

MUMPS IN IRELAND, 2004-2008

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Following a national mumps outbreak that began in November 2004 and continued into 2005, the number of mumps notifications in Ireland waned in the latter half of 2006 and during 2007 (Figure 1). However, mumps notifications have started to increase again in 2008 (Figure 1). The number of mumps notifications annually between 1988 and 2008 and the number of confirmed mumps notifications by year from 2004 to 2008 are shown in Figure 2. In total, there were 420 mumps notifications in 2004, 1,079 in 2005, 427 in 2006, 150 in 2007 and to date there are 153 notifications in 2008 (Figure 2). In contrast, there were 40 mumps notifications in 2003 (Figure 2).

The highest number of notifications and the highest incidence rates, from the start of the outbreak in Week 44 of 2004 to Week 16 of 2008, were in the age groups 15-19 years and 20-24 years (Figures 3 and 4). The setting in which the cases had most likely acquired mumps was reported for 25 percent of the notifications (n=535/2156) since the start of the outbreak; for the majority of these, college/university (48 percent) or secondary school (12 percent) were reported as the locations the infection was most likely to have been acquired.

Vaccination status was only reported for 35 percent (n=753/2156) of notifications since November 2004. Where vaccination status was reported, 35 percent of the cases were unvaccinated, 36 percent had received one dose of the combined measles-mumps-rubella vaccine (MMR), 28 percent had received two doses and one percent had received at least one dose (but it was unclear if they had also received a second dose). Reported vaccination status was obtained through a number of sources, such as local immunisation databases, general practitioner's records and case/parental records or recall. Due to recall bias by cases/parents, there may therefore be some inaccuracies in the vaccination status figures reported above.

Eighty-four cases were hospitalised, representing 10 percent (n=84/855) of all cases with known hospitalisation status. Reported complications of mumps include orchitis (19 percent, n=86/442), deafness (1.6 percent, n=11/707), meningitis (1.5 percent, n=11/718), pancreatitis (1 percent, n=6/629), mastitis (0.6 percent, n=4/644) and encephalitis (0.3 percent, n=2/714).

Notification data 2008

In contrast to the 153 mumps notifications for Weeks 1-16 2008, there were 34 mumps notifications during the same period in 2007 and 150 mumps notifications for the whole of 2007 (Figures 1 and 2). To date in 2008, 87 of the 153 notifications are classified

as laboratory-confirmed, nine as probable, 43 as possible, while 14 have no case classification specified.

The highest number of notifications in 2008 are in the age groups 15-19 years (n=34), 20-24 years (n=26) and 25-34 years (n=33), while the highest incidence rates are in those 15-19 years (Figures 5 and 6). The setting in which the case most likely acquired mumps was reported for 53 notifications; school/college/university (34 percent), social setting (23 percent) and family/household (23 percent) were the most frequently reported as the place the infection was most likely acquired. Fifty-nine percent of cases are male and 40 percent are female; sex was not reported for 1 percent.

Of the 153 notifications, the vaccination status was unknown or unreported for 50 percent; 20 percent were unvaccinated; 17 percent had one dose of MMR and 13 percent had two doses of MMR.

Four cases have been hospitalised in 2008, representing five percent (n=4/79) of all cases with known hospitalisation status. Reported complications of mumps included orchitis (30 percent, n=16/54), deafness (1 percent, n=1/79) and pancreatitis (1 percent, n=1/78). No cases of meningitis (n=0/78), encephalitis (n=0/79) or mastitis (n=0/79) due to mumps were reported.

Six outbreaks of mumps have been notified to date for 2008. One outbreak was notified in Week 15 in the Health Service Executive (HSE) Mid Western Area (community outbreak with 15 cases). Two outbreaks were notified in Week 14; one was notified in the HSE South Eastern Area (college outbreak with seven cases) and one in the HSE Eastern Region (school outbreak with seven cases). One outbreak was notified in Week 12 in the HSE North Western Area (private household outbreak with three cases), one in Week 10 in the HSE Southern Area (school outbreak with two cases) and one in Week 7 in the HSE North Western Area (private household with two cases).

Please note that the 2007 and 2008 notification data are provisional.

MMR uptake in Ireland

Mumps vaccine in Ireland is available as part of the MMR vaccine. Vaccination with the first dose of MMR (MMR1) is recommended at 12 to 15 months of age, and the second dose at four to five years. Mumps vaccination was first included in the childhood immunisation schedule in 1988, with the introduction of the MMR vaccine – mumps became a notifiable disease the same year [1]. In 1992, a second dose of MMR was recommended

FIGURE 1

Mumps notifications in Ireland, by month from 2004 to 2008
(Data for April 2008 is incomplete)

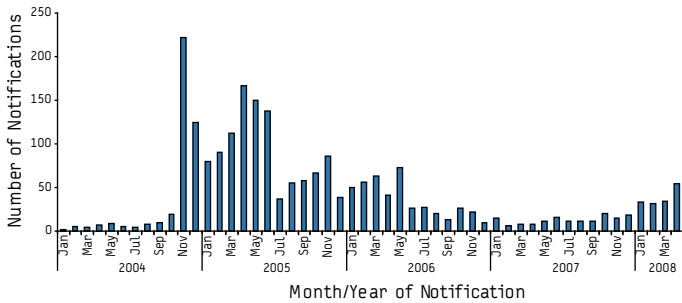


FIGURE 2

Mumps notifications by year and year of introduction of MMR vaccine in Ireland
(Prior to 2004, case classifications were not assigned to mumps notifications; therefore the number of confirmed mumps notifications is not known).

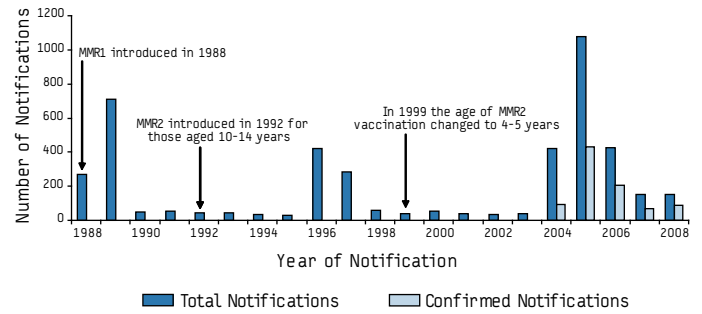


FIGURE 3

Mumps notifications in Ireland by age group, from Week 44, 2004 to Week 16, 2008

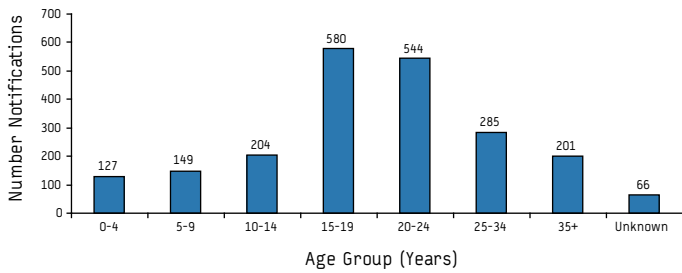


FIGURE 4

Age-specific incidence rates of mumps notifications in Ireland, from Week 44, 2004 to Week 16, 2008

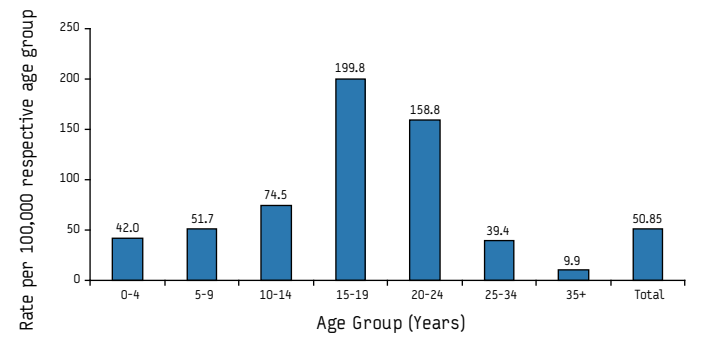


FIGURE 5

Mumps notifications in Ireland by age group, from Weeks 1 to 16, 2008

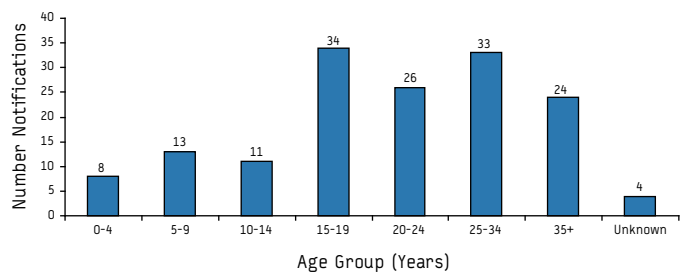
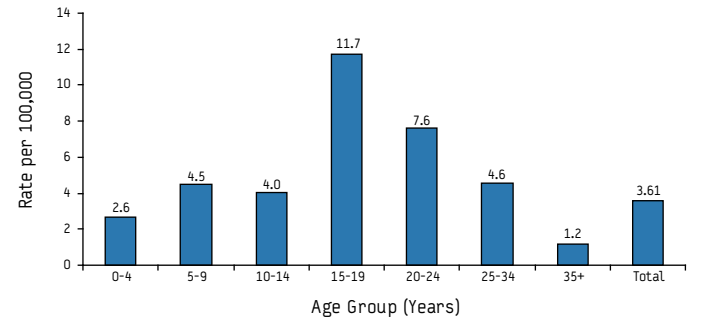


FIGURE 6

Age-specific incidence rates of mumps notifications in Ireland, Weeks 1 to 16, 2008



for children aged 10 to 14 years. In 1999, the age of the second dose was lowered to four to five years as a result of outbreaks in 1996/1997 that predominantly affected primary school children.

Since the national collation of quarterly MMR1 immunisation uptake statistics commenced in 1999, the uptake of MMR1 in those aged 24 months has ranged between 69 percent (Quarter 4, 2001) and 88 percent (Quarters 3 and 4, 2007), well below the target uptake of 95 percent required to prevent outbreaks of these diseases. The national quarterly MMR1 immunisation uptake rates at 24 months are shown in Figure 7.

Data on uptake of the second dose of MMR vaccine are not currently available at a national level.

Public health strategies and control measures

At the start of the outbreak in 2004, a national outbreak control team was convened [2], bringing together health professionals from all HSE Areas, the Department of Health and Children, the National Virus Reference Laboratory and the Health Protection Surveillance Centre (HPSC). This group agreed public health strategies (vaccination and management of cases and close contacts) to control the outbreak at national and local level. Communication messages were standardised and control measures were implemented locally.

The outbreak predominantly affected third-level colleges and universities, so this population was targeted for an MMR vaccination programme. All students and staff under 25 years old who had not received two doses of MMR were recommended vaccination. The vaccine was provided either by public health services, student health services or by the student's own general practitioner (GP). MMR vaccine was also provided for those at risk in the wider community through GP practices. Public health messages during the outbreak urged parents to ensure that their children were vaccinated with two doses of MMR by six years of age (i.e. routine vaccination schedule). Vaccine was provided free of charge by the HSE areas.

To prevent ongoing transmission of mumps virus and ensure high levels of immunity among the college students, the mumps outbreak control group also recommended that all new entrants to third-level colleges for the academic year 2005/2006 younger than

25 years should be fully vaccinated with two doses of MMR prior to commencing the academic year.

To increase awareness of the outbreak, leaflets and information materials were developed and disseminated locally and made available on the HPSC website and other HSE websites. These materials included information about mumps, MMR vaccination and the control measures recommended.

Since then, it has also been recommended that all new entrants to third-level colleges younger than 25 years for the academic years 2006/2007 and 2007/2008 should be fully vaccinated with two doses of MMR prior to commencing the academic year.

The Department of Health and Children has developed a strategy to expedite the elimination of measles and rubella – this is available on both the HPSC and EUVACNET web sites.

The HPSC participated in the European Sero-Epidemiology Network 2 (ESEN2) project, funded by the European Union. This project provided the sero-epidemiological profile of immunity to eight vaccine-preventable diseases. The profile demonstrated that immunity against measles, mumps and rubella in primary and secondary school students did not reach World Health Organization targets. The recent resurgence in mumps cases in this age group, already identified as being at risk, highlights the importance of seroepidemiology in guiding vaccination policy, including the need for catch-up campaigns. The HSE is currently planning an MMR catch-up campaign for all schoolchildren aged between four to 18 years over the next two years as part of the measles elimination strategy. It is anticipated that this programme will also prevent future mumps outbreaks occurring in this age group. This outbreak once again highlights the importance of a two-dose MMR schedule for all children.

References

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FIGURE 7

National quarterly MMR1 immunisation uptake rates at 24 months in Ireland

(The Q4-2005 MMR1 figure is based on data from seven of the eight HSE Areas. The Q1-2006 MMR1 figure includes the HSE Eastern Area figure, which is an estimate only.)

