incidence rate for age groups over 5 years is lower than those under 5 years. There has been a decrease in all age groups during 2020.

Meningococcal Disease

Notified and confirmed cases of invasive meningococcal disease (IMD), by serogroup, 1995-2020, Northern Ireland							
Year	Serogroup				All confirmed	Unconfirmed	Total (confirmed and probable)
	B	C	W135	Others*			
1995	35	20	2	2	59	0	59
1996	27	14	1	12	54	0	54
1997	34	16	3	13	66	0	66
1998	42	15	1	14	72	0	72
1999	50	40	2	15	107	76	183
2000	83	36	3	14	136	72	208
2001	60	8	2	11	81	51	132
2002	70	8	0	5	83	50	133
2003	71	4	0	8	83	33	116
2004	57	2	1	10	70	40	110
2005	56	0	0	1	57	36	93
2006	74	1	0	1	76	27	103
2007	61	0	1	8	70	20	90
2008	46	1	1	2	50	28	78
2009	49	0	1	3	53	21	74
2010	34	0	0	3	37	32	69
2011	35	1	0	6	42	18	60
2012	27	2	0	4	33	18	51
2013	22	4	2	6	34	24	58
2014	23	2	3	1	29	20	49
2015	20	3	5	0	28	5	33
2016	8	4	6	2	20	13	33
2017	13	4	1	3	21	15	36
2018	12	3	2**	0	17	9	26
2019	26	1	2	2	31	10	41
2020	3	0	0	0	3	1	4

Footnotes:

Data from 1995-1998 are based on laboratory reports of *N. meningitidis*.

Data from 1999-2020 are based on Enhanced Surveillance of Meningococcal Disease notifications validated with laboratory reports.

*Others include serogroups Y, Z and cases that are not groupable for various reasons.

**1 case typed as serogroup W/Y.



Meningococcal Disease

- There has been a decline in confirmed IMD cases over the last two decades from a peak of 136 confirmed cases in 2000.
- The initial decline in IMD cases was associated with the introduction of the immunisation against serogroup C (MenC) disease in 1999 that reduced serogroup C cases from a peak of 40 cases in 1999 to an average of 2 cases per year since 2001.
- The introduction of the meningococcal B and meningococcal ACWY (Men ACWY) vaccination programmes in 2015 have also contributed to a reduction in IMD cases in recent years.



Pneumococcal Disease

Update to schedule

All infants born on or after 1 January 2020 will be offered the changed schedule. This will be a single dose of PCV13 given alongside the routine DTaP/IPV/Hib/HepB and rotavirus immunisations at 12 weeks of age, followed by a PCV13 booster at one year old (on or after the first birthday). This is referred to as a 1+1 PCV schedule. This 1+1 schedule will replace the previous schedule of 2+1 (at 8 and 16 weeks, and a booster dose given at one year old (on or after the first birthday)).

Epidemiological situation

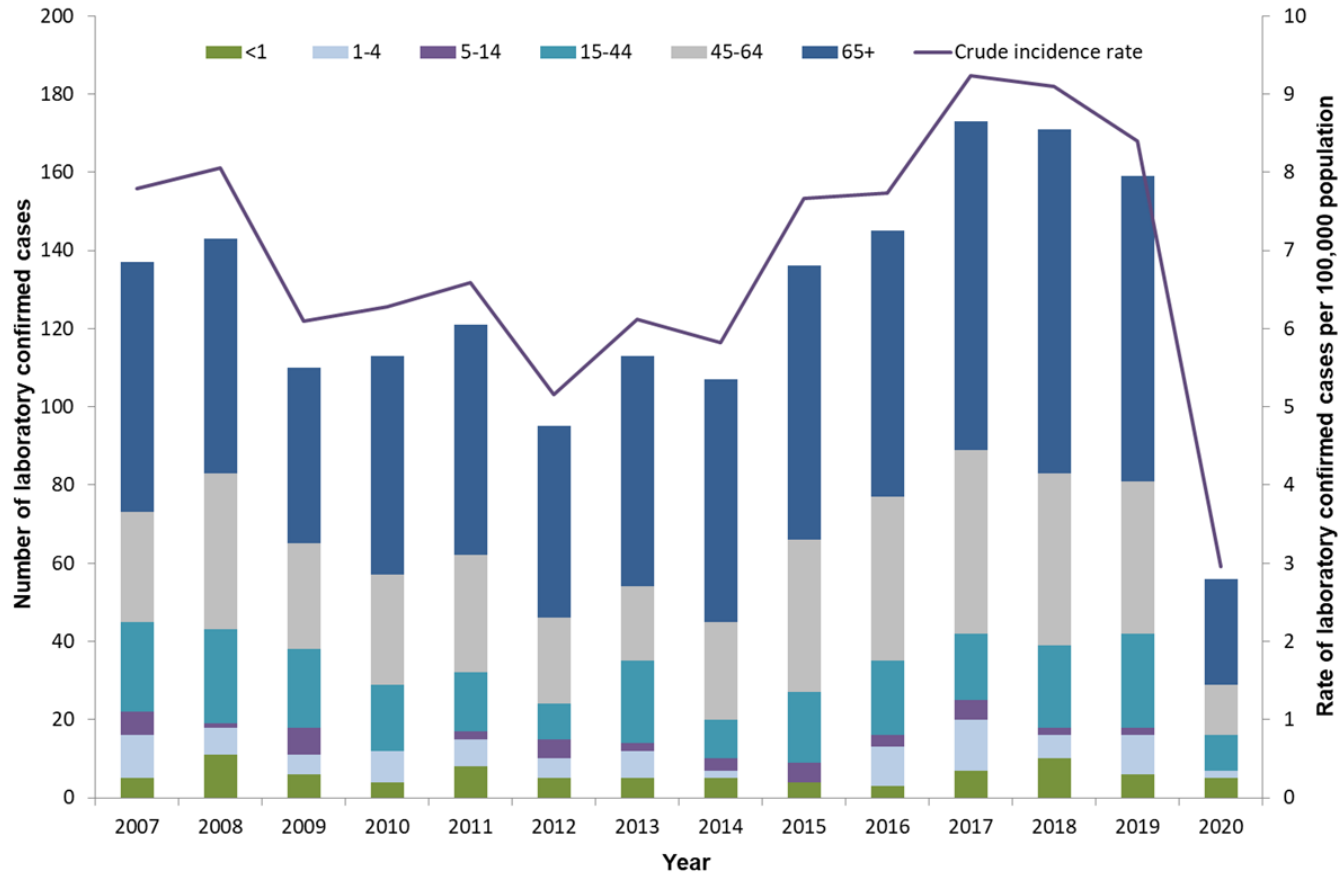
There were 56 laboratory confirmed cases of IPD, incidence rate 3.0 per 100,000 population. Since 2012, there has been an overall upward trend in both number of cases and incidence rate. In 2020 the lowest number of cases were reported over the past decade, with a 65% decrease in cases when compared with 2019 (159).

Age

As with previous years, cases predominantly affect the older age groups with 71% (40) over 45 years of age. Of the older age groups, 15% were over 85.

Pneumococcal Disease

Laboratory confirmed cases of Invasive Streptococcus Pneumoniae by age group, 2007-2020, Northern Ireland



Source: Northern Ireland Laboratory Information System (NILIS)

Pneumococcal Disease

Serotypes

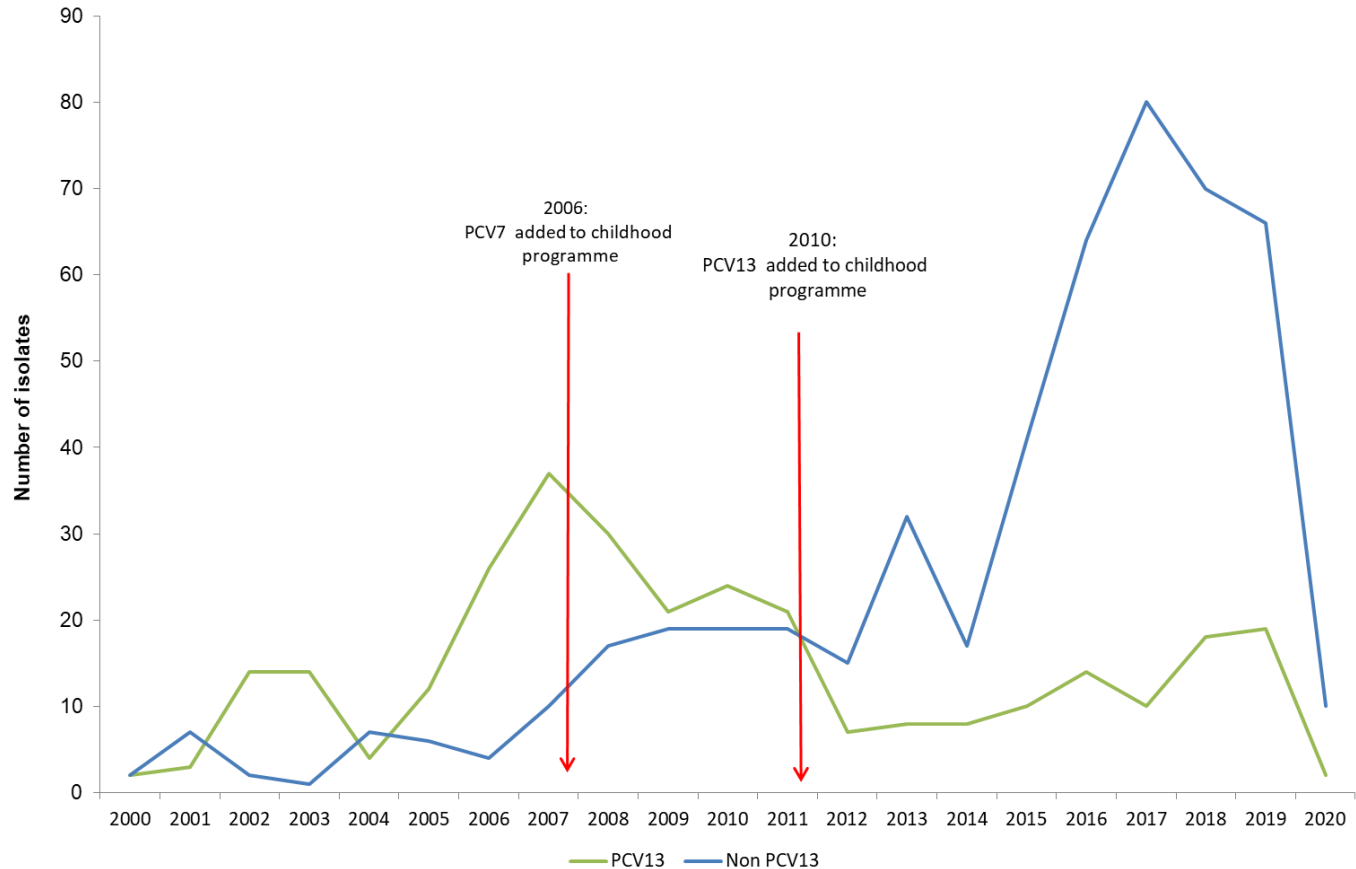
Typing information was available for 54% (30) of cases. Of these cases, the most common serotypes reported were 8 (23%) and 22F (13%). The majority 27 (90%) of cases were caused by vaccine-preventable strains not contained in the pneumococcal conjugate vaccine 13 (PCV13) offered routinely at 3 and 12 months of age. The 3 (10%) PCV13 type cases were distributed across the age groups.

Since pneumococcal conjugate vaccine was introduced into the routine childhood programme (PCV7 in 2006 and PCV13 in 2010), the number of cases from PCV13 serotypes has declined from a peak of 37 cases in 2007 to a low of 7 in 2012. Overall cases remain low.

Since 2014, there has been a slight upward trend, with 17 cases in 2019 compared to 8 in 2014. As numbers overall are small, the significance of this increase has to be interpreted with caution and will continue to be monitored. In contrast, since 2012 the number of cases from non-PCV13 strains has increased annually although a reduction has been observed in 2019 (68). While this is reassuring, the pattern across the UK is of increasing numbers of non-PCV13 strains and we will continue to monitor this alongside national surveillance systems.

Pneumococcal Disease

Laboratory confirmed cases of IPD by PCV/non-PCV serogroup, 2000-2020, Northern Ireland



Source: Northern Ireland Laboratory Information System (NILIS)

Haemophilus Influenzae

Epidemiological situation

There were 6 laboratory confirmed cases of invasive Hi disease, an incidence rate 0.3 per 100,000 population. Between 2007 and 2016, there has been no discernible trends. A sharp rise of cases was noted between 2016 (15) and 2018 (49). Cases fell to 29 in 2019 and further to 6 in 2020.

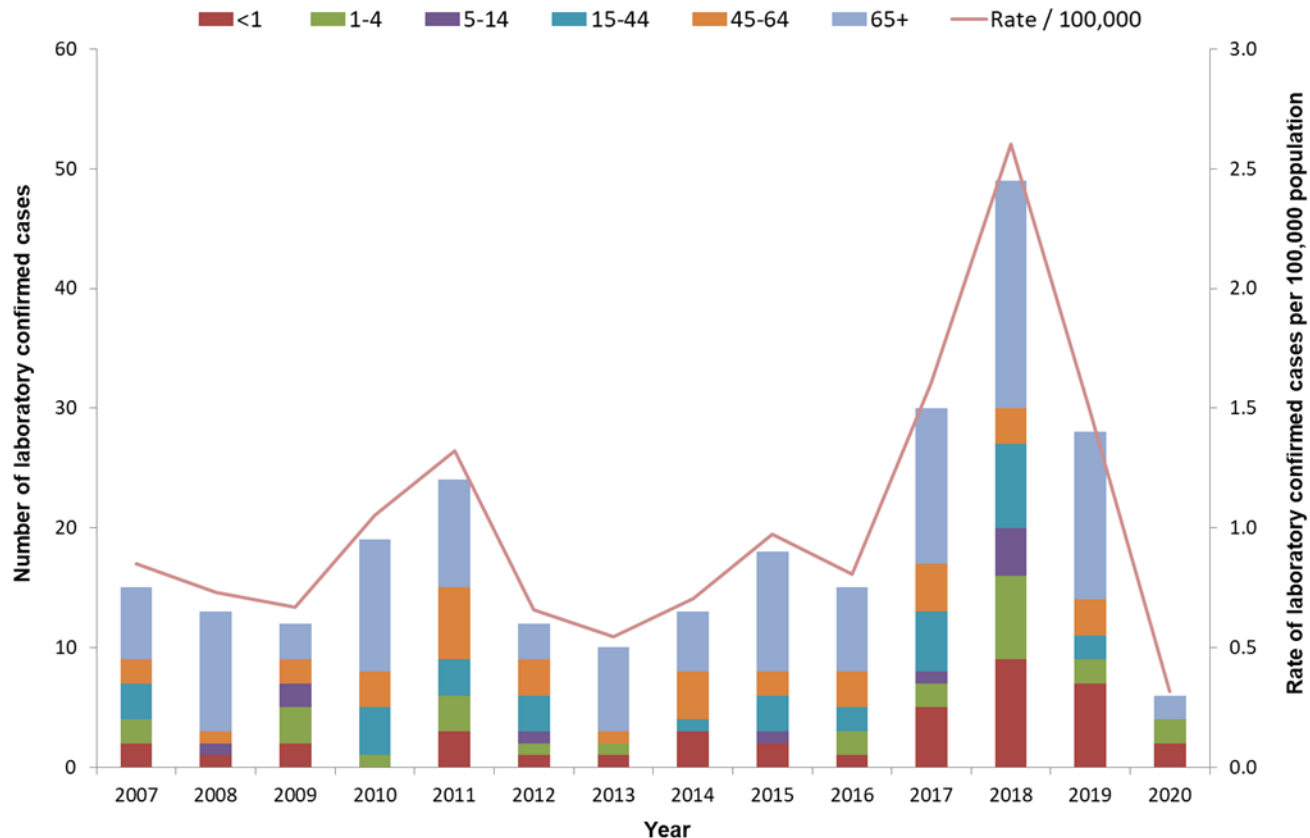
Age

The largest proportion of cases were those aged under 5 (67%).



Haemophilus Influenzae

Invasive Haemophilus Influenzae cases by age band, 2007-2020, Northern Ireland



Source: Northern Ireland Laboratory Information System (NILIS)

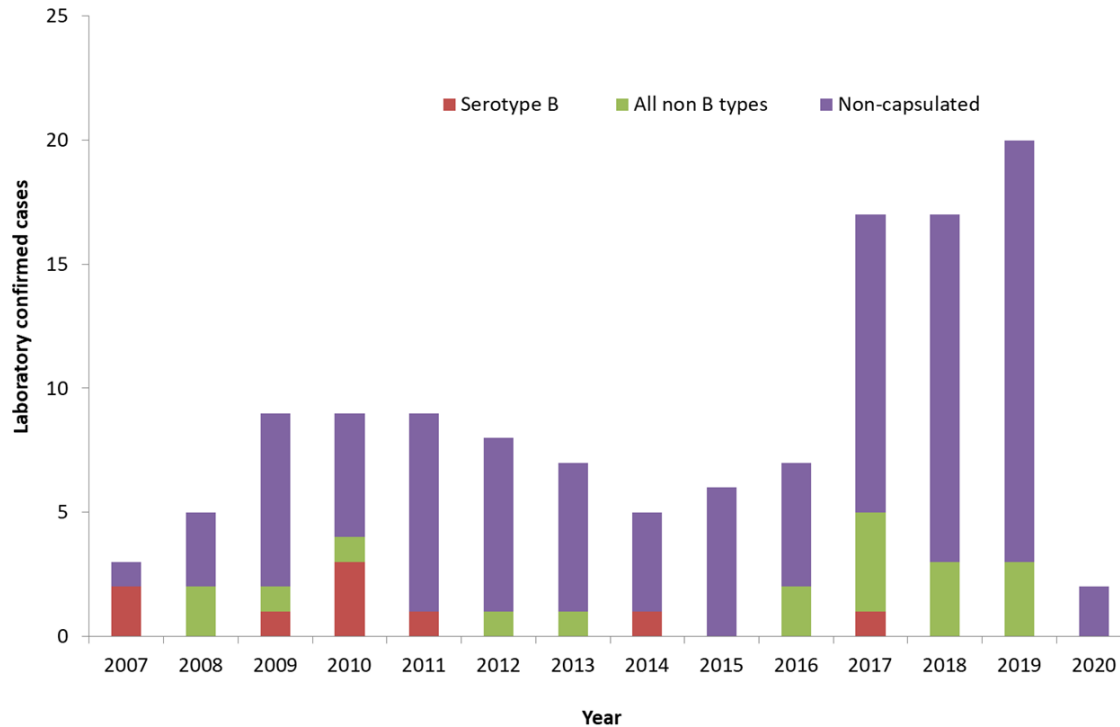


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Haemophilus Influenzae

Invasive Haemophilus Influenzae cases by serotype,
2007-2020, Northern Ireland



Source: Northern Ireland Laboratory Information System (NILIS)

Serotypes

Typing information was available for 33% of cases and of these, all were 'non-capsulated' Hi strains. Since 2007, the number of cases of Hib has remained constantly low highlighting the success of the Hib vaccine.

Pertussis (whooping cough)

Epidemiological situation

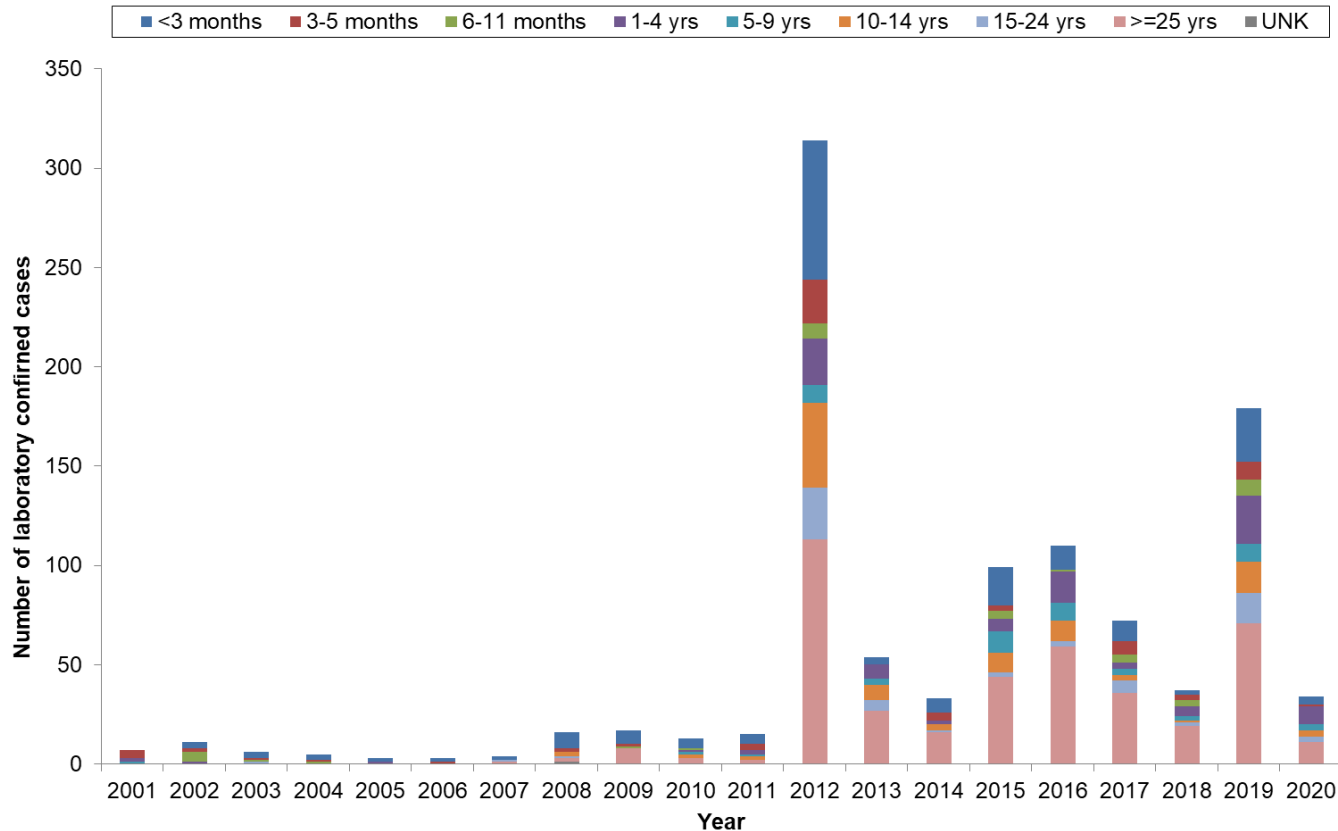
There were 34 laboratory confirmed cases of pertussis in 2020 which is a significant decrease when compared to 2019 (179). Since 2012, when cases peaked (314) and a national outbreak was declared, the mean number of cases (77; range 33-179) has remained higher than the pre-outbreak baseline (9; range 3-17).

Age

Prior to 2020 the greatest number of cases was in those aged over 25, however, in 2020, almost one third (32%) of cases were in those aged between 1 and 4. This is followed by over one quarter (26%) aged over 25. Other age groups have reported much smaller numbers.

Pertussis (Whooping Cough)

Laboratory confirmed cases of Pertussis by age group,
2001-2020, Northern Ireland



Source: Northern Ireland Laboratory Information System (NILIS)/Pertussis Enhanced Surveillance System

Measles

Epidemiological situation

There were 10 notifications of clinically suspected measles, of which 8 were discarded after PCR/serology testing. Isolates for two cases were not sent for testing. There were no confirmed cases in 2020 with the last confirmed case during the summer of 2017.

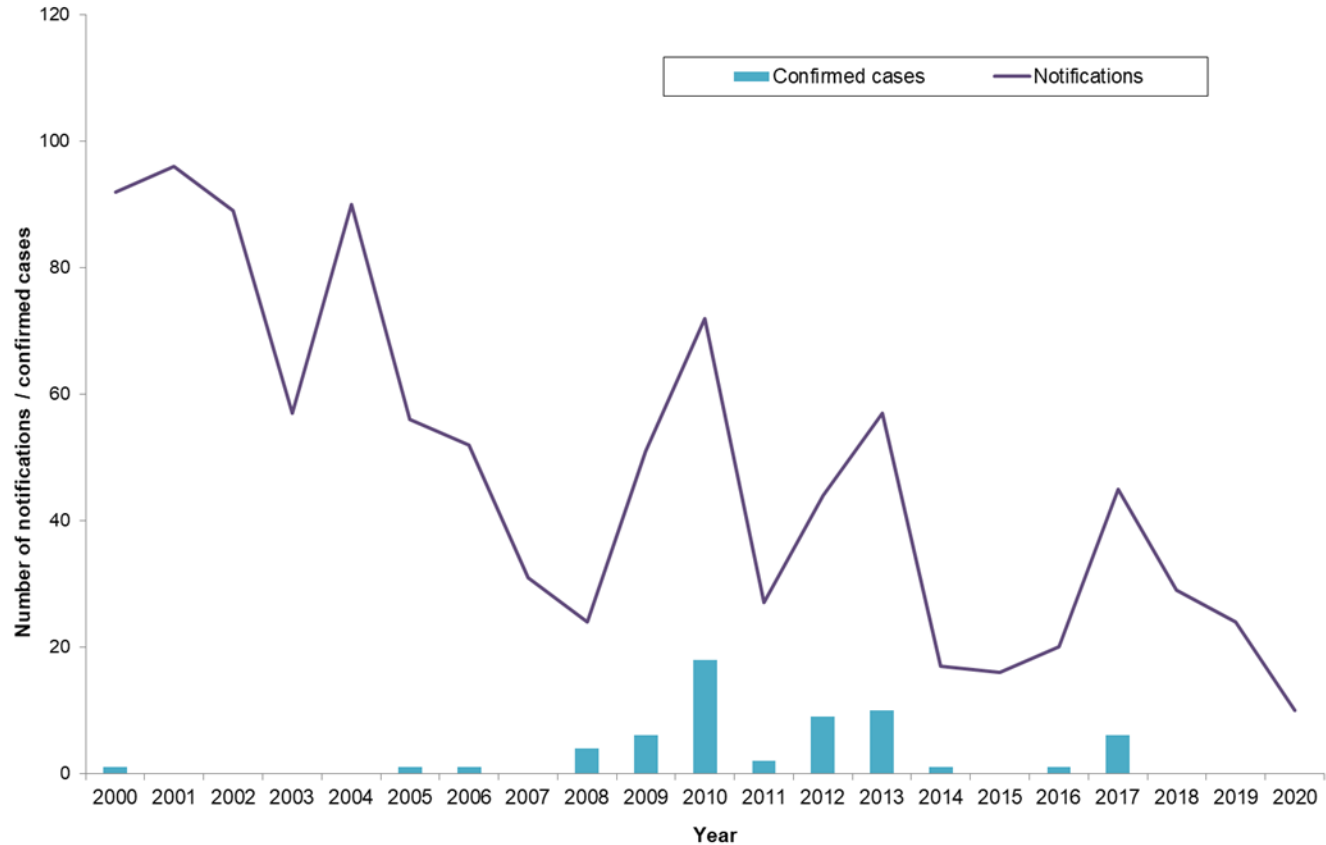
The number of notifications have decreased compared to 2019 (24). This follows the overall downward trend in notifications since 2000.

Age

Suspected measles cases were observed in both adults and children with 60% of cases in children aged under 4 years. The median age was 3.5 years, ranging from 8 months to 69 years. The age distribution of suspected measles has varied for the last four years. The majority were unvaccinated children and young adults.

Measles

Notifications and laboratory confirmed cases of Measles, 2000-2020, Northern Ireland



Source: Measles Enhanced Surveillance System and HP Zone®

Mumps

Epidemiological situation

There were 296 laboratory confirmed cases of mumps, a 45% decrease when compared with 2019 (543). Historically, a sharp rise in confirmed cases was observed in 2004, with the number of cases peaking at 850 in 2005. Since then, there has been fluctuation in the number of confirmed cases that follows the cyclical epidemiological pattern of mumps virus.

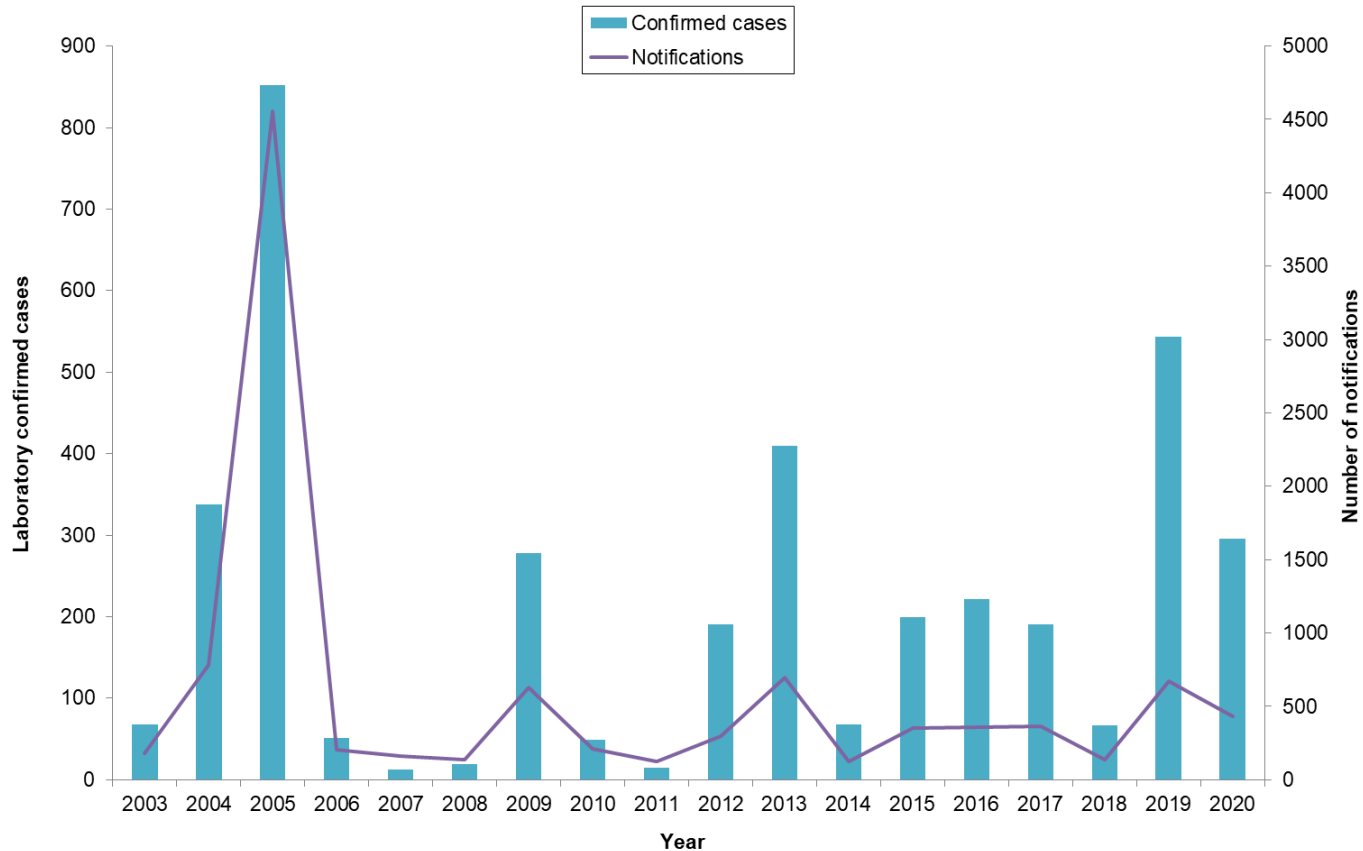
Of the 296 cases 98% of them occurred in the first 3 months of the year. This is similar to what was observed by Public Health England.

Age

Over two thirds (69%) of cases were aged 15-24. Of these, most (90%) received two doses of MMR vaccine. This may represent waning immunity within the fully and/or partially vaccinated population.

Mumps

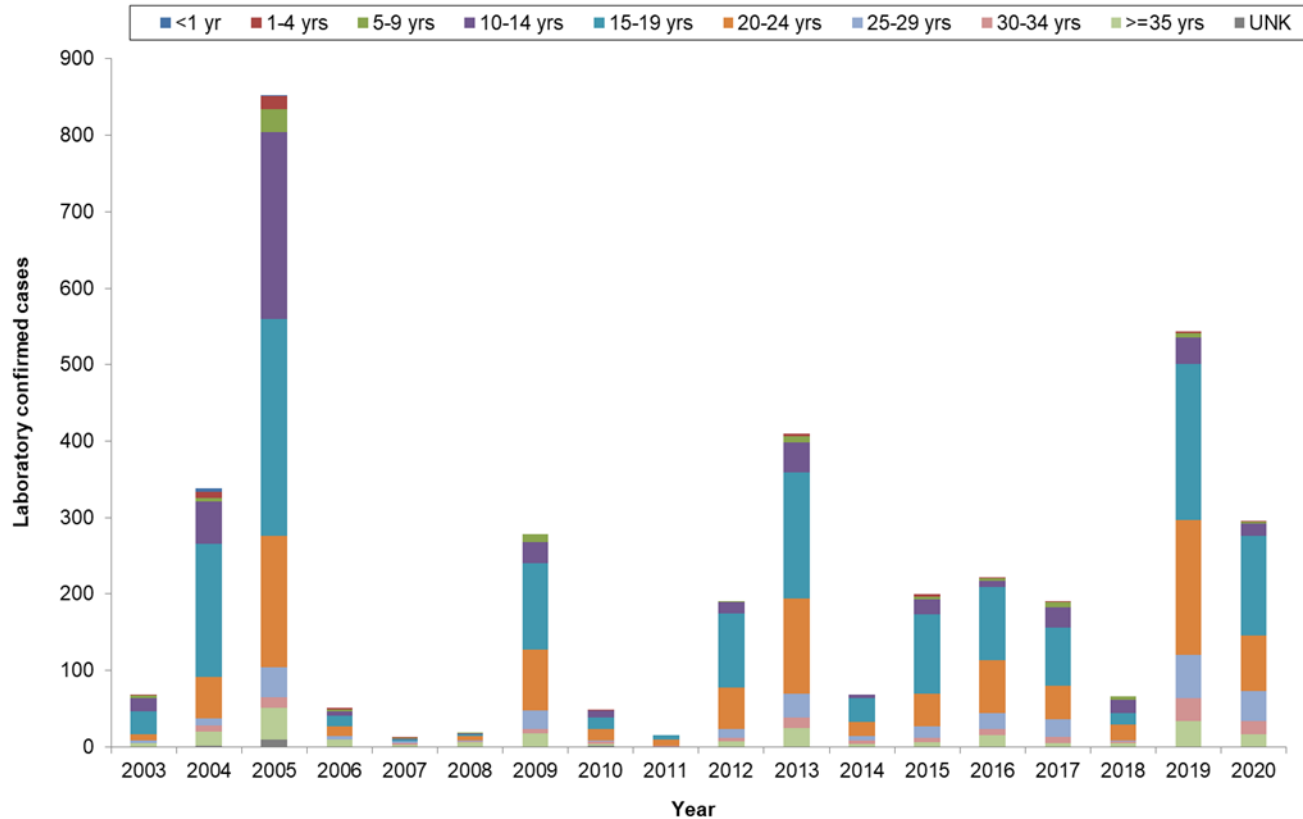
Notifications and laboratory confirmed cases of Mumps, 2003-2020, Northern Ireland



Source: Mumps Enhanced Surveillance System and HP Zone®, NB: Two different scales used

Mumps

Laboratory confirmed cases of Mumps, by age group, 2003-2020, Northern Ireland

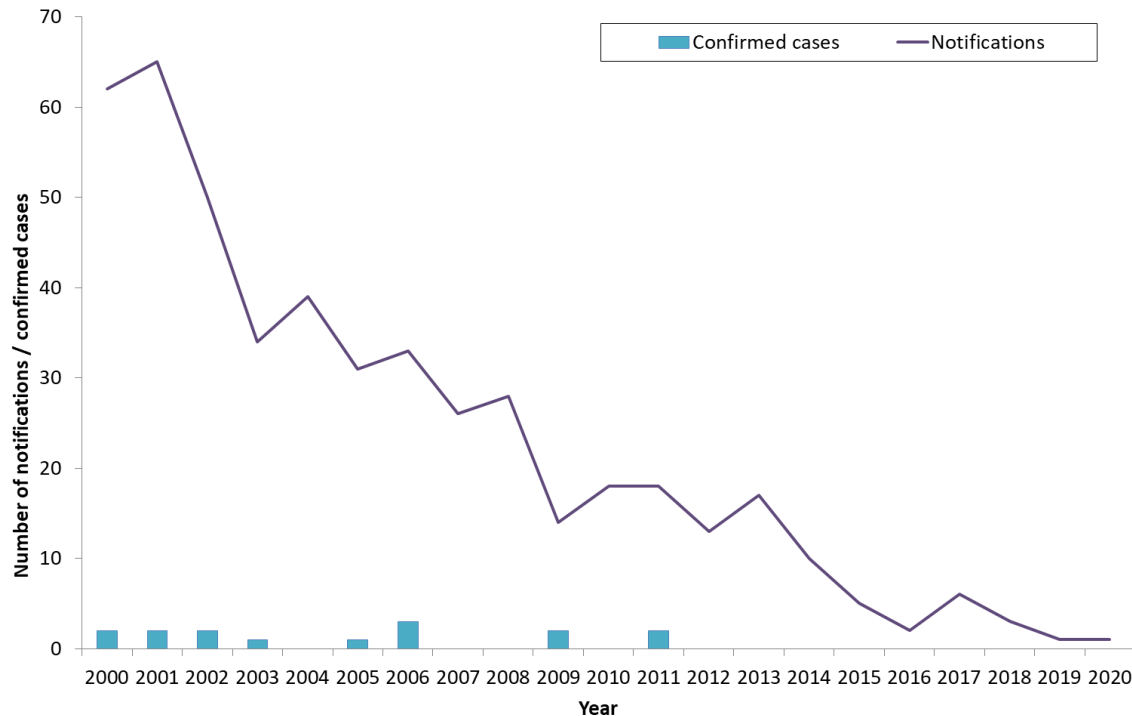


Source: Mumps Enhanced Surveillance System and HP Zone®

Note: salivary antibody testing for mumps ceased in May 2010

Rubella (German Measles)

Notifications and laboratory confirmed cases of Rubella,
2000-2020, Northern Ireland



Source: Rubella Enhanced Surveillance System and HP Zone®

Epidemiological situation

In 2020, there was 1 clinically suspected notification of rubella, that was discarded on PCR/serology testing. As a result of this, there were no laboratory confirmed cases. Since 2012, there have been no laboratory confirmed cases of rubella and the number of notifications has been declining over time.

Diphtheria

Epidemiological situation

There were no clinically suspected notifications or laboratory confirmed cases reported in 2020. Following the introduction of vaccine into the routine childhood programme, the incidence of disease has fallen dramatically with no cases in Northern Ireland in recent times.

Tetanus

Epidemiological situation

There was one clinically suspected notification. Since introduction of vaccination, the incidence of disease has fallen dramatically with no confirmed cases in Northern Ireland in recent times.

Poliomyelitis (Polio)

Epidemiological situation

Since introduction of vaccine, the incidence of disease has fallen dramatically with no cases in Northern Ireland in recent times.

Produced by

Dr Jillian Johnston, BBV/Immunisation Surveillance and Respiratory Surveillance Teams

Further Meningococcal Disease data for Northern Ireland is available at:

<https://www.publichealth.hscni.net/directorate-public-health/health-protection/meningococcal-disease>