PHIT-Contracted Staff Education Program

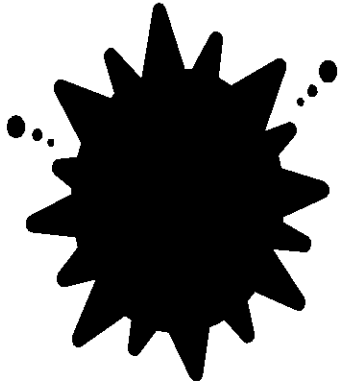
Infection Control and Prevention Guidelines and Priciples

Overview

- An Infectious Disease is one that is caused by microorganisms or by the products (toxins) of microorganisms.
- To cause an infection, a microorganism must enter and establish itself in a host and begin reproducing
- You can STOP this cycle with good infection control/prevention practices

Types of Infection

- Localized
- Systemic



Definitions

- Health care associated infections (HAIs)

  -Bacteremia/Sepsis

- Central line-associated bloodstream Infections (CLABSIs)

Portals of Entry and Exit

- Portals of entry

-eye
-nose
-mouth (food/water)
-bites of vectors
-skin breaks
-urinary or reproductive tract

- Portals of exit

-respiratory droplets
    -nose
    -mouth (cough)
-blood
-skin contact
-feces
-urinary tract
-reproductive tract

Health Care-Associated Infections (HAI)

- Localized or systemic condition resulting from an adverse reaction to the presence of an infectious agent(s) or its toxins(s).
- HAIs may be caused by infections agents from endogenous or exogenous sources

-Endogenous: skin, nose, mouth, GI tract or vagina

-Exogenous: external to the patient such as patient care personnel, visitors, patient care equipment, medical devices or the health care environment

Major Types of Health Care-Associated Infections (HAI)

- Urinary Tract Infections
- Surgical Site Infections
- Bloodstream Infections
- Pneumonia
- Lower respiratory tract infections
- Bone and joint infections
- Central Nervous system
- Skin and soft tissue infections
- Cardiovascular system infections
- Eye, ear, nose, throat or mouth infections
- Gastrointestinal system infections
- Reproductive tract infections
- Systemic infections

Central-line associated blood stream infection (CLABSI)

- Primary bacteremia (not due to another process like UTI or pneumonia)
- Patient has a central venous catheter
- Organism is a recognized pathogen (gram negative rod, candida) or organism is skin flora, isolated from at least two separate sets of blood cultures

Pathogenesis and Microbiology of CLABSIs

- **Gram positive skin flora**
  - -Most common causes of CLABSIs
  - 1. Coagulase-negative staphylococci – 31%
  - 2. Staphylococcus aureus – 20%
  - 3. Enterococci – 9%

-Commonly originate from the skin surface and track along the external surface of the catheter

- **Candida species – 9%**

-Normal bowel flora

-TPN an GI surgery patients

Pathogenesis and Microbiology of CLABSIs – continued

- **Enteric gram negative rods**

-Gram negative rods originate from the bowel tract, particularly in patients with GI pathology, receiving TPN or chemotherapy

1. Escherichia coli – 6%
2. Klebsiella species – 5%
3. Pseudomonas species – 4%
4. Enterobacter species – 4%
5. Serratia species – 2%
6. Acinetobacter baumannii – 1%

Risk factors for CLABSIs

- **Line Related**

-Duration of catheterization (although, no indication for routine line changing based on number of catheter days)

-Type of catheter Imidlines have the lowest rate, but this may be because it is often chosen in healthiest patients)

-Conditions of insertion (emergency vs. elective)

-Catheter-site care – hand hygeine technique

-Skill of the catheter inserter

- **Patient Related**

-Extreme of age

-Increased number and severity of underlying illnesses

-Malnutrition

-Loss of skin integrity, as with burns

-Immune system debilitation, especially neutropenia

Infection Prevention

- The following infection prevention strategies are vital in protecting yourself from infection and reducing the risk of transmitting infection to patients and their families

  -Precautions – standard and needle stick

  -Proper Hand washing technique

  -Nail Policy

  -Use of Personal Protective Equipment (PPE)

  -Vaccination

  -Surveillance of staff illness/disease

Standard Precautions

In 1985, the CDC developed the strategy of "universal blood and body fluid precautions" to deal with the transmission of HIV and HBV in the healthcare setting. This concept is now known as ***standard precautions***

Definition: All patients should be assumed to be infections for HIV and other blood borne pathogens.

- All healthcare workers should apply standard precautions when the worker anticipates exposure to any body fluid
- Standard Precautions require us of Personal Protective Equipment

Needle Stick Precautions

- Never re-cap needles
- Never bend or break a needle. Never utilize a needle cutting device
- Safety needles will be available whenever possible
    1. Cannula/retractable needle cover
    2. Huber/Needle Trap/Needlestick Guard
    3. Flushes – saline and heparin (needless)

Hand Washing

- All **direct care staff** will provide instructions on proper hand washing technique to ALL patients and caregivers
- All direct care staff will wash hands with either antibacterial liquid soap and water OR waterless alcohol based cleanser (Each nurse is responsible for supplying their own soap and hand santitizer
- All **delivery personnel** will wash hands with waterless alcohol based cleanser when returning from a patient's home
- All **pharmacy personnel** that compound adhere to hand washing protocols for the clean room

Hand Washing Technique Antibacterial Soap and Water

- When to use

-Must use antibacterial soap and water when hands are visibly soiled
-Must use antibacterial soap and water when a patient has active Clostridium difficile (C.diff)

- Technique

-Wet hands and apply soap. Use liquid soap only.
-Rub hands together vigorously, using friction to work into heavy lather, covering entire hand, top and bottom, pay special attention to nails, between fingers and back of hands, for at least 15 seconds
-Use warm, not extremely hot water and rinse in flowing stream of water
-Dry hands completely with clean towel or paper towel.
- Use towel to turn off faucet

Alcohol Based waterless hand cleanser

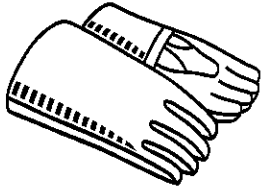
- Place quarter size amount of solution into palm of hand
- Rub hands together vigorously, using friction, covering entire hand (top and bottom)
- Pay special attention to nails, between fingers and back of the hands
- Do Not rinse, allow to air dry!!!

Fingernail Policy

- May not wear artificial fingernails of any length, includes tips or overlays
- May wear fingernail polish as long as it is not chipped
- Fingernail length no to exceed ¼ inch

Personal Protective Equipment

- Gloves



- Gowns
- Goggles/eye glasses

- Mask

Vaccination

- Hepatitis B
- Tetnus
- Measles, Mumps, Rubella (MMR)
- Influenza – PHIT is making mandatory to receive flu vaccines (common flu and H1N1)
- Tuberculosis testing

Staff Illness/Disease

- Employee communicable diseases that pose a threat to patients include influenza, strep throat, conjunctivitis, bronchitis

- At no time should a staff member place a patient at risk of obtaining a communicable disease

Infectious and Hazardous Waste

- All disposable items (ie. Needles, IV catheters, and syringes) are to be placed in the tamper and puncture-proof infectious waste container (SHARPS)
- All materials contaminated with blood/body fluids must be bagged in red infectious waste bags.
- Waste containers should be removed from the home ONLY by trained personnel

Waste Disposal - continued

- All waste containers should be sealed by the patient/caregiver PRIOR to pick-up

-waste bags should be tied closed

-lids should be secured on Sharps containers

- “Dirty” and “Clean” areas of van/car need to be defined
- All reusable patient equipment (ie. Pumps, poles, backpacks) should be bagged in a plastic bag prior to being removed from patients home

Waste Disposal - continued

- The equipment should be transported by trained personnel only in the delivery vehicle designated “dirty” area

- Reusable equipment is decontaminated/sterilized with a 1:10 bleach solution

Patient Education
Promoting Consistency in Education regarding Infection Prevention

What we should be asking our patients at every visit …

1. Medication changes
2. Falls
3. Recent hospitalizations and reason
4. Recent and upcoming physician/clinic appointments
5. Changes in condition

What we should be telling our patients about Infection Prevention…

- Hand Washing

-Per policy, direct care nursing staff will provide instructions on the hand washing technique to ALL patients and caregivers in the home

- Signs and Symptoms of Infection – ask the patients to notify the nurse of PHIT team if these things arise..

-Fever

-Above 100.4 F

-Above 99 F for patients receiving TPN

-Chills or rigors with or without fever

-Pain swelling at catheter site

-Bleeding (even dried blood) from catheter

-Redness at catheter site (quarter-size or larger)

What we should be telling our patients about Infection Prevention

- Bathing/Showering

-Utilize arm sleeve for all PICC lines or Press N Seal for tunneled catheters

- Catheter Care Maintenance

-Both the patient and the caregiver performing the dressing change must wear masks during the dressing change procedure

-Confirm that both lumens of the catheter are being flushed per protocol

-Reinforce clamping of the catheter to prevent blood back-up into the lumens

What we should be telling our patients about Infection Prevention…

- Respiratory Hygiene Guidelines

-cover the nose/mouth when coughing or sneezing;

-Use tissues to contain respiratory secretions and dispose of them in the nearest waste receptacle after use

-Perform hand hygiene after having contact with respiratory secretions and contaminated objects/materials

What we should be telling our patients about Infection Prevention…

- Safety Issues

-No heavy lifting or unnecessary pressure on IV catheter

-Be careful not to allow children/animals to pull or tug on dressing or catheter

-Teach patients to be their own advocates (example: if someone hasn't washed their hands – remind them)

FINAL THOUGHT

The single best method to preventing infection is

HAND WASHING