



IPPF Medical Bulletin

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IPPF guidelines on protection against HIV infection, including post-exposure prophylaxis, in the service setting

The following guidelines, developed with the assistance of IPPF's International Medical Advisory Panel and selected experts on HIV medicine, offer a comprehensive approach to the occupational risk of HIV infection. Part 1 gives advice on prevention, by application of "universal precautions" in circumstances of exposure to potentially infectious materials, and part 2 details steps that can be taken when a health worker sustains a needle-stick or other penetrative injury. The guidelines draw upon other published recommendations, especially those from the US Centers for Disease Control and the World Health Organization.

Universal precautions

Because infection with HIV or hepatitis viruses will not always be evident and because high-risk patients cannot reliably be identified, healthcare workers are recommended to take precautions on the assumption that all patients are potentially infectious. This doctrine of universal precautions applies to any circumstance where the worker is exposed to blood and certain other fluids. With regard to HIV, the following have been clearly implicated in transmission:

- Semen
- Vaginal secretions
- Any fluids contaminated with visible blood
- HIV-containing cultures or culture media.

In addition, fluids that present a theoretical risk are:

- Synovial fluid
- Cerebrospinal fluid
- Pleural fluid
- Peritoneal fluid
- Pericardial fluid
- Amniotic fluid.

Universal precautions should also be applied to any excised tissue or organ from a human, living or dead, to any body fluid that cannot confidently be identified, and to blood

or fluids or tissues from laboratory animals that have been infected with blood-borne pathogens. Universal precautions do not apply to faeces, nasal secretions, sputum, sweat, tears, urine, or vomitus unless they visibly contain blood. The aim of these precautions is to avoid infective hazards such as:

- Accidental injury with a contaminated needle or other sharp instrument
- Exposure of the health worker to infected blood or other body fluid via the mouth, eyes, nose, or open lesions on the skin such as cuts, scrapes, dermatitis, or acne
- Touching a contaminated environmental surface and then transferring the pathogen to a skin lesion or to the mucous membranes of eyes, nose, or mouth.

An employer has a duty to provide facilities and personal protective equipment and to inform the employee about appropriate work-practice controls that will reduce the likelihood of infection; ultimately, however, it is up to the employee to use these correctly.

Responsibilities of the employer

"Engineering" controls are physical measures to isolate or remove blood-borne pathogens from the workplace. In the present context the prime example is a suitable sharps disposal container, available near the point of use. Work-practice controls reduce the likelihood of exposure by altering the way in which a task is performed. To prevent transmission of blood-borne pathogens, an employee should be instructed as follows:

- Avoid splashing, spraying, or splattering droplets of blood or other potentially infectious materials
- Wash hands immediately or as soon as feasible after removal of gloves or other personal protective clothing
- Wash hands and any other exposed skin with soap and water, or flush mucous membranes with water, immediately or as soon as possible after contact with blood or other potentially infectious materials
- When no running water is available, use an antiseptic hand cleanser and clean towels followed by regular hand-washing as soon as feasible
- If needle recapping or removal is absolutely necessary, use a mechanical device that protects the hand or employ a safe one-handed technique
- For reusable sharps, place immediately after use in a puncture-resistant, labelled or colour-coded and leak-proof (side and bottom) container until they can be properly reprocessed
- Position sharps disposal container so that it is easily accessible and keep it upright throughout use
- Replace sharps disposal containers regularly and do not overfill.

In addition healthcare providers must *never*:

- Eat, drink, smoke, apply cosmetics or lip balm, or handle contact lenses in work areas where occupational exposure to blood-borne organisms is likely
- Keep food and drink in refrigerators or other locations where blood or other potentially infectious materials are present
- Use a mouth-suction pipette to draw up blood or other potentially infectious materials
- Use hands to pick up possibly contaminated broken glassware
- Bend, recap, break, or remove contaminated needles and other contaminated sharps unless there is no feasible alternative or the action is required by a specific medical procedure
- Use hands to open, empty, or clean reusable-sharps containers.

Personal protective equipment

If the potential for occupational exposure persists after engineering and work-practice controls have been put in place, personal protective equipment must be provided without cost to the employee. The purpose of this equipment is to prevent blood or other potentially infective material from reaching work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions and in normal duration of use. In case of such penetration the protective equipment should be removed as soon as possible; any contaminated skin should be washed with soap and water, and mucous membranes with water.

Gloves

Gloves should be worn when there is any possibility of hand contamination by infected material or tissue. Single-use gloves must not be reused. With latex-rubber gloves, petroleum-based lubricants should be avoided because they can weaken the material; for health workers allergic to conventional medical gloves, alternatives must be provided.

Gowns, face shields/masks, eye protection

When there is a possibility that blood or other potentially contaminated material will be sprayed, splattered, or splashed, health workers should wear chin-length face shields or masks together with eye-protection devices with side shields. Ordinary eye glasses (spectacles) do not sufficiently protect the eyes.

Post-exposure prophylaxis

Post-exposure prophylaxis is a short-term antiretroviral treatment used to reduce the likelihood of HIV infection after potential exposure, either occupationally or through sexual intercourse or isolated high-risk exposure. Within the health sector, post-exposure prophylaxis should be one component of a comprehensive strategy to minimise staff exposure to infectious hazards at work. Since evidence from controlled trials is lacking, the following guidelines are based mainly on expert opinion.

Risk for occupational transmission

Following percutaneous exposure to HIV-infected blood, the average risk of transmission is approximately 0.3% (95% confidence interval [CI], 0.2% to 0.5%). The risk after mucosal exposure is approximately 0.09% (95% CI, 0.006%–0.5%). The risks after exposure of intact skin or

exposure to HIV-infected body fluids other than blood have not been quantified. In any circumstances the likelihood of infection will also depend on the degree of exposure.

Indications for post-exposure prophylaxis

Post-exposure prophylaxis should be considered when a health worker has:

- Sustained a cut in the skin by a sharp object (e.g. hollow-bore or cutting needle, broken glassware) that is visibly contaminated with blood or other potentially infected material from an HIV-infected patient or has been in such a patient's blood vessel
- Has been bitten, with resultant bleeding, by an HIV-infected person who himself/herself has visible bleeding into the mouth
- Has been splashed on a mucosal surface by blood, visibly bloody fluid, or other potentially infective material
- Has experienced contact of non-intact skin (e.g. damaged by dermatitis, chapping, an abrasion, or an open wound) with such potentially infective material.

Management of potential occupational exposure to HIV

Immediately after the incident, a wound should be washed with soap and water and exposed mucous membranes flushed with water. Subsequent management depends on the HIV status of the source person and the health worker. The standard rapid HIV antibody tests should be used on both and the results should be obtained as quickly as possible. If the exposed worker is a fertile woman, a pregnancy test should also be done. Issues of counselling and consent for HIV testing, in health worker and source patient, are discussed separately below.

When the HIV results have been obtained, the following actions should be taken:

- If the source patient is HIV negative, no post-exposure prophylaxis is necessary for the exposed worker
- If the exposed worker is HIV positive, no antiviral prophylaxis is indicated and he or she should be referred for further counselling and long-term management of the infection
- If the healthcare worker is HIV negative and the source patient is HIV positive, then antiretroviral drugs should be provided for four weeks, with monitoring for side-effects. HIV testing should be repeated 1, 3, and 6 months after the initial test and if the test becomes positive the health worker should be counselled and referred for expert long-term management. If the test remains negative, he or she should be counselled on avoidance of HIV exposure in future
- If the HIV status of the source patient cannot be determined, the likelihood of seropositivity may be sufficient grounds for post-exposure prophylaxis
- Evaluation of the health worker should include hepatitis B virus status; if he or she is non-immune, passive and active specific prophylaxis may be indicated.

Drug protocols for post-exposure prophylaxis

Post-exposure prophylaxis should be started ideally within 2 hours and no later than 72 hours after exposure. The prescriber/provider should ensure that the patient has access to the full course of medications. Four weeks of highly active antiretroviral therapy is recommended, but the exact regimen will depend on factors such as drugs previously taken by the

source patient, prevailing resistance patterns, and local availability.

A recommended protocol consists of zidovudine plus lamivudine together with a protease inhibitor, all taken orally:

Zidovudine 300 mg twice daily
Lamivudine 150 mg twice daily
Plus one of the following:
Tenofovir 300 mg daily
or Nelfinavir 750 mg three times daily
or Nelfinavir 1250 mg twice daily
or Lopinavir/ritonavir 3 capsules twice daily
or Saquinavir 1000 mg/ritonavir 100 mg twice daily
or Indinavir 800 mg daily

Alternatives to the first two drugs are:

- Instead of zidovudine use stavudine – 40 mg twice daily if bodyweight more than 60 kg, 30 mg daily if bodyweight lower than 60 kg
- Instead of lamivudine use didanosine – 400 mg daily if bodyweight more than 60 kg, 250 mg daily if bodyweight lower than 60 kg.

Before starting, blood should be taken for full blood count (including differential and platelets) and liver function tests. These will serve as baselines for monitoring of side-effects.

Pregnancy

Although birth defects have generally not been associated with currently available antiretroviral drugs, use during pregnancy carries theoretical risks to the fetus. Antiretroviral drugs to avoid during pregnancy are efavirenz (teratogenicity), amprenavir in the second or third trimester (fetal skeletal ossification), and the combination of stavudine and didanosine (mitochondrial toxicity). Discussion of the hazards of antiretroviral drugs should not, however, neglect the considerable risk of HIV transmission to the fetus or breastfeeding infant if the pregnant healthcare worker goes on to develop the acute retroviral syndrome.

Counselling and HIV testing

Health worker

Although the risk of HIV transmission from an occupational exposure is usually low, the emotional impact of such exposure can be profound. For some the incident will disrupt sexual relations and childbearing plans, exacerbate existing marital problems, generate a career crisis, or create fear of social repercussions. Therefore counselling needs to address psychological repercussions as well as issues of disease transmission.

The initial counselling session should take place as soon as possible after the exposure and seek to accomplish the following:

- Establish a trusting relationship; the counsellor should communicate support, concern, confidence, competence, and confidentiality
- Assess the worker's emotional status; possible reactions range from anger, fear, and disbelief to silent acceptance
- Describe the post-exposure protocol. Indicate what services will be provided by the employer, who will be involved in the process (including referral for management beyond the scope of the employer), and what

is expected from the worker

- Counsel regarding HIV testing, and provide post-test counselling if the test is accepted
- Educate the healthcare worker on prevention of HIV transmission during the post-exposure period – including use of condoms (for 6 months), stopping breastfeeding where applicable, and deferment from donation of blood, plasma, organs, sperm, or tissue
- Establish a follow-up plan.

Source person

If the source person is already known to be HIV positive, no further HIV testing is necessary but other blood-borne pathogens should be tested for, subject to consent. Otherwise, clinical evaluation and HIV testing of the source person should proceed as quickly as feasible. An individual who for personal reasons would refuse HIV testing will often agree (perhaps after special guarantees of anonymity) when informed about the grave implications for the exposed health worker. In case of initial refusal, the employer's duty to the health worker requires all avenues to be explored.

- If baseline testing indicates that the exposed person was already HIV positive, the source's HIV status will not be disclosed
- If the source person is HIV positive and the exposed person is HIV negative, this information can be disclosed to the health worker in confidence. The employer is responsible for establishing and implementing policies and procedures to protect the confidentiality of both the exposed employee and the source person.

Record-keeping and education

Soon after the incident, a report should be filed detailing date and time of exposure, the procedure being performed, the use of protective equipment, the source, type, and amount of suspect material to which the health worker was exposed, and the proposed post-exposure management and follow-up. Subsequently, counsellors can discuss with the health worker, in a sensitive non-judgmental way, the sequence of events that preceded the exposure, in the hope of drawing useful lessons.

Post-exposure management: employer issues

Member Associations that employ health professionals or other persons who are at risk for occupational exposure are required to establish procedures and policies which guide the management of such exposures. The employer should ensure that any employee who sustains an occupational exposure has access to post-exposure services within 1–2 hours of the reported event. Organisations which do not have on-site facilities are encouraged to form agreements and/or contracts with facilities which are able to provide these services.

Persons covered

Employers must establish clear policies on who is an employee for purposes of post-exposure care – whether, for example, the coverage extends to interns, volunteers, part-time employees, consultants. In addition, they need to delineate the scope of services that will be provided, including whether there are limitations within the categories of individuals covered, particularly with regard to workers' compensation benefits where these exist.

News

Carcinogenicity of combined hormonal contraceptives: IMAP says no change in recommendations warranted

An expert committee of the International Agency for Research on Cancer (IARC), reviewing data on oestrogen/progestogen formulations, has classified combined oral contraceptives (COCs) as “carcinogenic to humans”. This is no change from the judgment made in an IARC review published in 1999. The data indicate that COCs slightly modify the risk of cancer, increasing it in cervix, breast, and liver and decreasing it in endometrium and ovary. In addition, the expert committee decided that combined hormonal menopausal therapy should be classed as carcinogenic rather than “possibly carcinogenic” to humans. These judgments have so far been reported only in brief.^{1,2} The complete document will be published in 2006 as an *IARC Monograph*.

At its October 2005 meeting, IPPF’s International Medical

Advisory Committee (IMAP) examined the implications of IARC’s latest findings for the use of COCs (hormonal therapy was not discussed). Reviews such as this, IMAP commented, do not examine the overall risk-benefit profile of compounds in public-health terms. In the opinion of the Panel, the IARC update provides no evidence to warrant a change in guidelines for COC use. IMAP upholds the view expressed in WHO’s *Medical Eligibility Criteria for Contraceptive Use* that, for most healthy women, the health benefits of COCs clearly exceed the health risks.

References

1. International Agency for Research on Cancer. IARC Monographs Programme finds combined estrogen-progestogen contraceptives and menopausal therapy are carcinogenic to humans. Press release 167, 29 July 2005
2. Cogliano V, Grosse Y, Baan R, Straif K, Secretan B, El Ghissassi F. Carcinogenicity of combined oestrogen-progestagen contraceptives and menopausal treatment. *Lancet Oncology* 2005; **6**: 552–3

Fulfilling Fatherhood: Experiences from HIV Positive Fathers

“...fathers are being lost... They need to be told they can live.”

“Men are usually stereotyped as ‘naughty boys’. People living with HIV/AIDS have a diversity of skills, and we can make a huge difference if we are given the opportunity...”

“My children are making a difference for me. I fight for them. For them, I lead a healthy life...”

Working with the Global Network of People Living with HIV/AIDS, IPPF has assembled thirteen personal stories from around the world to illustrate the importance of healthy fatherhood to the welfare of children and families.

The contributors are unusual in having chosen to speak out about their HIV status and the complex dilemmas it poses. More openness, they say, breaks down barriers.

A recurrent theme is the duty to survive and educate.

Fulfilling Fatherhood shows how, with more information and support, HIV positive fathers can live healthier lives and contribute more to the welfare of their children and families.



FULLFILLING FATHERHOOD EXPERIENCES FROM HIV POSITIVE FATHERS



The booklet can be ordered from info@ippf.org or accessed online at www.ippf.org