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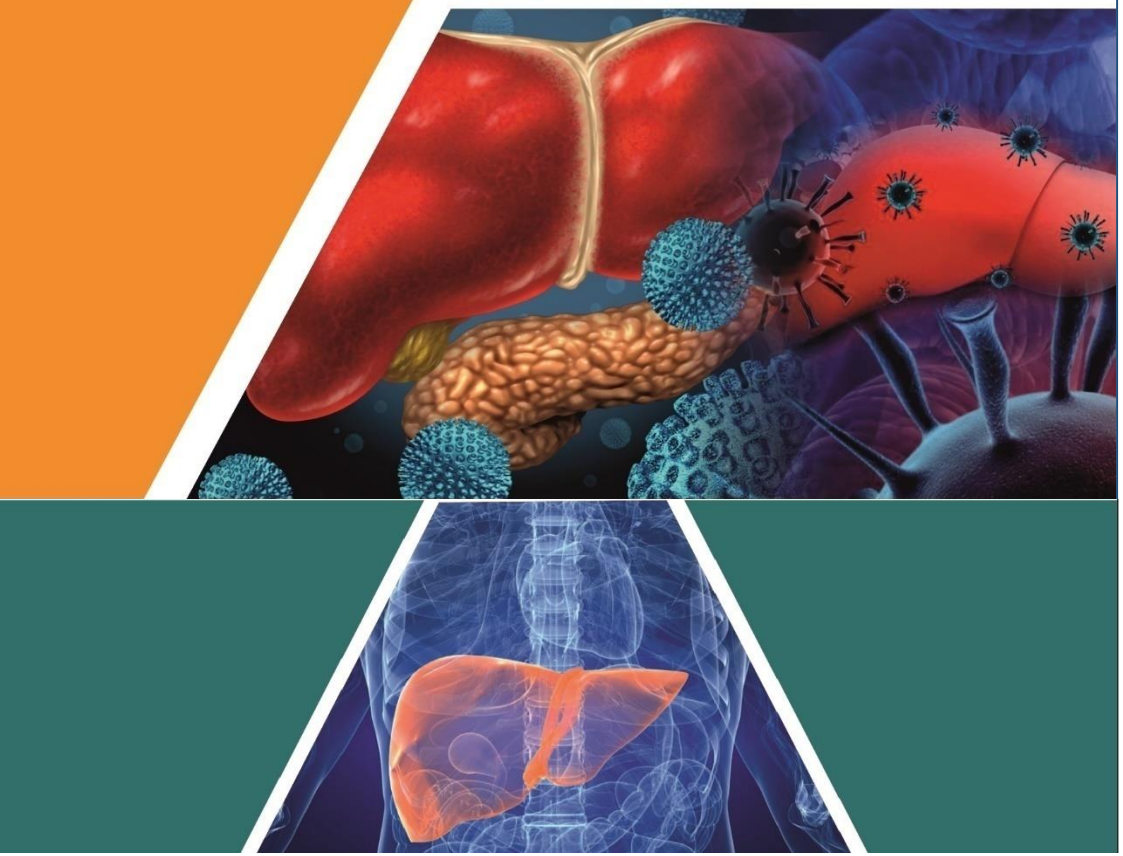
PROJECT PRAKASH

Pogrammed Approach to Knowledge and Sensitization on Hepatitis



HEPATITIS INDUCTION PROGRAM

FOR NURSES

DISINFECTION AND STERLIZATION IN CONTEXT OF VIRAL HEPATITIS

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Definition of terms

- **Cleaning:** The removal of all visible soil from surfaces.

- **Disinfection:** A process that kills or destroys many or all disease-producing microorganisms on the inanimate objects.

- **Sterilization:** The complete elimination/destruction of all forms of microbial life by physical or chemical procedures.

Universal Principles

- Instruments, medical devices and equipment should be managed and reprocessed according to recommended/appropriate methods regardless of a patient's diagnosis.

- Industry guidelines as well as equipment and chemical manufacturer recommendations should be used to develop and update reprocessing policies and procedures.

- Written instructions should be available for each instrument, medical device, and equipment reprocessed.

Steps of Reprocessing

1. Pre-Cleaning
2. Cleaning
3. Disinfection
4. Sterilization

Levels of Disinfection

- **High Level Disinfection**: This process kills vegetative microorganism and inactivates viruses but not necessarily high number of bacterial spores. They are used on medical equipments not on surfaces.

  Eg-Gluteraldehyde

  Stabilized Hydrogen Peroxide

  Peracetic Acid

  Chlorine & Chlorine releasing Agents

Levels of Disinfection

- **Intermediate Level Disinfection-This** procedure kills vegetative microorganism including bacteria, fungi and inactivate most of the viruses .

  Eg-Betadine, Povidion, Lysol

- **Low level Disinfectants**: This procedure kills most vegetative bacteria except Micobacterium tuberculosis

  Eg-70% ethyl alcohols, isopropyl alcohol

Commonly used classes of disinfectants

- Alcohols
- Aldehydes
- Chlorine
- Iodine and iodophors
- Hydrogen peroxide and peracids
- Phenolic compounds
- Quaternary ammonium compounds

Common disinfectants used in health care

1. Formaldehyde
2. Glutraldehyde
3. Orthophthaldehyde
4. Hydrogen Peroxide
5. Paraacetic acid.
6. Sodium hypochlorite
7. Betadine , Polyvidone
8. Triclosan, Chloroxylenol
9. Benzalkonium chloride

Methods of Sterilization

Various Methods of Sterilizations are:

1. Physical methods

a. Thermal(heat) methods

b. Radiation methods

c. Filtration Methods

2. Chemical Methods

a. Gaseous Methods

Spaulding's classification of medical equipment's

- **CRITICAL** - objects which enter normally sterile tissue or the vascular system should be **sterile/High level disinfection**

- **SEMICRITICAL** - objects that touch mucous membranes or skin that is not intact require a disinfection process (**Intermediate level of disinfection)** that kills all micro-organisms and high numbers of bacterial spores too.

- **NONCRITICAL** - objects that touch only intact skin require **low-level disinfection**.

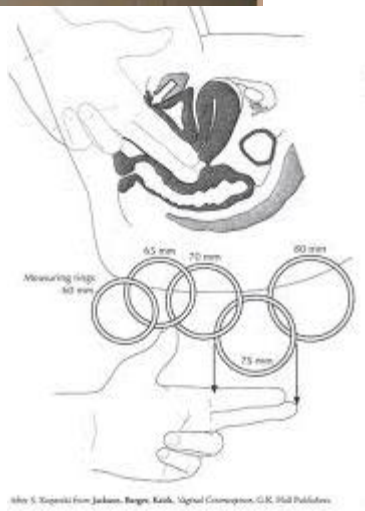
Critical Objects

- Surgical instruments
- Cardiac and urinary catheters
- Implants
- Ultrasound probes

Non-critical Items

- Bed pans
- Crutches
- Bed rails
- ECG leads
- Bedside tables
- Wheel Chairs & trolleys

Semi-critical items



- Endoscopes
- Respiratory therapy equipment
- Anesthesia equipment
- Endocavitary probes
- Tonometers
- Diaphragm fitting rings

Factors affecting the efficacy of Disinfection and sterilization

- Number and location of microorganism.
- Innate resistance of microorganism
- Concentration and potency of disinfectants
- Physical and chemical factors(PH, Humidity, water hardness etc).
- Organic and Inorganic Matter. (serum, blood, pus).
- Duration of Exposure.
- Bio-films.

Effectiveness of sterilization process

Effectiveness of the sterilization process is dependent on:

1. Selection and use of sterilization methods.
2. Monitoring the sterilization process.
3. Post sterilization handling and storage.

Disinfection of endoscopes

All endoscopes receive manual cleaning prior to disinfection. Flexible endoscopes are cleaned with a manufacturer-approved enzymatic cleaner immediately following use.

Each channel will be irrigated and brushed. Clean the scope with multienzyme detergent externally and with suction internally

Discard the used detergent solution after 24hrs . Use brush for cleaning the channels. Clean and disinfect the brush after each use

Conduct leak testing on flexible endoscopes prior to immersion. Remove endoscope from service, if it leaks,before it is cleaned and contact the Bio-Medical engineer.

Attach the scope in disinfector for minimum 5mts-10mts in Cidex OPA Following chemical disinfection, rinse the endoscope with running water

Hang the endoscope in the Endoscope hanger in upright position

Any question ??????????

Thank you!