Guidelines on Infection Prevention and Control for Cork Kerry Community Healthcare

07: Immunisation and Staff Health

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IMMUNISATION AND STAFF HEALTH

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1. Introduction

Immunisation is an important way of reducing infection. However, immunisation is not available against all infections and neither is it guaranteed 100% effective. It is not an alternative to good infection control practice and common sense.

Many of those receiving services in the community, particularly those in long-stay residential units, are at increased risk from a number of vaccine preventable diseases. We can decrease their risk by ensuring that they, and the staff looking after them, are appropriately vaccinated.

The most up-to-date advice on all aspects of immunisation is contained in the latest edition of Immunisation Guidelines for Ireland, National Immunisation Advisory Committee (available on the National Immunisation Office website at http://www.hse.ie/eng/health/immunisation/hcpinfo/guidelines/immunisationguidelines.html).

2. Immunisation History and Record Keeping

In residential care settings a written record of immunisation should be maintained for each resident. On admission to a service it is recommended that a record of the immunisation status of the person attending is commenced and updated as immunisation is completed.

Records of vaccination may be in the format of a record card or included in the residents admission chart. The record should include the vaccine and date given. This is not intended to be a record of prescription or administration.

Services dealing with children should have a copy of the child’s immunisation record card in the child’s notes.

Records of vaccination which are easily accessed are of particular importance in the event of an outbreak of infection. This information may be used in advising which residents/service users should be excluded from a service for their protection should an outbreak occur i.e influenza in a residential setting, measles in a children’s service.
3. ADULT IMMUNISATION – RESIDENTS

The following vaccines are recommended for adults in long-term residential care. Vaccination may also be recommended for adults who are assessed as at increased risk of infection. It is recommended that all adults have completed the primary immunisation schedule.

Influenza

During some winters, this remarkably seasonal infection causes a lot of illness and, in elderly people, a high death rate. The virus, which causes it, can change its nature rapidly so that a previous infection or immunisation may give little protection. Those recommended to have annual immunisation include the following:

- Persons aged 50 years or older
- Those with chronic illness requiring regular medical follow-up (e.g. chronic respiratory disease, chronic heart disease, diabetes mellitus, haemoglobinopathies, chronic renal failure, chronic liver disease, chronic neurological disease and degenerative disorders of the central nervous system)
- Patients with any condition that can compromise respiratory function (e.g. spinal cord injury, seizure disorder, or other neuromuscular disorder) especially those attending special schools/day centres.
- Children and adults with Down Syndrome
- Children with moderate to severe neurodevelopmental disorders such as cerebral palsy and intellectual disability.
- Residents of nursing homes, old people’s homes, and other long-stay facilities where rapid spread is likely to follow introduction of infection.
- Those with immunosuppression
- Children on long-term aspirin therapy
- Those with morbid obesity

Pneumococcus

This bacteria can cause severe chest infection, blood poisoning and meningitis especially in the very young, elderly people, or in anyone with reduced immunity. People are also at increased risk after influenza illness. Reductions in immunity may occur for many reasons, e.g. because of treatment for malignancy, a non-functioning or absent spleen, or infection with HIV.

Those recommended to have pneumococcal vaccination include the following:

- All aged 65 years and older
- Those with chronic respiratory disease
- Those with hyposplenia or asplenia
- Those who are immunocompromised
- Those with neuromuscular disease (e.g. cerebral palsy) with a risk of aspiration.
- Re-immunisation with PPV23 (Pneumovax) is generally not indicated, except in specific circumstances, e.g. where a person is vaccinated under the age of 65 years they will require re-immunisation over the age of 65 years with a 5 year time lapse between vaccines. Further information is available in the Immunisation Guidelines for Ireland, National Immunisation Advisory Committee, Chapter 16, available at this link - http://www.hse.ie/eng/health/immunisation/hcpinfo/guidelines/chapter16.pdf
Measles, Mumps and Rubella (MMR)

Individuals born before 1978 are likely to have had measles and mumps infection. MMR vaccine should be offered to such individuals on request if they are considered at high risk of exposure or if there is uncertainty about their history of measles or mumps infection.

Those born after 1978 should have documented evidence of two doses of MMR. Those without documented evidence should be vaccinated with two doses of MMR, separated by at least one month.

Tetanus

This is an acute infection characterised by muscular spasm. It is due to the toxin of a bacillus Clostridium tetani which is found in soil. Tetanus spores may be introduced into the body during injury, often through a puncture wound. Tetanus is not transmissible from person to person. Effective protection against tetanus is provided by active immunisation. Tetanus vaccination is included in the primary immunisation schedule, which consists of three doses with a booster dose given at school entry age and a further dose between 11 and 14 years. The aim is that a child will have 5 doses.

Unvaccinated adults and children 10 years and over

Unless reliable vaccine history, individuals should be assumed not to have been immunised and a full course of immunisation given. Please see National Immunisation Advisory Committee recommendation for unvaccinated adults and children 10 years and over in Chapter 2 available at this link - http://www.hse.ie/eng/health/immunisation/hcpinfo/guidelines/chapter2.pdf

Hepatitis B

In 2008 Hepatitis B vaccine was introduced into the childhood immunisation schedule. Since then this vaccine has offered to all infants at 2, 4 and 6 months.

Hepatitis B has been reported to occur more frequently in institutions for those with intellectual disability (including day care facilities) and therefore, service users in such centres should have their vaccination records checked on entry and they should be vaccinated if indicated.
4. CHILDHOOD IMMUNISATION

Preventing an illness is much better than trying to treat it once it has developed. There are now many safe and effective vaccines against potentially fatal illnesses. Some are given routinely to all the population, others only to individuals thought to be at high risk of certain infections.

There have been a number of changes to the routine childhood immunisation schedule in recent years, as new vaccine become available. The information below refers to the schedule as of January 2017. The most up to date information on the schedule is available on the National Immunisation website at this link - http://www.hse.ie/eng/health/Immunisation/pubinfo/

Under some very rare circumstances it may be necessary to withhold one or more immunisations. This will usually be on a temporary basis. The decision to deny a child the benefits of immunisation should not be taken lightly. Encouragement to ensure full uptake of immunisations at entry to a day centre/service and completion of the course as soon as possible is most important.

Prior to enrolment in a day centre/service the parent should provide an immunisation record. A copy of the child’s immunisation record card would be a suitable record. The immunisation record should continue to be updated in the day centre/service as the child receives his/her immunisations.

Diphtheria

This disease now only occurs rarely in this country but it is necessary to maintain a high rate of immunisation to prevent its return. The vaccine is given at 2, 4 and 6 months with a booster at school entry (junior infants). A second booster (lower dose) is recommended at 12-13 years.

Tetanus

Tetanus is rare in Ireland because most are vaccinated against it. The rare cases occur mainly in inadequately immunised adults and the disease has a high mortality. The vaccine is given at 2, 4 and 6 months with a booster at school entry (junior infants). A second, routine booster is recommended at 12-13 years.

Whooping Cough (pertussis)

Children may still die from this disease. Young infants, too young to have completed their immunisations, are at most risk, both of getting pertussis infection and of developing serious complications. Three doses of vaccine give a high degree of protection and even if an immunised child does get whooping cough it is generally milder. The vaccine is given at 2, 4 and 6 months with a booster at school entry (junior infants). A second, routine booster (lower dose) is recommended at 12-13 years.

Poliomyelitis

Like diphtheria, polio is now rare in this country. The vaccine is given at 2, 4 and 6 months with a booster at school entry (junior infants).
**Haemophilus influenzae b (Hib)**

Hib causes a range of illnesses including meningitis, severe croup, blood poisoning (septicaemia), joint and bone infections, and pneumonia. The organism (a bacterium) resides in the nose and throat and is spread by droplets. The Hib vaccine protects against this infection. It has been shown to be safe and effective. It is given at 2, 4 and 6 months with a booster at 13 months.

**Hepatitis B**

Hepatitis B is a viral infection that is spread through contact with the blood or other body fluid of an infected person and causes liver disease. A vaccine was introduced into the childhood immunisation schedule in September 2008. The vaccine is given at 2, 4 and 6 months. Hepatitis B has been reported to occur more frequently in institutions for those with intellectual disability (including day care facilities) and therefore, service users in such centres should have their vaccination records checked on entry and they should be vaccinated if indicated. Household contacts of individuals with Hepatitis B should also be vaccinated. There is no requirement to carry out serology testing post Hepatitis B vaccination (HBV) on children who have received a full course of 6 in 1 vaccine and who are attending Intellectual Disability Services. However each child being admitted to these services should produce documented evidence of completion of the HBV schedule and the situation pertaining to any child known to have Hepatitis B infection should be assessed on a case by case basis.

**Pneumococcal**

Pneumococcal disease is a bacterial disease spread by close contact with an infected person or carrier and causes pneumonia, meningitis and septicaemia (blood poisoning). A vaccine was introduced into the childhood immunisation schedule in September 2008. The vaccine is given at 2, 6 and 13 months.

**Meningococcal C**

Meningococcal C is one of the groups of meningococcal bacteria which cause meningococcal diseases, including meningitis and septicaemia and which can be fatal. The meningococcal C vaccine is given at 6 and 13 months.

**Meningococcal B**

Meningococcal B is another of the groups of meningococcal bacteria which cause meningococcal diseases, including meningitis and septicaemia and which can be fatal. The meningococcal B vaccine was introduced in October 2016 and is now given at 2, 4 and 12 months.

**Rotavirus**

Rotavirus is a viral infection which causes diarrhoea and vomiting in infants and young children. It is very infectious and can be spread easily. The rotavirus vaccine was introduced in October 2016 and is now given at 2 and 4 months. Rotavirus vaccine cannot be given once the child is aged 8 months as there is an increased risk of side effects from the vaccine after this age.

**Measles**
Measles still occurs in this country and can cause death especially in very young children. The MMR (Measles, Mumps, Rubella) vaccine is given at 12 months at which age the vaccine is highly effective. It is very safe. Sometimes mild measles may result from it. A second dose is given at school entry (junior infants).

Mumps
Although rarely fatal, mumps can be a very unpleasant illness and may cause meningitis and hearing problems. The vaccine is given at 12 months in the form of the MMR vaccine. A second dose is given at school entry (junior infants).

Rubella
Although a mild illness in most people, rubella (German Measles) can cause damage to an unborn baby if a pregnant woman becomes infected. The vaccine is given at 12 months in the form of the MMR vaccine. A second dose is given at school entry (junior infants).

Tuberculosis
BCG vaccination is given to protect against tuberculosis. In Ireland it is usually given at birth. However, there is currently a severe shortage of BCG in Europe and as of early 2017 no vaccine is available or has been available in Ireland since early 2015.

Chicken Pox (Varicella)
Chicken pox is caused by the varicella-zoster virus. It causes a rash of red, itchy spots that turn into fluid-filled blisters. They then crust over to form scabs, which eventually drop off. For most children, chickenpox is a mild illness that gets better on its own. But some children can become more seriously ill with chickenpox.

Chicken pox vaccine (Varicella vaccine) is not routinely given in Ireland. However, the National Immunisation Advisory Committee recommends its use for certain children and adults, including children in residential units for physical and intellectual disability.
5. STAFF HEALTH AND IMMUNISATION

HSE-South (Cork & Kerry) employees will be offered appropriate immunisation by the Occupational Health Department following their pre-placement health assessment and once they have a start date for commencing employment with the HSE.

Staff who are unaware of their immune status in respect of communicable diseases such as Tuberculosis (T.B), Hepatitis B, Varicella, Rubella and Measles are encouraged to contact their Occupational Health Department.

Staff Immunisation

Adult staff should be fully immunised, i.e. completed childhood immunisation schedules. If they are unsure whether they are up to date with all immunisations, they should consult their Occupational Health Department /GP.

Measles, Mumps and Rubella (MMR)

Health-Care Workers (HCWs) born in Ireland since 1978, or born outside Ireland, who do not have documented evidence of 2 doses of MMR vaccine should be given 1 or 2 doses of MMR as required, separated by at least 1 month, so that a total of 2 doses are received.

Most individuals born before 1978 are likely to have had measles infection. MMR vaccine should be offered to such individuals on request if they are considered at high risk of exposure.

Influenza

All healthcare staff are recommended to have annual influenza vaccine, both for their own protection and for the protection of patients and residents who may have a suboptimal response to influenza vaccinations. An outbreak of influenza among staff may also reduce staffing levels.

Influenza vaccination is also recommended for all pregnant women at any stage of pregnancy.

Tuberculosis

Tuberculosis is a bacterial infection caused by tubercle bacillus. It is spread by the airborne route. BCG vaccination is given to protect against tuberculosis. In Ireland it is usually given at birth. It is uncommon for healthcare workers to acquire tuberculosis from a patient. Staff protection begins at pre-placement health assessment where all healthcare workers are assessed. Where further follow up is required it is offered once they have a start date to commence employment. However, there is currently a severe shortage of BCG in Europe and as of early 2017 no vaccine is available or has been available in Ireland since early 2015.

Varicella (Chicken Pox)

A history of chickenpox is a less reliable predictor of immunity in individuals born and raised overseas, and therefore routine testing should be considered in this group of health-care workers. In addition, those from outside Ireland and Western Europe are less likely to be immune.
Vaccination should be offered to non-immune health-care staff. Chicken pox infection in pregnancy may cause more severe illness and poses a risk to the foetus. All female staff of childbearing age should discuss testing for chicken pox immunity with their GP or OHD. If they are found to be non-immune Varicella vaccine is recommended. During pre placement health assessment health-care workers who work in a clinical area and without serology proof of chickenpox status are offered screening by HSE Occupational Health Dept.

**Pertussis**

A booster dose of Tdap is recommended for Health Care Workers who are in contact with infants, pregnant women and the immunocompromised. Boosters every 10 years may be considered.

**Hepatitis B**

In addition to routine childhood immunisation Hepatitis B immunisation is recommended for those who are at risk of contracting the disease, for example through their occupation, lifestyle or because they are immigrants from, or travellers to, areas with a high level of Hepatitis B. Close sexual contact or sharing needles with someone who has the disease or who is a known carrier is the way most people become infected.

The following are among the risk groups recommended to receive Hepatitis B vaccine:

- Persons with occupational risk of exposure to blood or blood contaminated environments
  - Doctors, nurses, dentists, midwives, laboratory staff, mortuary technicians, ambulance personnel, cleaning staff, porters, medical, nursing and dental students, other health-care professionals.
  - Staff and carers in centres for those with learning disability (including daycare facilities, special schools and other centres).
- Family and household contacts of cases.

**Hepatitis A**

Hepatitis A infection in young children is usually sub-clinical (very mild illness, with little of no symptoms or signs). However, children with sub-clinical illness may still be a source of infection to others. Therefore, those working in day-care centres and other settings with children who are not yet toilet trained may be at increased risk. Under normal circumstances, the risk of transmission to staff and children can be minimised by careful attention to personal hygiene. However, in the case of an outbreak the immunisation of staff and children may be required. In that situation discussion would be needed with the local Department of Public Health.
a. VACCINATION IN PREGNANCY

Influenza

Influenza vaccine is recommended for all pregnant women at any stage of pregnancy. Pregnancy increases the risk of complications from influenza because of the alterations in heart rate, lung capacity, and immunological function. It is estimated that immunisation could prevent 1-2 hospitalisations per 1,000 pregnant women. Because inactivated influenza virus vaccine is not a live vaccine it is very safe in pregnancy.

Pertussis

Maternal antibodies from women immunised before pregnancy wane quickly and the concentration of pertussis antibodies is unlikely to be high enough to provide passive protection to their infants prior to primary vaccination.

Pregnant women should be offered Tdap as early as possible after 16 weeks and up to 36 weeks gestation in each pregnancy, to protect themselves and their infant.

Tdap can be given at any time in pregnancy after 36 weeks gestation although it may be less effective in providing passive protection to the infant.

Rashes in Pregnancy

In general, if a pregnant woman develops a rash or is in direct contact with someone with a potentially infectious rash this should be investigated by a doctor. The greatest risk to pregnant women from such infections may come from their own child/children rather than the workplace.

Rubella (German measles)

This infection may affect the developing baby if the woman is not immune and exposed in early pregnancy. If a pregnant woman, who does not know that she is immune, comes in contact with rubella she should contact her GP or ante-natal carer immediately to ensure investigation. The National Immunisation Advisory Committee recommends that all healthcare staff should have serological proof of immunity or evidence of having received 2 doses of MMR. Those who are non immune should receive two doses of MMR. Post vaccination testing is not recommended.

Chicken Pox (Varicella)

Chicken pox infection in pregnancy may cause more severe illness and poses a risk to the foetus. All female staff of childbearing age should discuss testing for chicken pox immunity with their GP or OHD. If they are found to be non-immune Varicella vaccine is recommended. Varicella vaccine is recommended for non-immune healthcare staff as appropriate.

Measles

Measles during pregnancy can result in early delivery or even loss of the baby. If a pregnant woman is exposed immediately inform whoever is giving antenatal care to ensure investigation. The National Immunisation Advisory Committee recommends that all healthcare staff should have serological proof of immunity or evidence of
having received 2 doses of MMR. Those who are non immune should receive two doses of MMR. Post vaccination testing is not recommended.

**Slapped Cheek Disease**

Slapped cheek disease (Parvovirus B19) can occasionally affect an unborn child. If exposed early in pregnancy (before 20 weeks) inform whoever is giving antenatal care, as this must be investigated promptly.

**Further information, including a range of leaflets, is available on [www.immunisation.ie](http://www.immunisation.ie) and [www.hpsc.ie](http://www.hpsc.ie)**

**BIBLIOGRAPHY**
