Zambia infection prevention guidelines & application in health care facilities

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Introduction to Infection Prevention

Key Concepts you will learn

- The basic principles of infection prevention
- Conditions that allow infections to be transmitted to others
- How to stop the spread of infectious diseases
Why is IP/IS important?

- Increased outbreak of diseases once well controlled
- Emergency of infectious agents that can cause incurable diseases such as HIV and hepatitis C
- Reasons increased infections include
  - Rapid population growth
  - Increased poverty
  - Expansion of population into ‘remote’ areas
  - Environmental degradation
  - Improved transportation
  - Inadequate public health infrastructure
  - Poor disease control and prevention
Health care facilities are ideal settings for transmission of diseases

- Sick people are more susceptible as their immunity is weak
- Patients may have transmissible diseases
- Service providers are constantly exposed to infectious material as part of their work
- During procedures clients are at risk of infections
- Services are sometimes provided to many clients in conditions of limited space and other facilities
Why is IP/IS important? (contd.)

With appropriate infection prevention practices, you can
- Prevent post procedure infection
- Provide high quality safe services
- Prevent infections in service providers and other staff
- Protect the community from infections that arise from the health facility
- Prevent the spread of antibiotic resistant micro-organisms
- Lower the cost of health care
What is the most common or frequent risk healthcare workers encounter while caring for patients?
Direct contact with blood and other body fluids.
Waste Disposal

Processing Patient Care Items
Purpose of Infection Prevention

Dual Role

- Reduce risk of disease transmission to healthcare, clients, patients, and community members

- Protect healthcare workers at all levels—from physicians and nurses to cleaning, housekeeping, laboratory staff and all paramedical staff
Important Concepts

- **Microorganisms** are the causative agents of infection
  - Bacteria (vegetative, mycobacterium and endospores)
  - Viruses
  - Fungi
  - Parasites

- **Colonization** means that disease-causing microorganisms are present in a person but not causing symptoms (clinical changes)

- **Infection** means that the colonizing organisms are now causing infection or disease

- **Infection prevention** depends on placing protective barriers (physical, chemical, or mechanical) between a susceptible host (person lacking immunity) and the organisms
Understanding the Disease Transmission Cycle

- All microorganisms can cause infection.
- All humans are susceptible to most infectious agents unless immune (naturally or by vaccination).
- Risk of infection is related to number and virulence of organisms.
- Number of organisms needed to cause infection varies with location (blood stream – least; intact skin – most number of organisms).
Transmission of HBV and HIV from Patients to Healthcare Workers

Most injuries are preventable by:
- eliminating unsafe and unnecessary injections
- immediately disposing needles and syringes in sharps containers
- placing sharps containers within “arm’s reach”
- using “Safe Zones” for passing sharps in the OR
- Decontaminating instruments and other items before reprocessing
Categories of Potential Infection Risk

- Since 1968, this system has served as the basis for:
  - Selecting appropriate infection prevention practices or processes (e.g., wearing gloves or sterilizing medical instruments), and
  - Setting priorities for infection prevention programs.

- Categories of potential infection risk
  - **Critical**: Management of items or processes that affect normally sterile tissues or the blood stream (highest risk of infection)
  - **Semicritical**: Management of items or processes that affect mucous membranes or small areas of nonintact skin
  - **Noncritical**: Management of items or processes that involve intact skin (lowest risk of infection)
How to prevent Infections

Primarily involves preventing the spread of infectious diseases through the air, from blood or body fluids and by contact (fecal-oral, contaminated food or water), and from infected animals or insects) by:

- Inhibiting or killing the infectious agent
- Blocking the agent’s means of getting from one infected person to a susceptible host
- Making sure people, especially workers, are immune or vaccinated
- Providing workers with appropriate personal protective equipment
Remember health care waste

- These waste may be contaminated or non-contaminated.
- About 75% - 90% of health care waste is non-contaminated wastes.
- The remaining is regarded as Hazardous (10% - 25%).

These hazardous waste can harbor pathogenic microorganisms or toxic substance which can cause harm to humans.
Some Biological Hazards

- **Bacterial**
  - E. coli
  - Tuberculosis
  - Streptococcus Group A

- **Fungal**
  - Yeast

- **Parasitic**
  - Malaria

- **Viral**
  - HIV
  - Hepatitis B virus
  - Hepatitis C virus
  - Rotavirus
  - Ebola
  - Papilloma virus
Survival of pathogenic microorganism in the environment

- Depends on temperature, humidity, ultra violet irradiation, availability of organic substances, presence of predators.
- Hepatitis B – is persistent in dry air and can survive several weeks, survive brief exposure to boiling water
  - Survive some antiseptic
  - In 70% ethanol remains viable for 10 hours at 60 degrees Celsius; even in a drop of blood
- HIV – less resistant, survive no more than 15 min when exposed to 70% ethanol
  - 3-7 days at ambient temp
  - Inactivated at 56 degrees Celsius
HIV Risk

- Risk of acquiring HIV after being stuck with a needle from an HIV-positive patient is **0.04%**
- The risk of HIV transmission from mucous membrane exposure from an HIV-infected person/infected body fluids is **0.09%**
Hepatitis B Virus Risk

- Risk of acquiring HBV after being stuck with a needle from an HBV-positive patient

27–37% (30%)
Hepatitis C Virus Risk

- Risk of acquiring HCV after being stuck with a needle from an HCV-positive patient

1-10% (1.8%)
Why avoid open piles of waste?

- Risk to scavengers/unknowingly reuse of contaminated waste
- Accidents and injury
- Production foul smell
- Attraction insects, animals and other vermin
Disposal of used syringes & needles

DO not;

- emptying sharp containers
Disposal of used syringes and needles

Do not allow:
- throwing safety boxes indiscriminately
Disposal of used syringes, needles and other wastes

Ensure that;

- Containers with sharps are incinerated
- Burying waste
Safety precautions when handling other medical wastes

- Equipment/transport for waste must not be used for other purposes - mark containers
- Wash waste container with a disinfectant
- Separate containers – combustible non combustible waste prior to disposal
- Use Personal Protective Equipment
- Wash hands or use a hand rub after removing gloves when handling wastes.
Role of the community

Community members (patients and clients)
- Avoid requesting for injections
- When injections are prescribed, politely ask and discuss oral medication
- Accept injection only from qualified HCP

Community leaders i.e. NGOs, CHWs, TBAs, NHCs etc
- Encourage community members to avoid unnecessary injections
- Educate community members on the dangers of health care wastes
- Monitor the disposal of HCW and report to appropriate authorities
- Educating children to avoid health care wastes
Infection Prevention is Everyone’s Responsibility
Thank you for listening

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