

Immunisation for health care workers (HCWs)

Fourth edition: revised May 2004



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Health care workers (HCWs) may be exposed to, and transmit, vaccine-preventable diseases (VPDs) such as influenza, measles, rubella and pertussis. Maintenance of immunity to VPDs in the HCW population helps prevent transmission of VPDs to and from HCWs and patients.

The likelihood of contact with patients and/or blood or body substances determines vaccination recommendations. HCWs should receive the vaccines they require ideally before or within the first few weeks of employment, with the exception of influenza vaccine which should be administered annually between March and May. Work activities, rather than job title, should be considered on an individual basis to ensure an appropriate level of protection is afforded to each HCW.

Medical facilities are encouraged to formulate a comprehensive immunisation policy for all health care workers. Each worker should be individually assessed for specific vaccines, taking possible contraindications into account.

Work practices should include the use of standard and additional precautions to minimise exposure to blood and body fluids. If exposure does occur, guidelines for post exposure prophylaxis should be followed. Ensure that post exposure guidelines are easily accessible 24 hours a day.

Vaccination program

Database

Health services should have a register which:

- contains details of staff vaccine preventable disease history, vaccination, antibody and test (eg Mantoux test) results, record of vaccines consented/refused, batch number and brand name of vaccine
- is secure and accessible by authorised personnel when needed (24hrs/7days a week)
- is updated when new events (vaccination, test, disease) occur
- is maintained by a designated staff member.

Who vaccinates?

A medical practitioner should take responsibility for staff immunisation, if possible. If individual written orders for vaccines are signed by the responsible medical practitioner then any registered Division 1 nurse may administer the vaccine. If no medical practitioner is available to take responsibility for the program, then an accredited immunisation nurse may administer the required vaccines without a doctor's order.

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Funding

The health service provides screening, testing and database maintenance.

The Department of Human Services provides free vaccines for:

- influenza
- measles, mumps and rubella
- diphtheria/tetanus (adult formulation)
- polio
- tuberculosis (includes both BCG vaccine and PPD Purified Protein Derivative for Mantoux testing)

The Department of Human Services (DHS) does *not* provide free vaccines for:

- hepatitis A
- hepatitis B
- meningococcal disease
- varicella
- pertussis
- typhoid
- yellow fever
- Japanese encephalitis
- plague

Smallpox and anthrax vaccine are not yet available for use and would only be available under the supervision of the Department of Human Services and the Australian Government.

Vaccines supplied free by the Department of Human Services should be ordered through the DHS Immunisation Program, telephone 1300 882 008.

Informed Consent

Obtain informed consent before screening and vaccination, preferably in writing. *If recommended vaccines are refused, obtain signed documentation of refusal.*

Health Care Worker Personal Immunisation Record

Issue each HCW with a personal immunisation record which documents vaccinations given and test results. These records, along with other program resources, are available from the DHS Immunisation Program, telephone 1300 882 008.

Risk Categorisation

The following categorisation of HCWs may be used to guide vaccine protocols.

Category A - Direct contact with blood or body substances

This category includes all persons who have physical contact with, or potential exposure to blood or body substances. Examples include dentists, medical practitioners, nurses, allied health practitioners, health care students, emergency personal (fire, ambulance and volunteer first aid workers), maintenance engineers who service equipment, mortuary technicians, central sterile supply staff, and cleaning staff responsible for decontamination and disposal of contaminated materials.

Category B - Indirect contact with blood and body substances

This category includes workers in patient areas who rarely have direct contact with blood or body substances. These employees may be exposed to infections spread by droplets, such as measles and rubella, but are unlikely to be at risk from blood borne diseases. Examples include catering staff and ward clerks.

Category C - Laboratory staff

Laboratories pose special risks because of the equipment used (such as centrifuges), and the possibility of exposure to high concentrations of micro-organisms generated by culture procedures. An additional risk to laboratory staff occurs in the handling of human blood and tissues.

Strategies for controlling infectious hazards in laboratories to create a safe working environment are covered in laboratory manuals and in AS/NZS2243.3:2002 *Safety in laboratories - Microbiological aspects and containment facilities*. An example of a detailed protocol is the *Code of practice in clinical laboratories*, Health Commission of New South Wales.

Category D - Minimal patient contact

In many health care establishments, clerical staff, gardening staff and numerous other occupational groups have no greater exposure to infectious diseases than do the general public. These employees do not need to be included in vaccination programs or other programs aimed at protecting category A, B and C staff.

Vaccine preventable diseases

Diphtheria/Tetanus

- Most HCWs will have received a primary course of diphtheria/tetanus vaccine however, if any doubt, offer 3 doses (ADT).
- Recommend a further dose on the 50th birthday.

Pertussis

- A single booster dose (given as dTpa vaccine) is recommended for HCWs in paediatric settings, particularly maternity and neonatal settings.

Poliomyelitis

- Most HCWs will have received a primary course of polio vaccine, however, if in doubt, offer 3 doses at 4 to 8 week intervals either as OPV or IPV.
- Offer a booster dose at 10 year intervals to staff in possible contact of poliomyelitis cases or their pathology specimens.

Measles/Mumps/Rubella

- Document at least two doses of a measles containing vaccine for all staff born since 1966. Persons born prior to 1966 are considered immune.
- If in doubt, offer two doses of MMR vaccine a minimum of one month apart.

Varicella (chickenpox)

- Seek and document a history of chickenpox from all HCWs. A history of chickenpox is strongly predictive of prior infection (>90%). Consider serological screening of persons with no definite prior history of chicken pox (approximately 50% of this group will be susceptible). Document result of testing.
- All non-immune direct care staff (see above for definition) should be vaccinated with varicella vaccine. Two doses of vaccine at least one month apart are required for adults.
- A small percentage of healthy vaccinees (<5%) will develop a rash after the vaccine. These vaccinees, and only these, should be reassigned to duties that require no patient contact or placed on sick leave for the duration of the rash.

Hepatitis B

- Offer a course of 3 doses of vaccine to all HCWs; emphasise that it is essential for all staff in categories A and C.
- Perform post-vaccination serological testing 1 month after the 3rd dose of vaccine. If adequate anti-HBs antibodies are not reached following the 3rd dose, the possibility of HBsAg carriage should be investigated. Those who are HBsAg negative and do not

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respond should be offered either a further double dose, or a further 3 doses at monthly intervals, of hepatitis B vaccine. Further testing should be performed 4 weeks later. Persistent non-responders should be informed about the need for HBIg within 72 hours of parenteral exposure to hepatitis B.

- Booster doses of hepatitis B vaccine are no longer recommended for those persons who have an adequate antibody response to the primary course, as there is good evidence that a primary course provides long lasting protection.

Hepatitis A

- Staff at higher risk of occupational exposure to hepatitis A include nursing staff and other health care workers in contact with patients in paediatric wards, infectious disease wards, emergency rooms and intensive care units or who frequently attend patients from rural and remote Indigenous communities.

Influenza

- Offer yearly influenza vaccine to all staff in direct care of patients.

Meningococcal disease

- Laboratory personnel who frequently handle *N. meningitidis*, should receive a single dose of meningococcal C conjugate vaccine, and should also receive the quadrivalent meningococcal polysaccharide vaccine.

Typhoid

- Laboratory personnel who frequently handle this infectious agent on a routine basis.

Yellow fever

- Laboratory personnel who frequently handle this infectious agent on a routine basis.

Japanese encephalitis

- Laboratory personnel who frequently handle this infectious agent on a routine basis.

Plague

- Laboratory personnel who frequently handle this infectious agent on a routine basis.

Tuberculosis

- *Management, Prevention and Control of Tuberculosis: Guidelines for Health Care Providers 2002 - 2005* provides detailed guidance to health care institutions for establishing or

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revising their program for preventing tuberculosis in health care workers. Infectious Diseases Unit, DHS.

- Health care institutions must classify both the health facility and individual HCWs according to their occupational risk of tuberculosis, provide a Mantoux screening program and post exposure follow-up protocol, and offer BCG vaccination only in line with the recommendations of the *Guidelines*.
 1. **High risk** HCWs include all staff working in respiratory clinics and laboratories, and specific tuberculosis treatment areas, staff working in intensive care, emergency departments, and bronchoscopy theatres, all HCWs who regularly work with TB or HIV positive patients, laboratory staff exposed to potential tuberculous material, mortuary staff and all immunocompromised HCWs.
 2. **Medium risk** HCWs include other medical and nursing staff, physiotherapists, radiographers, paramedical and ambulance staff and students involved in direct patient care, non-clinical staff in regular close contact with patients and community nurses working with at-risk groups.
 3. **Low risk** staff are those not routinely exposed to patients or their clinical specimens, for example, kitchen staff, administration and clerical staff.
- All medical, nursing, general ward, pathology, radiology, dental, mortuary and paramedical hospital staff should receive a *pre-placement* Mantoux test unless they have documentation of a positive Mantoux test, adequate treatment for disease or infection or a negative Mantoux test within the previous three months.
- The frequency of periodic Mantoux screening depends on the risk categories of the facility and the HCW. Screen Mantoux negative HCWs in **high risk settings** annually. Mantoux negative HCWs in medium risk settings require screening every two years unless the risk of infection is shown to be less than one percent per annum. HCWs in **low risk** settings need not be routinely screened during employment.
- All HCWs should have an exit Mantoux test on completion of employment at each health care institution.
- BCG vaccination is **no longer** routinely recommended for Victorian health care workers, however health care facilities should consider offering BCG to HCWs and voluntary workers who are Mantoux negative, where the risk of repeated exposure to infectious TB is high and not controlled despite appropriate infection control procedures. Use of BCG vaccination does not preclude periodic skin test surveillance. Do not give BCG to those who are HIV infected or immunosuppressed, or who are pregnant or likely to be pregnant.

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