
Transmission Based Precautions

Transmission precautions are used when the route of transmission cannot be stopped by the use of standard precautions alone. Sometimes more than one precaution may need to be used.

Standard- **Washing hands and gloves** (HIV)

Contact- direct or indirect contact with the patient or patient's environment

- **gown and gloves** (c.diff and MRSA)

Droplet- illness transmitted by droplets larger than 5 microns.

- **surgical mask, gown, and gloves** (pneumonia, flu and pertussis)
- diphtheria, mycoplasma pneumonia, pertussis, mumps, rubella, flu, pneumonia, and scarlet fever, meningococcal meningitis

Airborne- infections transmitted by air-borne droplets smaller than 5 microns.

- **N95 respirator** (TB, chicken pox, herpes zoster), **negative pressure room**
- If patient needs to be transported, they only need to wear a surgical mask
- Measles, varicella, and TB

Bacterial Pneumonia

- Droplet
- Mask, goggles, gloves and gown
- Have a private room, or share room with someone of the same disease process
- Have them wash their hands
- Avoid close contact with others

Influenza

- Droplet
- Mask, goggles, gloves and gown
- Private room, or same disease process
- Use mask for transportation
- Use correct hand hygiene

Pertussis

- Droplet
- Same PPE
- Same teaching as flu

Respiratory Syncytial virus

- Contact or droplet
- Same PPE
- Private room

- Mask on patient
- Nurse: hand hygiene, dedicate equipment to patient as much as possible, and disinfect

C.Diff

- Contact, Face shield, gown and gloves
- Special room: private room
- Cleanse bed rails with bleach
- Hands must be washed with soap and water (everyone)
- After discharged, clean entire room with bleach.

MRSA

- Contact
- Gown gloves and mask
- Private room
- Limit transport of patients outside room
- Strict hand hygiene
- Keep skin injuries covered
- Keep equipment dedicated to patient

Rodda Virus

- Contact
- Gown, gloves and mask
- Private room
- Soap and water if hands are visibly soiled
- Strict hand hygiene
- Dedicate equipment

Herpes Zoster

- Contact until lesions are crusted, then it becomes standard
- Gloves, gown, and mask
- Private room
- Keep rash covered

TB

- Airborne
- Nurse: n95 resp, gloves and mask
- Private room
- Negative air pressure, door closed at all times
- Minimum of 6 exchanges per hour
- Proper disposal of used tissues
- If transported: only use surgical mask
- Strict hand hygiene, dedicate equipment

HIV/AIDS

- Standard
- Needle stick precautions

Disease Prevention

- Number one way to prevent disease: **hand washing**
- Educate on immunizations
- Most at risk: older adults, young children and immunocompromised
- Oral hygiene, adequate rest, adequate fluid intake

6 links in the chain of infection (what can nurses do to break the chain? *Handwashing, Environmental cleaning, wear PPE, antibiotics (when indicated), contain contaminated waste*)

- Causative agent (infectious agent)
- Reservoir
- Portal of exit
- Portal of entry
- Mode of transmission
- Susceptible host

If a patient is isolated, they shouldn't be isolated from interactions. ***

Use of antibiotics must be used with caution as antibiotics can suppress or kill the endogenous "friendly" flora that provides protection against drug-resistant microorganisms.

Illness Management

- Identify the body system and the effects the infection has on the body system
- Identify the causative agent and treat accordingly

Lab Tests, Infections

- Labs, what does it mean when you have an infection
- Leukocytosis: greater than 10
- WBC: 4-11
- Neutrophil: left shift= inflammation and infection
 - Right shift= suppression of bone marrow activity
 - Increase in neutrophils indicates infection
 - Decrease indicates a problem in the bone marrow.
 - Immature neutrophils indicate an acute infection
- ESR: over 20
- Culture: know type of bacteria, sensitivity testing takes 24-28 hours

Potential complication from Surgical

- **Why is someone at risk during surgery? We are cutting them open (portal of entry)**
- Wrong person surgery

- Right person, wrong site
- Right person, wrong surgery
- Right person, right site, wrong surgery

Medical and Surgical Asepsis

- Asepsis: absence of illness producing microorganism. Hand hygiene is the primary behavior.
- Medical Asepsis: **reduce number** in growth and spread of microorganisms (gloves)
- Surgical asepsis: **eliminate all** micros from an area or surface
- Hand hygiene, 3-5 mL of soap ***
- Keep hair pulled back
- Nails short and clean
- Remove all jewelry
- Physical environment:
 - o **Always check for latex allergies, people who have latex allergies schedule their surgeries first thing in the morning**
 - o Don't place items on floor
 - o Don't shake linens/ keep soiled linens away from clothing
 - o **Clean least soiled areas to most soiled areas**
 - o **Sterile to sterile, nonsterile to nonsterile**
 - o **Avoid coughing, sneezing and talking around sterile**
 - o **1 in border around sterile field is NOT sterile**
 - o **Unfold flap away, to the sides, then towards you**
 - o **Cannot lift anything greater than 6 inches above the field**
 - o **Can't reach across or turn back to sterile field**
 - o Any sterile non-waterproof wrapper that comes in contact with water becomes non-sterile
 - o **Don't turn back on the sterile field.**
 - o **When in doubt, through it out**
- **Medical asepsis (static)**
 - o **Hand hygiene**
 - o **PPE PRN**
- **Surgical asepsis (cidal)**
 - o **Always sterile**

Inflammation

- Adaptive response that brings fluid into the IF space
- Local: topical
- Systemic: PO, IV
- Pain
- Swelling
- Redness

- Heat
- Impaired function of body part
- **Symptoms: pain, edema, warmth, restriction of mobility**
- **Stages of Inflammation**
- **Vascular and cellular phase:**
 - Histamines indicate injury and increase BF to space
- **Exudation**
 - Dead phagocytic cells and tissue cells ooze.
 - Sanguineous: bloody
 - Serosanguineous: pinkish, mix of blood and clear liquid
 - Serous: clear liquid
 - Purulent: puss, creamy yellow and even greenish liquid (indicates infection)
- **Reparative**
 - Scar formation
 - When regeneration isn't possible, scars form

Steps in acute dilation

- Vasodilation (redness and heat)
- Vascular permeability (edema)
- Cellular infiltration (puss)
- Thrombosis (clots)
- Stimulation of nerve endings (pain)

Medication Administration

- **Relief pain: NSAIDs, and Acetaminophen (fever)**
- Steroids to decrease inflammation
- **5 diagnostic tests for Inflammation**
 - WBC- if high its an indication
 - ESR- greater than 30, indicates significant inflammation
 - CRP reactive protein- goes with inflammation
 - CMP, BMP- Kidneys and Liver (vital organs)
- **Vitals**
 - Temp: greater than 100.4
 - Pulse: greater than 90
 - RR: greater than 20
 - WBC: greater than 12
 - 10% bands: specific type of WBC
 - **Antipyretics are for fever**
 - **Antibiotics are for infection**
 - **Surgery is for situations such as gallbladder and appendicitis**

- **Illness management, Inflammation**
- **Nonpharmacological interventions**
- **RICE:**
 - o Rest
 - o Ice
 - o Compression
 - o Elevation
- **Alterations in the body systems**
 - o Pain: PQRST, acute or chronic and location
 - o Edema: swelling in body caused by body tissues
 - o Heat: running a temperature
 - o Altered Oxygenation: RR greater than 20
 - o Infection: WBC greater than 12, Pulse greater than 90, nausea and vomiting, pain and fever

Neurological

- Changes in LOC
 - **Confusion:** judgement is impaired, poor attention span
 - **Disorientation:** AOx0
 - **Obtundation:** blackout, lethargic
 - **Stupor:** only reacting to painful stimuli
 - **Semi-comatose:** moan and stir, won't wake up, slight reaction to pain
 - **Coma:** have reflexes, but don't do anything
 - **Deep coma:** completely unarousable, no reflexes
 - Airway protection
 - GCS is less than 8, intubate
 - ABC, airway protection
 - LOC intake and output
 - Reduce environmental stimuli
 - Assess PEERLA, vital signs and admin fluids
 - Keep in comfortable position
- Techniques of physical assessment
 - o PEERLA: normal- direct and consensual dilation
 - o Neuro: talking to them
 - o Know person developmental stage
 - o LOC
 - o Assess motor functions (gait)
 - o GCS
 - o Mental status: LOC and GCS
 - Alert
 - A verbal stimulus response
 - A painful stimulus response

- Unresponsive
- Test memory
- Orientation: date, time, place

Intercranial Nerves

- Olfactory: 1st, sensory, sense of smell
- Optic 2: sensory and vision (Snellen chart)
- Oculomotor 3rd: peerla, motor, pupillary reflex, extrinsic muscle movement of the eye
- Trochlear: motor and eye movement, near too far, six cardinal points
- Trigeminal: ophthalmic, (cotton to eye)
 - Maxillary branch (cotton up and down check)
 - Mandibular branch (cotton to jaw)
- Abductans: outwards gaze
- Facial VII: smiling, frowning, puffing cheeks, use sugar, salt and lemon juice
- Stibulary cobclear: vestibular branch (Romberg, whisper test)
- **Glossopharyngeal: gag reflex (move tongue from side to side and up and down)**
- Vagus: tongue depressor, use pen light and swallow
- **Hipoglossool: light, tight, dynamite**
- **Accessory: Move head side to side, shrug shoulder**

Thermoregulation

- Hypothermia: low body temp, less than 95 degrees
 - **Remove all cold clothes, or wet clothes, and put a warm blanket on them and admin warm IV fluids**
 - Severe: dialysis
 - Induced: reduce metabolic rate, reduce neurological damage
 - Accidental: infants, older adults; fatigue, slurred speech, confusion, shivering, and tachycardia and tachypnea
 - Mild: slurred speech, poor judgement, worse confusion
 - **Moderate: decrease mental status, no more shivering, decrease RR and HR, hallucinations**
 - **Profound: no RR, unresponsive pupil, coma**
- Hyperthermia: above 100.4 but not a fever
 - Assess vitals, hydration status, dehydration or not
 - Antipyretic
 - **Apply ice bags to groin, armpits and back of neck**
 - Only cover with sheet
 - Do cool backs
 - Decrease room temperature
 - **Malignant: bad reaction to anesthetic (inherited disorder) during surgery, or procedure**
 - Heat exhaustion: excessive heat exposure and dehydration (not a Fever)

- Heat stroke: flushing, warm skin, tachycardia, tachypnea, seizures. Worse version of exhaustion, if fever reaches 104-106 it is severely dangerous
- Heat transfers:
 - **conduction** (physical contact with another surface)
 - **Convection**: motion of air and water against the skin
 - **Evaporation**: sweat to vapor
- **Alterations of Body of Body System: sensory and perception**
 - **Vertigo: feeling of imbalance**
 - Color blindness: usually happens with males, can't see certain colors (red and green)
 - Impaired olfactory function: smoked for so long and can't taste anything
 - Impaired sense of smell: common cold
 - Eye alterations
 - Cataracts: break down of protein within the lenses
 - Eye injury: damage to structure of the eye
 - **Glaucoma: increase in ICP, increase of intra ocular pressure that cause a gradual loss of peripheral vision**
 - **Age related macular degeneration: loss of central vision due to damaged retina**
- **Techniques of physical assessment**
 - Hearing impairment: avoid covering mouth, speak slow and clear, lower vocal pitch, write down things if they cannot hear
 - Visually impaired: call clients by name before approaching them, identify self and explain intervention
 - Sensory: have a support group (anything)
- **Illness management**
 - Healthy sensory function
 - Have environmental stimuli that is appropriate
 - **Prevent sensory overload- make environment calm, turn down lights, not many people in the room, don't have the tv on all the time**
 - **Prevent sensory deprivation: provide books, newspapers, tv, radio, keep them preoccupied**
- **System specific assessment**
 - **Snellen- 20 feet, near sighted**
 - **Rosenbloom- presbyopia (hyperopia) far sighted ness 14 inches**
 - **Ishihara test: color blindness**
 - **Cardinal fields vision- nerves 3, 4, 6**
 - **Pupillary assessment- peerla**
 - **Assess cornea**
 - Internal eye assessment: ophthalmoscopes
 - **Weber: tuning fork (on top of head)**

- o **Rinne: fork on mastoid bone, normal response is a positive (hear longer than they feel) negative (feel it longer than they hear it)**
- o External ear assessment: otoscope