Flinders UNIVERSITY

HEALTH ADVISORY BOOKLET

for Health Professional Students

2015

School of Medicine

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INTRODUCTION

This booklet is important for all health professional students who will have contact with patients. Included with this book is your personal immunisation record that should be kept up to date.

There are two general concerns about infectious diseases in health care establishments:

1. That you do not inadvertently acquire infections from patients.
2. That you do not transmit infections to your patients.

The following infection control policies indicate the proper procedures to be followed to minimise inadvertent infection. You have a responsibility for your own health and for the health of others to follow the guidelines. We specifically draw your attention to the risks of blood-borne viruses (Hepatitis B & C and HIV) and keeping yourself fully informed about infection risks if you travel overseas on electives.

When working in a hospital or other clinical establishment, you will be at increased risk of exposure to some infectious agents against which you should be vaccinated. You may also transmit infectious agents from yourself to patients during the incubation period that can be very serious in specific patient groups (eg. Chickenpox and Rubella in immunosuppressed or non-immune pregnant patients, Influenza to elderly at risk patients). Refer to the *Immunisation and Blood-Borne Viruses Policy and Questions and Answers* in this booklet to ensure you comply with the requirements of the School of Medicine.

Before enrolment, a student should seek medical advice to determine the student's immunity to common infections. Students are required to obtain appropriate immunisation where effective programs are available.

Should you have any queries on these policy matters please speak directly to Professor David Gordon of the Department of Microbiology and Infectious Diseases, or the Senior Occupational Health Nurse of Flinders Medical Centre OHS and Injury Management Services. Your supervisor in clinical situations outside Flinders Medical Centre (FMC) will also be happy to help.

Prof David Gordon
Head, Department of Microbiology & Infectious Diseases
Phone 8204 4720

Prof Bill Heddle
Associate Dean and Head, Flinders Southern Adelaide Clinical School

CONTACT INFORMATION

Flinders University Health & Counselling Service	Phone 8201 2118
Flinders Infectious Diseases Clinic (Referral required for Infectious Diseases Consultant)	Phone 8204 8953
Occupational Health Service and Injury Management Service (FMC)	
Royal Darwin Hospital, Infection Prevention and Management Unit	Phone 8922 8045
NT Department of Health, Centre for Disease Control	Phone 8922 8044

NATIONAL IMMUNISATION PROGRAM SCHEDULE

A National Health and Medical Research Council publication, *The Australian Immunisation Handbook - 10th Edition 2013*, is available on the web at:
http://www.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home
It outlines the currently available vaccines and recommended vaccination schedules.

The publications, *Immunisation Guidelines for Health Care Workers in South Australia 2014*, available on the web at:
http://www.sahealth.sa.gov.au/wps/wcm/connect/b65b12804f0cbdd29178b7791a12b24c/Immunisation+HCW+2010+guidelines.pdf?MOD=AJPERES

And the Northern Territory Department of Health *Immunisation Recommendations for Adults at Occupational Risk (December 2013),* available on the web at:
http://www.health.nt.gov.au/library/scripts/objectifyMedia.aspx?file=pdf/50/38.pdf&siteID=1&str_title=Immunisation%20recommendations%20for%20adults%20at%20occupational%20risk.pdf
list the recommended vaccination schedule, which is also applied to students on clinical placement in a hospital setting.

Students need to check which of the National Immunisation Program vaccines they have already received:

Hepatitis A*:* Prior to undertaking clinical placements in high risk areas (Northern Territory, Indigenous communities), students must have had at least the first dose of Hepatitis A vaccine. A second dose is recommended 6-12 months later to provide longer term immunity. Alternatively provide evidence of serological immunity.

Hepatitis B*:* This was added into the routine childhood schedule in 2000 and therefore not all students will have received immunisation. Health Care Workers (HCW) who have not been vaccinated should complete the course (vaccine at 0, 1, 6 months) and have confirmation of protection [positive HBsAb, >10mIU/mL]).

Varicella Zoster Virus (Chickenpox): Students with a reliable past history of Chickenpox can be considered immune. If there is no history of Chickenpox, either vaccinate *or* determine serological status and, if seronegative, give vaccine (2 doses 1-2 months apart).

Diphtheria & Tetanus*:* The recommended schedule comprises immunisation at 2, 4 and 6 months of age (given with pertussis vaccine as DTPa), with boosters at 4 and 15 years. Thereafter, boosting is no longer routinely recommended unless a high-risk injury occurs, until the age of 50 when a further booster is given (reduced dose diphtheria given with pertussis vaccine as dTpa).

Poliomyelitis*:* Most students will have received the recommended schedule comprising immunisation with inactivated Polio vaccine (IPV) at 2, 4 and 6 months of age with a booster at 4 years. If not, a 3-dose primary vaccination course is required. A booster dose may be required if undertaking an elective in affected countries.

Measles, Mumps & Rubella*:* The recommended schedule for Measles, Mumps and Rubella comprises immunisation with MMR at 12 months and 18 months of age. Adults born before 1966 can be considered immune. MMR is strongly recommended for adults born since 1966 who have not received 2 doses of vaccine in the past.

Tuberculosis: BCG is not generally recommended, but Mantoux status needs to be determined.

Influenza: Yearly vaccination is recommended for all students with patient contact.

Pertussis *(Whooping Cough)*: A single booster dose (given as dTpa, provided dTpa has not been given previously) is recommended for all health care workers if >10 years have elapsed since last dose. If no previous vaccination a primary course is required.

In addition to vaccines listed above, students may require other vaccinations. Please use the Questions and Answers on pages 14-16 to guide you on which vaccines you will require. Live attenuated vaccines are generally not recommended for immunosuppressed or pregnant subjects. Should you have a relevant medical condition you should discuss with your Doctor or seek confidential advice from the Infectious Diseases Specialists.

How to obtain information on your immunisation status: You, your parents or general practitioner may have the relevant information on file. Alternatively, local government immunisation clinics may have it, but you would need to know where you were vaccinated in order to get the information.

STUDENTS' ACTION LIST

- Read, understand and adopt the recommended practices concerning infection control (see following pages).

- Sign and date the Student Agreement *Compliance with Immunisation and Blood-Borne Viruses Policy* (Form A). This is a SA Health Policy Directive requirement for students prior to undertaking clinical placements.

- Review/update your immunisation status and bring records of previous immunisations or blood tests as outlined in the Immunisation and Blood-Borne Viruses Questions & Answers to your health care appointment. You can make an appointment with your general practitioner, or the University's Health and Counselling Service.

- You will need to provide the health care provider with a copy of the Health Care Provider form *Compliance with Immunisation and Blood-Borne Viruses* Policy (Form B). Students should have certified copies of their Form B for this purpose. For Medical students, the original document must be submitted to the Medical Course Administration (MCA) Unit. All other students please contact your course coordinators regarding submission of your Form B.

- ***South Australia (SA)*** Students are to undertake TB screening at the SA TB Services, Royal Adelaide Hospital Chest Clinic. All new student health care workers must first complete an online survey to determine if they are to attend the Chest Clinic for further assessment. http://www.pages.on.net/questionnaire.php. After completion of the questionnaire, you will receive an email from SA TB Services advising if further action is needed. If no further action is required, please provide a printed copy of this advice when submitting your Form B. Please visit the following website for more clinic information:
  http://www.rah.sa.gov.au/thoracic/diagnostic/tb_access_services.php

- ***Northern Territory (NT)*** Mantoux testing is free and available on Mondays, Tuesdays and Fridays at Community Care Centres or the TB Clinic at the Centre for Disease Control, Building 4, Royal Darwin Hospital. A follow-up visit 3 days later is required to have the test reviewed by medical staff.

  For information about TB screening contact the TB clinic in your region:

Alice Springs	8951 7540 or 8951 7777
Darwin	8922 8804
Katherine	8973 9049
Nhulunbuy	8987 0357
Tennant Creek	8962 4259

  For information about Mantoux testing and vaccine preventable diseases, please visit the following website:
  http://www.health.nt.gov.au/Centre_for_Disease_Control/Tuberculosis_and_Leprosy/index.aspx

- If you are exposed to infections against which you are unlikely to be immune or plan to work amongst patients who might be particularly susceptible to infection, you can seek advice from Infectious Disease Consultants at Flinders Medical Centre and the Centre for Disease Control at Royal Darwin Hospital.

Work-related Accident (eg. needle stick injury)

Should you have, in the course of your studies, a work-related accident with risk of infection (eg. needle stick injury or eye splash) it is necessary to report it immediately, either to OHS and Injury Management Services in the Flinders Medical Centre (or equivalent in other hospitals), or, after hours, to the Emergency Department. A procedure for follow-up of blood or body fluid exposure is included in this manual as a general guide.

Noarlunga students should immediately notify the Occupational Health and Safety Officer of the hospital or their GP supervisor, and as soon as practical notify staff in the Onkaparinga Clinical Education Program (OCEP) office.

Parallel Rural Community Curriculum (PRCC) students should immediately notify the Occupational Health and Safety Officer of the hospital (if in hospital) or their GP supervisor (if in any other clinical setting). The student also needs to notify the Clinical Educator in their region as soon as is practical. If any follow up is required it will be arranged with a GP of the student's choice.

Darwin students should report in the following order: to the supervisor, rotation team leader, Emergency Department, Infection Control at the Royal Darwin Hospital and to the Director of Clinical Education at the NT Medical Program (NTMP) Office.

Alice Springs students should report the incident directly to their supervisor and Infection Control and complete an Accident/Incident form.

Katherine students should report the incident to their supervisor and to Northern Territory Rural Clinical School (NTRCS) staff.

Nhulunbuy students should report the incident to their supervisor and to NTRCS staff.

Students doing ***General Practice placements in Adelaide*** should notify their GP supervisor immediately and inform the Department of General Practice.

IMMUNISATION AND BLOOD-BORNE VIRUSES POLICY

AIM: To minimise the risk of health professional students contracting or spreading an infectious or blood-borne disease.

STANDARD: The Policy has been devised in accordance with the Guidelines established by the former Committee of Deans of Australian Medical Schools (now Medical Deans Australia and New Zealand).

IMMUNISATION: Immunisation of health professional students should be in accordance with the standard recommendations of the National Health and Medical Research Council as documented in *The Australian Immunisation Handbook - 10th Edition 2013, the Immunisation Guidelines for Health Care Workers in South Australia 2014*, and the Northern Territory Department of Health *Immunisation Recommendations for Adults at Occupational Risk (December 2013).* Questions and Answers to guide students on any tests or vaccines they may require are included on pages 14-16.

PROCESS: Students are expected to attend a health care provider with expertise in infectious diseases prior to the commencement of clinical placement for assessment, counselling and immunisation as necessary. Appointments can be made with general practitioners or the Flinders University Health Service. At this appointment, previous infection with or immunity to a number of infections will be assessed. It is recommended you review the Questions and Answers prior to your appointment and bring any records of blood tests or immunisations with you when you attend. You may require additional vaccinations beyond this if other specific medical conditions are present e.g. past splenectomy.

CONFIDENTIALITY: All students will be assessed by the immunisation service with absolute confidentiality. The School of Medicine will be notified of a student's compliance with this Policy but will not be advised of individual results.

COMPLIANCE: Students are required to sign a statement (Form A) indicating that they have read and agree to comply with the Policy, and provide documentation of compliance with this Policy (Form B), signed by their health care provider. Both forms are included at the end of this booklet. Completed forms should be returned to the MCA office (for SA Medical Course students) or NTMP office (for NT Medical Course students) within 2 weeks of commencement of their course. Students who do not feel that they can comply with the Policy are required to discuss their objections with a nominated representative of the Dean.

ELECTIVES: Students are required to seek pre-travel advice well in advance before undertaking overseas medical electives where special precautions may be necessary, and provide proof that they have done so. This is not required for electives confined to New Zealand / USA / Canada / United Kingdom and European countries, with comparable health facilities to Australia.

DISCRIMINATION: No student will be discriminated against nor prevented from qualifying for the award of the degrees in which they are enrolled as a result of complying with this Policy.

INFECTION CONTROL: Students are expected to understand and practice appropriate infection control measures during all clinical experiences. Infection control information and policies are covered in this booklet.

OCCUPATIONAL HEALTH AND SAFETY: All health professional students should have access to medical advice, either in the teaching hospitals/clinical placement to which they are assigned or through an occupational health and safety service. Guidelines for the management of exposure to blood or body fluids are on pages 12-13.

BLOOD-BORNE VIRUSES: As per the guiding principles of the *Australian National Guidelines for the Management of Health Care Workers known to be Infected with Blood-Borne Viruses:*
http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-cdna-bloodborne.htm
As a student health care worker you have a responsibility to be aware of your status in relation to blood-borne viruses including HIV, Hepatitis B and Hepatitis C prior to commencing the course in which you are enrolled. Students who engage in at risk behaviour or suspect that they may have been infected with a blood-borne virus at any time during the course have a duty to seek testing and counselling.

Students who are infected with HIV, Hepatitis B or Hepatitis C are not required to disclose their status to the School of Medicine. However, infected students must not undertake exposure-prone procedures and are strongly encouraged to inform the Dean of their status and seek confidential counselling in relation to personal health measures and training and vocational issues.

EXPOSURE PRONE PROCEDURES (EPP): Procedures where there is potential for contact between the skin of the health care worker and sharp objects (including surgical instruments and splinters or pieces of bone) in body cavities or in poorly visualised or confined body sites (including the mouth).

Provided they are not conducted in poorly visualised or confined body sites, the following procedures are not considered to be exposure prone:

- Phlebotomy,
- administering injections,
- placing intravenous (IV) or central venous (CVC) lines,
- performing needle biopsies or aspirations, lumbar punctures, venous cutdowns or angiographic procedures,
- excision of epidermal or dermal lesions,
- suturing of superficial skin lacerations,
- any other procedure where the use of sharps is superficial, well visualised and very unlikely that a health care worker's skin injury would result in exposure of a patient to the health care worker's blood or body substances.

Oral, vaginal or rectal examinations, endoscopy, placing nasogastric tubes or urinary catheters or other procedures that do not involve sharps are also excluded from the definition of EPPs.

STANDARD AND ADDITIONAL PRECAUTIONS

Standard Precautions (formerly Universal Precautions) are work practices required for the basic level of infection control and are recommended for the treatment and care of all patients. Standard Precautions are designed to reduce the risk of transmission of micro-organisms from both recognised and unrecognised sources of infection to a susceptible host. Standard Precautions include:

- hand hygiene,
- use of personal protective equipment (PPE),
- aseptic practices,
- appropriate reprocessing of instruments and equipment following use,
- safe handling and disposal of potentially infectious material, and
- environmental controls.

Additional Precautions are recommended for specified patients known or suspected to be infected or colonised with epidemiologically important or highly transmissible pathogens that can cause infection. **Additional Precautions** are implemented when Standard Precautions may be insufficient to prevent transmission of infection. Additional Precautions when required are always in addition to Standard Precautions.

The precautions implemented are based on disease transmission and are specific to the situation:

- airborne transmission (Tuberculosis, Measles, Chickenpox),
- droplet transmission (Mumps, Rubella, Influenza, Pertussis),
- contact transmission (MRSA, *Clostridium difficile*),
- any combination of the above routes,
- immunocompromised patients,
- patients with altered mental state and/or poor hygiene, or
- patients with large areas of infected skin or large open purulent wounds.

Additional Precautions may include one or any combination of the following:

- allocation of a single room with ensuite facilities,
- cohorting (room sharing by persons with the same infectious agent),
- special ventilation requirements (a negative pressure room),
- a ‘STOP’ sign on the door directing all persons to consult staff prior to entering,
- antiseptic hand cleansers for routine hand hygiene,
- extended sterilisation time of used instruments/equipment when reprocessing (currently only required for Creutzfeldt-Jakob Disease – low risk patients),
- additional use of protective barriers (eg. gowns, gloves, masks, dressings),
- immune staff to care for infectious patients (eg. only staff who have had Chickenpox or VZV vaccination should care for a patient with Chickenpox),
- additional room cleaning,
- special scheduling of the patient on a procedure list, or
- dedicated patient equipment.

HAND HYGIENE

Hand hygiene is the most important and most basic measure to prevent the spread of infection. Alcohol gels or rubs are available in all wards and should be used for hand hygiene before and between all patient contacts. Hands carry two different types of flora: resident and transient.

Resident Flora: These organisms live and multiply on the skin (mainly on superficial layers, but 10-20% inhabit deep layers) and can be repeatedly cultured, even after routine hand washing. Although these organisms are generally harmless, they are of special concern when performing invasive procedures. In these circumstances they need to be reduced and inhibited using an antimicrobial preparation, to prevent cross-infection.

Transient Flora: These organisms are present in the hospital microenvironment and contaminate the hands of hospital staff during normal work activities. They can be readily passed on to another person during contact and will survive on the hands for up to 24 hours, if not removed by hand hygiene. (Occasionally, despite routine hand washing, a transient organism may take up "temporary residence" for a period of several weeks.) Contamination with transient flora may occur in the absence of visible soiling. Routine hand hygiene is performed to remove transient microbial flora derived from touching one's skin, another person's skin, or some object in the environment.

Hand hygiene should be performed before significant contact with any patient. Significant contact activities include: examination of a patient or similar prolonged contact, inspection of a wound or intravascular cannula site, emptying a catheter or drainage reservoir, undertaking a venepuncture or a dressing, changing an IV flask or manipulating any similar ‘closed’ sterile system, delivery of IM or IV injections.

Hand hygiene should be performed after activities likely to cause significant contamination. Activities known to cause significant contamination include handling objects or materials soiled with body secretions or excretions, direct contact with body secretions or excretions, direct contact with mucous membranes, wounds, tracheostomy, and personal hygiene after toileting. Gloves should be used as an adjunct to hand washing when contamination of hands with blood or body fluids is anticipated. Gloves should be changed and hand hygiene performed between patients.

There are two main methods for hand hygiene:

1. Hand washing with soap or other detergents and water.
2. Hand antisepsis with alcohol hand gels or alcohol liquid hand rub.

Alcohol-based hand antisepsis provides a significantly greater reduction of micro-organisms on hands than hand washing and is therefore preferable for most clinical situations. However, hand washing with soap is indicated when hands are visibly soiled.

Procedure for Hand Antisepsis: Ensure all skin surfaces are accessible. Ensure nails are clean, short and unvarnished. Dispense 2-3 squirts of alcohol gel or alcohol liquid rub from the dispenser onto the hands. Rub hands with alcohol to cover all hand and finger surfaces, including fingertips and the dorsal sides of thumbs. Make sure that the hands are not wet (ie. water) before alcohol hand antisepsis. Rub hands together until alcohol had dried by evaporation. Takes 15-30 seconds.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment (PPE) provides a barrier between the source and the operator. Its use does not negate the need for safe work practices or hand hygiene. In many situations the risk of exposure to blood and body fluids can be determined in advance, so the appropriate PPE should be worn prior to performing the procedure or task. PPE may include: gloves, gowns and aprons, eye and/or facial protection (glasses, goggles, and face shields), masks and adequate footwear.

Gloves must be worn whenever there is a risk of direct contact with blood, body fluids, mucous membranes, non-intact skin or contaminated equipment or surfaces. Types of gloves worn should be appropriate to the task: sterile gloves for procedures involving normally sterile areas of the body, non sterile examination gloves to be used for all other contacts, general-purpose utility gloves to be used for cleaning and during manual decontamination of used instruments and equipment. Allergy or sensitivity may develop to glove powder or contact with latex proteins. Powder-free latex gloves or alternatives to latex are available and should be used by those who develop sensitivity. Seek advice from Occupational Health and Safety and Injury Management Services.

Gowns are worn to protect the wearer's clothing and skin from contamination with blood and body substances. Fluid resistant gowns/plastic aprons are indicated in situations where contamination with large amounts of blood or body fluid is anticipated. A plastic apron can be worn beneath a sterile gown to give added protection if strike through is a possibility during surgical procedures. Gowns/aprons are also worn by personnel during the care of patients infected or colonised with epidemiologically important micro-organisms to reduce the opportunity for transmission of pathogens from patients or items in their environment to other susceptible patients.

Protective Eyewear (goggles, glasses or face shields) must be worn during procedures likely to cause splattering, splashing or spraying of blood or body fluids. Eyewear should be shielded at the side and close fitting, and should be cleaned after use in detergent and water if contaminated.

Masks are worn to protect the mucous membranes of the mouth and nose during procedures likely to cause splattering, splashing or spraying of blood or body fluids. High efficiency masks with filtration to 1 micron must be used for care of patients known or suspected to be infected with pathogens spread by the airborne route. To provide protection against airborne pathogens, masks must provide a snug fit and be changed when they become moist or visibly soiled during use.

Specimens should be collected with gloved hands, placed in a correctly labelled leak proof container, enclosed in a sealed bag for transport with the request form in the outer sleeve pocket of the plastic bag to prevent contamination.

ASEPSIS, REPROCESSING AND ENVIRONMENTAL CONTROL

Asepsis

Aseptic practices refer to precautions designed to prevent undue contamination of a person, object or area by micro-organisms. Aseptic practices are indicated if performing any invasive procedure, for example surgical procedures, dressing open wounds or insertion of indwelling cannulae. Measures employed to achieve asepsis include:

- performance of appropriate hand hygiene,
- preoperative skin and body cavity preparation,
- processing,
- supply and storage of sterile equipment,
- antiseptic and disinfectant use,
- management of indwelling devices,
- environmental controls such as air filtration.

Reprocessing equipment

Cleaning is the essential first step for any form of reprocessing. If an item cannot be thoroughly cleaned, it cannot be reprocessed. Thorough cleaning should commence as soon as practicable after use. Inadequate cleaning may result in ineffective disinfection or failure to sterilize instruments or equipment. Hospital crockery and cutlery require no special precautions. The combination of hot water and detergents used in hospital dishwashers is sufficient to render the items safe for reuse.

Environmental controls

A neutral detergent is the cleaning solution of choice for environmental surfaces. Extra cleaning may be necessary in the presence of some micro-organisms. Blood and body substance spills must be dealt with by wiping the area immediately with a paper towel and then cleaning the area with detergent and water if the spill is small. Large spills should be contained and in addition to cleaning with detergent and water, chlorine-generating disinfectants may be used. ***Linen*****:** Soiled linen is discarded into linen bags which when $^{2}/_{3}$–¾ full must be securely tied off for transport. Any linen bags likely to leak blood or body fluid must be contained by a clear plastic bag and secured prior to transport. Alternatively waterproof linen bags should be used. All used linen is considered contaminated therefore minimal handling is recommended.

Waste disposal

Standard Precautions must be employed when handling all waste. Waste is segregated at the point of generation into general, medical, cytotoxic, radioactive and hazardous streams. There is a legal obligation to classify waste appropriately.

Sharps

The person generating the sharp is responsible for its safe disposal. Sharps should never be passed by hand between health care workers. Disposal should occur immediately following its use and at the point of use into designated puncture resistant containers that conform to Australian Standard AS4031. Discard sharps containers when $^{2}/_{3}$ full, seal appropriately and place in the medical waste stream. Never recap used needles unless an approved recapping device is used.

NOSOCOMIAL INFECTION

Nosocomial infections are infections acquired directly or indirectly in a medical setting. The probability of a micro-organism causing infection in a host is dependent upon the dose (number of micro-organisms), a receptive host site of contact with the organism, time of contact (sufficient for multiplication or not) and the virulence of the organism.

The source(s) of the infecting agents may be patients, staff or visitors and may include:

- persons with acute diseases,
- persons in the incubating or window period of a disease,
- persons who are colonised or chronic carriers of the infecting agent,
- the person's own endogenous flora, or
- inanimate objects including equipment and medications.

Susceptible host

Resistance to infection varies depending upon underlying medical conditions and other factors that may compromise a person's immune status. Trauma, surgical procedures, anaesthesia, invasive indwelling devices, and therapeutic and diagnostic procedures render a person more susceptible to infection. Immunocompromised patients are at increased risk of infection from both their own flora (endogenous) as well as other sources (exogenous). Susceptibility to infection depends on the severity and duration of immunosuppression. They may be particularly susceptible to environmental contaminants such as Legionella or Aspergillus.

Where invasive medical procedures are involved, consideration should be given to placing patients at the start of the operating schedule. If considerable immunosuppression or neutropenia is present the Additional Precaution of single room accommodation is desirable.

Routes of transmission

- Direct contact transmission involves direct physical transfer of micro-organisms from an infected or colonised person to a susceptible host. Indirect contact transmission involves the contact of a susceptible host with a contaminated inanimate object, such as contaminated instruments or equipment.
- Droplets are generated during coughing, sneezing, talking, and during certain procedures such as suctioning and bronchoscopy. Transmission occurs when droplets containing micro-organisms come in contact with the conjunctiva, nasal mucosa or mouth of a susceptible person. Droplet distribution involves close association, usually 1 metre or less.
- Airborne transmission occurs by dissemination in the air of either droplet nuclei or dust particles containing the infectious agent. Micro-organisms carried in this manner can be widely dispersed via air currents and can remain airborne for long periods before being inhaled by the susceptible host.
- Vehicle transmission applies to micro-organisms transmitted by contaminated food, water, drugs, blood or body fluids.
- Vector-borne transmission occurs when mosquitoes, flies, rats or other vermin transmit micro-organisms.

PROCEDURE FOR FOLLOW-UP OF BLOOD/BODY FLUID EXPOSURE

Wash the affected area with soap and water. If cuts and abrasions are involved they should be included in the washing. For eye splashes rinse gently but thoroughly with water or normal saline, while the eyes are open. If blood gets in the mouth, spit it out and rinse the mouth with water several times. Record the accident details (for FMC this will be on BBFE Accident Report Form) including your name, contact number, ward, and the source name and medical record number if available.

The affected person should have blood taken (10 ml white top) either in the ward, Emergency Department or in the Occupational Health, Safety and Injury Management Unit. Blood is tested for Hepatitis B antibody if not previously tested, and serum is held for 7 years.

The source individual should have blood taken for HIV Antibody, Hepatitis B surface antigen, Hepatitis C antibody (NB: informed consent is required to undertake these tests, usually obtained by the doctor responsible for the patient). If blood is already available in serology (from previous tests) then more blood may not have to be taken. If the source individual does not consent to have tests taken, the affected person is to be followed up as if the source was unknown.

If the source is known or suspected to be HIV positive, the on-call Infectious Diseases Physician must be contacted urgently (via FMC switchboard) for advice.

Source HIV positive
Post-exposure prophylaxis with antiretroviral therapy may be offered when the risk of transmission is considered to be significant. Commence as soon as possible after the exposure (preferably within 2 hours). Counselling will be provided on the risk of transmission, the importance of strict compliance with the treatment regimen and the potential side effects and appropriate course of action if these are experienced.

***Follow-up*:** Report any febrile illness that occurs within 3 months after exposure. Repeat testing for HIV antibody will be performed 3 and 6 months after exposure. During the first 3 months you should not donate plasma or blood, body tissue, milk or sperm. Sexual partners should be protected from contact with blood, semen or vaginal fluids by using condoms. Pregnancy should be avoided until HIV status is known and you must avoid performing exposure prone procedures.

Source HBV positive (HBsAg positive)
If you have previously had Hepatitis B infection or you have been vaccinated against Hepatitis B and have confirmation of seroconversion, no further action is required. If there is no record of seroconversion to confirm that vaccine immunity has been achieved or if you have not been previously vaccinated for Hepatitis B, blood is taken for Hepatitis B surface antibody. If negative, Hepatitis B immunoglobulin (HBIg) will be offered and a Hepatitis B vaccination course should commence at the same time. Three vaccinations at 0, 1 and 6 months are required.

Source Anti-HCV positive
At present, apart from thorough washing (as for HIV and HBV) at the time of injury there is no known treatment that can alter the likelihood of transmission. If HCV infection does occur, early treatment with interferon may be offered. Repeat testing for HCV antibody will be done 3 months after exposure.

Source unknown
Reasonable efforts should be made to identify source persons or syringes. If the source remains unknown, appropriate follow-up should be determined on an individual basis depending on type of exposure and likelihood of source being positive for a blood pathogen.

Source negative for HIV, HBV, HCV:
No further action is required.

FOLLOW-UP AND APPROPRIATE CARE NOT REQUIRED

- **Non-Parenteral** Exposure: Intact skin visibly contaminated with blood or body fluid.
- **Doubtful Parenteral** Exposure: Intradermal (superficial) injury with a needle considered not to be contaminated with blood or body fluid, eg. giving IV medication, drawing up medication. A superficial wound not associated with visible bleeding produced by an instrument not contaminated with blood or body fluid. Prior wound or skin lesion contaminated with a body fluid other than blood and with no trace of blood eg. urine.

FOLLOW-UP AND APPROPRIATE CARE ARE REQUIRED FOR

- **Possible Parenteral** Exposure: Intradermal injury with a needle contaminated with blood or body fluid. A wound not associated with visible bleeding produced by an instrument contaminated with blood or body fluid. Old wound or skin lesion contaminated with blood or body fluid containing any trace of blood. Mucous membrane or conjunctival contact with blood.
- **Definite Parenteral** Exposure: Laceration or similar wound which causes bleeding, and is produced by an instrument that is visibly contaminated with blood or body fluid. Any direct inoculation with human immunodeficiency virus (HIV) tissue or material likely to contain HIV, Hepatitis B virus (HBV) or Hepatitis C virus (HCV) not included above - this refers to accidents in laboratory settings.
- **Massive** Exposure: Transfusion of blood. Injection of large volume of blood/body fluids (>1ml). Parenteral exposure to laboratory specimens containing high titre of virus.

ELECTIVES IN DEVELOPING COUNTRIES

Students undertaking Electives in developing countries are strongly encouraged to seek advice well in advance of travel, on illnesses and personal health and safety issues which may be encountered in those countries. Students planning Electives in countries with high rates of HIV positivity (eg. most of Africa, India and South East Asia) must consult with a General Practitioner, the Flinders Health and Counselling Service or The Travel Doctor several months prior to undertaking the Elective. Students may require specific preventative treatment medications for Malaria and traveller's Diarrhoea and may be advised to carry emergency HIV drugs to take immediately should a high risk blood/body fluid exposure take place. HIV medications for post-exposure use may be available at cost price through FMC Pharmacy by prescription from Infectious Diseases medical staff.

Vaccination status needs to be reviewed for students undertaking electives in developing countries and additional vaccines such as Typhoid, Meningococcal and Yellow Fever vaccinations may be required. Further information can be obtained from the Centre for Disease Control and Prevention: http://www.cdc.gov/ and the *Australian Immunisation Handbook 10th Edition 2013, Part 3.2 Vaccination for International Travel*: C:\Users\scot0242\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Outlook\Library\Caches\TemporaryItems\Local Settings\Temporary Internet Files\Content.IE5\A699C721\f
http://www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/handbook10-3-2

EXPOSURE TO PERSONS WITH PULMONARY TUBERCULOSIS

Contact/tracing of patients with pulmonary tuberculosis may identify students who require follow up TB testing because of potential airborne exposure to *M. tuberculosi*s. Follow up TB testing is done through the Department of Health (SA & NT) in such cases and students must participate if requested to do so.

IMMUNISATION AND BLOOD-BORNE VIRUSES QUESTIONS AND ANSWERS

***Q1*: What if I am unable to have my vaccinations finalised before placement?**
You should be in the process of completing all your vaccinations prior to placement.

Q2*: *What if I am unwell - should I still have my vaccinations?
This depends on which vaccines you are having and how unwell you are. Please seek advice from your General Practitioner or the Flinders Health and Counselling Service.

Q3: What if I have allergies should I still be vaccinated?
This depends on which allergies you have and which vaccines you are having. Please seek advice from your General Practitioner or the Flinders Health and Counselling Service.

Q4*: *What if I am pregnant – will I be able to have vaccinations?
Please seek advice from your General Practitioner or the Flinders Health and Counselling Service.

Q5: Will the School of Medicine cover the costs of my blood tests and consultation(s) with a doctor?
No, although for most students Medicare will cover the cost. The University Health Service has agreed to bulk bill for consultation. For International students private health insurance policies may vary in their cover, so students ineligible for Medicare will need to clarify their cover with their own health insurance provider.

Q6: Can I be reimbursed for vaccines purchased from private pharmacies or get private scripts filled by the School of Medicine?
No.

Q7: Do I need to have a HIV antibody test done and who needs to know the result?
Although you do not need to inform the School of the result, you do need to know your HIV antibody status. Infected students are strongly advised to inform the Dean of their status and seek counselling in relation to personal health measures and training and vocational issues. You must not undertake exposure prone procedures.

Q8: Do I need to provide results from a recent Hepatitis B surface antigen test?
You need to know your HepBsAg status. If you have documented surface antibody to Hepatitis B you don't need to do anything further as you are considered to have life-long immunity to Hepatitis B. If not, you will need 3 doses of Hepatitis B vaccine followed by a blood test 6-12 weeks after the final injection to confirm you have developed immunity to Hepatitis B. For students at risk of Hepatitis A (see below) there is an option of combined Hepatitis A and B vaccine (Twinrix).

Q9: What if my HepBsAg test was positive?
If your HepBsAg test was positive, it is highly recommended that you seek confidential medical and career advice from an infectious diseases specialist. You must not undertake any exposure prone procedures.

Q10: Do I need to provide results from a recent Hepatitis A surface antigen test?
You do need to know your Hepatitis A status. In Australia, Hepatitis A screening and vaccination is necessary for student health care workers who will be living or making frequent visits to remote Indigenous communities in SA, NT, WA, QLD and all medical students. It is also recommended for students in childcare and preschool settings and carers of people with intellectual disabilities.

Q11: Do I need to have a Hepatitis C antibody test done?
Although you do not need to inform the School of the result you need to know your Hepatitis C antibody status. If you are Hepatitis C antibody positive it is strongly advised you seek confidential medical and career advice from an infectious diseases specialist. You must not undertake any exposure prone procedures unless cleared to do so by an infectious diseases specialist following HCV RNA PCR testing.

Q12: Do I need to be immunised if I've previously had Chickenpox (Varicella Zoster virus - VZV)?
You are considered to be immune if you have previously had Chickenpox or Shingles. If you are uncertain of your immunity, you need to have a blood test to see if you are immune to chickenpox (presence of IgG to VZV) and if you are not immune you should be vaccinated.

Q13: What if I've already received at least 5 Diphtheria/Tetanus toxoid shots, at least one of which was administered above the age of 10 years?
You do not require any boosters unless you sustain a high risk injury. If not, you will need to have your diphtheria/tetanus toxoid shots.

Q14: Did you have a full course (3 doses) of Polio vaccinations as a child?
If not, you must get a complete set of Polio vaccinations. Otherwise no action is required, unless you travel into an endemic country, eg. for an elective. Then, contact an infectious disease physician or travel physician for advice.

Q15: Do you have documented evidence of vaccination with at least 2 doses of Measles Mumps Rubella (MMR) vaccine?
If you are born after 1966 and do not have vaccination or immunity evidence you will need to complete your 2 vaccinations against MMR. A history of previous infection with one or more of Measles, Mumps or Rubella is not considered reliable evidence of immunity nor is it a contraindication for vaccination against the other components of the vaccine. It is not necessary to check serology prior to vaccinating against MMR.

Q16: Will you have contact with patients this year?
It is recommended that all students who have direct contact with patients during their placement receive an annual influenza vaccine.

Q17: Did you have a full course (3 doses) of Pertussis (Whooping Cough) vaccinations as a child? Did you receive a booster dose in adolescence (between 15-17 years) and is this less than 10 years ago?
No action is required if you had the full course as a child and also received your adolescent booster dose less than 10 years ago. A single booster dose is recommended if you did not receive the full course of vaccinations as a child or the adolescent booster dose less than 10 years ago.

Q18: What do I need to do if I have a scar from a previous BCG vaccine (against TB) or have lived in a country in which TB is endemic?
If so, TB Services (SA and NT Health) will possibly direct you to have a 2 step Mantoux test.

Q19: If you have had your Mantoux test already?
If it was positive, you will be referred for further advice at the time of your Mantoux test.
If your test was negative it is not essential that you have a BCG vaccination, but if you are exposed to TB, you should have a repeat Mantoux test. **BCG vaccination is only offered to students at high risk of exposure, eg. Northern Territory students exposed to East Timorese refugees.**

Q20: Do I need to do anything extra if I'm planning to work in areas where Meningococcus, Malaria or HIV are prevalent?
If you are planning to work in high risk areas such as remote Indigenous communities in SA, NT, WA, QLD and the Torres Strait Islands you may wish to discuss the pros and cons of vaccinations, antimalarials and/or post-exposure prophylaxis against HIV with an infectious diseases specialist.

Q21: Should I carry anti-HIV drugs in the event of possible exposure during electives in parts of Africa and Asia?
These may be required depending on the location of your Elective. You should seek advice from your General Practitioner, the Flinders Health and Counselling Service or The Travel Doctor who may arrange for you to carry an emergency supply of anti-HIV drugs. Students will be expected to cover any associated costs.

Q22: What if I do not wish to have my vaccinations? Why do I need them?
You can choose not to have your vaccinations, but you may find it more difficult to find placement for the practical component of your course. Many clinical establishments insist on complete immunisation. Vaccinations are necessary to prevent you from becoming ill and to protect immuno-suppressed patients inadvertently getting diseases from their health care workers. Any concerns can be discussed with your General Practitioner or the Flinders Health and Counselling Service regarding the associated risks.

If you decide not to immunise you must discuss your objections with a nominated representative of the Dean.

APPENDIX 1: TUBERCULIN SKIN TEST

Government of South Australia
Central Northern Adelaide Health Service

Royal Adelaide Hospital

SA TB Services

CHEST CLINIC 8222 4867
PATIENT INFORMATION ON TUBERCULIN SKIN TEST

This information is intended as a general guide only. Please ask the Nurse or Doctor if you have any questions relating to this information.

What is a tuberculin skin test (TST)?
The TST is a simple & safe test to show if a person has ever been exposed to tuberculosis (TB) bacteria (or germs).

Who should be tested?
- People who have had contact with someone who has active TB
- People from countries where TB is common
- People who are travelling to or have recently returned from countries where TB is common
- People who have to be tested for work e.g. health care workers
- People who have to be tested for medical reasons
- People who require a Bacille Calmette-Guerin (BCG) vaccination

When should the TST be delayed?
- If you have a fever (>38C) or have had a recent infection
- If you have had a live vaccine e.g. measles-mumps-rubella (MMR), yellow fever, chicken pox (varicella) within the last 4 weeks [1]

When should the TST not be done?
- If you have or have had TB
- If you have had a previous large reaction to a TST
- If you have an allergy to any component of tuberculin solution [2]

Please let the healthcare worker know if any of these are relevant to you.

How is the test done?
A small amount of tuberculin [3] is injected into the skin on the inner forearm by a healthcare worker.

Care of the test site
Remove cotton wool from TST site after 60 minutes. Leave uncovered.
- Do not scratch. If it itches, place a cold pack on it
- Shower or bathe as usual

What happens next?

Three to four days later you will need to return for the site of the test to be checked & the result recorded. Test documentation will be provided for your records.

Only a trained healthcare worker can accurately measure & interpret the test result.

A TST can result in:

- Redness
- Lump at site
- Bruising
- Blistering
- Ulceration

Depending on the reaction & your medical & TB history you may be advised:

- To have the TST repeated
- To avoid future TST
- To make an appointment to see a medical practitioner experienced in TB management
- That no further testing or follow-up is required

When should the TST be repeated at 1-3 weeks ("two-step" TST)?

An initial TST result may be falsely negative. A second TST may produce a more accurate response. The TST may be repeated if:

- If you require testing at regular intervals e.g. Healthcare workers
- If you are immune suppressed

Where can I get more information?

If you have any questions please telephone SA TB Services at the RAH Chest Clinic between 8:45am & 4:45pm Monday to Friday on (08) 8222 4867 to talk to a registered nurse or doctor.

1. The Australian Immunisation Handbook 9th Edition, 2008. National Health & Medical Research Council

2. TUBERSOL® contains:

- Purified protein derivative of *M. tuberculosis*
- Polysorbate 80 0.0006%
- Phenol 0.22% to 0.35% w/v in sterile isotonic phosphate buffered saline

3. Tuberculin is available in Australia as TUBERSOL®. It is a purified protein derived from the TB bacteria but contains no active TB bacteria. In Australia the standard dose of TUBERSOL® is 5 Tuberculin Units (TU) per test dose of 0.1 ml.

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FACULTY OF MEDICINE, NURSING AND HEALTH SCIENCES
SCHOOL OF MEDICINE

FORM A

COMPLIANCE WITH IMMUNISATION AND BLOOD-BORNE VIRUSES POLICY

STUDENT FORM

STATEMENT OF COMPLIANCE

I have read and agree to comply with the Immunisation and Blood-Borne Viruses Policy.

STUDENT NAME _____

STUDENT ID _____

SIGNATURE _____

DATE _____

NOTE: Students who do not feel that they can comply with the Policy are required to discuss their objections with a nominated representative of the Dean. Please contact the Medical Course Administration for details.

Please return the completed form no later than 31 March, 2015 to:

Medical Course Administration
School of Medicine
Flinders University
GPO Box 2100
Adelaide SA 5001
Australia

Location: Room 5E:209, Flinders Medical Centre

FACULTY OF MEDICINE, NURSING AND HEALTH SCIENCES
SCHOOL OF MEDICINE

FORM B – HEALTH CARE PROVIDER FORM

COMPLIANCE WITH IMMUNISATION AND BLOOD-BORNE VIRUSES POLICY

STUDENTS PLEASE NOTE:
This form **must** be completed before you will be permitted to commence clinical studies/patient contact.

STUDENT NAME _____ STUDENT ID _____

*NT	SA	REQUIREMENTS**	Date/s
Chickenpox (*Varicella Zoster* virus)	Chickenpox (*Varicella Zoster* virus)	A past history of clinical chickenpox OR presence of IgG to VZV OR 2 shots of Varilrix	
Diphtheria/ Tetanus	Diphtheria/ Tetanus	At least 3 diphtheria/tetanus toxoid shots, at least one of which was administered aged >10 years	
Hepatitis A***	Hepatitis A***	If no immunity shown from serological screening then administration of at least 2 dose monovalent Hepatitis A vaccine or 3 dose combination Hepatitis A/B vaccine (see below)	1. 2.
Hepatitis B	Hepatitis B	Results from a recent Hepatitis B serology test including evidence of immunity (Hep B surface antibody >10 IU/ml)	1. 2. 3.
Hepatitis C	Hepatitis C	Results from a recent Hepatitis C antibody test	
HIV	HIV	Results from a recent HIV antibody test	
Measles/Mumps/ Rubella	Measles/Mumps/ Rubella	At least 2 doses of MMR vaccine	1. 2.
Pertussis (Whooping Cough)	Pertussis (Whooping Cough)	Single booster dose (given as dTpa) if >10 years since last dose	
Strongly advised	Poliomyelitis	At least 3 doses of inactivated polio vaccine	1. 2. 3.
Tuberculosis	Tuberculosis	Mantoux test or Quantiferon test	
		BCG vaccination if necessary	

* NT Students are **strongly advised** to follow the SA immunisation guidelines as they are a compulsory requirement for clinical placements beyond the Northern Territory.
**Influenza: An annual dose of influenza vaccine is recommended.
***Hepatitis A - screening and vaccination necessary for student health care workers who will be living or making frequent visits to remote Indigenous communities in SA, NT, WA and QLD and all medical students. It is also recommended for students in childcare and preschool settings and carers of people with intellectual disabilities.

I confirm that the above student has provided me with evidence satisfying the above requirements.

SIGNATURE _____ DATE _____

HEALTH CARE PROVIDER'S NAME & CONTACT DETAILS:

_____ _____

Please return completed form to: Medical Course Administration**,** School of Medicine, Flinders University, Room 5E:209, Flinders Medical Centre, BEDFORD PARK SA 5042