VIRTUAL TRAINING ON INFECTION PREVENTION AND CONTROL

Standard Precautions: Environmental Cleaning

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Standard Precautions: Environmental Cleaning

- Standard Precautions These are the minimum infection prevention practices that must be considered wither you have infection or not.

- Standard Precautions include —
- 1. Hand hygiene.
- 2. Use of personal protective equipment (PPE) (e.g., gloves, masks, eyewear).
- 3. Respiratory hygiene / cough etiquette.
- 4. Sharps safety (engineering and work practice controls).
- 5. Safe injection practices (i.e., aseptic technique for parenteral medications).
- 6. Sterile instruments and devices.
- 7. Clean and disinfected environmental surfaces.

Hand Hygiene

- Hand hygiene is the most important measure to prevent the spread of infections among People.

- It is very important to wash your hands properly with water and plain soap (hand washing) or antimicrobial soap (hand antisepsis) specific for health care settings or use an alcohol-based hand rub. Although alcohol-based hand rubs are effective for hand hygiene in health care settings, soap and water should be used when hands are visibly soiled

SANITIZER

- Hand sanitizer is a liquid, gel, or foam generally used to decrease infectious agents on the hands.

- However, hand washing with soap and water is generally preferred

What is the best natural hand sanitizer?

- 70% ALCOHOL BASED FORMULA KILLS 99% GERMS:

- Provides superior antibacterial power to help... MOISTURIZING HAND SANITIZER:

- Made with Organic Aloe Vera Gel & Vitamin E to combat dryness..

PERSONAL PROTECTIVE EQUIPMENT

- Personal protective equipment (PPE) are wearable equipment that are designed to protect you from exposure to or have contact with infectious agents.

- PPE that is appropriate for various types of patient interactions and effectively covers personal clothing and skin likely to be soiled with blood, saliva, or other potentially infectious materials (OPIM) should be available.

- Face Mask coverings may help prevent people who have infectious diseases from spreading to others.

- Wearing of face mask covering will help protect people around you, including those at **higher risk of severe illness** from infection and workers who frequently come into close contact with other people (e.g., in stores and restaurants).

- Face Mask coverings are most likely to reduce the spread of infectious disease when they are widely used by people in public settings.

- The spread of diseases can be reduced when face mask coverings are used along with other preventive measures, including social distancing, frequent handwashing, and cleaning and disinfecting frequently touched surfaces.

- Training should also stress to preventing further spread of contamination while wearing PPE by:

- Keeping hands away from face.
- Limiting surfaces touched.
- Removing PPE when leaving work areas.
- Performing hand hygiene.

What is environmental cleanliness?

- **Cleanliness** is a state of being clean and free from germs, dirt, trash, or waste, and the habit of achieving and maintaining that state is refers to as environmental cleanliness

Environmental Cleanliness

- This can be classified into several areas

- Your immediate surroundings

  stir rails, doors handle, walls, toilet handle, chairs, tables etc.
- Health and non-health care facilities
- Laboratories
- Animal house etc.

Cleaning Instructions

- Before you start cleaning, put on a pair of gloves, N95 mask, eye goggles and a disposable gown
- . Avoid touching your face, mouth, nose and eyes during clean-up. Gloves should be removed and discarded if they become soiled or damaged, and a new pair worn. Prepare the disinfectant according to manufacturer's recommendations or bleach solution

- Clean all accessible surfaces (sinks, taps, soap dispensers, toilet roll dispensers, walls, cubicle doors, cubicle locks, handles, flush buttons, etc).
- Mop floor with prepared disinfectant or bleach solution, starting from one end of the premises to another.

- Soak cloths with prepared disinfectant or bleach solution and use them to wipe all frequently touched areas (e.g. lift buttons, hand rails, doorknobs, arm rests, seat backs, tables, air/ light controls, keyboards, switches, etc.) and allow to air dry.

- All other disposable PPE such as N95 masks and eye goggles, should be removed and discarded after cleaning activities are completed.

- Hands should be washed with soap and water immediately after each piece of PPE is removed, following completion of cleaning. Eye goggles, if used, should be disinfected after each use, according to the manufacturer's instructions.

Why is environmental cleaning important?

- The environment can serve as a breeding ground for these organisms.

- Cleaning and disinfecting surfaces and medical equipment, especially those that are frequently touched, is important to decrease and prevent the spread of these organisms to people.

What are environmental surfaces?

- The environment refers to the people or resident's surroundings. When we talk about cleaning the environment, typically we are referring to cleaning and disinfecting objects, like housekeeping surfaces (e.g., floors, tabletops) and medical equipment.

What are the cleaning Agents?

- Water, the most common cleaning agent, which is a very powerful polar solvent.
- Soap or detergent.
- Ammonia solution.
- **Calcium** hypochlorite (powdered bleach)
- Citric acid.
- Sodium hypochlorite (liquid bleach)
- Sodium hydroxide (lye)
- Acetic acid (vinegar)

Properties of an ideal disinfectant

Broad spectrum	Should be active against many antimicrobial types
Fast acting	Should produce a rapid kill
Not affected by environmental factors	Should be active in the presence of organic matter (e.g. blood, sputum, faeces) and compatible with soaps, detergents, and other chemicals
Non toxic	Should not be harmful to the user or patient
Surface compatibility	Should not corrode instruments and metallic surfaces and Should not cause the deterioration of cloth, rubber, plastics, and other materials.
Odourless	Should have a pleasant odour or no odour to facilitate its routine use
Economical	Should not be prohibitively high in cost
Solubility	Should be soluble in water
Stability	Should be stable in concentrate and use-dilution
Cleaner	Should have good cleaning properties
Environmentally friendly	Should not damage the environment on disposal

Types of Chemical Disinfectants

Disinfectants	Recommended Use	Precautions
Alcohol e.g. Isopropyl, Ethyl alcohol, methylated spirit.	Rapidly bactericidal, tuberculocidal, fungicidal, and virucidal but do not destroy bacterial spores. Smooth metal surfaces, table tops and other surfaces on which bleach cannot be used. Effectively to disinfect non- critical items such as oral and rectal thermometers, hospital mobiles, BP cuffs and stethoscopes etc	Flammable, toxic, to be used in cool and well- ventilated area, avoid inhalation. To be kept away from heat sources. electrical equipment, flames, hot surfaces.

Disinfectants	Recommended Use	Precautions
Quaternary Ammonium Compounds e.g. Alkyl dimethyl benzyl ammonium chloride, Alkyl dimethyl ethylbenzyl ammonium chloride	Commonly used in general environmental cleaning of noncritical surfaces, such as floors, furniture, and walls.	Relatively non toxic and less corrosive Dilutions in use may get contaminated and grow gram negative bacteria
Phenolics e.g. Benzyl-4-chlorophenol, Amylphenol, Phenylphenol	Effective and good for general use on vegetative bacteria, lipid containing viruses and *Mycobacterium tuberculosis*.	If phenolics are used for terminal cleaning of infant bassinets and incubators, the surfaces should be rinsed thoroughly with water and dried before reuse of infant bassinets and incubators.
Sodium hypochlorite [e.g. Sodium dichloroisocyanurate (NaDCC)]	Kills fast and has broad spectrum actions against a wide range of gram negative and gram positive bacteria and spores.	PPE are required while handling and using undiluted Corrosiveness to metals Flammable, toxic, to be used in cool and well- ventilated area, avoid inhalation.

New technologies in room decontamination

Type	Advantages	Disadvantages
Ultraviolet (UV) light Uses UV to decontaminate surfaces by reflecting UV from walls, ceilings, floors and calculates the operation total dosing/ time to deliver the programmed lethal dose for	Reliable biocidal action against a wide range of pathogens Room decontamination is rapid for vegetative bacteria (~15 mins) Does not require to seal off the room	Can only be done for terminal cleaning All patients and staff must be evacuate from room Does not remove dust and Stains
Hydrogen peroxide (HP) System – Vapors/ mist. Using of dry mist technology Offer uniform diffusion of HP solution even in hard-to reach and hidden areas.	Reliable biocidal activity against wide range of pathogens Residual free Does not give rise to both health and safety Concerns	Only can be carried out for terminal cleaning All personnel must be evacuated from room Decontamination process takes approximately 2-5 hours Substantial capital costs

- Disinfectant solutions should always be prepared in well-ventilated areas.

- Avoid combining disinfectants, both during preparation and usage, as such mixtures cause respiratory irritation and can release potentially fatal gases, in particular when combined with hypochlorite solutions.

- In outdoor spaces, routine application of disinfectants to environmental surfaces by spraying or fogging (also known as fumigation or misting) is recommended. However people should avoided

Drainages, hoods, corridor rails,

Some countries have approved no-touch technologies for applying chemical disinfectants (e.g. vaporized hydrogen peroxide) in health-care settings such as fogging-type applications

- Furthermore, devices using UV irradiation have been designed for non and health-care settings. However, several factors may affect the efficacy of UV irradiation, including distance from the UV device; irradiation dose, wavelength and exposure time; lamp placement; lamp age; and duration of use.

- Disinfecting, or using chemicals to kill germs on surfaces, can further lower the risk of spreading infection. After applying a disinfectant, wait for the required exposure time to ensure it kills germs on the surface. Once the contact time has lapsed, the disinfectant may be rinsed with clean water and soap

- Disinfectants are not substitutes for cleaning.

All surfaces must be cleaned with soap and water before applying a disinfectant.

Where possible, proceed from cleaner to dirtier areas to avoid spreading dirt and germs.

Consider cleaning less-frequently touched surfaces before frequently touched surfaces.

Use separate cleaning tools and freshly prepared solutions for toilets and bathroom surfaces

How to Clean

- The best way to protect yourself from germs, is to regularly wash your hands with soap and water for 20 seconds or use hand sanitizer with at least 60% alcohol.

- Soft Surfaces

For soft surfaces such as carpeted floor, rugs, and drapes.

- Clean the surface using soap and water or with cleaners appropriate for use on these surfaces.

- Launder items (if possible) according to the manufacturer's instructions. Use the warmest appropriate water setting and dry items completely.

Electronics

- Follow manufacturer's instruction for cleaning electronics

For electronics, such as tablets, touch screens, keyboards, and remote controls.

- Consider putting a wipe-able cover on electronics.
- Follow manufacturer's instruction for cleaning and disinfecting.
- If no guidance, use alcohol-based wipes or sprays containing at least 70% alcohol. Dry surface thoroughly.

Waste disposal

Handle all waste with care.

We should take the same PPE precautions as with handling soiled linen.

Hold waste bags away from the body.

Secure waste in a general waste bag and dispose off as per facility protocol.

Dispose of cleaning solutions as per facility guidelines.

- Clean hands often

Wash your hands often with soap and water for 20 seconds

Key times to clean hands

- Immediately after removing gloves and after contact with a person who is sick or not.
- After blowing one's nose, coughing, or sneezing
- After using the restroom
- Before eating or preparing food

After contact with animals or pets

- Before and after providing routine care for another person who needs assistance (e.g. a child)

- Wash your hands often with soap and water for 20 seconds.
- Hand sanitizer: If soap and water are not readily available and hands are not visibly dirty, use a hand sanitizer that contains at least 60% alcohol. However, if hands are visibly dirty, always wash hands with soap and water.

- Trash
- Use disposable gloves when handling and disposing of trash

- Dedicated, lined trash can: If possible, dedicate a lined trash can for the person who is sick. Use disposable gloves when removing garbage bags, and handling and disposing of trash. Wash hands afterwards.

- Thank you