MMR Catch-Up Campaign  
Frequently Asked Questions for Healthcare Professionals

This information should be read in conjunction with
- Summary of Product Characteristics for MMR vaccines available at [www.medicines.ie](http://www.medicines.ie)

**Is it possible to eliminate endemic measles and rubella?**

The World Health Organisation considers that both measles and rubella meet the criteria for diseases that can be eradicated:\(^1\)

1. there is no animal or environmental reservoir and humans are critical to maintaining transmission;
2. accurate diagnostic tests are available;
3. the vaccines and existing vaccination strategies for both diseases are effective and safe; and
4. transmission has been interrupted in a large geographic area (e.g., nationwide) for a prolonged period of time.

Using the experience of measles elimination in the WHO Region of the Americas, (measles elimination achieved since 2002) each of the remaining WHO regions has assessed progress and challenges towards regional measles elimination, and the WHO European Region has established a target date for the elimination of measles by 2015.

In the European Region the objectives are:
- To eliminate endemic measles;
- To eliminate endemic rubella, which will lead to elimination of Congenital Rubella Syndrome (CRS) as well.

**Elimination of measles requires the following:**

- Two doses of MMR with a sustained very high coverage ≥95%
  The attenuated live measles vaccine is highly effective, yielding seroconversion rates of 95% or more in persons over 12 months old. Almost all children who fail to respond to the first dose will respond to the second dose, thus ensuring seroconversion rates after two doses of 99% or more if the first dose is given at 12 months or older. However as a result of the high transmissibility of the measles virus, the herd immunity threshold is very high and very high coverage (≥95%) is necessary to interrupt virus transmission.
- Provision of supplemental opportunity for MMR vaccination for groups susceptible to measles.
- Strengthening of surveillance systems for rigorous investigation and laboratory confirmation of suspected cases and outbreaks.
- Improving availability of high quality information for health professionals and the public on benefits and risks of MMR vaccination.
What are Ireland’s plans for measles elimination?

Ireland is committed to the Measles Elimination Strategy (DoHC, 2007) as requested by the World Health Organization (WHO) in 2005 and in a renewed WHO commitment to achieving measles and congenital rubella syndrome (CRS) elimination by 2015. The DoHC committee recommended strengthening surveillance and control measures, with an emphasis on improving immunisation uptake in all children and implementing a catch-up campaign to ensure that all children were provided with an opportunity for a 2nd dose of MMR.

The recommendations of the DoHC committee in 2007 are summarised as follows:

A. Surveillance
   Strengthening of public health surveillance systems is required to investigate and obtain laboratory confirmation on all suspected cases of measles (and rubella) and implement control activities.

B. Immunisation
   1. Achieve and maintain high coverage of routine two doses of MMR
      • MMR1 at 12 months - uptake ≥ 95%
        o Identification and registration of all children due MMR1
        o Target MMR1 defaulters systematically and opportunistically
        o Monitor uptake in a timely manner
        o All vaccinated children should be provided with a vaccine certificate/parent-held child health record
      • MMR2 at 4-5 years - uptake ≥ 95%
        o Identification and registration of all children due MMR2
        o Target children without evidence of MMR1 at 4-5 years for routine MMR2 at least 1 month later
        o Develop a national system for monitoring MMR2 uptake
        o Target MMR2 defaulters systematically and opportunistically
        o All vaccinated children should be provided with a vaccine certificate/parent-held child health record

   2. Recommendations of the Measles and Rubella Elimination Committee of the Department of Health and Children in 2007
      • Comprehensive MMR approach to target all children 4-18 years of age regardless of immunisation status

      • Other groups
        o Women of childbearing age should be protected against rubella
        o Health Care Workers should be appropriately immunised with MMR
During outbreaks consider lowering age of MMR for infants to 6 months and expedite MMR2 in crèches and day centres. Encourage such facilities to maintain immunisation records of children attending

A school based catch-up campaign was recommended for children aged 4 to 18 years regardless of immunisation status based on:
- Epidemiology of measles (and rubella) in Ireland
- Measles susceptibility by age groups (based on European Sero-Epidemiology Network (ESSEN2) study) and a modelling of this data with known information on disease incidence and historic MMR uptake
- Immunisation uptake data (MMR1 at 24 months)
- The difficulties in rapid and accurate retrieval of MMR2 immunisation uptake data (due to a lack of comprehensive immunisation information systems at regional level)
- Cost estimates of different strategies

A critical element of Ireland’s plan to eliminate measles is to ensure that all children in second level and primary schools are offered the opportunity to receive a catch-up dose of MMR vaccine so that they have had two doses by the time they leave school. This is estimated at 30% of primary school students (136,000) and 50% of second level students (163,000). Measles outbreaks will continue until this campaign is implemented.

Since 2009 measles has re-emerged in Europe and the primary reason for the increased transmission and outbreaks is failure to vaccinate. In the past 12 months, Ireland has reported the third highest level of measles notifications among EU/EAA countries at 23.0 cases per million. Romania had the highest level of measles during this time at 170.0 cases per million and UK had 54.7 cases per million. This adds to the urgency of an MMR catch-up campaign in primary schools and for first years of second level schools from September 2013.

**What MMR vaccines did children born in 1990s get?**
The MMR vaccine was introduced in 1988 for babies at 15 months of age and this was the recommendation all through the 1990s.

During the 1990s there were changes to the MMR vaccination schedule for children.
1. In 1992 a second dose of MMR was introduced for boys and girls in 5th/6th Class of primary school
2. In 1999 the timing of the second dose was brought forward to Junior Infants at 4-5 years of age

**What MMR vaccines do children need?**
- For the best protection against measles children need 2 doses of MMR vaccine at 12 months and again at 4-5 years.
- To eliminate measles from a country more than 95% of children should have 2 doses of MMR vaccine
What records do we have of children’s MMR vaccinations?
There is no one national immunisation registry for all children’s vaccinations in Ireland. During the 1990s each former health board developed electronic records of a baby’s first dose of MMR vaccine but these systems have not yet been joined up.

MMR vaccinations carried out in schools are mostly held as physical records for children born in the 1990s. Some of the school vaccinations are held as electronic records but not joined up with the record of the first dose of MMR vaccine.

Finding an individual child’s immunisation record takes time and even after a search where we find no record of MMR vaccination we are still not certain that this means MMR vaccine was not given – as it could be recorded elsewhere but we couldn’t find it.

How well protected against measles are children born in 1990s?
We know some children born in the 1990s missed out getting 2 doses of MMR vaccine because of changes to the schedule and because vaccine uptake was not as good as it is now.

In 2007 the Department of Health set up a committee to look at how well protected our children are against measles. The DOH committee recommended that many children in Ireland were not fully protected against measles and we should give children born in the 1990s another opportunity to receive MMR vaccine through a MMR catch-up campaign in schools.

In areas where electronic immunisation information systems are lacking and children requiring MMR vaccine cannot be readily identified the committee recommended offering MMR vaccine regardless of immunisation status.

How well protected against measles are children born in 2000s?
We know that the uptake for the first dose of MMR vaccine was as low as 70% in the early 2000 because of Autism scare from Wakefield’s publications in 1998. It is only since the end of 2008 that uptake of 90% was achieved nationally and we have still not achieved ≥95% national uptake for first dose of MMR.

National statistics for second dose of MMR through the schools immunisation programme are not available nationally for the 2000s. In 2011/2012 uptake for second dose of MMR in the schools immunisation programme was reported as 84%. Therefore some children born in 2000s need another opportunity to receive MMR vaccine through a MMR catch-up campaign in schools.

Who is this MMR catch-up campaign targeting?
The campaign started in October 2012 and will continue during the 2013/2014 school year.

During 2013/2014 the MMR catch-up campaign the HSE will offer a dose of MMR vaccine to all students in senior infants to sixth class in primary schools and to first year students in second level schools and those of equivalent age in special schools and all home schooled students (age 6 to 18 years) who have not completed (or are not sure they have completed) their two dose MMR vaccination schedule.
How do parents decide about the MMR catch-up vaccination?
If parents have their own record showing that their child got 2 doses of MMR vaccine then no additional doses of MMR vaccine are required.

If parents are unsure about whether their child got 2 doses of MMR or not then they should sign the consent form for MMR catch-up.

Should staff check the vaccination status of students before offering a dose of MMR vaccine?
If electronic records are available and resources exist, staff may check returned consent forms against the HSE electronic records to determine if the student has already received 2 doses of MMR.

- If there is documentary evidence that the student has already received 2 doses of MMR the student/parents should be advised of this and told an extra dose is not required.
- If there is no documentary evidence that the student has already received 2 doses of MMR then the student should be offered a dose of MMR vaccine.

In areas where it is not possible to review electronic records students should be offered a catch-up dose of MMR vaccine if the students (or parents) are unsure if they have received the recommended 2 doses of MMR vaccine.

What about giving a 3rd dose of MMR?
Where students are unsure if they have received the recommended 2 doses of MMR, NIAC advises administration of a catch-up dose of MMR (even if this is actually a 3rd dose of MMR).

If an individual has already had two doses of MMR a third dose will not cause any increase in side-effects.

When MMR vaccine is given to an individual who is already immune, the immune system prevents the virus from replicating significantly. Thus adverse effects are less common. When a live virus vaccine is given to a non immune individual, the virus replicates in the body. Most adverse effects of the vaccines are caused by this viral replication.

Therefore, it is perfectly safe to repeat MMR vaccination (as a 3rd or even a 4th dose): either a person is immune, and are most unlikely to suffer side effects; or they are not immune, and need the vaccine.

What if there is documented proof a student has received 2 doses of MMR or their parents are certain the student had 2 doses of MMR?
Two doses of MMR are recommended for best protection against measles. If a student has received two doses of MMR they do not require another dose in this campaign.
Are there any reasons why MMR should not be given?
NIAC has stated the following contraindications and precautions

Contraindications
1. Anaphylaxis following a previous dose of MMR or one of its constituents (e.g. Neomycin, Gelatin)
2. Significantly immunocompromised persons, such as those with untreated malignant disease and immunodeficiency states other than HIV infection, and those receiving immunosuppressive therapy, high-dose x-ray therapy and current high-dose systemic corticosteroids.
3. Pregnancy. There is no evidence of congenital rubella syndrome or increase in other teratogenic effects in women inadvertently given rubella vaccine before or during early pregnancy, but pregnancy remains a contraindication. Pregnancy should be avoided for 1 month after MMR. (NB this is as per Immunisation Guidelines for Ireland and supersedes the SPCs for both MMR vaccines which state pregnancy should be avoided for 3 months)

Breastfeeding is not a contraindication to MMR vaccination

Precautions
1. Acute severe febrile illness, defer until recovery.
2. Injection with another live vaccine within the previous 4 weeks.
3. Recent administration of blood or blood products. (Where possible, MMR should be deferred for at least 3 months after receipt of low-dose immunoglobulin, 6 months after red-cell transfusion, and 11 months after high-dose immunoglobulin (as for Kawasaki Disease)).
4. Patients who developed thrombocytoopenia within 6 weeks of their first dose of MMR should undergo serological testing to decide whether a second dose is necessary. The second dose is recommended if the patient is not fully immune to the 3 component viruses.
5. Children using Protopic cream and other topical immunomodulators should discontinue these preparations for four weeks before the administration of MMR vaccine. They should not be restarted until four weeks after vaccination.

Is egg allergy a contraindication to MMR vaccine?
Egg allergy is not a contraindication to MMR vaccine. Currently-used measles and mumps vaccines do not contain significant amounts of egg cross-reacting proteins and recent data suggest that anaphylactic reactions to MMR are not associated with hypersensitivity to egg antigens but to other vaccine components (Gelatin or Neomycin).

Can MMR vaccine be given at the same time as other vaccines?
MMR is a live vaccine and can be given at the same time as other live vaccines or if not at the same time there should be a four week interval between the two live vaccines. MMR can be given at the same time or at any interval as inactivated vaccines such as HPV (Human Papillomavirus) or Tdap (low dose tetanus, diphtheria and acellular) vaccines.
Which MMR vaccines are available and are they interchangeable?
Two MMR vaccines are available in Ireland they are MMRvaxpro (Sanofi Pastuer) and Priorix (GlaxoSmithKline). These vaccines are interchangeable i.e. if an individual has been vaccinated with one product in the past they can be either vaccinated with that MMR vaccine again or with a different brand.

What about students who are absent or whose vaccination is deferred due to an acute febrile illness?
Students who miss vaccination at school should be invited to a HSE mop-up clinic. If parents choose to go to a GP they will have to pay for the consultation (although vaccine is free) as the HSE does not have any arrangements with GPs for this MMR catch-up campaign.

What about students who require a second dose of MMR?
If a student requires a 2nd dose of MMR they should be should be invited to a HSE mop-up clinic at least 1 month after the 1st dose of MMR in school. If parents choose to go to a GP they will have to pay for the consultation (although vaccine is free) as the HSE does not have any arrangements with GPs for this MMR catch-up campaign.

What about consent?
Students aged 16 years of age and over can consent on their own behalf. For any students younger than 16 years, consent of a parent or legal guardian is required for the administration of MMR vaccine.

What can a student expect after vaccination?
For those students for whom this is the 2nd dose of MMR, adverse reactions are considerably less common (< 1%) after a second dose. Individuals who are already immune as a result of natural infection or previous immunisation do not usually develop the associated adverse reactions.

Although adverse reactions following immunisation are most commonly reported at the time of vaccination (sore or red arm, occurring in approximately 10% of vaccine recipients) these are typically transient and of short duration. Fever (6%), rash (7%), headache, vomiting and salivary gland swelling may occur. A febrile convulsion occurs in 1 in 1,000 children.

Other possible adverse events that have been reported, both during safety trials and following licensure, are much less than those likely to occur following infection:
- ‘Mini-measles’ may occur 6-10 days after immunisation and consists of mild pyrexia and an erythematous rash.
- ‘Mini-mumps’ with salivary gland swelling may rarely occur during the third week after immunisation.
- The rubella component may occasionally produce a rash, mild arthralgia, and lymph-node swelling 2-4 weeks post-vaccination, particularly in postpubertal females (up to 25% of recipients).
- Very rarely, anaphylaxis, erythema multiforme, thrombocytopenia, and nerve deafness have been reported.

- Pregnancy should be avoided for 1 month after MMR vaccination
How is an adverse event reported?
All suspected adverse reactions to vaccines should be reported to the Irish Medicines Board, Kevin O’ Malley House, Earlsfort Terrace, Dublin 2, using the Yellow Card System. This is a “Freepost” system and cards are available from the Irish Medicines Board at the above address, or may be downloaded from the IMB website www.imb.ie.

Reports should be as detailed as possible and include the batch number of the vaccine.

Measles facts
Measles is a highly contagious, serious viral disease. It spreads by coughing and sneezing, close personal contact or direct contact with infected nasal or throat secretions. The virus remains active and contagious in the air or on infected surfaces for up to two hours. It can be transmitted by an infected person from four days before rash onset to four days afterwards. Almost all susceptible contacts will develop measles if in close contact with a case.

Signs and symptoms
The first sign of measles is usually a high fever, which begins about 10 to 12 days after exposure to the virus, and lasts four to seven days. A runny nose, a cough, red and watery eyes, and small white spots inside the cheeks can develop in the initial stage. After several days, a rash erupts, usually on the face and upper neck. Over about three days, the rash spreads, eventually reaching the hands and feet. The rash lasts for five to six days, and then fades. On average, the rash occurs 14 days after exposure to the virus (within a range of seven to 18 days).

Complications
Complications are quite common, especially in children under the age of five (even more so for children under 1 year), or adults over the age of 20 years. They include a severe cough and breathing difficulties (croup), ear infections (1 in 20), viral and bacterial lung infections (pneumonia) (1 in 25), and eye infections (conjunctivitis). Most of the complications are caused by secondary bacterial infections, which can be treated with antibiotics.

More serious problems involving the nervous system are rarer. Inflammation of the brain (acute encephalitis) occurs 2-6 days after the rash has appeared for less than 1 in 1,000 measles cases, but 25% of those affected are left with brain damage. SSPE (subacute sclerosing pan-encephalomyelitis) is the most severe complication of measles. It usually occurs years after the initial illness and is a slowly progressive brain infection. SSPE starts with intellectual impairment and deteriorates to seizures and eventually death. It is, however, very rare occurring in less than 1 in 100,000 cases of measles.

Measles infection during pregnancy can result in the loss or early birth of the baby.

In 2010, there were 139,300 measles deaths globally – nearly 380 deaths every day or 15 deaths every hour.
Rubella facts
Rubella is a contagious viral disease. It spreads by close contact with an infected person through coughing and sneezing. It is most contagious when the person has a rash, but it can spread up to 7 days before the rash appears.

Signs and symptoms
Usually rubella is a mild illness, with a low grade fever, swollen neck glands and a rash which can be fleeting but typically lasts about 3 days. Up to 50% of infections may be subclinical, particularly in children.

Complications
If a woman gets rubella in early pregnancy she has a 90% chance of passing the infection on to her foetus. This can cause miscarriage, stillbirth or severe birth defects known as congenital rubella syndrome (CRS). Children with CRS may have major birth defects such as deafness, blindness, brain damage or heart defects. Worldwide, an estimated 110,000 babies are born with CRS every year.

References