

## Issues in Occupational Exposure for HIV/AIDS Palliative Care

### TRANSMISSION OF HIV

*“I experienced discrimination in the hospital because I had AIDS. I was placed in isolation and no one would come in to see me”  
– one voice –*

Fear of contagion has led some caregivers to use excessive or inappropriate HIV precautions. Others, especially in HIV/AIDS Palliative Care, feel that infection control techniques create artificial barriers to communication with the person living with HIV/AIDS. These providers take unnecessary, unacceptable risks when delivering care. The challenge in AIDS Palliative Care is to maximize quality of care while minimizing risk to staff.

- HIV is transmitted through unprotected sexual intercourse, exposure to blood, blood components or bloody body fluids, perinatally from mother to child, and rarely through breast milk
- risk of occupationally acquired HIV infection through exposure to intact skin or mucous membranes is too low for an accurate estimate
- for health care providers, the greatest risk of occupationally acquired HIV infection is from exposure to blood or bloody body fluids through a hollow-bore needle stick injury.
- persons with endstage HIV/AIDS disease have high viral loads, so vigilance is essential when using or disposing of needles and other sharps. Before choosing an invasive route, use all non-invasive techniques in the delivery of drugs, or essential diagnostics and treatment
- skin infections, like molluscum contagiosum, and herpes simplex are common in HIV+ persons.
- there is a world-wide resurgence of tuberculosis (TB). HIV and TB have a synergistic action, posing an additional threat for those living with HIV/AIDS and their caregivers.

In 1987, Health and Welfare Canada recommended implementation of Universal Precautions (UP) in all health-care facilities in Canada in consideration of all persons potentially infected with HIV or other bloodborne pathogens<sup>1</sup>. Lynch proposed Body Substance Precautions (BSP) as an alternative approach<sup>2</sup>. Either UP or BSP should be established in all institutional or home health care settings. Note that there is a move in the U.S. and in Canada to standardize Universal and Body Substance Precautions which will be known as Standard Precautions. Whichever approach is implemented in your setting, the following guidelines should be adhered to:

### GUIDELINES FOR PREVENTING OCCUPATIONAL EXPOSURE TO ANY INFECTION

- HANDWASHING:
  - use warm running water
  - moderate amount of soap
  - vigorously rub hands together, including between fingers, around nails and wrists
  - rinse well
  - dry hands with a paper towel
  - turn tap off using the paper towel to grip faucet handle.
- PROTECTIVE APPAREL when anticipating contact with blood and/or body fluids
- SAFE USE and DISPOSAL OF NEEDLES AND OTHER SHARPS in biological waste
- Appropriate use of RESPIRATORY PRECAUTIONS

## MANAGEMENT OF ACCIDENTAL EXPOSURES TO BLOOD/BODY FLUIDS

The following summary addresses the management of an occupational exposure to hazardous body fluids (HBF).

### DEFINITION OF EXPOSURE

*Hazardous body fluids (HBF) include blood, bloody fluids, and other body fluids known or assumed to be associated with transmission of blood-borne pathogens*

<b>Massive exposure</b>	<ul style="list-style-type: none"> <li>transfusion of blood</li> <li>injection of a large volume of blood or HBF (&gt;1 ml)</li> <li>parenteral exposure to laboratory or research specimens containing high titre of virus</li> </ul>
<b>Definite parenteral exposure</b>	<ul style="list-style-type: none"> <li>injection of blood or HBF (&lt;1 ml)</li> <li>deep im (&gt;3mm) injury produced by blood or HBF contaminated needle or instrument</li> <li>laceration or wound causing spontaneous bleeding in caregiver</li> <li>visible laceration or similar fresh wound</li> <li>inoculated with blood or HBF fluid</li> </ul>
<b>Probable parenteral exposure</b>	<ul style="list-style-type: none"> <li>subcutaneous/superficial injury with blood or HBF contaminated needle or instrument</li> <li>laceration or similar wound produced by blood or HBF contaminated instrument which does not cause spontaneous bleeding in care provider</li> <li>prior wound or skin lesion visibly contaminated with blood or HBF fluid</li> <li>mucous membrane inoculation with blood or HBF</li> </ul>
<b>Doubtful parenteral exposure</b>	<ul style="list-style-type: none"> <li>subcutaneous/superficial injury with non-HBF needle or contaminated needle or instrument</li> <li>laceration or similar wound produced by non-HBF contaminated instrument</li> <li>prior wound or skin lesion contaminated with non-HBF</li> <li>mucous membrane inoculation with non-HBF</li> </ul>
<b>Non-parenteral exposure</b>	<ul style="list-style-type: none"> <li>intact skin visibly contaminated with any body fluid</li> </ul>

### TREATMENT

<b>Wound care/first aid</b>	<ul style="list-style-type: none"> <li>seek assistance from fellow staff members</li> <li>immediately cleanse injury           <ul style="list-style-type: none"> <li>carefully flush mucous membranes or eye with large quantities of water or saline</li> <li>thoroughly clean wound/needle stick injury with soap and water or antiseptic soap</li> <li>promote passive bleeding of needle stick wound</li> </ul> </li> <li>report to institutional First Aid/Occupational Health services (WCB designated attendant), doctor's office or emergency room</li> <li>complete WCB reporting and appropriate institutional incident report</li> </ul>
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**Early treatment**

- evaluate need for tetanus, HBV prophylaxis, suturing and implement appropriately
- evaluate seriousness of injury based on Definition of Exposure (above)
- baseline HIV testing
- evaluate appropriateness of antiretroviral therapy for HIV:
  - may be recommended for massive and definite exposure in known HIV/AIDS
  - should be discussed but not routinely prescribed for other exposures
  - is not prescribed for non-parenteral exposure (there is no evidence proving the efficacy of antiretroviral therapy in an occupational exposure)
- if starting antiretroviral therapy, consider either:
  - zidovudine 200mg 5 times daily for 28 days, or
  - if the source individual has received one or more antiretroviral agents, and may be presumed to have a drug resistant virus, combination therapy may be considered using AZT (Retrovir®) 200mg 5 times daily, for 28 days and ddI (Videx™) 200mg bid < 75 kg, for 28 days
  - in all cases where antiretroviral therapy is administered, every effort must be made to initiate therapy within 2 hours of exposure. The injured person should receive follow-up management by his/her physician or appropriate specialist and the institution's occupational health service
- pre and post-test counselling, especially if person declines antiretroviral therapy
- repeat HIV testing at 6 weeks, 3 months, 6 months

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**Provide counselling for prevention of transmission of HIV (Health and Welfare Canada, 1990) in workplace and in personal life (i.e. use of condoms), and for critical incident stress associated with occupational exposure<sup>3</sup>**

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**Follow-up**

- report exposure to Laboratory Centre for Disease Control, Ottawa
- monitor response/side effects of antiretroviral therapy
- maintain schedule of repeat HIV testing
- provide emotional support

**HIV AND TUBERCULOSIS**

Critical synergistic interaction exists between HIV and TB. In HIV infected persons the source of the TB may be:

- previous exposure and reactivation
- new exposure and infection
- new exposure and active disease

Individuals exposed to TB but not infected with HIV have a 10% lifetime risk of developing TB. Those infected with both HIV and TB have a 10% per annum risk of developing TB. Until proven otherwise, TB should be suspected in all HIV infected persons exhibiting a productive cough. Avoid caring for such persons in communal areas like open emergency rooms and multi-bed ward rooms<sup>4</sup>. Known HIV+ persons must not be exposed to persons with productive coughs.

Usually TB is an "early infection" (500 helper cells). However, Palliative Care programs must be alert when investigating and diagnosing productive coughs, because reactivation or new TB infection/disease could occur at any point on the trajectory of HIV disease<sup>5</sup>. Skin testing with five TU of PPD, and prophylaxis with isoniazid as required, should be completed at diagnosis of HIV<sup>6</sup>.

As HIV takes hold in Canada, higher incidences of TB in groups like aboriginals, immigrants or drug users, will increasingly challenge management of palliative AIDS care. The U.S. reports multiple drug resistant tuberculosis (MDRTB) in persons living with HIV/AIDS and health care providers<sup>5</sup>. This is not yet a major problem in Canada, but only vigilance and aggressive therapeutic management will prevent an ever increasing occurrence of TB or the introduction of MDRTB.

## CAREGIVERS AND AIDS PALLIATIVE CARE

### TESTING FOR TB:

Caregivers, whether HIV+ or not, should regularly consult their family practitioner and/or occupational health program, to monitor their health, PPD status, and risk of occupational exposure to tuberculosis. PPD screening should be done every six months, and if there is a positive test (induration >10mm) a chest x-ray should be done. Where there is evidence suggesting TB inoculation, prophylactic therapy may be necessary, with a referral to provincial TB services, or a specialist in infectious disease or pulmonary medicine may be necessary. Even if previously exposed to BCG, positive tests should be investigated further and prophylaxis considered. BCG is not currently recommended for persons living with HIV/AIDS or health care providers. Consult local public health agencies or provincial tuberculosis agencies when developing guidelines for your organization.

### TESTING FOR HIV:

Widely publicized transmissions of HIV from an American dentist to several individuals<sup>7</sup> raised concern about mandatory testing of health care personnel, continued employment of HIV+ persons in health care, and performance of exposure prone procedures by HIV+ health care providers. No scientific evidence exists for mandatory testing of health care providers. Ethics and morality demand diligent use of body substance and respiratory precautions. If a health care worker's blood is exposed, reciprocal responsibilities require testing and appropriate therapy as described in guidelines for managing occupational exposure.

## REFERENCES

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6. Guidelines for the identification and treatment of individuals with concomitant tuberculosis and human immunodeficiency virus infection. Ottawa, ON: Health and Welfare Canada, 1992
7. Cieielski C, Marianos D, Ou C-Y. et al. Transmission of human immunodeficiency virus in a dental practice. *Annals of Internal Medicine* 1992; 116 (10) 798-805