

**Canadian Orthopedic Association**

# **The Orthopedist and Blood-borne Pathogens**

**Literature Summary Supporting the Canadian  
Orthopedic Association's Position Statement on  
the Orthopedist and Blood-borne Pathogens**

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## Introduction

A key principle of medicine is that of “first, do no harm”. Physicians practice under guide of this overarching principle. In the case of surgery; prevention of nosocomial complications is an important application of it. There are many aspects to preventing complications during provision of health care. The standard use of universal precautions (UP) is an example. Precautions not only serve to prevent untoward health consequences to patients but also to health care workers (HCW), including physicians, who are readily exposed to infective pathogens through the course of their work. In order to maintain a healthy medical workforce, health care workers must take every precaution to protect themselves from acquiring illness or injury in the line of work. Some of the illnesses to which health care workers are exposed can have significant consequences not only to the health of the worker but also to their livelihood and broader health system.

Infection by blood borne pathogens (BBP) such as Human Immunodeficiency Virus (HIV), Hepatitis B (HBV) and Hepatitis C (HCV) is a risk to health care workers. These pathogens are found in blood and body fluids (BBF) of infected individuals, specifically; blood, cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, and amniotic fluid. Exposure of HCWs to these pathogens can occur by means of percutaneous injury or via contact with mucous membranes or non-intact skin.

In orthopedic surgery, there is evidence of a high risk of exposure to blood and body materials [1-5]. This places orthopedic surgeons at relatively high risk of exposure to HIV, HBV and HCV. In addition to the use of universal precautions and engineering controls, there are several medical treatments that help reduce transmission of pathogens including the use of antiretroviral agents in infected individuals to lower viral titers and immunization against HBV. Since vaccines are not readily available for HCV or HIV these remain the greatest risks for those who are immune to HBV. For those for which vaccination with HBV is contraindicated or otherwise not effective, HBV poses the greatest risk overall [6-7]. Although transmission of any of these viruses can occur from either patient to provider or provider to patient, the risk of transmission from patients to HCWs is obviously greatest considering the nature of the activities being performed, the rate of exposure to blood and body materials, and the health of patients seeking treatment. The risk of transmission of infection from HCW to patient is extremely low. With the advent of greater awareness of the risks of transmission, the stringent application of

universal precautions with every patient, immunization of HCW and changes in disease prevalence; cases of transmission of BBP from HCW to patients have not been documented in Canada since the mid 1990's [8]. Even in known cases where HCWs report infection with BBP there are very few cases of confirmed "to patient" transmission and subsequent seroconversion where proper preventive techniques were used [8]. Of the three viruses being considered here, occupational transmission of HBV is the only one that has occurred, albeit rarely, without recollection of an actual exposure [7]. Being that HBV can survive on inanimate surfaces for a minimum of 7 days [7] it is conceivable that exposure and transmission could occur in this fashion in an unvaccinated person.

Of concern to HCWs and regulating bodies, is patient safety. There are risks inherent to the delivery of health care procedures and patients need to be informed of the associated material risks in order to make an informed choice. Whether the risk of transmission of BBP is "material" has been debated [9-10]. When patients are being informed of the possible risks to which they may be exposed during a procedure, it is common practice to raise both the most likely and most significant risks. As to whether potential transmission of a BBP falls in this category has generated significant controversy. Lack of consensus on disclosure of a BBP infection to patients or regulating bodies is as a result of weighing scientific evidence, medico-legal opinion, ethics and human rights for both parties, for which material risk cannot be clearly defined [9, 11]. In essence, is the small risk of contracting a BBP from a healthcare provider superseded by the high risk of infringement on the rights of the HCW to privacy, particularly given a well managed illness?

In the event of exposure to blood or body fluids, there are protocols in place to assist both HCWs and patients in obtaining testing, treatment, counseling and follow-up. Strict adherence to universal precautions, use of safety techniques and engineering controls should reduce the risk of exposure to a rare occurrence [12-13]. Post exposure protocols (PEP) have been criticized for being complicated, punitive and not user friendly; however, work continues in attempt to rectify these criticisms and encourage HCWs and patients alike to make use of the protocols. It is probable that PEP is highly underutilized, particularly by physicians [14]. Evidence suggests that HCWs seroconverting after an exposure were less likely to have initiated PEP [15-17]. PEP has been shown to suppress and or cure BBP infections [8].

Ultimately the best prevention against transmission of BBP is to use every protection available including a range of infection controls methods, equipment, medical and pharmacological strategies [12-13, 16, 18-20]. To protect one's livelihood and ability to contribute to the field of medicine, the addition of some form of income protection insurance is also an important consideration.

## **Purpose**

The purpose of this report is to supplement the position statement adopted by the COA in 2010. It serves to educate members and act as a resource to support personal information needs and professional advocacy.

## **Background**

### ***What's New: HIV, HBV and HCV***

People with HIV have had access to highly active antiretroviral therapy which has contributed to vast improvements in the health and lifespan of those infected with HIV. Tests to monitor HIV viral loads are relatively accessible, therefore monitoring patients can be done with relative ease. In Canada since 2003, HIV infection has been legally notifiable in all provinces and territories, meaning that name based as well as non-identifying information about an individual who tests positive for HIV infection is forwarded to provincial or territorial public health officials by labs or medical providers [21]. The types of HIV testing services available and HIV infection reporting information across Canada are summarized in Table 1.

**Table 1. HIV testing and HIV reporting by province/territory**

Province/territory	Type of HIV testing available	Year in which HIV infection became notifiable	Responsibility for reporting of HIV infection	Type of testing reported to the province/territory
British Columbia	N, NN*	2003	L, P, RN**	N, NN
Yukon	N, NN	1995	L, P, RN	N
Northwest Territories	N, NN	1988	L, P, RN	N
Nunavut	N, NN	1999	L, P, RN	N
Alberta	N, NN,***A***	1998	L, P	N
Saskatchewan	N, NN, A	1988	L, P, RN	N, NN
Manitoba	N, NN	1985	L, P	N, NN
Ontario	N, NN, A	1985	L, P, NP, MW, D	N, NN <sup>§</sup>
Quebec	N, NN, A	2002	L, P	NN
New Brunswick	N, NN, A	1985	L, P, RN	N, NN
Nova Scotia	N, NN, A	1985	L, P	N, NN
Prince Edward Island	N, NN	1988	L, P, RN	N, NN
Newfoundland and Labrador	N, NN, A <sup>‡</sup>	1987	L, P, RN	N

N = nominal/name-based

A = anonymous

P = physician

MW = midwife

NN = non-nominal/non-identifying

L = laboratory

RN = nurse

D = dentist

\* In BC, follow-up and reporting of non-nominal tests is the same as for nominal tests. If a patient tests non-nominally, they remain part of the non-nominal system.

\*\* In BC, all positive cases are reported to HIV Surveillance/British Columbia Centre for Disease Control, which then reports the first positive cases to designated nurses in the health service delivery area where the test was ordered.

\*\*\* All positive HIV tests are reported nominally.

<sup>§</sup> In Ontario, data from positive HIV tests completed by means of anonymous HIV testing (AHT) are reported non-nominally at the provincial level.

<sup>‡</sup> If someone tests positive for HIV through AHT, that individual then becomes part of the nominal/name-based system, in which counselling, follow-up care, and HIV data reporting are all done nominally.

**Table 1 HIV testing methods available by province as of 2007.**

Source: Public Health Agency of Canada, 2007. Reproduced with the permission of the Minister of Public Works and Government Services Canada, 2010©.

Rapid testing kits have been approved for use in Canada. Currently, one test is licensed and available for purchase by physicians; however, there are no known provincial governments who have as of yet funded the use of rapid testing in public health centres [22].

Although not readily available to the Canadian public, vaccines for HIV are being manufactured. Canada's participation in vaccination strategies currently involves research, development of vaccines and support for their use in developing countries where HIV infection rates are much higher [23].

Immunization against HBV is recommended for anyone at risk of exposure. This includes all HCWs as well as at risk patients. HBV carries the highest risk for transmission

without immunity and therefore diligence with regard to pursuing effective immunization is critical for HCWs. Initial non-responders to standard HBV vaccination should be followed by a specialist to attempt tailored courses of vaccination to achieve HBV immunity [7]. HBV has also been notifiable in Canada since 1969 [24].

Advances in the detection and management of HBV in recent years have shown that HBeAg is not the most sensitive marker for infectivity as not all strains of HBV produce HBeAg. Rather, precise, direct measurement of circulating viral loads is the ideal standard [8]. The availability of antiviral medications and other medical management approaches to HBV infection has begun to show effectiveness as evidenced by increased rates of disease remission [8]. Research in this area is far from conclusive but in acute cases, post exposure protocols can be highly effective in preventing seroconversion to HBV infection [7-8, 15-17]. Therefore it is prudent for HCWs to be immunized and to adhere to PEP when exposed. In cases where patients are exposed to BBP from HCWs, immunized HCWs should still undergo confirmatory testing to evaluate status of BBP infectivity for other pathogens [8].

Like HBV, methods to detect HCV viral loads have become more precise in recent years [8]. Treatments are available and can be very effective at curing HCV in certain patients [14]. A desk resource created by Health Canada assists physicians in testing and treatment for HCV [25]. Cure rates have been quoted in the range of 90-100% for some patients infected with HCV, and comprehensive PEP include follow-up testing that is outside the incubation window to ensure detection of early infection and increased chances of a cure (Myrna Childs, Occupational and Environmental Safety & Health (OESH) Winnipeg Health Sciences Centre, Personal Communication) [8].

## **Transmission Rates**

It is surmised from the literature that the risk of transmission of BBP from patient to HCW or vice versa is very small. Although the impact of an infection could be significant for either, the odds are very low. Reviews of the literature suggest that since the 1980's and 1990's when awareness of the transmission of these illnesses between patients and HCWs became notable, there have not been as many cases, particularly for HCW to patient transmission [8, 24, 26]. This has happened despite increases in some disease prevalence (HCV). Perhaps greater awareness and emphasis on universal precautions has contributed to this result.

No documented cases of transmissions of BBP from providers to patients in Canada could be found since the mid 1990's [8]. Considering that the risk of transmission, particularly from HCW to patient, is very low, the reaction to the potential threat of this directional transmission has been disproportionately high. HCWs have been exposed to breaches of human rights including the right to privacy, and to non-discrimination, particularly in the United States of America where disclosure of infective status has been required by legislation [8, 27].

All HCWs must comply with the requirements of regulating or governing authorities with respect to reporting and monitoring of BBP infections, and in turn, those authorities must ensure that its imposed requirements regarding BBP infection are based on ethics, respect, due diligence, the best available evidence, and least imposition on human rights. They must also aim to work with and facilitate "arm's length" supportive management of seroconverted HCWs while respecting human rights [8, 11, 28-29].

Assessing the risk of transmission of a blood-borne pathogen is an important aspect of managing the risk of transmission. As reported by the Public Health Agency of Canada, 1998, "mathematical models of risk suggest that the following rates of potential transmission per 1,000,000 procedures by an **infected** health care worker having no history of previous transmissions:

240-2,400 transmissions of HBV;

50-500 transmissions of HCV;

2.4 to 24 transmissions of HIV (average sporadic risk)"[30].

The level of the viral titre, the length of time the source person is infectious, the health of the infected, the competency with infection control practices and, the seroconversion rate, all influence the rate of transmissibility [8, 16] (Table 2). According to the Centers for Disease Control and Prevention, the risk of HIV seroconversion in HCWs after percutaneous exposure to HIV-infected blood is influenced by: depth of injury, amount of visible blood on the device, in procedures where needle placement is directly into a vein or artery, and higher viral titres [20, 31].

<b>Table 2</b>	<b>Virus</b>		
	<b>HCV</b>	<b>HBV</b>	<b>HIV</b>
Plasma/serum in viral particles/mL	10-1,000,000	HBeAg +ve 100-1,000,000,000	10-1,000
When is the source person most infectious?	Lifetime risk once infected	6-12 wk after onset of disease Chronic carriers = lifetime risk	Seroconversion and AIDS clinical stage result in the highest titres
Seroconversion rate if exposed to the virus	2.7-6.0%	If no hepatitis B immunization has been given to the person exposed HBeAg +ve: 19-30% HBeAg -ve : 5%	0.31%

**Table 2 The level of the viral titre, the length of time the source person is infectious and the seroconversion rate influence the rate of transmissibility**

Source: Public Health Agency of Canada, 1998. Reproduced with the permission of the Minister of Public Works and Government Services Canada, 2010©.

In regard to relative transmissibility of one virus to another; in non-immunized persons the relative infectivity is represented by HBV>HCV>HIV. If the infected source has certain viral antigens (HBeAg), and or the circulating viral load is very high then HBV is approximately 100 times more transmissible than HIV after a significant percutaneous blood exposure. Whereas the risk of transmission of HCV after a significant exposure is approximately 10 times less than that of HBV but is still more than HIV [8, 30]. Transmission from percutaneous injury may occur between 2% to 40% of HCWs after exposure to HBV, in 3% to 10% after exposure to the HCV, and in 0.2% to 0.5% after exposure to HIV [8, 20].

The rate of seroconversion from a mucous exposure (0.09% for HIV) is less than from a percutaneous exposure. Although mucous membrane and skin exposures may account for about 50% of exposures from patient to surgeon, it would not be very likely to occur from HCW to the

patient [30]. In an occupational setting, blood is the only likely bodily fluid of a HCW to which a patient may be exposed. In the event of an exposure, factors important in the overall risk of transmission and subsequent seroconversion are:

- characteristics of the pathogen itself;
- nature of the procedure being performed;
- health status of the physician and patient, (viral loads, immune status);
- infectious status of the physician or patient;
- susceptibility of the physician or patient;
- nature of the trauma to the physician, ie amount of blood and area/depth of tissue exposure [16, 32]

Table 3 describes exposure rates by health related job title. This table shows that physicians were among the top 5 HCWs suffering needle stick injuries in the reporting period. Other data confirm that trainees and junior physicians are at greater risk for exposures [33-34] and during surgery, the surgeon and the assistant are exposed to the highest number of splashes followed by the scrub nurse [2].

Job title	FTEs	Exposures	Rate per 100 FTEs
Registered nurse**	15,282.87	746	4.88
MD (resident)	515.00	108	20.97
MD (specialist)	824.95	83	10.06
Phlebotomist	172.98	74	42.78
Nursing assistant	2,024.21	67	3.21
Other	5,958.75	68	1.14
Clinical laboratory technician	1,862.46	51	2.74

Sterilization attendant	403.79	49	12.14
Housekeeper	1,247.38	53	4.25
MD (general practitioner)	1,319.80	25	1.89
Other technician	325.38	23	7.09
Nursing student	772.55	18	2.33
Medical student	227.00	15	6.61
Inhalation therapist	309.60	13	4.2
Other attendant	896.30	12	1.34
Nuclear medicine technician	66.22	9	13.59
Radiology technician	576.90	8	1.39
Patient attendant	509.93	8	1.57
Laundry worker	240.86	4	1.66
Unknown	257.57	2	0.77
Dentist	21.20	0	0
Dental hygienist	18.30	0	0
Total	33,833.90	1,436	4.24

\* Includes both percutaneous and mucocutaneous exposures.

\*\* Includes 981 days of follow-up among community health nurses = 3.78 FTEs.

**Table 3 Annual exposure rates to BBP by job title from the Canadian Needle Stick Surveillance Network for Fiscal Year April 1, 2000 to March 31, 2001**

Source: *Needle Stick Injuries*, [http://www.ccohs.ca/oshanswers/diseases/needlestick\\_injuries.html](http://www.ccohs.ca/oshanswers/diseases/needlestick_injuries.html), OSH, Canadian Centre for Occupational Health and Safety (CCOHS), 2005. Reproduced with the permission of CCOHS, 2010.

## Exposure Prone Procedures (EPP)

According to Health Canada [30], a new Canadian definition for the term "exposure-prone procedures" is used for the purpose of managing the risk of blood-borne pathogens in Canada.

EPP are defined as procedures during which transmission of HBV, HCV or HIV from a HCW to patient is most likely to occur and include:

- a. digital palpation of a needle tip in a body cavity (a hollow space within the body or one of its organs) or the simultaneous presence of the HCW's fingers and a needle or other sharp instrument or object in a blind or highly confined anatomic site, e.g. during major abdominal, cardiothoracic, vaginal and/or orthopedic operations, or
- b. repair of major traumatic injuries, or
- c. major cutting or removal of any oral or perioral tissue, including tooth structures, during which there is a potential for the patient's open tissues to be exposed to the blood of an injured HCW.

(Source Exposure Prone Procedures Definition: Public Health Agency of Canada, 1998. Reproduced with the permission of the Minister of Public Works and Government Services Canada, 2010©.)

In their 2010 guideline for the management of HCWs infected with BBP, the Society for Healthcare Epidemiology of America (SHEA) outline categories of “at risk” procedures which are based on the risk of transmission from HCW to patient rather than the broader definition of EPP.

Table 4 Categorization of Healthcare-Associated Procedures According to Level of Risk for Blood-Borne Pathogen Transmission

**Category I: Procedures with de minimis risk of blood-borne virus transmission**

- Regular history-taking and/or physical or dental examinations, including gloved oral examination with a mirror and/or tongue depressor and/or dental explorer and periodontal probe
- Routine dental preventive procedures (eg, application of sealants or topical fluoride or administration of prophylaxis<sup>a</sup>), diagnostic procedures, orthodontic procedures, prosthetic procedures (eg, denture fabrication), cosmetic procedures (eg, bleaching) not requiring local anesthesia
- Routine rectal or vaginal examination
- Minor surface suturing
- Elective peripheral phlebotomy<sup>b</sup>
- Lower gastrointestinal tract endoscopic examinations and procedures, such as sigmoidoscopy and colonoscopy
- Hands-off supervision during surgical procedures and computer-aided remote or robotic surgical procedures
- Psychiatric evaluations<sup>c</sup>

**Category II: Procedures for which blood-borne virus transmission is theoretically possible but unlikely**

- Locally anesthetized ophthalmologic surgery
- Locally anesthetized operative, prosthetic, and endodontic dental procedures
- Periodontal scaling and root planing<sup>a</sup>
- Minor oral surgical procedures (eg, simple tooth extraction [ie, not requiring excess force], soft tissue flap or sectioning, minor soft tissue biopsy, or incision and drainage of an accessible abscess)
- Minor local procedures (eg, skin excision, abscess drainage, biopsy, and use of laser) under local anesthesia (often under bloodless conditions)
- Percutaneous cardiac procedures (eg, angiography and catheterization)
- Percutaneous and other minor orthopedic procedures
- Subcutaneous pacemaker implantation
- Bronchoscopy
- Insertion and maintenance of epidural and spinal anesthesia lines
- Minor gynecological procedures (eg, dilatation and curettage, suction abortion, colposcopy, insertion and removal of contraceptive devices and implants, and collection of ova)
- Male urological procedures (excluding transabdominal intrapelvic procedures)
- Upper gastrointestinal tract endoscopic procedures
- Minor vascular procedures (eg, embolectomy and vein stripping)
- Amputations, including major limbs (eg, hemipelvectomy and amputation of legs or arms) and minor amputations (eg, amputations of fingers, toes, hands, or feet)
- Breast augmentation or reduction
- Minimum-exposure plastic surgical procedures (eg, liposuction, minor skin resection for reshaping, face lift, brow lift, blepharoplasty, and otoplasty)
- Total and subtotal thyroidectomy and/or biopsy
- Endoscopic ear, nose, and throat surgery and simple ear and nasal procedures (eg, stapedectomy or stapedotomy, and insertion of tympanostomy tubes)
- Ophthalmic surgery
- Assistance with an uncomplicated vaginal delivery<sup>e</sup>
- Laparoscopic procedures
- Thoracoscopic procedures<sup>f</sup>
- Nasal endoscopic procedures<sup>g</sup>
- Routine arthroscopic procedures<sup>h</sup>
- Plastic surgery<sup>i</sup>
- Insertion of, maintenance of, and drug administration into arterial and central venous lines
- Endotracheal intubation and use of laryngeal mask
- Obtainment and use of venous and arterial access devices that occur under complete antiseptic technique, using universal precautions, “no-sharp” technique, and newly gloved hands

**Category III: Procedures for which there is definite risk of blood-borne virus transmission or that have been classified previously as “exposure-prone”**

- General surgery, including nephrectomy, small bowel resection, cholecystectomy, subtotal thyroidectomy other elective open abdominal surgery
- General oral surgery, including surgical extractions,<sup>a</sup> hard and soft tissue biopsy (if more extensive and/or having difficult access for suturing), apicoectomy, root amputation, gingivectomy, periodontal curettage, mucogingival and osseous surgery, alveoplasty or alveoectomy, and endosseous implant surgery
- Cardiothoracic surgery, including valve replacement, coronary artery bypass grafting, other bypass surgery, heart transplantation, repair of congenital heart defects, thymectomy, and open-lung biopsy
- Open extensive head and neck surgery involving bones, including oncological procedures
- Neurosurgery, including craniotomy, other intracranial procedures, and open-spine surgery
- Nonelective procedures performed in the emergency department, including open resuscitation efforts, deep suturing to arrest hemorrhage, and internal cardiac massage
- Obstetrical/gynecological surgery, including cesarean delivery, hysterectomy, forceps delivery, episiotomy, cone biopsy, and ovarian cyst removal, and other transvaginal obstetrical and gynecological procedures involving hand-guided sharps
- Orthopedic procedures, including total knee arthroplasty, total hip arthroplasty, major joint replacement surgery, open spine surgery, and open pelvic surgery
- Extensive plastic surgery, including extensive cosmetic procedures (eg, abdominoplasty and thoracoplasty)
- Transplantation surgery (except skin and corneal transplantation)
- Trauma surgery, including open head injuries, facial and jaw fracture reductions, extensive soft-tissue trauma, and ophthalmic trauma
- Interactions with patients in situations during which the risk of the patient biting the physician is significant; for example, interactions with violent patients or patients experiencing an epileptic seizure
- Any open surgical procedure with a duration of more than 3 hours, probably necessitating glove change

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Note: Modified from Reitsma et al Infected physicians and invasive procedures: safe practice management. *Clin Infect Dis* 2005; 40:1665–1672.

<sup>a</sup> Does not include subgingival scaling with hand instrumentation.

<sup>b</sup> If done emergently (eg, during acute trauma or resuscitation efforts), peripheral phlebotomy is classified as Category III.

<sup>c</sup> If there is no risk present of biting or of otherwise violent patients.

<sup>d</sup> Use of an ultrasonic device for scaling and root planing would greatly reduce or eliminate the risk for percutaneous injury to the provider. If significant physical force with hand instrumentation is anticipated to be necessary, scaling and root planing and other Class II procedures could be reasonably classified as Category III.

<sup>e</sup> Making and suturing an episiotomy is classified as Category III.

<sup>f</sup> If unexpected circumstances require moving to an open procedure (eg, laparotomy or thoracotomy), some of these procedures will be classified as Category III.

<sup>g</sup> If moving to an open procedure is required, these procedures will be classified as Category III.

<sup>h</sup> If opening a joint is indicated and/or use of power instruments (eg, drills) is necessary, this procedure is classified as Category III.

i A procedure involving bones, major vasculature, and/or deep body cavities will be classified as Category III.

j Removal of an erupted or non-erupted tooth requiring elevation of a mucoperiosteal flap, removal of bone, or sectioning of tooth and suturing if needed.

**Table 4 Categorization of Healthcare-Associated Procedures According to Level of Risk for Blood-Borne Pathogen Transmission**

Source: Henderson 2010, used with permission.

## Orthopedic Surgery

The use of high powered tools, the presence of sharp bone and working in closed spaces where sharp bone and instruments may be present, places orthopedic surgeons at high risk of both splash and percutaneous exposure to blood and body fluids/materials. There is ample evidence to suggest that orthopedists should enlist multiple forms of personal protective equipment during surgery to adequately protect themselves and their patients [1-5, 13, 20, 31, 35-46]. The evidence in the current literature supports the following recommendations for equipment and techniques to reduce exposures:

- Strict adherence to universal precautions and consideration that every patient may be infected
- Waterproof gowns
- Double gloving (minimally the double glove has been shown to afford ample protection for most practitioners however the use of a glove liner or outer orthopedic glove or the use of gloves containing disinfectant have been shown to provide additional protection). For longer procedures or those involving sharp fragments, outer gloves should be changed frequently.
- Retractable syringes
- Blunt suture needles
- Hands free or neutral sharps zones
- Full face shields including coverage of sides of face
- Specific respiratory protection (in some cases)
- Immunization against HBV

Given that there is a degree of risk, it is recommended that all practitioners carry some form of income protection insurance. Students and Residents have been shown to be at a higher risk

for exposure to BBF [34]. While varying by jurisdiction, Students and Residents are often afforded occupational coverage via the Workers Compensation System; however, this coverage is limited to a percentage of salary and only the earning power at the time of injury or occupational illness and does not cover the potential income to be enjoyed by them as a fully licensed practitioner (Holly Penner, Legal Counsel, Worker's Compensation Board of Manitoba, John Van Massenhoven, Legal Counsel, Winnipeg Regional Health Authority; Sheila Smith, Administrator Student Affairs, U of M, Personal Communication). Therefore it is recommended that Students and Residents supplement their coverage with other forms of insurance.

For more experienced practitioners, it is also recommended that they carry some form of disability insurance such as that offered by the respective provincial medical associations (Appendix A) and that they work with insurers to maintain coverage that reflects current income levels (Gord Brennan, Marketing Representative, Doctors Manitoba; Glenna Murray, Insurance Programs Coordinator, Doctors Manitoba, Personal Communication).

## **Post Exposure Protocols**

It is probable that over the course of a career in orthopedic surgery a physician will have at least one to many exposures to blood and body fluids. When protective equipment fails, accessing and following post exposure protocols is recommended. These are typically accessible at occupational health units and emergency departments to provide testing and begin treatment if necessary. These protocols are designed to be universal to all HCWs and although may be designed with the employee in mind, they are encouraged for physicians as well (Diane Gantzel, Regional Director, Occupational Health and Safety, Winnipeg Regional Health Authority, Personal Communication).

Protocols for exposure to HIV, HBV and HCV are specific and the details of each are beyond the scope of this document however two samples of protocols and care plans are provided in Appendix B.

The critical elements of PEPs are: Consent, Expedious Testing and Treatment, Counseling, and Follow-up. Utilization of PEP to reduce the chances of seroconversion is important however could be viewed as potentially punitive depending on the handling of information related to the exposure. Sensitivity and confidentiality are of utmost importance in handling of exposure related information for both HCWs and patients [8, 15]. HCWs must

remember that when they initiate PEP, they are now a patient and their privacy and personal health information is protected by applicable privacy legislation and policy.

## **Routine Testing**

Routine testing of HCWs for BBP has been discussed in the literature [6-8, 14, 17, 27-31, 47-48]. The costs and infrastructure required for a mandated testing regime is argued to have little if any detectable effect on the risk to patients [47]. Once again, because risks are low and providers are already ethically obliged to ensure the safety of their patients, the costs of mandating routine testing do not seem warranted. However given that rapid testing is available for HIV and with education the stigma around the illnesses will continue to lessen, there may be a time where routine testing of all patients and HCWs becomes common place in Canada. However there remain many ethical and moral considerations around implementing routine testing. One of those considerations is that of pre and post test counseling, while another is adequate follow-up care [16, 22, 49]. In order to undertake routine testing in Canada, and support the subsequent treatment regimes, the health care system may need to establish greater infrastructure support for laboratories as well as increased counseling services. Counseling services are recommended whether testing is positive or not, therefore pre-test counseling services would be recommended according to Health Canada [22]. It could be argued that a private health care system such as that in the USA could be more responsive to increased workloads and costs associated with routine testing. A further circular argument can be made that to preserve the Canadian health care workforce, routine testing should be implemented. Ultimately this decision would have a requirement to consider cost versus benefit inclusive of scientific evidence and moral/ethical costs. Several studies have examined the cost effectiveness and public health benefits of “opt out” routine screening for HIV in the USA based on the 2006 CDC guidelines [48, 50-54]. Although these authors have reported cost effectiveness of HIV screening even in areas of low incidence, there is little discussion in these articles of the ethical issues of testing. The World Health Organization (WHO) does not advocate mandatory testing of patients or providers but does suggest (for HIV at least) that provider initiated discussions to encourage testing are useful and effective [49].

Screening of patients having high risk factors for HBV/HCV is common in Canada. There have been few studies specifically examining routine screening for HBV and others

looking at the role of universal versus targeted immunization for HBV [24, 55-59]. Screening has been addressed in the context of blood donations for HCV [60-61]. A single study validated the predictive ability of a screening questionnaire to determine infection with BBP in company employees and reduce costs associated with routine employment screening blood tests [59]. The findings from Sypsa and Hadjipaschali showed that employees having 2 or more risk factors as identified on the screening questionnaire were predicted to be HCV positive 100% of the time, as confirmed by blood test. However, the specificity of the screening questionnaire was not very high, but this study does point to a potential role for screening questionnaires given greater refinement. Further investigation of the predictive ability of similar questionnaire based screening techniques in patients would be warranted as an adjunct to the concept of routine blood testing.

A caution with routine testing of both the patient and the surgeon is the inherent risk of false negative and false positive test results due to the inaccuracy of assays used. Particularly in large scale screenings there needs to be a relative degree of confidence with the pre-test probability to ensure that the rate of false negatives and false positive results is less than the overall derived benefit of testing. There is some evidence to suggest that this is not yet the case for HIV, HBV or HCV [8].

Another consideration in regard to patient testing is around that which happens after an occupational exposure. Patient consent is required for testing for BBP. In the case of occupational exposures during surgery, most situations are such that HCWs must wait until patients regain consciousness after a procedure to discuss the situation and obtain consent. Given that PEP shows best results when initiated early after exposure, this process can be inconvenient and have potential negative health outcomes. Tansley and Beresford argue that it makes sense to acquire consent to test for BBP proactively in elective or planned cases [6]. This concept suggests that consent is sought from all patients having elective or planned procedures before the procedure so in the event of an occupational exposure there is no waiting for the patient to regain consciousness before testing is undertaken. This reduces waiting time for post exposure testing, could optimize the use of post exposure protocols and minimize unnecessary adverse affects of post exposure medications [6]. This method also provides an opportunity for better test related counseling than what might otherwise be done in a rushed post exposure

circumstance. The practice of proactive consent is used in the Winnipeg Regional Health Authority, forming part of the surgical consent (Appendix C).

Patient optimization (e.g. treatment to drop viral titers) prior to surgery is an adjunctive reason that routine screening be considered. In high risk groups it could be deemed relevant to ask patients about their status prior to procedures not only from safety perspective but also from a patient optimization perspective. Although the literature in this area is limited from the past 10 years, there is some evidence to suggest that ensuring patients are as healthy as possible prior to an intervention is important for a good outcome [62-67]. This is particularly easy to facilitate in elective cases however, the issue of medical optimization of emergency patients becomes more difficult and is not addressed here.

Simply considering every patient as infected, with strict application of universal precautions is the basic recommendation to be gleaned on this topic however, there may be benefit in further evaluation of pre-procedure consent for testing in the event of an exposure or pre-procedure screening of patients as is done for antibiotic resistant organisms, particularly when testing becomes faster and more accurate on a large scale. Further consideration of routine screening is most likely on the horizon for Canada. At such time attention to confidentiality will remain of utmost importance.

## Knowledge of Serological Status

It is very clear in both the Hippocratic Oath and in the CMA Code of Ethics that it is both the ethical and moral duty of a physician to know his or her serological status in regards to BBP [6, 8, 11, 27-31, 47, 68-74]. All documents reviewed on this topic are of consensus on this matter. There is also a general theme that testing need not be mandatory except where there has been an exposure to a pathogen to which the HCW is not immune and, to remain abreast of one's current immune status against HBV. It is recommended that regular testing be done **post exposure and** at intervals determined by an appropriately trained health care provider as it is medically, ethically and morally required [8, 24, 28, 30].

Given that routine mandatory testing of physicians or other HCWs is **not** currently advocated in the literature, it is the responsibility of the HCW to monitor his or her own status as often as risks encountered dictate or as required by their respective regulatory bodies. Given that HBV has been shown to transmit from patient to provider without recollection of an exposure,

that the virus can survive on inanimate surfaces for a minimum of 7 days, and has the highest rates of transmission, it is prudent that all HCW undertake the full course of immunization and subsequent testing and follow-up to endeavor to be immunized against it [7-8].

According to the UN/WHO and Health Canada there are certain ethical aspects to testing that must be considered for both patients and providers. These are summarized in Table 5 [49].

<p><b>Table 5 ENSURING A RIGHTS-BASED APPROACH TO TESTING FOR HIV</b></p> <p>The global scaling up of the response to AIDS, particularly in relation to HIV testing as a prerequisite to expanded access to treatment, must be grounded in sound public health practice and also respect, protection, and fulfillment of human rights norms and standards.</p> <p>The voluntariness of testing must remain at the heart of all HIV policies and programs, both to comply with human rights principles and to ensure sustained public health benefits. The following key factors, which are mutually reinforcing, should be addressed simultaneously:</p> <ol style="list-style-type: none"><li>1. Ensuring an <i>ethical process for conducting the testing</i>, including defining the purpose of the test and benefits to individuals being tested; and assurances of linkages between the site where the test is conducted and relevant treatment, care and other services, in an environment that guarantees confidentiality of all medical information;</li><li>2. Addressing the <i>implications of a positive test result</i>, including on discrimination and access to sustainable treatment and care for people who test positive;</li><li>3. Reducing <i>HIV/AIDS-related stigma and discrimination</i> at all levels, notably within health care settings;</li><li>4. Ensuring a supportive <i>legal and policy framework</i> within which the response is scaled up, including safeguarding the human rights of people seeking services;</li><li>5. Ensuring that the <i>health care infrastructure</i> is adequate to address the above issues and that there are sufficient trained staff in the face of increased demand for testing, treatment, and related services.</li></ol>
--

**Table 5 Principles of Ethical Testing for HIV from UNAIDS Global Reference Group on HIV/AIDS and Human Rights,**

Source: Public Health Agency of Canada, 2004. Reproduced with the permission of the Minister of Public Works and Government Services Canada, 2010©.

## ***Testing Positive***

Upon discovering a positive serological status, it is the responsibility of the HCW to undergo appropriate and up to date medical management of their condition. With advances in medical therapy, HIV can be well managed and viral titres lowered so that risk of transmission is negligible and the health of the infected person can be optimized [8]. In the case of HBV, where an individual is not immune, post exposure management has been shown to have a 90% success rate in preventing illness [7-8]. For HCV, new treatments and subsequent reports in the literature offer evidence as to the potential curability of HCV infection [7-8, 14](Myrna Childs, Occupational and Environmental Safety & Health (OESH) Winnipeg Regional Health Authority, Health Sciences Centre Site, Personal Communication).

Many reports published in the past two decades recommend that regulatory bodies establish **arm's length** advisory or expert panels to assist in guiding the practice of infected HCWs. Depending on the nature of the practice, the health and viral load of the practitioner and, the competency with application of universal precautions, the practice of an infected HCW may only need to be temporarily or partially restricted [8, 27, 29-31, 69]. The recently published (2010) guideline and review of the literature by Henderson for SHEA follows a format familiar to physicians in that its recommendations are supported by levels of evidence such as that presented in the well known CHEST Guidelines for the Prevention of Venous Thromboembolism [75]. For regulatory bodies and expert advisory panels the SHEA guideline [8], among other literature resources [8, 11, 13, 27-32, 41, 45, 69, 71], provide recommendations and evidence to assist in developing policy and guiding practice for infected HCWs.

The ultimate service to HCWs, patients and the health care system is achieved by the collaborative work of an objective, informed panel of experts in fields relevant to the circumstances of the practitioner along with the treating physician, to determine the capability of the practitioner, subsequently making recommendations for practice accommodations to regulatory bodies. In this process, upholding privacy and confidentiality of both the practitioner and the nature of the infective pathogen is recommended and necessary to minimize infringement upon human rights. The most recent CMA policy statement on this matter provides a good description of the basic roles and responsibilities of panels and advisory experts [28]. It

is the responsibility of the affected practitioner to ensure he or she is in compliance with the policies of the regulatory body, recommendations of the treating physician and advisory panels where required. It is the responsibility of regulatory bodies to be informed of and act in accordance with the best available scientific evidence, remembering ethical and medico-legal considerations. This is in the best interest of both the public and the HCW.

## **Disclosure**

Arguments for and against disclosure of infection status of HCWs to patients exist in the literature [8, 11, 27, 29-31, 73-74]. Arguments for disclosure cite the ability of the patient to make an informed choice based on all of the material risks associated with a procedure. It is cited that court cases in the USA have tended to favor that patients need to know all risks to make an informed choice [11]. However arguments against disclosure aptly cite 2 main points: first is the establishment of material risk. Consensus does not exist as to whether the remote risk of transmission of a blood borne pathogen constitutes material risk. Certainly it would depend on a number of factors including the health of the practitioner, the health of the patient, the procedure being done, among other factors. However disclosure of serological status to patients does inarguably result in risk to the livelihood of the practitioner and an infringement on the right to privacy without ultimately affecting the potential for risk of transmission. The general recommendation from most of the literature is that disclosure should NOT be mandatory. In the event that there is higher than average risks to the patient, then practice modifications may be a preferable alternative to disclosure.

At this time in health care, there is insufficient public knowledge of and ongoing public education about BBP to achieve a good understanding of the risks of, treatments for and sequelae of illnesses caused by BBP. It would be prudent for many reasons for health systems to prioritize mass public education about these illnesses to improve prevention and reduce stigmatization [24]. In the absence of this effort and sufficient counseling services, mandated disclosure may result in unfounded fears about patient safety.

## **Accommodation of HCWs**

For employees of health systems in Canada there are a number of mechanisms in place to enable accommodation in the event of disability or restricted practice, especially in relation to

occupationally acquired health issues. All employees including resident trainees are covered by Worker's Compensation legislation and the majority by union contracts and employer supported disability insurance plans. Trainees such as medical students, while not employees, are normally still protected under Worker's Compensation legislation. However, in this particular circumstance, the impact of an occupationally acquired infection with a BBP would most likely result in an alteration in career choice and potentially truncated earning potential for such a trainee. In this regard, standard coverage may not be sufficient for trainees and supplementary coverage should be considered.

For fee for service or contractual practitioners; as with all other self-employed individuals in Canada, the onus is on the individual to establish and employ their own income protection strategies using whatever mechanism best suits their circumstances. The options are ranging but include strategies such as critical illness insurance, disability insurance, Worker's Compensation or income and overhead protection plans. In Canada, all provincial medical associations offer very comprehensive and affordable disability insurance plans designed specifically for physicians and do offer coverage in the event of an inability to practice due to infection with a BBP or loss of income related to diagnosis with a BBP. It is recommended that all trainees and physicians become educated about their options and choose coverage that suits their situation, including increasing coverage adjustments as income progresses. An example of a provincial disability plan summary is included in Appendix A.

It has been suggested that the Health Ministries may have an obligation to accommodate, retrain or compensate practitioners who are fully or partially disabled by infection [28]. Although physicians are, for the most part, self-employed and responsible for protecting their incomes from such unfortunate crisis, they are unable, ethically, to mitigate their risk by choosing not to treat high risk individuals. As new BBPs are discovered, accumulated risks continue to rise often without a compensatory rise in the remuneration for care. The resulting question that arises is whether society and the Ministries of Health have an obligation to the HCW in the event of contracting an occupational illness? In other words, should they share 'the increased cost of doing business' with the individuals at greatest risk financially, the practitioners?

The regulatory bodies have an obligation to work with the HCW to manage practice restrictions so advised by a local/college, provincial or federally established arm's length expert

panel. The expert panel's role is to work with the infected practitioner and their personal physician to ensure optimal care and adherence to suggested practice revisions [8, 30] as well as advising the college of the practice restrictions and adherence to same. Expert panels should endeavor to engage HCWs in a contractual relationship regarding adherence to their recommendation as suggested in Henderson 2010 including a sample contract [8].

## Conclusions

Based upon the nature of the work of orthopedic surgery, the inherent risks of the profession, along with their obligations under the Hippocratic Oath and the Code of Ethics, it is important for practitioners not only to care for the patients entrusted to them but in so doing to care for themselves. This care extends to many areas including:

- 1) Maintaining knowledge of occupational hazards and risks; keeping abreast of the scientific evidence around risks to which they are exposed.
- 2) Preventing and mitigating those risks; seek immunization, and strictly employing proper protective equipment and universal precautions.
- 3) Acting on an exposure event; following post exposure protocols.
- 4) Being aware of the risks imposed on patients; being aware of one's own serological status.
- 5) Maintaining an optimal level of health; following healthy lifestyle practices and when required seeking advice of care providers and advisory panels.
- 6) Acknowledging when their health is such that it may affect the ability to care for patients; declaring when they need help and accepting it.
- 7) Complying with regulations of the authorities with and for whom they work; including recommendations of advisory panels in regard to practice accommodations.
- 8) Proactively work with regulatory bodies and other authorities to establish policy in keeping with just and ethical considerations for all parties and based upon the latest scientific evidence.

Although occupational infection with HIV, HBV and HCV can pose serious consequences to the health and well being of individuals, either HCW or patient; the risk of transmission is small, particularly from provider to patient when all necessary precautions are implemented.

# Appendix A – Sample Disability Insurance Policy Terms for HIV, HBV and HCV

## SECTION 3: HIV AND HEPATITIS B AND C BENEFIT

Subject to the terms and conditions set out in this Policy, should an Insured Member, while his/her insurance is in force, for the first time ever test positive for the Human Immunodeficiency Virus (HIV) or is determined to be a carrier of the Hepatitis B or Hepatitis C Virus (acute Viral Hepatitis) and who is in an asymptomatic infectious state, he/she will be considered eligible for Partial Disability Benefits as set out in this Section, notwithstanding the fact that the Insured Member is neither Totally Disabled nor Partially Disabled, as defined. Student Members are not eligible for any of the benefits set out in this Section 3.

### 3.1 Eligibility for the HIV/HEP B and C Benefit

An Insured Member shall be considered eligible for the HIV/HEP B and C benefit if, before attaining age 65, an Insured Member suffers one of the conditions insured under this Section 3, and such condition:

- a) is required to be disclosed to the Insured Member's patients by regulations approved by an appropriate governmental authority or hospital board or an applicable medical regulatory body or licensing authority; and/or
- b) results in a limitation of the Insured Member's practice of medicine as a consequence of regulations approved by an appropriate governmental authority or hospital board or an applicable medical regulatory body or licensing authority; and

as a consequence of either or both of the situations described in paragraphs a) and b), the Insured Member suffers a loss of 20% or more of his/her Pre-Disability Average Monthly Earned Income for the period before: the date the condition was disclosed as provided in paragraph a); and/or his/her practice of medicine was limited as provided in paragraph b).

### 3.2 Amount of Benefit

If the circumstances described in subsection 3.1 apply, the Company will pay a Partial Disability Benefit as determined in subsection 2.9(b).

### 3.3 Disclosure

Nothing in this provision requires the Insured Member to make public his/her infectious state.

### 3.4 Rehabilitation

Where applicable, the Rehabilitation provision of this Policy may be used to assist the Insured Member to train in a new occupation or specialty.

### 3.5 Termination of Benefit Payments

Monthly Income Benefit payments shall terminate on the earliest of:

- a) the date as of which the Insured Member is determined to have recovered from the infectious state;
- b) the date the Insured Member no longer suffers a loss of Pre-Disability Average Monthly Earned Income of at least 20%;

- 
- c) the date the Insured Member becomes entitled to Total Disability or Partial Disability benefits, as defined, and in accordance with the other provisions of this Policy;
  - d) the date the Insured Member is Attained Age 65;
  - e) the date of death of the Insured Member; or
  - f) the date the Insured Member fails to furnish satisfactory medical or financial evidence as requested by the Company.

---

2.8 Benefit Payments

Benefits shall be paid at the end of the month for which it is due, and in respect of any period of Disability of less than one month, shall be at a daily rate of one-thirtieth (1/30th) the monthly rate.

2.9 Monthly Income Benefit

- a) The amount of benefit payable to an Insured Member in the event of Total Disability is equal to \$100 times the number of Units for which the Insured Member is insured, in accordance with the terms and conditions set out in this Policy.
- b) The amount of benefit payable to an Insured Member in the event of Partial Disability shall be determined using the formula:

$$\frac{\text{Pre-Disability Average Monthly Earned Income} - \text{Partial Disability Benefit}}{\text{Pre-Disability Average Monthly Earned Income}} \times \text{Total Disability Benefit} = \text{Partial Disability Benefit}$$

in accordance with the terms and conditions set out in this Policy.

Notwithstanding the foregoing provisions, Partial Disability Benefits will end once the Insured Member's monthly Earned Income is greater than 80% of the Insured Member's Pre-Disability Average Monthly Earned Income.

Wherever used in this Policy hereinafter, Monthly Income Benefit shall include Partial Disability Benefit.

2.10 Earned Income During Partial Disability

If the Insured Member's Earned Income during Partial Disability is less than 20% of Pre-Disability Average Monthly Earned Income, then the Insured Member's Earned Income during Partial Disability shall be considered zero.

2.11 All Source Maximum Benefit Provision

Where the Monthly Income Benefit payable hereunder, together with any Earned Income received while Disabled, and other loss of time benefits to which the Insured Member is entitled, results in total monthly income from all sources exceeding 100% of the Insured Member's Pre-Disability Average Monthly Earned Income, the Company will reduce the Monthly Income Benefit as provided hereunder by the amount of such excess.

Total monthly income from all sources includes:

- a) Earned Income received while Disabled, except where the Own Occupation Option Rider has been purchased;
- b) the benefit payable under this plan;
- c) other loss of time benefits; and
- d) any individual disability insurance held by the member.

## Appendix B – Post Exposure Protocol Samples

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Winnipeg Regional Health Authority    Office régional de la santé de Winnipeg  
*Caring for Health    À l'écoute de notre santé*

# Post-Exposure Prophylaxis (PEP) Initial Assessment Package

for use by Emergency / Urgent Care / Occupational Health Departments

See reverse side of this envelope for flow chart  
"Responsibilities of Initial Assessment Care Provider"

This package includes:

- FULL VERSION: Initial Assessment of Blood or Body Fluid Exposure Worksheet (W-00015)
- SUMMARY: Initial Assessment of Blood or Body Fluid Exposure and Action Plan Worksheet (W-00242)
- Blood or Body Fluid Exposure: Standard Orders (W-00007)
- Follow-Up Instructions and Advice for Exposed (W-00018)
- "What You Should Know if You Have Come into Contact with Blood or Body Fluids" brochure from Manitoba Health

## RESPONSIBILITIES OF INITIAL ASSESSMENT CARE PROVIDER

This flow chart is an overview of the steps to be followed by the **EMERGENCY / URGENT CARE / OCCUPATIONAL HEALTH** Department when assessing a blood or body fluid exposure.

### EXPOSURE TO BLOOD OR BODY FLUID

- TRIAGE:** as urgent (level 2 or 3) NOTE: Treatment may need to be initiated within 2 - 4 hours of exposure time
- PROVIDE:** urgent wound care
- ASSESS:** significance of exposure (shallow vs. deep; large vs. small, hollow vs. solid, etc.) and risk of infection transmission of the specific fluid involved in exposure
- REVIEW:** Blood or Body Fluid Exposure Source Risk Assessment Information
- DOCUMENT:**
  - triage assessment form
  - emergency documentation form / urgent care documentation form
  - Initial Assessment of Blood or Body Fluid Exposure Worksheet (full version) and/or
  - Initial Assessment of Blood or Body Fluid Exposure and Action Plan (summary)
  - Blood or Body Fluid Exposure: Standard Orders form
- COUNSEL:** Exposed re: significance of exposure for infection risk and need for treatment
- ADMINISTER:** PEP medications as determined in assessment
- ARRANGE:** testing of source (For non-occupational exposures, see Initial Assessment Worksheet Sections 21 and 32)
- SEND:** Exposed's blood for testing (See Initial Assessment Worksheet Section 32 for detailed instructions regarding Nominal and Non-nominal testing options)
- COMPLETE:** Follow-up Instructions and Advice for Exposed form
- GIVE TO EXPOSED:**
  - 1) Follow-up Instructions and Advice for Exposed
  - 2) Manitoba Health brochure "What You Should Know if You have Come into Contact with Blood or Body Fluids"
- FAX:** Copies of forms to the follow-up care provider, including:
  - Triage Assessment
  - Emergency Documentation / Urgent Care Documentation
  - Initial Assessment of Blood or Body Fluid Exposure Worksheet (full version) and/or
  - Initial Assessment of Blood or Body Fluid Exposure and Action Plan (summary)
  - Blood or Body Fluid Exposure: Standard Orders form



## Information for Supervisor of Unit Where Blood or Body Fluid Exposure Occurred

A health care worker on your unit has been exposed to blood or body fluids. Treatment must be started within 2 to 4 hours to prevent possible disease transmission. You must complete the following steps immediately:

### Step 1 Complete Blood or Body Fluid Exposure Source Risk Assessment Form

Obtain consent from the source (consent form is in this envelope) and complete the Blood or Body Fluid Exposure Source Risk Assessment Form in this envelope. If the source is unable to cooperate or refuses, or if the identity of the source is not known, go directly to step 2.

### Step 2 Send Exposed for Assessment

- If the exposure occurs when the Occupational Health Nurse is immediately available, consult with her/him to discuss who will provide immediate assessment of the exposed.
- If the exposure occurs when the Occupational Health Nurse is not available, send the worker to Emergency/Urgent Care for assessment and treatment. If possible, the yellow copy of the completed Blood or Body Fluid Exposure Source Risk Assessment Form should be placed in a sealed envelope marked "Confidential" and sent with the exposed to the assessment.
- If it will take more than 30 minutes to complete the Source Risk Assessment Form, send the worker immediately for assessment, and deliver the yellow copy of the completed Source Risk Assessment Form to the exposed's assessment interview as soon as possible. If the assessment interview is over before the Source Risk Assessment Form is done, forward the yellow copy of this form to Occupational Health instead.

### Step 3 Arrange Source Testing

After obtaining consent from the source for HIV and Hepatitis testing, blood samples must be drawn and sent to Cadham Provincial Lab for testing. Weekend and holiday blood work will be done on the next business day and must be received before 08:30.

Source Testing Requisition Instructions (choose either Nominal or Non-nominal Testing)

- 1) **Nominal Testing** - use Cadham Provincial Lab requisition "Microbiology and Serology"
  - write source name in "PATIENT" section
  - request HB / HC / HIV testing on this one requisition
  - mark requisition "SOURCE - STAT"
  - document or stick one of the requisition numbers onto the Source's medical record
  - place a requisition sticker on the specimen tube and label specimen with source name, etc.
- OR 2) **Non-nominal Testing** - use Cadham Provincial Lab HIV-specific requisition to request HIV testing and label requisition with "Patient Code"
  - request HB / HC testing on Cadham Provincial Lab requisition "Microbiology and Serology" and label requisition with source name
  - Mark both requisitions as "SOURCE - STAT"
  - document or stick requisition numbers from each of the requisitions onto the Source's medical record
  - place a requisition sticker from each requisition onto their respective specimen tubes. Label one specimen with the Source's HIV Code and the second tube with the Source's name, etc.

WRHA Community Care (Home Care, Public Health, Primary Care and Mental Health) and Personal Care Homes (prop and non-prop) - call the WRHA Community IV Program (CIVP) to arrange source testing. Monday - Friday (0730 - 1600) call the Specialty Skills Coordinator at 938-5405 or at 938-5791. Evenings and weekends call WRHA after hours service at 940-3644. Nights (2330 - 0800) source testing is to be arranged for the next day.

### Step 4 Notify Occupational Health

If Occupational Health was not available (in Step 2 above), leave a voice mail message at their office (*see office phone numbers on reverse side of this envelope*) indicating the names of the exposed and source, contact information for exposed and a brief description of incident and follow-up done.

**SUMMARY:  
INITIAL ASSESSMENT OF BLOOD OR BODY  
FLUID EXPOSURE AND ACTION PLAN**

Full version of BBF Worksheet is included in this package for additional info

Exposed's Name: \_\_\_\_\_

DOB: \_\_\_\_\_

CPL Req. #'s: \_\_\_\_\_  
(Exposed's specimens)

Exposure Time:	Exposure Date:
a.m.	dd/mm/yyyy ____ / ____ / ____
p.m.	

**A. EVALUATION OF EXPOSURE**

Discuss the following details about the exposure with the Exposed:

- Type of fluid in exposure, and presence or absence of blood in the fluid \_\_\_\_\_  
*(refer to Section 2 in full version of BBF Worksheet)*
- Route of exposure: *(refer to Section 1 of full Worksheet)*
  - percutaneous  non-intact skin  human bite - broke the skin
  - mucous membrane  intact skin  human bite - did not break the skin
- Consider extent of exposure: *(refer to Section 3 of full Worksheet)*
  - volume of blood – evaluate gauge of needle, hollow vs. solid, estimate of amount of blood spilled or splashed
  - depth of injury/extent of exposure – superficial wound vs. deep; estimate size of area of non-intact skin or mucous membrane exposed
  - duration of exposure – availability of, and timing of initiation of first aid (bled, flushed, washed) or none done
- Review Source Information: *(refer to Sections 6, 23 and 24 of full Worksheet)*
  - Use Blood or Body Fluid Exposure Source Risk Assessment Form to evaluate level of risk in Source for each of the bloodborne pathogens.

NOTE: Mandatory testing of the source may be applicable under the "Testing of Bodily Fluids and Disclosure Act".

**B. FOLLOW-UP FOR EXPOSURES EVALUATED AS SIGNIFICANT FOR TRANSMISSION OF INFECTION**

**I. HIV**

SOURCE	EXPOSED
<i>(refer to Sections 7, 9, 10, 11 and 32 of full Worksheet)</i>	
<p><b>POSSIBLE SOURCE PRESENTATIONS:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 1. Source is known to be HIV infected →</li> <li><input type="checkbox"/> 2. Source's <b>current</b> HIV status is known to be <b>NEGATIVE</b> →</li> <li><input type="checkbox"/> 3. Source's HIV status is Unknown, <b>WITH</b> Risk Factors →</li> <li><input type="checkbox"/> 4. Source's HIV status is Unknown, <b>with NO</b> Risk Factors →</li> <li><input type="checkbox"/> 5. Source's HIV status is Unknown, <b>and unable to determine</b> Risk Factors →</li> <li><input type="checkbox"/> 6. Source's <b>identity</b> is known, but HIV status is Unknown, <b>AND Source refuses consent for testing</b> →</li> <li><input type="checkbox"/> 7. Source's <b>identity</b> is Unknown →</li> </ul>	<p><b>CARE TO PROVIDE TO EXPOSED:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Give Expanded Starter Kit; Commence 0-3-6 month bloodwork for anti-HIV and counseling</li> <li><input type="checkbox"/> Prophylaxis not required; no further follow-up required</li> <li><input type="checkbox"/> Give Basic Starter Kit; do baseline anti HIV bloodwork; await source test results</li> <li><input type="checkbox"/> Prophylaxis not required; await source test results</li> <li><input type="checkbox"/> If result is <b>POSITIVE</b>: Give Expanded/Extended Starter Kit. Consult ID. Review Source's history current viral load and genome. Commence 0-3-6 month bloodwork and counseling for worker. Forward case to follow-up care provider.</li> <li><input type="checkbox"/> If result is <b>NEGATIVE</b> and source not suspected to be in "window" period of infection No further follow-up required; discontinue Starter Kit if it was given on initial assessment.</li> <li><input type="checkbox"/> Consider details of exposure including route, extent and absence/presence of visible blood in exposure</li> <li><input type="checkbox"/> Evaluate any available information about Source</li> <li><input type="checkbox"/> Consider commencing Basic Starter Kit</li> <li><input type="checkbox"/> Test Source, after consent, for anti HIV</li> <li><input type="checkbox"/> Follow instructions in point 4 above regarding <b>POSITIVE</b> or <b>NEGATIVE</b> HIV result for Source</li> <li><input type="checkbox"/> Consider details of exposure including route, extent and absence/presence of visible blood in exposure</li> <li><input type="checkbox"/> Evaluate all available information about Source</li> <li><input type="checkbox"/> Consider commencing Basic Starter Kit</li> <li><input type="checkbox"/> Commence 0-3-6 month bloodwork for anti HIV and counseling for worker</li> <li><input type="checkbox"/> Prophylaxis generally not required, <b>but</b> must carefully consider <b>nature</b> of exposure, <b>circumstances</b> and <b>environment</b> where sharp had been abandoned or where BBF was encountered. <i>May</i> consider use of Basic Starter Kit and extend treatment to 28 days in certain situations.</li> </ul>
<p>Test Source after consent →</p>	

**II. HBV**

**SOURCE**

*(refer to Sections 8, 11, 12 and 13 and 22 of full Worksheet)*

**POSSIBLE SOURCE PRESENTATIONS:**

- 1. Source is known to be HBV infected  
Choose Exposed option **a), b), c)** or **d)**.
- 2. Source's HBV **status** is Unknown  
↓  
  - Test Source for HBsAg  
    - If result is **HBsAg POSITIVE**:  
Choose Exposed option **a), b), c)** or **d)**.
- 3. Source's **identity** is unknown  
Choose Exposed option **a), b), c)** or **d)**.

- 4. Source is **currently** known, or is found to be **HBsAg NEGATIVE** →  No follow-up required.

**EXPOSED**

**CARE TO PROVIDE TO EXPOSED:**

- Options for care for Exposed:
- a)** If the Exposed has completed HB vaccine series *and* is known to be anti HBs positive, no further follow-up is required for HBV.
  - OR**
  - b)** If the Exposed has had none, or an incomplete initial series of HB vaccine **OR** is known to have a non-protective level of antibodies, **give HBIG and HB vaccine.**
  - OR**
  - c)** If the Exposed has a completed series of HB vaccine but anti HBs status is not known, **and if blood results will be available in 24 - 48 hours**, send Exposed's blood for anti HBs testing and choose option **a)** or **b)** when anti HBs results are known.
  - OR**
  - d)** If Exposed has completed series of HB vaccine but anti HBs status is not known **and will not be available in 48 hours**, give HBIG and await results. Choose Exposed Option **a)** or **b)** when results available.

Test Exposed

**III. HCV**

**SOURCE**

*(refer to Section 11 and 14 of full Worksheet)*

**POSSIBLE SOURCE PRESENTATIONS:**

- 1. Source is known to be HCV infected →
- 2. Source's **current** HCV status is known to be **NEGATIVE** →
- 3. Source's HCV **status** is unknown  
↓  
  - Test Source for anti HCV →
    - If result is **POSITIVE**: Test Exposed for anti HCV at baseline; test for HCV-RNA for pcr at 3 months; test for anti HCV at 6 months.
    - If result is **NEGATIVE**: No further follow-up required.
- 4. Source's **identity** is unknown →

**EXPOSED**

**CARE TO PROVIDE TO EXPOSED:**

- Test Exposed for anti HCV at baseline; test for HCV RNA for pcr at 3 months; test for anti HCV at 6 months.
- No further follow-up required.
- Test Exposed for anti HCV at baseline and at 6 months.

**C. FAX BOTH SIDES OF THIS FORM TO FOLLOW-UP CARE PROVIDER**

Worksheet completed by: \_\_\_\_\_ Date: \_\_\_\_\_  
SIGNATURE  
 \_\_\_\_\_ Facility: \_\_\_\_\_  
PRINT NAME



Winnipeg Regional Health Authority    Office régional de la santé de Winnipeg  
*Caring for Health    À l'écoute de notre santé*

## POST-EXPOSURE TESTING OF SOURCE AND SOURCE RISK ASSESSMENT CONSENT FORM

I understand a health care worker has come in contact with my blood or body fluid.

I consent to:

- have HIV and Hepatitis blood tests performed on me .....  Yes  No
- provide information regarding my risk of having HIV or Hepatitis infection .....  Yes  No

I understand that my blood will be labelled with my name for all testing.

OR

I understand that my blood will be labelled with a code and without my name for the HIV test if I choose this option.

I understand that the exposed health care worker and their health care provider will be advised of my results and risk factors. This information is, otherwise, kept confidential from all others.

I am aware that my results will become part of my health care record and the Occupational Health record of the exposed health care worker.

If the results of my testing are significant, I would like my family doctor to be notified .....  Yes  No

My Family Doctor's name is: \_\_\_\_\_

Name of Clinic: \_\_\_\_\_

\_\_\_\_\_  
 PRINTED NAME OF SOURCE

\_\_\_\_\_  
 SIGNATURE OF SOURCE/LEGAL GUARDIAN

Check here if verbal consent is given instead of written consent

\_\_\_\_\_  
 PRINTED NAME OF PERSON WITNESSING CONSENT

\_\_\_\_\_  
 SIGNATURE OF PERSON WITNESSING CONSENT

\_\_\_\_\_  
 DATE

**NOTE: THIS CONSENT FORM IS TO BE KEPT ON THE SOURCE'S HEALTH RECORD**

### Information for Person Seeking Consent

The source should be counselled that this form is necessary for the Physician or Occupational Health Nurse to determine what action is needed to prevent the possible spread of HIV or Hepatitis to the exposed health care worker. The source should be advised that the information sought is personal and that it will be necessary to share it with the exposed and their health care provider. The source should be reassured that the information will be kept confidential from all others.

W-00006 07/09







## BLOOD OR BODY FLUID EXPOSURE STANDARD ORDERS

Weight: \_\_\_\_\_ kg Allergies \_\_\_\_\_  
Height (children): \_\_\_\_\_ cm

<p><b>HIV POST-EXPOSURE PROPHYLAXIS</b></p> <p>■ <i>Reminder:</i> reorder kits through Pharmacy to maintain your stock</p> <p>■ <b>TIPS for administering medications – see reverse</b></p> <p><b>ADULT REGIMENS</b></p> <p>■ <b>BASIC</b> (5 day starter kit)</p> <p><input type="checkbox"/> Combivir ONE tablet po BID (contains zidovudine 300 mg + lamivudine 150 mg)</p> <p><input type="checkbox"/> <b>EXPANDED</b> (administer in addition to the BASIC regimen)</p> <p><input type="checkbox"/> Kaletra TWO tablets po BID (each tab contains lopinavir 200 mg + ritonavir 50 mg)</p> <p><b>PEDIATRIC REGIMENS</b></p> <p>&lt; 50 kg - use pediatric dosages    ≥ 50 kg - use adult dosages</p> <p>See reverse for pediatric weight table with dosing recommendations</p> <p>■ For weight &lt; 20 kg: measure height = _____ cm calculate BSA = _____ m<sup>2</sup> (see reverse)</p> <p>■ <b>BASIC</b> (5-day starter kit) <i>Order both zidovudine and lamivudine for Basic Kit</i></p> <p><b>Zidovudine</b></p> <p><input type="checkbox"/> Zidovudine _____ capsules (100 mg each) po in A.M. <b>and</b> _____ capsules po at bedtime (~ 10 mg/kg/24h)</p> <p><input type="checkbox"/> Zidovudine _____ mL (10 mg/mL solution) po in A.M. <b>and</b> _____ mL po at bedtime (~ 10 mg/kg/24h)</p> <p><b>Lamivudine</b></p> <p><input type="checkbox"/> Lamivudine _____ tablets (150 mg each) po in A.M. <b>and</b> _____ tablets po at bedtime (~ 8 mg/kg/24h)</p> <p><input type="checkbox"/> Lamivudine _____ mL (10 mg/mL solution) po in A.M. <b>and</b> _____ mL po at bedtime (~ 8 mg/kg/24h)</p> <p><input type="checkbox"/> <b>EXPANDED</b> (administer in addition to the BASIC regimen)</p> <p>&lt; 30 kg    <input type="checkbox"/> Nelfinavir _____ tablets (250 mg each) po BID (~ 100 mg/kg/24h)</p> <p>30 - 49 kg    <input type="checkbox"/> Kaletra tablet _____ tablets po BID (~ 600 mg/m<sup>2</sup>/24h) (lopinavir 100 mg + ritonavir 25 mg per tablet)</p>	<p>ORDER TRANSCRIBED AND ACTIVATED</p> <p>TEST DONE</p>	<p style="text-align: center;"><b>Label Requisition</b> "STAT - EXPOSED" or "STAT - SOURCE"</p> <p><b>Bloodwork:</b></p> <p><input type="checkbox"/> anti-HBs, HBsAg</p> <p><input type="checkbox"/> anti-HCV</p> <p><input type="checkbox"/> Anti-HIV</p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p><b>HEPATITIS</b></p> <p>CADHAM LAB REQUISITION STICKER</p> </div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p><b>HIV</b></p> <p>CADHAM LAB REQUISITION: If applicable for non-nominal testing</p> </div> </div> <p><input type="checkbox"/> <b>Consult Infectious Diseases</b> (See Section 27 on Worksheet)</p> <ol style="list-style-type: none"> <li>pediatric cases</li> <li>cautions to medication use</li> <li>HIV+ source</li> <li>use of the expanded regimen</li> <li>exposure occurred &gt; 24 hrs ago</li> <li>acute retroviral syndrome diagnosis is entertained</li> <li>pregnancy - potential teratogenicity - consult before meds</li> <li>breast feeding</li> <li>the full 28-day course is considered</li> </ol> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p><b>do not delay commencing PEP meds when consulting</b></p> </div> <p><input type="checkbox"/> <b>Consult Public Health for Source Testing for Non-occupational Exposures</b></p> <p><b>Criteria for referral:</b></p> <ul style="list-style-type: none"> <li>significant exposure has occurred</li> <li>adequate identifying information (name/DOB or age)</li> <li>sufficient locating information (address/phone number)</li> </ul> <p><b>Regular hours: 940-2081 Monday - Friday 08:30 - 16:30</b> <b>After hours: 788-8666</b></p> <p><b>Select the Appropriate Follow-up Care Provider:</b> (see reverse for fax numbers)</p> <p><input type="checkbox"/> Occupational Health at the worker's facility.</p> <p><input type="checkbox"/> HSC Occupational Health (OESH) for WRHA Community health care workers, WRHA Personal Care Home workers, etc.</p> <p><input type="checkbox"/> Primary Care Clinic for non-occupational exposures _____</p> <p><input type="checkbox"/> Infectious Disease consultant _____</p> <p><input type="checkbox"/> Other: _____</p> <p>■ <b>FAX THE FOLLOWING FORMS TO THE SELECTED FOLLOW-UP CARE PROVIDER</b></p> <ol style="list-style-type: none"> <li>Triage Assessment</li> <li>Emergency Documentation / Urgent Care Documentation</li> <li>Initial Assessment of Blood or Body Fluid Exposure Worksheet (full version)</li> <li>Initial Assessment of Blood or Body Fluid Exposure and Action Plan (summary)</li> <li>Blood or Body Fluid Exposure: Standard Orders</li> </ol> <p>■ <b>After faxing the forms to the Follow-up Care Provider, detach Sections 5 and 17 from the Worksheet and dispose in confidential waste.</b></p> <p>Date &amp; Time faxed: _____ Unit Clerk signature: _____ Printed Name: _____</p>															
<p><b>HBV POST-EXPOSURE PROPHYLAXIS</b></p> <p><input type="checkbox"/> <b>Hepatitis B Immune Globulin (HBIG)</b> _____ mL IM dose 0.06 mL/kg, if &gt; 5 mL is required, round up to the nearest 0.5 mL (HBIG is supplied in 5, 1 and 0.5 mL vials)</p> <p><b>HBV VACCINE:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">ENGERIX-B</th> <th style="text-align: center;">RECOMBIVAX</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> adult</td> <td style="text-align: center;">1 mL IM</td> <td style="text-align: center;">1 mL IM</td> </tr> <tr> <td><input type="checkbox"/> 11 - 19 years</td> <td style="text-align: center;">0.5 mL IM</td> <td style="text-align: center;">0.5 mL IM</td> </tr> <tr> <td><input type="checkbox"/> &lt; 10 years</td> <td style="text-align: center;">0.5 mL IM</td> <td style="text-align: center;">0.25 mL IM</td> </tr> <tr> <td><input type="checkbox"/> immunocompromised and hemodialysis</td> <td style="text-align: center;">2 mL IM</td> <td style="text-align: center;">1 ** mL IM</td> </tr> </tbody> </table> <p style="text-align: right;">** dialysis formulation 40 micrograms/mL</p>		ENGERIX-B	RECOMBIVAX	<input type="checkbox"/> adult	1 mL IM	1 mL IM	<input type="checkbox"/> 11 - 19 years	0.5 mL IM	0.5 mL IM	<input type="checkbox"/> < 10 years	0.5 mL IM	0.25 mL IM	<input type="checkbox"/> immunocompromised and hemodialysis	2 mL IM	1 ** mL IM		
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<input type="checkbox"/> < 10 years	0.5 mL IM	0.25 mL IM															
<input type="checkbox"/> immunocompromised and hemodialysis	2 mL IM	1 ** mL IM															
<p>PHYSICIAN SIGNATURE _____ DATE _____</p>		<p>PHYSICIAN PRINTED NAME _____</p>															

### Guidelines for Use

- Standard orders are identified with a solid black box (■). These are initiated on all patients placed on the Care Map.
- To individualize the orders:
  - Check (✓) the order(s) you wish to activate, where empty boxes (□) are provided.
  - If not in agreement with the standard orders (defined with a solid black box) cross out and initial the order.
- The Standard Orders form is placed in the Physician Order Form section of the chart; a copy of the Standard Orders must be faxed to the Follow-up Care Provider

### Tips for Administering Anti-retroviral PEP Medications

#### Combivir®, lamivudine, zidovudine

- If the patient is unable to swallow the tablet or capsule, and (for children) does not want the liquid product:
  - empty the zidovudine capsule (wear gloves)
  - crush the Combivir® or lamivudine tablet (avoid inhaling powder)
  - Mix powder with apple sauce, water or juice

#### Kaletra® (strong, foul taste)

- tablet - swallow whole, do NOT chew or crush
  - if unable to swallow tablets whole, use nefinavir
  - may take with food

#### Nelfinavir (Viracept®)

- tablet - may take with food
  - may crush and mix with non-acidic foods or beverages (i.e. NO apple sauce, apple juice, orange juice – acidic foods create a bitter taste with nelfinavir)

### Follow-Up Fax Numbers

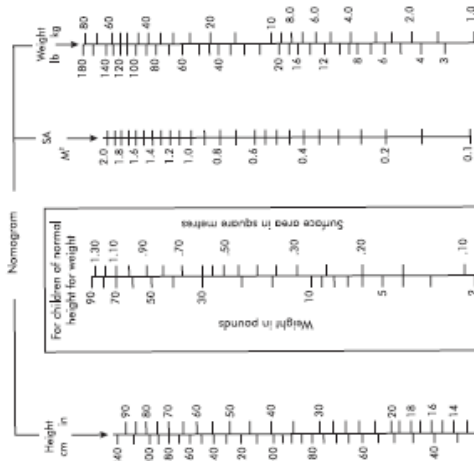
Health Sciences Centre Occupational Health (OESH) .....	787-1172
Misericordia Health Centre Occupational Health .....	774-2517
Concordia Hospital Occupational Health .....	661-7317
Grace General Hospital Occupational Health .....	837-2588
Seven Oaks General Hospital Occupational Health .....	694-0479
St. Boniface General Hospital Occupational Health .....	237-2041
Victoria General Hospital Occupational Health .....	477-3449
Deer Lodge Centre Occupational Health .....	831-2918
Riverview Health Centre Occupational Health .....	475-1572
St. Amant Occupational Health .....	258-7067
Primary Care:	
Health Action Centre .....	942-7828
Klinic .....	784-4013
Infectious Diseases:	
Children's .....	787-7086
St. Boniface General Hospital .....	233-7125
Health Sciences Centre .....	789-3956

### Pediatric HIV Post-Exposure Prophylaxis Regimens

(Dosage rounded for convenient measurement and administration)

PEDIATRIC KITS	BASIC (administer both drugs)		EXPANDED (choose one drug + BASIC)	
	ZIDOVUDINE	LAMIVUDINE	NELFINAVIR	KALETRA® 1,2
Preparation	Capsule: 100 mg Solution: 10 mg/mL	Tablet: 150 mg Solution: 10 mg/mL	Tablet: 250 mg	Tablet: (Lopinavir 100 mg + Ritonavir 25 mg per tablet)
Recommended Dose	10 mg/kg/24h po divided BID	8 mg/kg/24h po divided BID	100 mg/kg/24h po divided BID	600 mg/m <sup>2</sup> /24h po divided BID max. 800 mg/24h (based on lopinavir)
5 - 20 kg (~2 years of age)	360 mg/m <sup>2</sup> /24h po, divided BID use oral solution	8 mg/kg/24h po, divided BID use oral solution	round dose to nearest ½ tablet	—
20 - 29 kg	100 mg (1 cap or 10 mL) po BID	75 mg (½ tab or 7.5 mL) po BID	1250 mg (5 tablets) po BID	3 tabs po BID 2,3
30 - 39 kg	100 mg (1 cap or 10 mL) po in morning, PLUS 200 mg (2 caps or 20 mL) po at bedtime	75 mg (½ tab or 7.5 mL) po in morning PLUS 150 mg (1 tab or 15 mL) po at bedtime	1750 mg (7 tablets) po BID	4 tabs po BID 2,3
40 - 49 kg	200 mg (2 caps) po BID	150 mg (1 tab) po BID	—	4 tabs po BID 3
≥ 50 kg	Combivir 1 tablet po BID (use adult BASIC kit)	—	—	Use adult EXPANDED kit

- Kaletra Dosage: 300 mg po/dose BID for all weight ranges. Usual dosage adjusted to weight categories based on average BSA for weight.
- If unable to swallow Kaletra® tablets, use nelfinavir. Refer to TIPS for Administering Anti-retroviral Medications.
- Use lower strength Kaletra tablet (Lopinavir 100 mg + Ritonavir 25 mg)



### BODY SURFACE AREA (BSA):

For children of normal height and weight for age, use BSA value in box.  
For other children, place a straight edge from the patient's height in the left column to the weight in the right column. The point of intersection on the body surface area column indicates the BSA.

## FOLLOW-UP INSTRUCTIONS AND ADVICE FOR EXPOSED

**(EMERGENCY / URGENT CARE: COMPLETE AND GIVE THIS PAGE TO EXPOSED)**

### FOLLOW-UP Check (✓) the selected office for follow-up

**Contact the following and state that you are calling for post-exposure follow-up:**

**Occupational Health:**

- Health Sciences Centre Occupational Health ..... 787-3312
- Misericordia Health Centre Occupational Health ..... 788-8011
- Concordia Hospital Occupational Health ..... 661-7176
- Deer Lodge Centre Occupational Health ..... 831-2122
- Grace General Hospital Occupational Health ..... 837-0183
- Riverview Health Centre Occupational Health ..... 478-6860
- Seven Oaks General Hospital Occupational Health ..... 632-3280
- St. Boniface General Hospital Occupational Health ..... 237-2441
- Victoria General Hospital Occupational Health ..... 477-3322
- St. Amant Occupational Health ..... 256-4301

**Infectious Diseases:**

- Children's Infectious Diseases ..... 787-2071
- St. Boniface General Hospital Infectious Diseases ..... 237-2053
- Health Sciences Centre Infectious Diseases ..... 787-2071

**Primary Care (Please let the clinic know you are attending for the post-exposure program):**

- Health Action Centre, 425 Elgin Ave. .... 940-1626
- Klinik, 870 Portage Ave. .... 784-4090
- \_\_\_\_\_

**Appointment:** Date \_\_\_\_\_ Time \_\_\_\_\_

### ADVICE

If you become infected as a result of this blood or body fluid exposure, you may transmit a viral infection to others if they come in contact with your blood or body fluids.

For at least the next 6 months, or until a physician/nurse informs you otherwise, you should take these steps to protect others:

- Do not expose others to your blood  
Examples: cuts, razors, toothbrushes, nail files...
- Notify your sexual partner(s) of the blood or body fluid exposure.
- Practice safer sex - use condoms, no unprotected sex, no oral sex.  
Use of PEP meds does not eliminate the need for safer sex practices.
- Avoid pregnancy.
- Stop breastfeeding until your case has been discussed with an Infectious Disease Specialist.
- Do not donate blood, semen, organs or tissues.
- See a physician if you develop a combination of these viral symptoms during the next 6 months:
  - fever                      - muscle aches              - diarrhea              - nausea              - swollen lymph nodes
  - headache                - rash                        - fatigue                - sore throat



**PROPHYLAXIE POST-EXPOSITION CONSEILS/SUIVI**  
**(SOINS D'URGENCE – DONNEZ AU PATIENT)**

**SUIVI : Cochez (✓) le bureau choisi pour le suivi**

Communiquez avec le bureau suivant et spécifiez que vous appelez pour le suivi post-exposition :

- Centre des sciences de la santé - *santé au travail* ..... 787-3312
- Centre de santé Misericordia - *santé au travail* ..... 788-8011
- Hôpital Concordia - *santé au travail* ..... 661-7176
- Centre Deer Lodge - *santé au travail* ..... 831-2122
- Hôpital général Grace - *santé au travail* ..... 837-0183
- Centre de santé Riverview - *santé au travail* ..... 478-6860
- Hôpital général Seven Oaks - *santé au travail* ..... 632-3280
- Hôpital général St.-Boniface - *santé au travail* ..... 237-2441
- Hôpital général Victoria - *santé au travail* ..... 477-3322
- St. Amant - *santé au travail* ..... 256-4301

**Maladies infectieuses :**

- Hôpital pour enfants - *maladies infectieuses* ..... 787-2071
- Hôpital général St.-Boniface - *maladies infectieuses* ..... 237-2053
- Centre des sciences de la santé - *maladies infectieuses* ..... 787-2071

**Soins primaires (N.B. : avisez le centre de santé communautaire que vous assistez pour le programme post-exposition) :**

- Health Action Centre - 425, ave Elgin..... 940-1626
- Klinik - 870, ave Portage..... 784-4090
- \_\_\_\_\_

Rendez-vous:	Date _____	Heure _____
--------------	------------	-------------

**CONSEILS :**

Si vous contractez une infection par le biais de cette exposition à sang ou un liquide organique, vous risquez de transmettre une infection virale à d'autres personnes qui pourraient entrer en contact avec votre sang ou vos liquides corporels.

Pendant au moins 6 mois ou la période prescrite par un médecin ou le personnel infirmier, vous devez faire ce qui suit afin de protéger les autres :

- Évitez d'exposer les autres à votre sang.  
Par exemple : coupures, rasoirs, brosse à dents, lime à ongles...
- Informez votre ou vos partenaires sexuels que vos liquides corporels ont été exposés.
- Observez des pratiques sexuelles sans risque : utilisez le condom, n'ayez pas de relations non protégées ni de relations orales. L'usage de médicaments PPE n'élimine pas le besoin de pratiques sexuelles sans risque.
- Évitez de devenir enceinte.
- Cessez l'allaitement au sein jusqu'à ce que vous ayez consulté un spécialiste des maladies infectieuses.
- Évitez de faire un don de sang, de sperme, d'organes ou de tissus.
- Consultez un médecin si vous manifestez une combinaison des symptômes d'une infection virale suivants au cours des 6 mois suivant l'incident :
  - fièvre                    - douleurs musculaires    - diarrhée    - nausées            - enflure des ganglions lymphatiques
  - mal de tête            - éruption                    - fatigue     - mal de gorge

# PEP Smart Pocket Card Summary Information

## Blood / Body Fluid Exposure Follow-up]

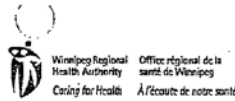
1. Do first aid: Wash or flush thoroughly with warm water.
2. Get WRHA “*Information for Exposed Worker Package*” envelope available on all units. Follow algorithm.
3. Notify on-site manager/charge nurse (physicians/residents/students - notify on-site charge nurse).
4. Seek medical assessment ASAP – go to Emergency **STAT** if OESH is closed. Report to OESH on voice mail even if you are seen in ER. Leave your name, and name & PHIN # of Source on message.
5. Manager/charge nurse to obtain consent from Source; do Risk Assessment; arrange for testing of Source for HBsAg/antiHCV/anti HIV.
6. OESH/ER will follow Exposed if Source is unknown. OESH will complete all follow-up started in ER.
7. Complete INM form.

## Safety Checklist for Sharps & Blood/Body Fluid Handling

↑ *Awareness* + ↑ *Prevention* = ↓ *Exposures*

- Anticipate RISK of exposure occurring - wear PPE-goggles, gloves.
- Cover any open skin or wounds on hands/arms.
- Hand off used open scalpels, suture needles safely. LOOK first.
- Situate sharps container so it is accessible for your use.
- Check if sharps container can hold more – do not shake container down; do not decant from container; do not dismantle used sharp.
- Use Safety Engineered Needles & dispose stat in sharps container.
- Explain to patient what you are doing & enlist cooperation. Have a co-worker assist if you anticipate patient may jump or move.
- Unclutter your work area of extra linens and clothing, tape, tubes.

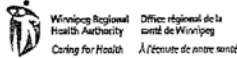
# Appendix C – Surgical Consent Form



## Consent to Procedure, Treatment, or Investigation

*Consentement à une procédure,  
un traitement ou une enquête*

1. I freely and voluntarily agree that \_\_\_\_\_ or his/her Authorized Designate and  
*J'accepte librement et volontairement que \_\_\_\_\_ ou son agent autorisé et toute autre*  
RESPONSIBLE PARTY/PARTIE RESPONSABLE  
 any person(s) he/she appoints to assist may perform the following Procedure(s), Treatment(s), Investigation(s)  
*personne nommée par la partie responsable pour l'aider peuvent effectuer les procédures, traitements ou enquêtes suivants :*
- 
2. The purpose, nature, expected outcomes and potential complications of the proposed Procedure(s), Treatment(s),  
 Investigation(s) along with the alternative(s) (where appropriate) and the consequences of not doing the proposed  
 Procedure(s), Treatment(s), Investigation(s) have been discussed with me by:  
*J'ai discuté de l'objectif, de la nature, des résultats prévus et des complications potentielles des procédures, des traitements  
 ou des enquêtes proposés, ainsi que des solutions de rechange (le cas échéant) et des conséquences liées à la non-  
 exécution des procédures, des traitements ou des enquêtes proposés, avec la personne suivante :*
- 
- PRINTED NAME OF RESPONSIBLE PARTY OR AUTHORIZED DESIGNATE/NOM EN LETTRES MÔULÉES DE LA PARTIE RESPONSABLE OU DE SON AGENT AUTORISÉ
3. I consent to such further extended or alternative Procedure(s), Treatment(s), Investigation(s) as may be found advisable in my  
 interest during the course of the above Procedure(s), Treatment(s), Investigation(s).  
*Je consens à la prolongation ou à la modification des procédures, des traitements ou des enquêtes proposés dans la mesure où  
 cela est jugé utile dans mon intérêt au cours de l'exécution des procédures, des traitements ou des enquêtes indiqués ci-dessus.*
4. I acknowledge that no guarantee or assurance for a favourable outcome has been made to me.  
*Je reconnais que l'on ne m'a offert aucune garantie ou assurance d'un résultat favorable.*
5. I consent to the administration of anaesthetics and drugs that I may require.  
*Je consens à l'administration des agents anesthésiques et des médicaments dont je peux avoir besoin.*
6. I consent to the administration of any needed blood or blood products.  
*Je consens à l'administration de toute transfusion sanguine ou de tout produit sanguin nécessaire.*
7. I agree to the disposition by the facility of any substance, tissues, or parts that may be removed. Disposition may include  
 retention for the purposes of research, evaluation, or teaching.  
*J'accepte que l'établissement de santé dispose de toute substance ou partie du corps ou de tout tissu qui peut être enlevé de  
 mon organisme. La disposition peut inclure la conservation à des fins de recherche, d'évaluation ou d'enseignement.*
8. I consent to photographing or otherwise recording of the Procedure(s), Treatment(s), Investigation(s) I undergo for the  
 purposes of my medical treatment and health record.  
*Je consens à ce que l'on photographie ou enregistre autrement les procédures, traitements ou enquêtes que l'on effectue aux  
 fins de mon traitement et mon dossier médical.*
9. In the event that a health care provider experiences a significant exposure to my body fluids, I consent to a sample of my  
 blood being drawn and tested for transmissible infections (Hepatitis B, Hepatitis C, Human Immunodeficiency Virus), with the  
 understanding that the results will be made known both to myself and to the exposed individual.  
*Si un fournisseur de soins de santé est exposé de manière importante à mes liquides organiques, je consens à ce que l'on  
 prenne un échantillon de mon sang afin qu'il soit analysé pour détecter des infections transmissibles (hépatite B, hépatite C,  
 virus de l'immunodéficience humaine). Je comprends que les résultats de l'analyse me seront communiqués, ainsi qu'à la  
 personne exposée.*
10. I understand that WRHA facilities educate and train students from University, College, and Facility-based programs.  
 Confidential information about my illness and its treatment may be shared with students. I may also be examined, tested, and  
 treated by students under the direction of their supervisor.  
*Je comprends que les établissements de l'ORSW éduquent et forment des étudiants qui proviennent des universités, des  
 collèges et des programmes des divers établissements. Des renseignements confidentiels sur ma maladie et son traitement  
 peuvent être transmis à ces étudiants. Je peux aussi faire l'objet d'examen, d'analyses et de traitements administrés par des  
 étudiants sous la direction de leur superviseur.*



Consent to Procedure, Treatment, or Investigation

Consentement à une procédure, un traitement ou une enquête

I certify that I have read and fully understand the above consent to Procedure, Treatment, or Investigation and that the explanations therein referred to were made to me, and the form was completed prior to the Procedure(s); Treatment(s), investigation(s) being performed.

Signed at \_\_\_\_\_ hours, this \_\_\_\_\_ day of \_\_\_\_\_ Year \_\_\_\_\_

PRINTED NAME OF PATIENT/RESIDENT/CLIENT, SIGNATURE OF PATIENT/RESIDENT/CLIENT, SIGNATURE OF WITNESS, SIGNATURE OF SUBSTITUTE DECISION-MAKER, REASON FOR SUBSTITUTE DECISION-MAKER SIGNATURE, RELATIONSHIP TO PATIENT/RESIDENT/CLIENT, AGENCY (IF APPLICABLE)

I've discussed the purpose, nature, expected outcomes and potential complications of the proposed Procedure(s), Treatment(s), Investigation(s) along with the alternatives (where appropriate) and consequences of not doing the proposed Procedure(s), Treatment(s), investigation(s) with the Patient/Resident/Client or Substitute Decision-Maker.

SIGNATURE OF AUTHORIZED DESIGNATEE, PRINTED NAME OF AUTHORIZED DESIGNATEE, DATE, SIGNATURE OF RESPONSIBLE PHYSICIAN, PRINTED NAME OF RESPONSIBLE PHYSICIAN, DATE

TELEPHONE CONSENT/CONSENTEMENT TÉLÉPHONIQUE

I have heard the information and explanation given by the Responsible Party or Authorized Designate to: J'ai entendu les renseignements et les explications fournies par la partie responsable ou de la personne autorisée à: Name: Phone #: Relationship to Patient/Resident/Client: Reason for Telephone Consent: and he/she has agreed to the performance of the Procedure(s), Treatment(s), or investigation(s) as indicated.

Two witnesses are required/Deux témoins sont exigés. Witness # 1: Witness # 2:

INTERPRETER'S DECLARATION (if applicable) To the best of my knowledge, I have interpreted the conversation between \_\_\_\_\_ and \_\_\_\_\_ accurately. SIGNATURE OF INTERPRETER, PRINTED NAME, DATE

EMERGENCY - DANGER TO LIFE, LIMB, VITAL ORGANS For these reasons:

I believe the Patient/Resident/Client is incapable of consenting to the Procedure(s), Treatment(s), or investigation(s) noted on the front of this consent form and that the delay in obtaining consent from a Substitute Decision-Maker would endanger the patient's life, limb or vital organ.

SIGNATURE OF RESPONSIBLE PARTY OR AUTHORIZED DESIGNATEE, PRINTED NAME, DATE & TIME

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