

MODULE 1: HIV TRANSMISSION, UNIVERSAL PRECAUTIONS, AND POST-EXPOSURE PROPHYLAXIS

Objectives:

- 1) Discuss modes of transmission
- 2) Describe infection control measures including Universal Precautions
- 3) Review the hospital's PEP policy and how to access it
- 4) Brainstorm interventions to increase the protection of HCW when working with HIV infected patients

Procedures:

- 1) Conduct myths OR transmission exercise (see exercise for procedure)
- 2) Debrief exercise by reviewing factual information about modes of transmission as well as infectious and non-infectious bodily fluids
- 3) Lecture using power point slides on Universal Precautions
- 4) Conduct small group discussions on Universal Precautions using three questions
 - A) What is done well on your ward at Sassoon
 - B) What areas could use improvement
 - C) What barriers do you experience include discussion on solution
- 6) Lecture using slides on PEP. Be sure to define occupational exposure and risk of exposure to HCW.
- 7) Discusses facility PEP policy and how to access it
- 8) Conducts case study activity found in curriculum on waste management and UP
- 9) Debrief case studies
- 10) Summary of Module 1

THERE ARE TWO ACTIVITIES – CHOOSE ONE

(We have practiced the second activity)

A) Demystifying HIV /AIDS

Purpose

- Demystifying HIV/AIDS information by creating a non-threatening atmosphere for trainers to learn and present information to a group
- To begin a process of group learning

Materials required:

Bowl, paper, music

Methodology:

Keeping in mind the number of participants and time available, cut out small strips of paper. Write down questions related to HIV/AIDS, then fold them and put them all into a bowl. If there are 10 people in the group then there should be at least 15 different questions. Possible questions include:

- What is the difference between HIV and AIDS?
- How is HIV/AIDS transmitted?
- Is there a cure for HIV/AIDS?
- Name two symptoms of HIV or AIDS.
- What are STDs?
- Name one prevention method for HIV/AIDS
- How does HIV destroy the immune system?

These questions will vary depending on the group. For the doctors and nurses, the questions will be more focused on the stages of infection, symptoms, etc. For the class IV staff it will consist of very basic questions relating to the transmission of HIV, how it is transmitted in general and in the hospital setting.

Participants should be seated in a circle. As soon as the music starts the bowl is rotated and when it stops the person holding the bowl picks out the paper and tries to answer the question. After the participant has attempted the question the other members of the circle should try to build upon it.

The collective knowledge of the group comes out during this exercise and promotes a sharing of knowledge. More importantly, it begins to focus on the different ways complex facts can be presented. Some participants may describe HIV and AIDS in a simple way while others may describe it

in an in depth and perhaps complicated way. Both methods are important to observe and potentially adopt as tools for trainers.

Facilitator's guidelines:

- | |
|--|
| <ul style="list-style-type: none"> • Make sure that each participant has the opportunity to respond to a question. |
| <ul style="list-style-type: none"> • Encourage the participants to help build on the responses of others. |
| <ul style="list-style-type: none"> • Ask someone from the group to volunteer to keep notes on a chart paper (this is also a trainer's tool) |
| <ul style="list-style-type: none"> • Ask someone to summarize all of the responses to a question. |

B) Myths and misconceptions about HIV/AIDS

Purpose:

- To clarify misconceptions about transmission and modes of HIV/AIDS
- To understand how myths develop

Materials required:

Set of index cards or paper cut outs with common beliefs on them

Process A:

1. The cards are distributed to each participant. In turn, each participant reads her card and says whether the statement is a myth or a fact. Alternately the group can be requested to volunteer opinions about each statement read.
2. The facilitator provides the explanation why the belief is a fact or fallacy.

Process B:

1. An alternative approach is to make it like a game. First break the group into teams of about 10. The teams compete against each other for points from correct answers.
2. The question cards would be all jumbled in a "hat". Either the facilitator or a member of each team would draw out their question. The facilitator would read it for all to hear. One team would be allowed to confer and come up with the answer. If the team answers correctly, they would be awarded 100 points for getting the myth/fact part correct and 400 points for being able to explain why (total points for a correct answer: 500)

FACTS AND FICTION:**Statement****Notes**

- | | |
|---|---|
| 1. You cannot get infected with HIV from a mosquito | True: HIV is the Human Immuno deficiency virus. HIV lives within human white blood cells. It cannot survive outside its host. Thus as soon as the white blood cells die, HIV dies. White blood cells and HIV are destroyed in the highly acidic environment of the mosquito's stomach. |
| 2. A man can only become infected with HIV from an infected woman, not if he has sex with an infected man or hijra | False: The gender of the sexual partner is absolutely irrelevant. HIV transmission can happen whenever the virus from an infected person is able to access the white blood cells of an uninfected person. Both anal sex and vaginal sex are highly dangerous. |
| 3. 85% of people in India who are infected with HIV got it through sex | True: The Government estimates that more than 4.53 million people have been infected with HIV in this way and four crore Indians seek treatment at Govt. STD clinics each year. |
| 4. Anal sex has a higher chance of HIV transmission than vaginal sex | True: Both anal; and vaginal sex are unsafe. Both the vagina and the rectum are lined with a mucus membrane through which the virus can pass directly into the blood stream, but anal sex has a higher chance of transmission because the chances of minor abrasions or tearing is higher. |
| 5. 1 out of every 10 people with an STD has HIV | True: The same behavior that leads to an STD can lead to HIV transmission if your partner is infected. Furthermore the existence of an STD |
| 6. 50% of all HIV infections happen between the age of 15 and 25 | True: Young people are experimenting with sex and drug use, but they may not understand the risks. Thus early education about reproductive health, sex sexuality and HIV/AIDS is essential to the safety of young people. |
| 7. Using a copper 'T' for birth control also protects you from HIV. | False: Condoms are the only form of birth control, which also offers protection from the sexual transmission of HIV. Use of copper 'T' actually increases the rate of transmission. |
| 8. 7 or 8 out of every 10 women who will be infected with HIV will be infected by their husbands | True: The only risk behavior the majority of women who are infected will have practiced is having sex with their husbands - 'their marital duty'. |
| 9. One way of knowing that you are HIV positive is if you lose more than 10% of your body weight over a period of less than one month for no apparent reason. | False: Although rapid weight loss can be an indication of a weakening immune system and, thus, the presence of HIV, there are many reasons for unexplained weight loss. The only way you can be sure whether you have the virus is to take an HIV test |
| 10. Frequent scratching of the genital region is a symptom of AIDS | FALSE |

Basic Facts about HIV

Important facts

- AIDS is caused by a virus named Human Immunodeficiency Virus (HIV).
- People who are infected with HIV often have no symptoms of disease for many years and can therefore infect others without realizing that they themselves are infected.
- AIDS refers to specific clinical manifestations seen during the later part of HIV infection when people are ill as a result of opportunistic infections.
- Although many of the opportunistic infections seen in AIDS can be managed, there is presently no cure for AIDS. Most people with AIDS will eventually die.
- The mortality rate is very high. Prior to antiretroviral therapy, 50% of adults could die within eighteen months after being diagnosed with AIDS. The survival period for children is less. For those who have access to anti-retroviral therapy life can be prolonged and improved.
- Prevention is at present the only possible cure. Health care workers have an important role in teaching their patients and their colleagues how HIV is and is not transmitted, and how people can protect themselves against infection.

How HIV is spread?

There are two requirements for HIV infection to take place

1. **Concentration of Viral Load** – There must be a sufficient quantity of HIV to allow infection to occur. If the concentration is too low, then it is not possible for infection to take place.
2. **Port of Entry** – There must be a way for HIV to enter into the body. If HIV infected fluid does not have a path into another person's body, then infection cannot take place.

Body Fluids

A

Blood
Semen
Menstrual Blood
Vaginal Fluid
Breast milk

B

Sweat
Tears
Saliva
Skin Oils

C

Cerebrospinal Fluid
Amniotic Fluid
Fecal Matter

Body fluids and HIV:

The fluids in Column A contain a high enough concentration of HIV to infect and can be exchanged.

The fluids in Column B contain too small a concentration of the virus to infect.

The fluids in Column C are not likely to be exchanged between people.

IMPORTANT NOTE ABOUT THIS GRAPH

Please keep in mind that Column C discusses fluids not likely to be shared between people however there is a high concentration of virus found in cerebrospinal fluid and amniotic fluid. Health Care Workers do come in contact with these fluids and must take precautions. Virus is not generally present in fecal matter unless visible blood is present.

HIV is transmitted by

- Exposure to blood, blood products, or donated organs (parenteral transmission); exposure to blood is principally through the transfusion of unscreened blood or use of unsterilized contaminated syringes and needles

Facts

- Recipients of a single unit of HIV infected blood have a virtually 100% probability of becoming infected.
- Over 80% of single unit transfusions in India can and should be avoided. The body can normally manage the loss of a single unit of blood.
- HIV can live between 30 seconds to one minute when exposed to air. Inside a needle, HIV is not in direct contact with air and can live for longer periods of time, depending on the environmental conditions.
- Injection drug use is a high risk behavior for transmission when needle sharing occurs.
- Transmission of HIV in health care settings in the United States i.e. from doctors/nurses to patients or vice versa is very low – only 0.3%, if universal precautions are taken.
- If a health care worker is involved in a needle stick injury or another high risk exposure he or she should seek to activate the facilities' PEP protocol.

- From infected mother to fetus or infant, before, during or shortly after birth. (Perinatal transmission). HIV is most likely transmitted during the labor process and is not as likely to be transmitted in utero.
- The overall risk of HIV transmission from an infected woman to her fetus in utero or during delivery is about 30%.
- Administration of Zidovudine (AZT) and Nevarapine prior to and following delivery can reduce transmission by 50 – 75%.
- HIV can be transmitted by breast-feeding from an infected mother to a newly born child. 10 - 15%
- HIV can be transmitted from an infected person to his or her sex partner (man to woman, woman to man and man to man).
- It is easier for the virus to be transmitted if the uninfected partner is already suffering from another sexually transmitted disease.

You cannot get HIV from:

- Drinking water or eating food from the same utensil used by an infected person
- Socializing or casually living with people with HIV or AIDS
- Hugging, touching or kissing
- Caring and looking after people with HIV/AIDS
- Getting bitten by an infected person
- Use of the same toilets as AIDS patients or people with HIV
- Sharing telephones or computers
- Sneezing and coughing
- Getting bitten by a mosquito that has already bitten an infected person
- Donating blood if sterilized equipment is used
- Working with people who are HIV positive.
- Bed bugs, flies, lice, fleas, mosquitoes and other insects and pests DO NOT spread HIV

Kissing

Casual contact through closed-mouth or "social" kissing is not a risk for transmission of HIV. Because of the potential for contact with blood during "deep-kissing" or open-mouth kissing, CDC recommends against engaging in this activity with a person known to be infected. However, the risk of acquiring HIV during open-mouth kissing is believed to be very low. CDC has investigated only one case of HIV infection that may be attributed to contact with blood during open-mouth kissing.

Saliva, Tears, and Sweat

HIV has been found in saliva and tears in very low quantities from some AIDS patients. It is important to understand that finding a small amount of HIV in a body fluid does not necessarily mean that HIV can be *transmitted* by that body fluid. HIV has *not* been recovered from the sweat of HIV-infected persons. Contact with saliva, tears, or sweat has never been shown to result in transmission of HIV.

From U.S. Center for Disease Control and Prevention

How HIV infection can be prevented

1. If you know you are uninfected and are already sexually active, have sex only with one mutually faithful partner who is also known to be uninfected
2. In all other situations a condom should always be used during sex
3. Women with HIV should seek advice before getting pregnant because they may pass HIV to their babies.
4. When you need a blood transfusion, insist on having blood that has been tested for HIV.
5. When you cannot avoid skin-piercing instruments such as blades, needles and syringes insist on having sterilized instruments.
6. Don't share needles
7. Cover cuts and wounds with waterproof plasters. If you do not have plasters, use a piece of clean cloth to cover the wounds
8. Women should be extra careful as they are more at risk of getting infected with HIV because of:
 - a. Greater chances during sexual intercourse
 - b. Greater chances of needing a blood transfusion because of bleeding associated with pregnancy and child birth

UNIVERSAL PRECAUTIONS, WASTE MANAGEMENT, AND POST-EXPOSURE PROPHYLAXIS

General Objective: On completion of the module the health care workers will be able to develop strategies and participate in the implementation of universal precautions into all aspects of clinical nursing practices. HCWs understand the importance of Universal Precautions and the concept of PEP.

Universal Precautions Procedure:

1. Lecture on Universal Precautions
2. Break into groups to discuss the following questions on universal precautions
3. Large group discusses questions lead by facilitator

QUESTIONS:

The purpose is to have the group discuss practices at their own facility. Use these questions:

- 1) What is done well on your ward or facility?
- 2) What areas could use improvement?
- 3) What barriers do you experience? (include discussion on solutions)

Universal precautions consists of four standard practices

- Hand washing
- Use of protective barriers to prevent direct contact with body fluids.
- Safe handling and disposal of sharps
- Safe decontamination of instruments and other contaminated equipment

People working in health care settings – doctors, nurses and class IV staff – run a risk of getting infected accidentally by HIV from a patient if they are not careful. They can also transmit the virus into an uninfected patient if they themselves are infected with HIV and do not take the necessary steps to prevent it happening. Such risks can be avoided by following **universal precautions**.

Universal Precautions are a set of measures taken to ensure that accidental exposure of patients and health care workers to infected blood is reduced to the minimum. **Universal precautions are based on the assumption that blood is potentially infectious regardless of whether it is from a patient or health care worker, regardless of their known HIV status, and should be applied in all patients.**

Transmission of HIV Infection and AIDS can be prevented

- All blood, body fluids and objects contaminated with them must be regarded as infected
- Health care workers should follow the same principles of cleanliness, sterility, hygiene and precautions, which they have been following for other viruses like Hepatitis B Virus (HBV)
- Precautions must be taken to avoid accidental exposure to areas with broken or cut skin, scratches, rashes, acne, chapped skin or fungal infections

- Precautions must be taken to avoid accidental splashes on mucous membrane (eyes, mouth)
- All such accidental splashes must be immediately reported to the authorities.
- All contaminated objects must be properly disposed and /or appropriately decontaminated
- Hands must always be washed immediately before and after the procedure. Hands and other parts of the body that have been contaminated with blood should be washed thoroughly with soap and water. Hands should also be washed immediately after removal of gloves.
- HIV is an extremely delicate virus, which can be easily destroyed by simple methods using chemicals such as bleach.
- Wear rubber boots or plastic disposable shoes when the ground is likely to be contaminated.
- Needle sticks should be avoided by eliminating the practice of recapping needles and disposing of sharps in proper containers.
- **It is important to remember that infection control measures are intended to isolate the virus and body fluids, not the patient**

Recommendations

- HCWs should don gloves, masks, and protective eye shields when contact with blood or body fluids of the patients is anticipated
- Never try to recap or reinsert the hypodermic disposable needle back in its cap. it is the commonest cause of needle stick injury among HCWs
- All used disposable needles, and other sharp items must be discarded in puncture proof containers immediately after use.
- All blood or body fluids and spills must be immediately covered with cloth dusters or big gauze pieces soaked with bleach and left for 30 minutes. Then, using gloves, the soaked duster can be appropriately discarded and the area further washed clean.

Infections in the health care settings

Although we do not often think about it, health care settings are ideal for transmission of diseases because

- Invasive procedures, which have the potential to introduce micro-organisms into parts of the body where they can cause infections, are performed routinely
- Service providers and other staff are constantly exposed to potentially infectious materials during their work
- Many of the people seeking health care services are already sick and may be more susceptible to infections

- Some of the people seeking services have infections that can be transmitted to others
- Services are sometimes provided to many clients in a limited physical space, often during a short period of time.

Service providers are at risk for infection because they are exposed to potentially infectious blood and other body fluids on a daily basis. Staff who are responsible for processing instruments and cleaning after procedures are particularly at risk.

RISKS TO CLIENTS

Clients are at risk of infection when

- ◆ Service providers do not wash their hands between clients and procedures
- ◆ Used instruments and other items are not cleaned and sterilized properly

Barriers: Surgical attire

Gloves prevent micro-organisms on the provider's hands from entering the client and prevent the provider's hand from contact with blood and other fluids. Health care workers should wear gloves while performing their duties. If gloves are not disposable they should be changed washed and then disinfected or sterilized after use with each patient. When injuries from sharp instruments are possible, extra heavy-duty gloves are recommended and the instruments should be handled with extreme care.

Masks prevent micro-organisms expelled during talking, coughing or breathing from entering the client and protect the provider's mouth from splashes of blood or other fluids

Eyecovers and face shields protect the provider's eyes, nose, and mouth from splashes of blood or other fluids

Gowns and waterproof aprons prevent micro-organisms from the HCWs arms from entering the client

Caps prevent micro-organisms from hair and skin on the HCWs from entering the client.

Boots protects the HCWs feet from injury or splashes of blood and other fluids.

Selection of protective barriers		
Type of exposure	Protective barriers	Examples
Low risk – contact skin, no visible blood	◆ Gloves helpful but not essential	Injections, minor wound dressings
Medium risk - probable contact with blood, splashing unlikely	◆ Gloves ◆ Gowns and aprons may be necessary	Insertion or removal of intravenous cannula, handling of laboratory specimens, large open wounds dressing, blood spills, vaginal examination, venipuncture
High risk – probable contact with blood, splashing and uncontrolled bleeding	◆ Gloves ◆ Waterproof gown ◆ Eye wear ◆ Mask	Major surgical procedures particularly in orthopedic surgery and oral surgery; vaginal delivery

Procedures

Collection of Blood Specimen

- Gloves are recommended for drawing blood specimens from patients however when in short supply this activity is not high risk.
- Soiling of linen must be avoided. Use thick dressing pad or sheet of absorbent cotton below the forearm when drawing blood samples
- Tourniquet must be removed before the needle is withdrawn
- Dry cotton swab must be given to the patient to press over the site of venipuncture after the needle is withdrawn
- Keep the cotton swab in place until the bleeding stops
- Soiled cotton swab and dressing pads must be disposed in a plastic bag, tied and properly labeled “infected waste” and properly disposed off.
- Any blood spill must be carefully wiped with an approved disinfectant
- Blood must be carefully plunged from the syringe to the specimen vials. These must be disposable screw capped vials avoiding the risk of leakage, breakage or spills
- After the blood is put in the vials, they should be labeled appropriately and placed in plastic boxes before sending it to the laboratory.

Precaution in relation to invasive procedures

- Gloves should be worn for all invasive procedures
- Protective glasses, gowns and masks should be worn for procedures where a splash is likely
- Health care workers who assist in caesarean deliveries should wear gloves, gowns and aprons while handling the placenta
- If a glove is torn, the gloves should be changed and the hands washed carefully.

Use and disposal of sharps

In health care settings, injuries from needles and other sharp items are the main cause of infections in staff from blood borne pathogens. All staff who handle sharps are at risk of infection. Health care workers can be injured:

- When they recap, bend or break hypodermic needles
- When they are struck by a person carrying unprotected sharps
- When sharps are thrown in unexpected places, such as in linen bags.
- During procedures in which they use many sharps, or are working in a small confined space
- When they handle or dispose wastes that contains used sharps
- When clients move suddenly during injections or venipuncture

Disposal of sharps

Improper disposal of contaminated sharps can cause infection. To avoid injuries during sharp disposal:

- Avoid recapping needles
- Do not bend or break needles
- Do not remove needles from syringes before disposal
- Dispose the sharps in a puncture proof container

Laundry and Linen

- Soiled linen must be handled with care (BUT HIV does not live long outside of the body and the potential for HIV exposure while handling soiled linens is minimal. In a setting where gloves are scarce only use gloves if the blood stain is fresh)
- All soiled linen should be soaked then placed in a plastic bag. Bags must be tied and sent to the laundry (this would be for all patients whether or not they are HIV infected)
- The person sorting linen should put on gloves

REMEMBER

1. The causative agent of AIDS is present in the white blood cells, therefore the virus is present in highest concentrations in blood, semen and vaginal fluids
2. The virus is found in low concentrations in saliva, tears and other body fluids. Therefore, transmission via tears and saliva does not occur
3. The disease is not transmitted by casual contact , air, mosquitoes, water, food or living together
4. The virus is easily inactivated by heat, bleach, alcohol and glutaraldehyde
5. Health care workers should observe universal precautions
- 6. Following universal precautions is the key to protecting yourself and others from contracting HIV infection**

What to do When Supplies of Gloves are Limited:

Hospital and clinic managers, and supervisors should first check to be sure staff are not wearing gloves when they are not needed (ie: for activities such as taking a patient's blood pressure, using the telephone or writing in a chart, and that do not involve contact with blood or other potentially infectious materials). In addition, when resources are limited and examination gloves are in short supply, soiled disposable surgical gloves can be reprocessed for reuse if they are:

- Decontaminated by soaking in 0.5% chlorine solution for 10 minutes
- Washed and rinsed, and
- Sterilized (autoclaving) or high-level disinfected (steaming)

DO NOT REPROCESS GLOVES THAT ARE CRACKED, PEELING OR HAVE DETECTABLE HOLES OR TEARS

INFECTION CONTROL INDICATOR CHECKLIST

Indicator 1	<p>Sharps should be handled safely to minimize the risk of sharps injury</p> <ul style="list-style-type: none"> • Appropriate puncture proof container • Container less than three quarters full • Sharps are not protruding from container • No recapping or one hand recapping
Indicator 2	<p>Instruments should be sterilized fully</p> <ul style="list-style-type: none"> • Sterilizer available and in working condition • Equipment thoroughly cleaned after use • Clean instruments are stored in cupboard
Indicator 3	<p>Hands washed appropriately to prevent cross infection</p> <ul style="list-style-type: none"> • Soap and clean water available • Clean towels available • Staff observed to wash and dry hands after contact with body fluid
Indicator 4	<p>A protective barrier is worn to prevent exposure to blood</p> <p>The following protective barriers should be available for the use of staff (depending on the clinical area and risk of exposure):</p> <ul style="list-style-type: none"> • Disposable gloves • Heavy duty gloves • Masks • Aprons • Protective eyewear
Indicator 5	<p>Waste should be disposed safely</p> <ul style="list-style-type: none"> • All infectious waste should be put in the incinerator • No contaminated waste visible

POST EXPOSURE PROPHYLAXIS:

Procedure:

- 1) Lecture using slides
- 2) Discusses PEP policy at BJMC
- 3) Leads debriefing of exercise

MANAGEMENT AND NOTIFICATION OF EXPOSURE TO INFECTED BLOOD

- Exposed area must immediately be washed with soap and water
- Blood and other body fluids must be removed and cleaned under running tap water while washing with soap
- Notify the accident to the **Infection Control Committee** of the hospital or any other appropriate competent authority
- Exposed person is evaluated for serological evidence of HIV infection after the accident provided that they consent to testing.
- Depending on the nature of the occupational exposure and risk of HIV and other blood borne pathogens, the healthcare worker may or may not be advised to take post-exposure prophylaxis (PEP).
- If the health care worker is found negative, then the evaluation is repeated after 30 days, 3 months, 6 months and 12 months after exposure.
- If test remains negative then it can be concluded that the HIV virus was not transmitted
- If found positive at any time, the **result should be confirmed** with an appropriate HIV testing algorithm (**2 rapid tests. One test is insufficient.**) and performed at certified lab. The person would be referred for appropriate counseling and care.

POST EXPOSURE PROPHYLAXIS (PEP) GUIDELINES

Introduction

Health care workers (HCW) are normally at a very low risk of acquiring HIV infection during management of the infected patient. However, in spite of a low statistical risk of acquiring HIV, the absence of a vaccine or effective-curative treatment, makes the health care worker apprehensive. So, it is very necessary to have a comprehensive program in place to deal with anticipated accidental exposure.

Most exposures do not result in infection. The risk of infection varies with type of exposure and other factors such as:

- The amount of blood involved in the exposure
- The amount of virus in patient's blood at the time of exposure
- Whether post exposure prophylaxis (PEP) was taken within the recommended time.

Prevention is the main strategy to avoid occupational exposure to blood/body fluids. All the precautions emphasized earlier must be practiced at all times when handling patients, blood and body fluids while providing medical services.

Definition of an occupational exposure

An occupational exposure that may place a worker at risk of HIV infection is a percutaneous injury, contact of mucous membrane or contact of skin (especially when the skin is chapped, abraded or afflicted with dermatitis or the contact is prolonged or involving an extensive area) with blood, tissue or other body fluids to which universal precautions apply.

STEPS TO BE TAKEN ON EXPOSURE TO HIV INFECTED BLOOD/BODY FLUIDS AND CONTAMINATED SHARPS ETC.

Immediately following an exposure:

- Pricked finger should **not** be put into mouth, reflexively.
- Needle sticks and cuts should be washed with soap and water;
- Splashes to the nose, mouth or skin, should be flushed with water;
- Eyes should be irrigated with clean water; saline, or sterile irritants;

No scientific evidence exists as to the fact that the use of antiseptics for wound care or squeezing the wound will reduce the risk of transmission of HIV. However, this should be done. The use of a caustic agent such as bleach is not recommended.

Report the exposure to the appropriate authority and condition must be treated as an emergency. Prompt reporting is essential because in some cases, HIV post-exposure prophylaxis (PEP) may be recommended and it should be started as soon as possible, preferably within a few hours.

Based on animal models, the success of PEP therapy is reported to be maximal when started within a matter of hours after the exposure. Although, any cut-off time is arbitrary initiating treatment more than 72 hours after the exposure is not recommended. Although perhaps not as effective as prophylaxis, late PEP (after 72 hours) may still be useful as early treatment of HIV infection, in case infection has occurred.

Post exposure prophylaxis with drugs or other therapy can reduce the risk of transmission of some blood borne pathogens. Whether PEP is indicated following exposure to blood or other fluids depends on a number of factors, including the infection status of the client whose blood or fluids are involved, the type of exposure (a splash to the skin versus a deep puncture wound).

For HIV – several antiretroviral drugs, used either alone or in combination have been recommended to reduce the risk of HIV transmission following accidental exposure in health care workers.

If the health care worker has been exposed to blood or other body fluids, consult an infectious disease specialist familiar with post exposure prophylaxis.

Post Exposure Prophylaxis Protocol of BJMC

In the event of an exposure via needle stick injury or exposure to other infectious material by a health care worker the following protocol exists:

- 1) The HCW should first immediately wash the area thoroughly with soap and water
- 2) The HCW should then immediately contact the Lecturer on duty of that particular unit where the incident occurred
- 3) If the Lecturer is not available then the CMO is to be contacted and the following procedure takes place. If the Lecturer is available the same procedure will be followed and the Lecturer will send the report to the CMO:
 - HCW is counseled
 - Consent from HCW is obtained
 - Baseline bloods are drawn: HIV ELISA or two HIV rapid tests (using appropriate testing algorithm), LFTs, hemoglobin
 - If HCW refuses blood draw they must sign record.
 - Draw patient's blood if HIV status is unknown or if most recent test was over 4 weeks ago
 - Send samples to lab. If incident occurs at night, call lab on call person and store blood appropriately with label and date.
- 4) CMO administers HCW emergency dose of antiretroviral drugs based on the exposure code within 24 hours. Drugs given at 72 hours or more after exposure are less effective.

BASIC REGIMEN: (Zidovudine 300 mg + Lamivudine 150 mg twice per day (Duovir)

EXPANDED REGIMEN: same as above + Indinavir 800 mg thrice per day (Indivan)

Stat dose for PEP is available in Ward 22

5) Drug dose provided until the HCW can approach the Medicine Department or PSM department for further doses during work hours. The Medicine or PSM department keeps a record of incidence report, lab results and follow up of HCW. The HCW should also be advised to approach Medicine and Virology OPD for follow up advice.

6) The lab report will be made available within 48 hours. Report will be made available to the HCW after the appropriate post test counseling in the Medicine/Virology OPD.

CONFIDENTIALITY OF THE HCW IS TO BE STRICTLY MAINTAINED

7) HCW then goes to the first available OPD:

Medicine clinic is Wednesdays 9:30-12:00 noon
Virology clinic is Friday 2:00 – 3:00 p.m.

HCW is monitored for adverse effects of drugs and adherence. They are also prescribed weekly doses of antiretroviral medications.

8) HCW is to be monitored by ELISA testing at 6 weeks, 12 weeks and at 6 months.

9) Results will be reported to MSACS and NACO at monthly intervals. Again, confidentiality of the health care worker is to be strictly maintained

CASE SCENARIO ACTIVITY:

Procedure:

- 1) Introduce activity
- 2) Divide into small groups
- 3) Each group has one case scenario
- 4) Each group presents answers
- 5) Facilitator debriefs using key points

Case scenario on Universal Precautions

Shanti the nurse in the Gynecology department usually changes the bed sheets of the patients during the early morning rounds. Today she found a blood spill on a bed sheet. She put the stained bed sheet along with the other linen and sent it to the laundry.

Questions

1. What steps did Shanti go wrong in implementing /following universal Precautions
2. What measures should have been taken in case the blood spill was from a HIV positive patient?
3. What measures should have been taken in case the blood spill was from a Hepatitis positive patient?

FACILITATOR NOTES: Be sure that the following key points are addressed:

1. ALL potentially infectious material should be treated the same way.
2. Gloves should be worn.
3. Risk of infection in VERY LOW (virtually does not exist) when coming in contact with blood stained sheets.

Case scenario on Waste Management

Dr. Lal usually takes the blood samples of all the patients in the morning before the rounds. Today he wore a pair of gloves and collected blood samples from five patients. He left the stained cotton near the patients' bed and threw the stained gloves in the wash basin. He recapped the used syringes and needle and left it at the nursing station.

Questions

1. What mistakes did Dr. Lal commit in segregation and disposal of sharps

2. What are the correct steps that should be done in maintaining Universal Precautions and proper waste management?

FACILITATOR NOTES: Be sure that the following key points are addressed:

1. Hand washing
2. There should be NO recapping of needles
3. Gloves should be worn in this situation
4. Sharps disposal is done properly

Case scenario on PEP

Radha a sweeper in Surgery department cleared the waste bags with her bare hands and was pricked with a used needle. She immediately washed her hands, wiped her finger with Dettol and forgot about it.

Questions

1. What should Radha have done after getting the needle stick injury?
2. What could be done to avoid such injuries?
3. Whom should HCWs contact if they got a needle stick injury or a blood splash in the eyes?
4. Which are the diseases that can spread by such an injury?

FACILITATOR NOTES: Be sure the following key points are addressed:

1. The hospital's PEP policy is reviewed
2. The correct procedure is used after an exposure such as washing the affected area.

MODULE 1 KEY POINTS

- Modes of transmission are through: IV drug use, Mother to Infant, sexual intercourse (anal or vaginal), transfusion
- HIV is found in: blood, semen, vaginal secretions, breast milk, CSF
- HIV is NOT transmitted through sweat, tears, urine and feces
- Risk of HIV transmission to Health Care Workers is 0.03% if universal precautions are followed.
- Universal Precautions assumes all blood from any patient is potentially infectious.
- Universal Precautions consists of four standard practices: Hand washing, use of protective barriers when appropriate, safe handling of sharps, safe decontamination of instruments.
- Selection of protective barriers is dependent on type of exposure.
- Use of mask and gown in low risk situations is unnecessary
- If a HCW sustains an exposure she/he should first wash affected area with soap and water then activate post-exposure prophylaxis policy

Nursing Actions:

1. Use universal precautions with every patient
2. Masks should not be used in low risk situations
3. Seek PEP if a HCW has an exposure such as a needle stick injury or another exposure