# 04

# Immunisation and Health Information for Health Care Workers and Others in At Risk Occupations

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## Key Changes

4.1 Introduction
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## 4.1 Introduction

Workers in a variety of occupations may be exposed to infectious agents during their employment. In the Irish workforce, the largest at risk group is healthcare workers (HCWs). Other groups at significant risk include security and emergency services workers.

A Health and Safety Risk Assessment should be performed to establish if vaccinations are required for employees in a particular work setting. This is required under the Safety, Health and Welfare at Work Act (Biological Agents) Regulations 2013. It should ideally occur before commencing employment or work placement. A decision to vaccinate a worker should be based on the activities they perform rather than their job title.

**Routine vaccines**

All staff should be up to date with their routine immunisations, e.g. tetanus, diphtheria, polio, pertussis and MMR. Staff should also be up to date with age appropriate vaccines e.g. MenC. Staff should also be up to date with COVID-19 and influenza vaccines or other vaccines recommended due to any underlying medical condition.

**Travel vaccines**

Persons who travel abroad in the course of their work are advised to have a travel health risk assessment by a competent health professional at least six weeks prior to the intended travel date. Employers should facilitate access to such professional advice, at least six weeks prior to the intended travel date.

## 4.2 Healthcare workers (HCWs)

In relation to HCWs, immunisation should be regarded as one part of good infection prevention and control practices, which include hand washing and universal precautions when dealing with body fluids. Immunisation is an essential component in preventing transmission of infections.

HCWs refers to all who have direct patient contact, both clinical and non-clinical staff. It applies to those who have roles in which:

- their work requires face to face contact with patients, or
- their normal work location is in a clinical area such as a ward, emergency department or outpatient clinic, or
- their work frequently requires them to attend clinical areas.

Such staff include:

- Medical, nursing, and allied health professionals
- Medical, nursing and allied health students
- Dentists, dental hygienists and dental assistants
- Hospital porters and cleaners
- Pre-hospital emergency care providers
- Other at risk healthcare personnel including students, trainees and volunteers

### 4.2.1 BCG

At present no licenced BCG vaccine is available in Ireland. Advice will be provided when adequate supplies are available. See Chapter 22.

### 4.2.2 COVID-19

Recommendations for COVID-19vaccination of HCWs are outlined in Table 5a.1 Chapter 5a.

### 4.2.3 Hepatitis B

All HCWs, both clinical and non-clinical, who have direct patient contact should be immune to hepatitis B.

Acceptable levels of immunity are anti-HBs ≥10 mIU/ml.

If a HCW has not been vaccinated, a course of hepatitis B vaccination is recommended. Anti-HBs levels must be checked two months after the final dose.

If a HCW at high risk has been fully vaccinated against hepatitis B and their response is unknown, their anti-HBs should be measured. If anti-HBs are below recommended levels, a booster dose of hepatitis B vaccine should be given and anti-HBs checked two months later. If there is no increase in the anti-HBs level, refer to Table 9.3 Chapter 9 for further advice.

### 4.2.4 Influenza

Annual seasonal influenza vaccine is recommended for all HCWs.

### 4.2.5 Measles, mumps and rubella

All healthcare workers, both clinical and non-clinical, who have direct patient contact should be immune to measles, mumps and rubella.

**Measles**

Acceptable presumptive evidence of immunity against **measles** includes at least one of the following:

- written documentation of vaccination with two doses of MMR vaccine at least four weeks apart

or

- serological evidence of measles immunity (i.e., detectable measles specific IgG from an INAB accredited laboratory)

or

- birth in Ireland before 1978. Most adults born in Ireland 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.

HCWs born since 1978 without evidence of two doses of MMR vaccine or measles immunity should be offered one or two doses of MMR vaccine as required at least four weeks apart so that a total of two doses are received.

See Chapter 12 for advice on post exposure prophylaxis for non-immune HCWs.

**Mumps**

Acceptable presumptive evidence of immunity against **mumps** includes at least one of the following:

- written documentation of vaccination with two doses of MMR vaccine at least four weeks apart

or

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

As the clinical interpretation of mumps serology post-vaccine can be challenging, detectable mumps IgG at a single time-point is not considered sufficient evidence for immunity.

HCWs born since 1978 without evidence of two doses of MMR vaccine should be offered one or two doses of MMR vaccine as required at least four weeks apart so that a total of two doses are received.

If an outbreak of mumps occurs in an institution or an area served by an institution, all HCWs without evidence of two doses of MMR vaccine (including those where immunity was presumed by birth before 1978) should be offered one or two doses of MMR vaccine as required. This is to prevent ongoing spread to susceptible staff during the outbreak.

Protection is important both for themselves and in the context of their ability to transmit **mumps** to vulnerable groups.

**Rubella**

Acceptable presumptive evidence of immunity against **rubella** includes at least one of the following:

- written documentation of vaccination with one dose of live rubella or MMR vaccine

or

- serological evidence of rubella immunity (serum rubella IgG ≥10 IU/ml) from an INAB accredited laboratory. Equivocal results should be considered negative.

HCWs without evidence of at least one dose of MMR vaccine or serological evidence of rubella immunity should be offered one dose of MMR vaccine. For protection against measles and mumps two doses may be required.

If an outbreak of rubella occurs in an institution or an area served by an institution, HCWs without serological evidence of immunity to rubella, or without documented evidence of having received at least one dose of a rubella containing vaccine should be given a dose of MMR. This is to prevent ongoing spread to susceptible staff during the outbreak.

Protection is important both for themselves and in the context of their ability to transmit **rubella** to vulnerable groups.

**Table 4.1** Presumptive evidence of immunity (PEI) for measles, mumps and rubella

| | Measles PEI using Measles IgG | Measles PEI using MMR Vaccine | Measles PEI by birth | Mumps PEI using Mumps IgG | Mumps PEI using MMR Vaccine | Mumps PEI by birth | Rubella PEI using Rubella IgG | Rubella PEI using MMR Vaccine |
|---|---|---|---|---|---|---|---|---|
| **HCW born in Ireland before 1978 (31.12.77)** | Detectable Measles Specific IgG from an INAB accredited laboratory. | Two doses of MMR[1] | Yes[2] | Mumps Serology not Acceptable. | Two doses of MMR[1] | Yes[2] | Rubella IgG ≥10 IU/ml from an INAB accredited laboratory.[3] | One dose of MMR |
| **HCW born in Ireland since 1978 (01.01.78)** | Detectable Measles Specific IgG from an INAB accredited laboratory. | Two doses of MMR[1] | No | Mumps Serology not Acceptable. | Two doses of MMR[1] | No | Rubella IgG ≥10 IU/ml from an INAB accredited laboratory.[3] | One dose of MMR |
| **HCW Born Overseas** | Detectable Measles Specific IgG from an INAB accredited laboratory. | Two doses of MMR[1] | No | Mumps Serology not Acceptable. | Two doses of MMR[1] | No | Rubella IgG ≥10 IU/ml from an INAB accredited laboratory.[3] | One dose of MMR |
| **Management of HCWs without confirmed immunity (i.e. serology if appropriate or appropriate number of MMR vaccines) during an outbreak in their institution.** | Post exposure prophylaxis as per Chapter 12 | | | Up to two doses of MMR vaccine[1] | | | One dose of MMR vaccine | |

[1]Administered at least four weeks apart.
[2]MMR vaccine should be offered to such individuals on request if they are considered at high risk of exposure.
[3]Equivocal results should be considered negative.

### 4.2.6 Mpox

While the priority is to ensure appropriate infection prevention and control (IPC) measures are followed, the mpox vaccine may provide additional protection depending on the nature and timing of exposure risk. When wearing suitable PPE and applying correct precautions, the risk to HCWs is low. Mpox vaccine may be considered in designated healthcare and laboratory staff (including domestic staff etc.) who will be involved in the management of mpox cases or their samples based on a health and safety risk assessment

See Chapter 13a for advice on post exposure prophylaxis.

### 4.2.7 Pertussis

A booster dose of Tdap is recommended for HCWs who are in contact with infants, pregnant women and the immunocompromised. Boosters every 10 years may be considered as recommended in Chapter 15.

### 4.2.8 Polio

A single dose of Tdap/IPV is recommended for HCWs at risk of Polio. Those at risk are HCWs in contact with patients who may be excreting wild poliovirus or in contact with specimens that may contain wild poliovirus (see Chapter 17).

### 4.2.9 Varicella

All HCWs who have direct patient contact both clinical and non-clinical should be immune.

Acceptable presumptive evidence of immunity against **varicella** includes at least one of the following:

- documented evidence of two doses of varicella vaccine given at least four weeks apart

or

- serological evidence of immunity (positive varicella IgG titre)

or

- definite clinical history of varicella infection. (A history of varicella may be a less reliable predictor of immunity in individuals born and raised overseas, and therefore routine testing should be considered in this group of HCWs).

Two doses of varicella vaccine at least four weeks apart, are recommended for non-immune HCWs without acceptable evidence of immunity.

Routine post vaccination serology is not recommended.

See Chapter 23 for advice on post exposure management of vulnerable (i.e. pregnant or immunocompromised) non-immune HCWs.

All non-immune HCWs who have had significant exposure to VZV should be excluded from contact with high-risk patients from 8-21 days after exposure. (see Chapter 23 Table 23.1).

## 4.3 Prison workers

This includes Prison Officers and Prison Administration and Support Officers.

### 4.3.1 BCG

At present no licenced BCG vaccine is available in Ireland. Advice will be provided when adequate supplies are available.

### 4.3.2 Hepatitis B

Hepatitis B vaccination is recommended for all prison workers if not previously vaccinated (see Chapter 9 for immunisation schedule). Either a rapid (0, 1, 2 and 12 months) or very rapid (0, 7, 21 days and 12 months) schedule should be used. Anti-HBs levels should be checked two months after the final dose of vaccine (see Table 9.3 Chapter 9 for management of non-responders).

## 4.4 Security and emergency services

- Members of Security and Rescue Services
- Members of An Garda Síochána
- Members of the Fire Brigade
- Members of the Defence Forces
- Employees of security companies

Other workers at risk of occupational exposure to blood.

#### 4.4.1 Hepatitis B

Hepatitis B vaccination is recommended for all workers in this category if not previously vaccinated. Anti-HBs levels should be checked two months after the final dose of vaccine (see Table 9.3 Chapter 9 for management of non-responders).

## 4.5 Laboratory and research workers

This includes scientists dealing with human body fluids, e.g.,

- Medical laboratory technicians
- Research scientists.

#### 4.5.1 BCG

At present no licenced BCG vaccine is available in Ireland. Advice will be provided when adequate supplies are available.

#### 4.5.2 COVID-19

Recommendations for COVID-19 vaccination are the same as for healthcare workers and are outlined in Table 5a.1 Chapter 5a.

#### 4.5.3 Diphtheria

A diphtheria containing booster (Td) is recommended every 10 years for all laboratory and research Workers who handle material that may contain pathogenic corynebacteria. This includes most laboratory staff (see Chapter 6 for immunisation schedule).

#### 4.5.4 Hepatitis A

Hepatitis A vaccination is recommended for all laboratory and research workers who may be exposed to HAV in the course of their work.

#### 4.5.5 Hepatitis B

Hepatitis B vaccination is recommended for all laboratory and research workers if not previously vaccinated. Anti-HBs levels should be checked two months after the final dose of vaccine (see Table 9.3 Chapter 9 for management of non-responders).

#### 4.5.6 Meningococcus

Following a health and safety risk assessment one dose of MenACWY may be recommended for laboratory personnel with potential exposure to

*N. meningitides.* Booster doses of MenACWY vaccine are recommended at five year intervals for those who remain at ongoing risk of exposure.

Two doses of MenB vaccine four weeks apart are also recommended for those at risk. The need for boosters has not been determined.

See Chapter 13 for advice on post exposure prophylaxis.

### 4.5.7 Mpox

While the priority is to ensure appropriate infection prevention and control (IPC) measures are followed, the mpox vaccine may provide additional protection depending on the nature and timing of exposure risk. When wearing suitable PPE and applying correct precautions, the risk to HCWs is low. Mpox vaccine may be considered in designated healthcare and laboratory staff (including domestic staff etc.) who will be involved in the management of mpox cases or their samples based on a health and safety risk assessment.

See Chapter 13a for advice on post exposure prophylaxis.

### 4.5.8 Polio

A single dose of Tdap/IPV is recommended for laboratory and research workers at risk of polio. Those at risk are laboratory and research workers in contact with specimens that may contain wild poliovirus. (see Chapter 17).

### 4.5.9 Other vaccine-preventable microorganisms

Medical laboratory staff working in higher risk settings (e.g., reference laboratories or infectious disease units or with other clinical contact) or those conducting research into specific organisms should be considered for immunisation against cholera, influenza, Japanese encephalitis, rabies, typhoid, and varicella or other appropriate vaccine preventable disease.

## 4.6 Veterinary and animal workers

This group includes persons who work with animals and have exposure to animal tissues, e.g., veterinary staff, abattoir workers, zoological workers, dog wardens, veterinary inspectors, agricultural officers and poultry workers.

#### 4.6.1 BCG

At present no licenced BCG vaccine is available in Ireland. Advice will be provided when adequate supplies are available.

#### 4.6.2 Hepatitis A

Hepatitis A vaccination is recommended for susceptible staff working with non-human primates that are susceptible to hepatitis A infection.

#### 4.6.3 Influenza

Annual seasonal influenza vaccination is recommended for agricultural workers who have close, regular contact with pigs, poultry or waterfowl. This is to reduce the risk of co-infection with avian influenza virus.

#### 4.6.4 Rabies

Rabies vaccination is recommended to those who are at continuous or frequent risk of exposure (see Chapter 18).

#### 4.6.5 Tetanus

Tetanus containing vaccine (Td or Tdap) is recommended every 10 years for to those at increased and ongoing risk of being in contact with tetanus spores. Tetanus spores are present in the soil, and in the intestine and faeces of cattle, sheep, horses, chicken, dogs, cats, rats, guinea pigs, and chickens (see Chapter 21).

## 4.7 Vaccines for other occupational groups

#### 4.7.1 Hepatitis A

Workers in contact with faecal material should be checked for hepatitis A immunity. Hepatitis A vaccination is recommended for those not immune to hepatitis A.

Such workers include:

- sewage and water treatment workers
- crèche workers
- selected aircraft maintenance workers
- staff of institutions for persons with learning disabilities.

### 4.7.2 Hepatitis B

Hepatitis B vaccination is recommended for staff of institutions for persons with learning disabilities if not previously vaccinated. This may be given as a combined hepatitis A and hepatitis B vaccine if hepatitis A vaccination also required.

### 4.7.3 Pneumococcal

Pneumococcal polysaccharide vaccine (PPV23) is recommended for welders and other workers exposed to metal fumes as there is a strong association between welding and the development of invasive pneumococcal disease (see Chapter 16).

## 4.8 Occupational Body Fluid Exposure

Occupational blood and body fluid exposures (e.g., through needle stick or sharps injuries, bites, breaches of skin and mucosal exposure) may occur in the health care sector. For guidance refer to Chapter 9 and the Emergency Management of Injuries (HPSC).

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