



Resource Document 17 (2011)

WELFARE OF ANAESTHETISTS SPECIAL INTEREST GROUP

INFECTIOUS DISEASES

INTRODUCTION

Exposure prone procedures (EPPs) are procedures involving contact between health care workers and patients. These contacts may occur (eg) via sharp surgical instruments, (such as needlestick injuries), sharp tissues in body cavities, instruments used in anaesthesia, or via droplet contamination of mucosae.

Such procedures constitute risks to both the patient and the proceduralist, ie the risk of transmission of blood-borne viruses from an infected health care worker to a patient, or from an infected patient to a health care worker.

Routes of transmission include hollow bore needle-stick injuries (which carry a higher risk than solid needles), droplet or mucosal contacts during intubation, airway or other procedures, or contamination via instruments such as endotracheal tubes, laryngoscopes, and suction catheters

BLOOD BORNE VIRUSES: HIV, HBV, HCV

Source	Risks to health care workers after occupational exposure
HIV	0.3%
HBV – HbsAG (+) only	1-6%
HBeAg	22-31%
HCV +ve	10%
If virus PCR -ve	1.9%

Hepatitis B, the most infectious of the blood borne disease, has a vaccination available. HBV vaccinations should be given immediately to those with significant exposures to the virus who have not been vaccinated. However, some individuals will be non-responders to HBV vaccines, and they are not protected against HBV. Anti HBs titres are measured to differentiate responders from non-responders. Those who are initial responders are not generally offered a booster, even if their titres drop, unless they are immuno-compromised.

There is no immunization or post exposure prophylaxis proven to be effective against **HCV** at present. However treatment of **acute hepatitis C** with interferon alfa-2b prevents chronic infection in most cases. Previous exposure does not result in immunity, and re-infection can still occur if there is repeated exposure.

The risk of acquiring **HIV** after an occupational exposure to HIV-infected blood is low.

After significant exposures, post-exposure prophylaxis (PEP) should be commenced within 1-2 hours, but it is still effective until 72 hours post exposure. PEP is difficult to tolerate due to side effects. HIV sero-conversion is generally documented within 4 weeks from exposure.



It may be very stressful to be in a situation in which you may have acquired an infection with a blood-borne virus. Remember to seek help from your mentors and other support persons if necessary.

IMMEDIATE POST-EXPOSURE MANAGEMENT

(Hospital processes will vary)

- Wash the exposure site, rinse eyes and mouth with water.
- Risk assessment, including significance of the injury, the status of the source, and the health care workers affected.
- Fill in an incident report if required.
- Obtain patient consent for baseline tests to check infectious disease status.
- Consult infectious disease specialist, a service which should be provided by hospitals to all health care workers.
- Post-exposure prophylaxis for high risk exposures depends on the extent of the injury, the item that caused the injury, the body fluids, and volume involved.
- Organise follow up for further testing, treatment, expert consultation, counselling, and compensation.
- Confidentiality must be maintained at all times.

AIRBORNE DISEASES

Neisseria meningitides, measles, Mycobacterium tuberculosis, SARS

- These airborne diseases are spread by aerosols; small airborne particles as small as 1-5 microns. The pathogens are dispersed by air currents, and are inhaled by susceptible individuals in an area with shared air circulation. Respiratory protection can be provided by tightly fitted N-95 mask with a particulate filter to trap tiny aerosolized particles. Influenza and most respiratory viruses are spread by droplets.
- Droplets are expelled from an infectious person and fall within a radius of approximately 1 metre. Standard masks and contact precautions within a 2 metre radius of the patient are sufficient.
- Diseases with droplet transmission include pneumococcal pneumonia, streptococcal pharyngitis, pertussis, and parvovirus B19.
- BCG vaccine is available, but the protective efficacy is only around 50%.
- Flu vaccines have been reported to be 70-90% efficacious for preventing illness in healthy adult volunteers.



RECOMMENDATIONS

- It is recommended that anaesthetists participate in a **vaccination program** which includes Hepatitis B, Influenza, Pertussis, Measles, Mumps, Rubella, Varicella, and Hepatitis A. BCG should be included for anaesthetists working in high risk TB areas. The onus is on the individual to undertake these precautions.
- Some hospitals do not check the immunization status of their health care workers. In New Zealand, hospitals may request evidence of infectious status and immunizations.
- Anaesthetists who perform EPPs have a responsibility to know **their infectious status** with regards to blood-borne viruses HIV, HBV and HCV.
- Anaesthetists who perform EPPs should undergo **regular checks** every 1-2 years. Status should also be rechecked after significant exposures.
- Anaesthetists who are HIV antibody positive, HBeAg positive, HBV DNA positive, or HCV PCR positive should inform their employer. They should not perform EPPs. (*This recommendation is controversial because of privacy concerns*).
- **Standard precautions** should be applied whenever patient contact is made. These include safe handling of sharps, cough etiquette, respiratory hygiene, and protective barriers such as gloves, mask, and eye protection.
- Transmission-based precautions for diseases such as TB include minimization of unnecessary contacts between personnel and patients; respiratory protection is provided by a tightly fitted N-95 mask.
- An expert consultation should be sought after significant exposures for risk assessment and up to date prophylaxis treatment should be provided.
- Anaesthetists should check whether their income protection policies cover occupationally acquired infections. Employed anaesthetists should be covered for this eventuality by their employers.

Thanks to Dr Jenny Stevens and Dr Kim Weng for this document.

Further reading

ANZCA Bulletin Sept 2009

Infectious diseases and the anaesthetist. Jenny Stevens, Archie Darbar, Kim Weng.

Australian Department of Health Policy PD 2007_036. Infection Control Policy. 23-May-2007

Australian Department of Health Policy PD 2005_162. HIV, Hepatitis B or Hepatitis C – Health Care Workers Infected. 25-Jan-2005

Australian Department of Health Policy PD 2005_311. HIV, Hepatitis B and Hepatitis C – Management of Health Care Workers Potentially Exposed. 27-Jan-2005

Australian Immunisation Handbook (The) 9th edition 2008 page 104-6.

Australian Government, Department of Health and Ageing, Australian Health Management Plan for Pandemic



Influenza. 2010.

- Charles PGP, Angus PW, Sasadeusz JJ, Grayson ML, et al. Management of healthcare workers after occupational exposure to hepatitis C virus. *MJA* 2003; 179: 153-157
- Dore G, Wallace J, Locarnini S, Desmond P, Gane E, Crawford D, et al. Hepatitis B in Australia: Responding to a Diverse Epidemic. alliance.hepatitis.org.au/uploads/ACT_HBV.pdf
- Greene ES, Berry AJ, Jagger J, et al. Multicenter study of contaminated percutaneous injuries in anaesthesia personnel. *Anesthesiology* 1998; 89: 1362-72.
- Guy JR, McDonald AM, Bartlett MJ, Murray JC, et al. HIV diagnoses in Australia: diverging epidemics within a low-prevalence country. *MJA* 2007; 187: 437- 440.
- Health Regulatory Authorities, New Zealand. Joint Guidelines on Transmissible Major Viral Infections
- Hepatitis C Virus Projections Working Group: Estimates and Projections of the Hepatitis C Virus Epidemic in Australia 2006.
- Jaeckel E, Cornberg M, Wedemeyer H et al. Treatment of Acute Hepatitis C with Interferon Alfa-2b. *NEJM* 2001; 345; 20: 1452
- National Centre in HIV Epidemiology and Clinical Research 2008. HIV/AIDS, viral Hepatitis and Sexually Transmissible Infections in Australia; Annual Surveillance Report
- Siegel JD, Rhinehart E, Jackson M, Chiarello L, the Healthcare Infection Control Practices advisory Committee. 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. Centers for Disease Control and Prevention page 66-73
- Victorian Government Department of Human Services. Management, Control and Prevention of Tuberculosis: Guidelines for Health Care Providers. August 2002
- WHO: Statement by WHO Director-General Dr Margaret Chan, World now at the start of 2009 influenza pandemic 11 June 2009.
- Young T, Arens FJ, Kennedy GE, Laurie JW, Rutherford G, et al. Anti-retroviral post-exposure prophylaxis (PEP) for occupational HIV exposure (REVIEW). The Cochrane Collaboration. The Cochrane Library 2009, Issue 2.

This Resource Document has been prepared in good faith and having regard to general circumstances and is intended for information only. It is entirely the responsibility of the practitioner as to the manner in which s/he follows this document, having express regard to the circumstances of each case, and in the application of this document in each case.

The information contained in this document is not intended to constitute specific medical or other professional advice. The College and Societies, their officers, and employees, take no responsibility in relation to the application of use of this Resource Document in any particular circumstance.

The Resource Documents have been prepared having regard to the information available at the time of their preparation. They are reviewed from time to time, and it is the responsibility of the practitioner to ensure that s/he has obtained the current version. The practitioner should therefore have regard to any information, research or material which may have been published or become available subsequently.

Whilst the Welfare of Anaesthetists Special Interest Group endeavours to ensure that Resource Documents are as current as possible at the time of their preparation, it takes no responsibility for matters arising from changed circumstances or information or material which may have become available subsequently.



Promulgated: 1996
Date of current document: 2011

© *This document is copyright; if it is reproduced in whole or in part, due acknowledgement is to be given.*

ACECC is a joint initiative of the Australian and New Zealand College of Anaesthetists,
the Australian Society of Anaesthetists and the New Zealand Society of Anaesthetists.

ANZCA HOUSE 630 ST KILDA ROAD MELBOURNE VIC 3004
Telephone: (03) 9510 6299 Facsimile: (03) 9510 6786