

Regulations Pertaining to Healthcare Epidemiology and Infection Control

Exposure Control Plan

This plan is designed to eliminate or minimize
employee exposure to pathogens

Standard precautions



1. Handwash
2. Gloves
3. Masks, Eye protection equipments
4. Patient care

5. Environmental control

6. Linens

7. Occupational health and bloodborne pathogens

8. Patients placement

Vaccinations

healthcare personnel should receive the following vaccines:

- Hepatitis B vaccine
 - Influenza (annually)
 - Measles–mumps–rubella (MMR)
 - Varicella (chickenpox)
 - Tetanus–diphtheria–pertussis (TDP)
 - Meningococcal vaccine (for microbiologists who are routinely exposed to isolates of *Neisseria meningitidis*)
- meningococcal vaccine should be given for those who work directly with patient -who take CSF form patient

Personal Protective Equipment

Gloves.

>protective personal equipments must be p to standards

>coats must be long, tight and cover the neck

>coats in operation rooms are exception ,because rooms must be sterile ,and the percentage of mo there is 0%

Isolation Gowns

ثوب

Masks

Eye Protection

Respiratory Protection

Patient-Care Equipment

patient care equipment must be cleared ,and organic material are removed before sterilization

>organic material might be proteinous

Organic material (e.g., blood, body fluids, secretions, excretions) must be removed from medical equipment, instruments, and devices prior to high-level disinfection and sterilization because residual proteinaceous material reduces the effectiveness of disinfection and sterilization processes.

All such equipment and devices must be handled in a manner that will protect healthcare workers and the environment from potentially infectious material.

Environmental Control

The hospital must have, and employees must comply with, adequate procedures for the routine care, cleaning, and disinfection of environmental surfaces such as bedrails, bedside tables, commodes, doorknobs, sinks, and any other surfaces and equipment in close proximity to patients.

>any part of the patients room, and materials which he uses must be cleaned daily

>commodes: مقعدة

>sinks: مصارف

Linens, Disposal of Sharps

All contaminated needles, lancets, scalpel blades, and other sharps must be disposed of immediately after use, by placing them in special containers known as sharps containers

the sharp containers must be

- 1)unbreakable
- 2)waterproof
- 3)available everywhere in the hospital



Sharps containers are rigid, puncture resistant, leak proof, disposable, and clearly marked with a biohazard label



Sharps containers must be easily accessible to all personnel needing them and must be located in all areas where needles are commonly used, as in areas where blood is drawn, including patient rooms, emergency rooms, ICUs, and surgical suites.

When full, sharps containers are properly disposed of as biohazardous waste

Transmission-Based Precautions

Contact Precautions

Droplet Precautions

Airborne Precautions

Patient Placement



Isolation

Source isolation

- Patients with contagious diseases are isolated in special rooms to protect other people from becoming infected.
under negative pressure means air flow mustn't exit from the room
the patient room must be closed ,HEPA filter must be there to filter the room frequently
- The isolation rooms are under negative pressure

Protective isolation

- Patients who are susceptible to infections are isolated in special rooms under positive pressure to protect them from getting infections from others

patients who are susceptible to infection such as those who are under chemotherapy or burn cases patients

>under positive pressure means air flow mustn't enter to the room

Handling food and eating utensils

- Provide an excellent environment for the growth of pathogens

Handling fomites

Non living objects that may transmit microbes

Examples of fomites in healthcare settings are patients' gowns, bedding, towels, and eating and drinking utensils; and hospital equipment such as bedpans, stethoscopes, latex gloves, electronic thermometers, and electrocardiographic electrodes

Transmission by fomites can be prevented by



- Using disposable equipments
- Disinfect or sterilize equipment after use
- Use individual equipment for each patient
single equipment for single patient ,sharing is not available
- Empty bedpans and wash them soon
- Use electronic thermometer, with disposable cover for
single use disposable :such as plastic

Medical waste disposal



medical wastes must be disposed of properly. These standards include the following:

اناء ووعاء: receptacle

- Any receptacle used for decomposable solid or liquid waste or refuse must be constructed so that it does not leak and must be maintained in a sanitary condition.

70% of alcohol mustn't be used >>because it will be converted to water after a period of time

>medical wastes are the most potent pathogens

>all wastes even metal must be converted to ash in a room that is called incinerator where the temperature reaches 1000C

- All sweepings, solid or liquid wastes, refuse, and garbage shall be removed to avoid creating a menace to health and shall be removed as often as necessary to maintain the place of employment in a sanitary condition.
- The medical facility's infection control program must address the handling and disposal of potentially contaminated items.

Infection Control in Dental Healthcare Settings

Infection control guidelines applicable to dental healthcare settings

Preventing transmission of **bloodborne pathogens**, including HBV vaccination and preventing exposures to blood and other potentially infectious materials

- Hand hygiene
- Contact dermatitis and latex hypersensitivity
- Sterilization and disinfection of patient-care items
- Environmental infection control, including use of disinfectants, housekeeping services, spills of blood or body substances, and medical waste
- Special considerations, such as dental handpieces, dental radiology, aseptic technique for parenteral medications, oral-surgical procedures

Infection Control Committees and Infection Control Professionals

A hospital's infection control program is usually under the jurisdiction of the hospital's ICC or Epidemiology Service.

The ICC is composed of representatives from most of the hospital's departments, including medical and surgical services, pathology, nursing, hospital administration, risk management, pharmacy, housekeeping, food services, and central supply

The chairperson is usually an Infection Control Professional (ICP), such as a physician (e.g., an epidemiologist or infectious disease specialist), an infection control nurse, a microbiologist, or some other person knowledgeable about infection control.

The primary responsibilities of an ICP are as follows:

communication between ICU and other compartments

- Possess knowledge of infectious diseases processes, reservoirs, incubation periods, periods of communicability, and susceptibility of patients
- Conduct surveillance and epidemiologic investigations

- Prevent/control the transmission of pathogens to include strategies for hand hygiene, antisepsis, cleaning, disinfection, sterilization, patient-care settings, patient placement, medical waste disposal, and implementation of outbreak control measures

- Manage the facility's infection control program
- Communicate with the public, facility staff, and state and local health departments concerning infection control- related issues
- Evaluate new medical products that could be associated with increased infection risk

the last point he does it to make sure ,it is not dangerous and will not break the chain

The ICC periodically reviews the hospital's infection control program and the incidence of HAIs.

It is a policymaking and review body that may take drastic action (e.g., instituting quarantine measures) when epidemiologic circumstances warrant.

Other ICC responsibilities include patient surveillance, environmental surveillance, investigation of outbreaks and epidemics, and education of the hospital staff regarding infection control.

Role of the microbiology laboratory in the hospital

CML personnel participate in healthcare epidemiology and infection control:

1. By monitoring the types and numbers of pathogens isolated from hospitalized patients.
2. By performing antimicrobial susceptibility testing, detecting emerging resistance patterns,
3. By notifying the appropriate ICP should an unusual pathogen or an unusually high number of isolates of a common pathogen be detected.

4. By processing environmental samples, including samples from hospital employees that have been collected from within the affected ward(s), with the goal of pinpointing the exact source of the pathogen that is causing the outbreak.

5. By performing biochemical, immunological, and molecular identification and typing procedures to compare various isolates of the same species.

Conclusion

- An HAI can add several weeks to a patient's hospital stay and may lead to serious complications and even death.
- From an economic viewpoint, insurance companies rarely reimburse hospitals and other healthcare facilities for the costs associated with HAIs.

- Cross-infections transmitted by hospital personnel, including physicians, are all too common; this is particularly true when hospitals and clinics are overcrowded and the staff is overworked.
- However, HAIs can be avoided through proper education and disciplined compliance with infection control practices.

- All healthcare workers must fully comprehend the problem of HAIs,
- Must be completely knowledgeable about infection control practices,
- Must personally do everything in their power to prevent HAIs from occurring.