Universal precautions for the prevention of HIV and HBV infection in health care settings

Committee for Science and Education, Medical Association of South Africa

Objective. To outline the principles guiding the deliberate actions that should be taken in health care settings to prevent the spread of pathogens, especially HIV and hepatitis B virus (HBV), to patients and health care workers (HCWs).

Outcomes. Universal precautions should be implemented in all health care settings.

Evidence. Based on similar international recommendations.

Values. An adaptation of an existing guideline, it was sent to 87 organisations for comment. The comments received were included where possible in this guideline. It is the right of HCWs and patients to be protected from nosocomial HIV and HBV infection.

Benefits, harms and costs. The prevention of costly HIV and HBV infection by simple, rational precautions in the health care setting. The cost to the health care system has not been measured. The cost to individual patients or HCWs who acquire either infection is inestimable.

Recommendations. The guideline recommends that the four basic elements of universal precautions be implemented appropriately in all health care settings: (i) body fluids should be handled with the same precautions as blood; (ii) avoidance of sharps (sharp objects); (iii) avoidance of skin or mucous membrane contamination; (iv) cleaning/disinfecting/sterilising.

Validation. The draft guideline was subjected to extensive external review by specialist, generalist and health professional groups. These included HIV activist groups. There were no major disputes about the content. The most important amendment to the draft guideline is the inclusion of HBV and other related pathogens together with the HIV.

Development and funding. The Medical Association of South Africa Committee for Science and Education.

Endorsements. The MASA and twenty national health care organisations and three provincial health authorities (see list at end of document).


Committee members: E. M. Barker (Chairperson), B. M. de Bruin, E. J. Immelman, D. G. C. Presbury, A. D. P. van den Berg, V. J. Pinkney-Atkinson

Definition

Universal precautions are deliberate actions taken in health care settings to prevent the transmission of certain pathogens from patient to patient, from patient to health care worker (HCW), and from HCW to patient. In particular, universal precautions aim to prevent hepatitis B virus (HBV) and HIV from contaminating and penetrating the skin (particularly non-intact skin), mucous membranes and conjunctivae.

Objective

To set guidelines for the implementation of universal precautions to prevent pathogens (especially HIV and HBV) from infecting HCWs and patients in health care settings.

Rationale

Patients and HCWs are at increased risk of infection from HBV, HIV and other blood-borne pathogens during procedures and care. Although HCWs are at increased risk of HIV infection, this risk is relatively small. Every institution and practice providing health care (private and public) must have a clearly defined policy document stating the universal precautions for that setting. This document must be available and familiar to all employees. These institutions and practices must adopt procedures for: (i) the ongoing education of all HCWs (irrespective of level); and (ii) monitoring the effective implementation of universal precautions.

The most serious risk of infection is faced in emergency admitting rooms (casualty/trauma units). The pressure of work together with inadequate staffing, space, lighting and equipment make the application of universal precautions virtually impossible. The high prevalence of HIV seropositivity among patients attending these facilities further increases the risk of exposure.

The Medical Association of South Africa recommends that all HCWs be informed of their absolute right to the provision of all facilities and equipment necessary for the implementation of universal precautions as stated in this document. The MASA will intervene on behalf of doctors where adequate equipment and supplies are not provided by the employing authority.

The following simple and logical measures are cost- and time-efficient. Routine implementation of universal precautions by all HCWs will greatly reduce the risk of patient and HCW infection. The disciplined implementation of universal precautions should make the pretreatment determination of a patient's HIV status irrelevant in terms of HCW safety.

Methods

This guideline is an adapted and expanded version of a section contained in the original MASA AIDS ethical guideline. The universal precautions guideline is similar to existing international recommendations. A draft document...
was circulated to 87 national health care organisations (including professional associations and trade unions) and to provincial health authorities for comment and endorsement; a Delphi-type methodology was used. The draft guideline was subjected to extensive external review by specialist, generalist and health professional groups. These included HIV activist groups and trade unions.

Thirty-three responses were returned and the comments were accommodated where possible in the final guideline. Only national organisations and regional health authorities are listed as endorsing the guideline. There were 20 such national groupings. Consensus-seeking commenced in February and continued until November 1994. The MASA funded the universal precautions guideline project. There were no major disputes about the content. The most important amendment to the draft guideline is the inclusion of HBV and other blood-borne pathogens.

Basic elements of universal precautions

1. Body fluids should be handled with the same precautions as blood

Cerebrospinal fluid, peritoneal fluid, pleural fluid, pericardial fluid, synovial fluid, amniotic fluid, semen, vaginal secretions, breast-milk, unfixed tissues and organs (including the placenta), any blood-stained body fluid, and saliva associated with dentistry should all be handled with the same precautions as blood.

Body fluids such as urine, sweat and saliva (except in the context of dentistry) do not pose any known risk.

2. Avoidance of sharps (sharp objects)

- Recognise and avoid all potentially risky objects, not only needles and knives. Examples include towel clips, suction drain Introducers and bone spicules.
- Hollow needle-stick injuries account for almost all sharps injury.
- Continuously aspirate laser and fulguration smoke by suction.
used (see below). Thorough washing before disinfection or sterilisation is essential for all equipment. Gloves and plastic aprons should be worn for this procedure.

4.2. Suitable disinfectants
- Glutaraldehyde — 2% x 1 hour.
- Hypochlorite solutions — 2 000 parts per million (ppm) for general cleaning, 10 000 ppm x 30 minutes for soaking blood-contaminated material.
- Ethyl alcohol — 70% V/V x 1 hour.
- Isopropanol — 70% V/V x 1 hour.
- Iodine — 1% x 30 minutes.

Inactivation of HIV occurs after 5 minutes’ exposure to most of these agents. The longer exposure time given here accommodates the possible presence of other pathogens and the time required to destroy these pathogens, e.g. HBV.

4.3. Equipment
Wear gloves when handling equipment contaminated by blood or body fluids. Blood-stained equipment must be wiped as clean as possible with paper towels, which must be discarded after use. Wipe the item with a hypochlorite solution (if suitable) and send it for the usual sterilisation. If such cleaning is not possible, place the item in a sealed and labelled clear plastic bag. Protect sharp instruments adequately.

4.4. Linen
Only handle blood-stained linen with gloved hands. If at all possible, contaminated linen should be placed directly in an appropriately sealed and labelled plastic bag from whence it should be tipped directly into a cold water sluice or washing machine. If this is not possible the following steps should be taken:
- Wipe off as much blood as possible.
- Soak the blood-stained area in a bucket containing 10 000 ppm available chlorite for at least 30 minutes.
- Send the linen for the usual laundering (hot wash 65 - 70°C for 5 minutes).

4.5. Body fluid spillage
Wear gloves and remove the spillage with paper towels. Immediately discard the soiled paper towels into an appropriate bag for incineration. Once the area is largely free of organic material from the spillage, pour a disinfectant containing 2 000 ppm available chlorite over the area and allow it to stand for at least 15 minutes. Use paper towels to wipe the area clean and dry.

References

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Dokter en digter
Blanke-vers
woorde ongerymd
tot blanke vers
op die marmertafel
klinies ontbloot
'N kamma-sad grimas
aan haak-en-steek-gesigte vas
en gramig braak die dooiekuns
die waarheid half-half
van die waarheid half-half
alikreukel-op
"Op die marmertafel
tot blanke vers"

L. Sauermann


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National Groups endorsing the guideline: AIDS Consortium, Association of Physicians of South Africa, Association of Nuclear Physicians, College of Medicine of South Africa, Community Health Association of South Africa, Community Health Group, Federation of South African Societies of Pathology, Junior Doctors Association of South Africa, Medical Association of South Africa, National Council Against Smoking, National Pathology Group, Ophthalmological Society of South Africa, Paediatric Association of South Africa, Provincial Deputy Director Generals Hospital and Health Services: Cape, Natal, OFS, South African Academy of Family Practice, South African Association of Medical Scientists, South African National...