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Immunisation and Health Information for Health-Care Workers and Other 'At Risk' Occupations

Workers in many occupations may be exposed to infectious agents. A complete risk assessment should be carried out to determine which, if any, vaccinations are recommended for workers. This is required under the Health and Safety at Work Biological Agents Regulations. It should ideally take place before employment. Routine review of general immunisation status may also be appropriate. Persons whose work involves international travel should consider the recommendations given in the chapter on travel vaccinations.

Immunisation is one of the most effective health-care interventions. Nonetheless, it must be seen as just one part of a wider policy to prevent transmission of infection in health-care workers and their patients. Immunisation should never be regarded as a substitute for good infection control practices, such as hand washing and universal precautions for the prevention of transmission of blood-borne viruses.

Decisions about vaccination(s) recommended should be based on the duties of the individual rather than on job title alone. These guidelines may change as the prevalence of disease changes.

Categories of workers

Category A

Frontline health-care workers (both clinical and non-clinical), whose work may expose them to blood-borne virus infections and other infectious

diseases, e.g.

- Medical, nursing and paramedical staff
- Medical and nursing students
- Dentists and dental staff
- Hospital porters and cleaners
- Ambulance personnel
- Other health-care personnel deemed vulnerable following risk assessment
(This may include all persons working 'on-site' whether paid or unpaid)

Hepatitis A

- Hepatitis A immunisation may be occasionally advisable in some of the above categories, e.g. paediatric hospital staff, workers who culture hepatitis A, or during local outbreaks of hepatitis A.

Hepatitis B

- All workers in this category should be offered hepatitis B vaccination if not previously vaccinated.
- All workers in this category should have anti-HBs levels checked if previously vaccinated against hepatitis B and response not known (see hepatitis B chapter for adequate response levels).
- Please refer to hepatitis B chapter for new recommendations re anti-HBc testing in frontline health-care workers.

BCG (Bacillus Calmette Guerin)

- Please refer to tuberculosis chapter.
- Health-care workers should have pre-employment base-line Mantoux tuberculin testing performed if there is no BCG scar present, or no documented evidence of having received BCG vaccination.
- If there is an inadequate Mantoux response (defined as skin induration less than 5 mm in diameter) then the health-care worker should be referred to their public health clinic or occupational health department, where BCG should be offered.
- Any health-care worker who has been in close contact with a case of smear-positive tuberculosis should be assessed by an occupational health department.

Varicella

- Health-care workers without a definite history of chickenpox, proof of immunity or vaccination status, particularly those working with haematology, oncology, obstetrical, general

paediatric or neonatal patients should be routinely screened for VZ antibody. 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 HCWs. In addition HCWs from outside Ireland and Western Europe are less likely to be immune. Vaccination should be offered to non-immune staff.

- Laboratory staff who may be exposed to varicella virus in the course of their work should be offered vaccination.
- Post-vaccination serological testing is not recommended. Where exposure occurs in a susceptible HCW, advice should be sought from Occupational Health on further management and possible exclusion from the workplace.

Influenza

- Health-care workers should be offered vaccination against influenza on an annual basis each autumn.

Measles, mumps, rubella

- Health-care workers should have serological proof of immunity or evidence of having received 2 doses of MMR. Those who are non-immune should receive 2 doses of MMR. Post-vaccination testing is not recommended.
- Where exposure occurs in a susceptible HCW, advice should be sought from Occupational Health on further management and possible exclusion from the workplace.

Category B1

Non-healthcare workers who share the occupational risk of exposure to blood borne viral infection:

- Members of security and rescue services
- Members of An Garda Síochána
- Members of the fire brigade
- Members of the armed forces
- Employees of security companies
- Staff of institutions for persons with learning difficulties
- Any other workers who may be exposed to 'blood to blood' injuries.

Hepatitis B

- All workers in this category should be offered hepatitis B vaccination if not previously vaccinated (see hepatitis B chapter for immunisation schedule).
- All workers in this category should have anti-Hbs levels

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checked if previously vaccinated against hepatitis B and response not known (see hepatitis B chapter for adequate response levels).

Category B2

Prison Officers

Hepatitis A

- Immunisation against hepatitis A may be considered if there is an ongoing outbreak in a prison.

Hepatitis B

- All workers in this category should be offered hepatitis B vaccination if not previously vaccinated (see hepatitis B chapter for immunisation schedule).

BCG

- Prison Officers aged 35 years and under should have pre-employment base-line Mantoux tuberculin testing performed if there is no BCG scar present, or no documented evidence of having received BCG vaccination.
- If there is an inadequate Mantoux response, BCG vaccination should be offered.

Category C

Workers in contact with raw faecal material, e.g.

- Sewage workers
- Crèche workers.

Hepatitis A

- All workers in this category may be checked for hepatitis A immunity (see Chapter 5).
- Workers in this category who are not immune to hepatitis A may be offered hepatitis A vaccination (see Chapter 5 for immunisation schedule).
- Crèche workers may be immunised against hepatitis A, especially if there is evidence of an ongoing outbreak of hepatitis A.

Category D

Scientists dealing with human body fluids, e.g.

- Medical laboratory technicians
- Research scientists.

Hepatitis A

- All workers in this category who culture hepatitis A virus should be checked for hepatitis A immunity, and if not immune, should be offered hepatitis A vaccine (see Chapter 5 for immunisation schedule).

Hepatitis B

- All workers in this category should be offered hepatitis B vaccination if not previously vaccinated (see Chapter 6 for immunisation schedule).
- All workers in this category should have anti-HBs levels checked if previously vaccinated against hepatitis B and response not known (see Chapter 6 for adequate response levels).

Polio

- Workers in this category who culture enterovirus should give a history of polio vaccination and may need to be offered immunisation.

Diphtheria

- Workers in this category who handle material that may contain pathogenic corynebacteria may require immunisation. This includes most laboratory staff (see Chapter 3 for immunisation schedule).

BCG

- Immunisation may be required in certain instances. Workers in this category who culture mycobacteria may require immunisation.

Other organisms

- Medical laboratory staff working in higher risk settings (e.g. reference laboratories or infectious disease units) or those conducting research into specific organisms should be considered for immunisation against these organisms (e.g. Japanese B encephalitis, cholera, meningococcal ACW₁₃₅Y, typhoid, influenza, varicella, rabies).

Category E

Personnel who work with animals and have exposure to animal tissues, e.g. veterinary staff, abattoir workers, zoological workers, veterinary inspectors, agricultural officers and poultry workers.

BCG

- This may be recommended to those thought to be at particular risk, (see Chapter 16, for immunisation schedule).

Rabies

- This may be recommended to those thought to be at particular risk, (see Chapter 20, for immunisation schedule).

Tetanus

- This may be recommended to those thought to be at particular risk, (see Chapter 15, for immunisation schedule).

Influenza

- Poultry workers, veterinary inspectors, agricultural workers, park rangers and those with likely contact with water fowl (as this puts them at risk of co-infection with avian influenza).

Occupational blood exposures

Occupational blood exposures (e.g. through needle stick or sharp injuries) may occur in the health-care sector. Some of these may leave a person at risk of getting hepatitis B, hepatitis C or HIV. Such exposures should be assessed by a competent person, e.g. Occupational Medicine Consultant or Infectious Diseases Consultant, or a member of their team.

In the first instance, the wound should be washed and all appropriate first aid given. Health-care workers should attend their occupational health department or A&E depending on local arrangements. A risk assessment will then be carried out. If appropriate, the Occupational Medicine Consultant or Infectious Diseases Consultant should be contacted. Such risk assessment includes details of the source patient's risk status (if known). A blood sample from the source patient should be taken (with consent) and tested for viruses.

If the exposed person has not been adequately vaccinated against hepatitis B, then hepatitis B prophylaxis should be considered. Specific hepatitis B immunoglobulin is available for passive protection and may be used in addition to hepatitis B vaccination to confer passive/active immunity after exposure. If they have had a previous needle stick injury, or recent hepatitis B vaccination, it may not be necessary to give hepatitis B immunoglobulin as the results of any previous hepatitis B test should be available within 72 hours.

If the occupational blood exposure was from a source believed to be HIV positive, then post-exposure prophylaxis with antiviral therapy should also be considered. *This should be undertaken urgently, ideally within 1-4 hours.* As the drug regime for such antiviral prophylaxis changes regularly, it is not possible to go into the details of such therapeutic protocols in these guidelines. The local Occupational Medicine Consultant/ Infectious Disease Consultant, or a member of their team, can provide up-to-date details on this.

