

# INFECTION PREVENTION AND CONTROL

- Bloodborne Pathogens
- Needlestick Safety
- Transmission Based Precautions
- Best Practice Guidelines



# OBJECTIVES

- Discuss hand hygiene, why it is important, when it is necessary and what is the procedure.
- Discuss Contact, Respiratory Airborne and Respiratory Droplet Precautions.
- Describe the how the use of devices with safety features decreases sharps injuries.
- Describe safer work practices to minimize sharps injuries
- Identify the bloodborne diseases of concern to healthcare providers in the U.S.
- Discuss how Standard Precautions protects against exposure to these diseases.
- Describe actions to be taken in case of a bloodborne exposure.
- Discuss the best practice guidelines for prevention of:
  - C.difficile
  - Central line associated bloodstream infections (CLABSIs)
  - Multidrug resistant organisms (MDROs)
  - Surgical site infections
  - Catheter associated urinary tract infections

# HAND HYGIENE

- Bacteria and viruses are most commonly transmitted on the hands of health care workers
  - The single most important way to prevent the spread of these organisms is good hand hygiene



# HAND HYGIENE INCLUDES

- Good hand washing  
*For 15-20 seconds*
- Using alcohol hand gels
- Hand care (lotions, cover cuts)
- Taking care of dermatitis
- Reporting of skins lesions or rashes to your Manager and Employee Health



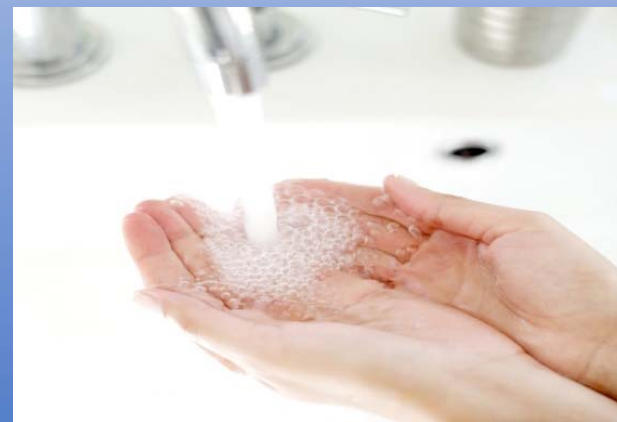
# HAND HYGIENE

## WHEN IS HAND HYGIENE NECESSARY

- When hands are visibly dirty or soiled
- Before & after patient care
- Before eating
- After using the restroom
- Before donning gloves & After removing gloves
- When moving from a contaminated body site to a clean body site
- After contact with inanimate objects  
*including medical equipment*

## WHEN NOT TO USE ALCOHOL HAND GELS

- When hands are visibly soiled
- Before eating
- After using the restroom
- When caring for patients with C. Difficile



**Bloodborne Pathogens:  
Protecting Against  
Transmission  
Standard Precautions**

# Bloodborne Pathogens (BBP) of Concern to Healthcare Providers

- Hepatitis B
- Hepatitis C
- Human Immunodeficiency Virus (HIV)



# Exposures With Highest Risk for BBP Transmission

- Blood, OPIM\*\*, or Fluids containing visible blood:
  - On non-intact skin.
  - Splashed in eyes, nose, mouth
- Skin puncture with contaminated needle

\*\*

Semen and vaginal secretions

Cerebrospinal, synovial, pleural, pericardial,  
peritoneal, and amniotic fluids

Saliva in dental procedures

Any body fluid that is visibly contaminated  
with blood.





# Exposures *Not* Considered a Risk for BBP Transmission

- Blood or body fluids on intact skin
- Splashes of body fluids without visible blood
- Blood on clothes
- Human Bites –
- Contact with feces, nasal secretions, saliva, sputum, sweat, tears, urine or vomitus... unless they contain visible blood

# Methods to Prevent BBP Transmission

- **Standard Precautions**
  - Treat every patient as if they are infected with a bloodborne pathogen
- **Engineering Control**
  - Use rigid containers to dispose of sharps
  - Utilize safety needles and needleless connectors
- **Work Place Controls**
  - Do not recap needles
  - Perform safe injection practices.
  - Use a safe passing zone when handling sharps during a procedure
  - Do not eat or drink in areas potentially contaminated with blood/OPIM



# Methods to Prevent BBP Transmission

- **Personal Protective Equipment**

- Put on protective equipment based on interaction with the patient and/or potential for exposure to blood/body fluids.
  - *Gloves, Gowns, Masks, Face Shields*

- **Get the Hepatitis B vaccine**

- ***Constantly* wash hands or use alcohol hand-gel**



## If a BBP exposure occurs:

- Wash exposed area with soap and water
- Flush splashes to nose, mouth, or skin with water
- Immediately notify Supervisor/Manager
- Report to EHS (or ED when EHS is closed)
- For high risk exposures, you will:
  - Have lab tests
  - Be counseled re: antiviral medications
  - Be offered antiviral medications
- Source patient will be tested for BBP as indicated
- Follow-up with EHS/UCSF to review yours and the source patient's lab work.
  - Antiviral medications are usually discontinued if source patient is HIV negative



# What items are to be discarded in the red biohazard trash bags?



- Any item that is “wet and dripping” with blood/body fluids or contains liquid/semi-liquid blood/body fluids is to be placed in the red bags. Examples include:
  - Dressings saturated with blood and/or body fluids
  - Containers with visible blood and body fluids (capped and sealed).
  - Blood transfusion bags
  - Tubing with visible blood
  - Surgical waste
  - Any other item with liquid or semi-liquid blood present or items that are caked with dried blood

# What items should be discarded in the regular trash?

- Examples of regular trash items are:
  - Empty Urinary catheters/bags
  - N/G tubes, empty IV bags and tubing (without visible blood)
  - Soiled chux/diapers (except from patients with radioactive implants)
  - Suction tubing
  - Kleenex
  - Urinals/bedpans
  - Urine cups/tubes
  - Gloves
  - Oxygen tubes and masks
  - Ventilator circuits
  - Paper towel



# What items are to be discarded in the Sharps container?

- Any item capable of cutting or puncturing the skin is to be placed in a sharps container. Examples include:
  - Needles
  - Glass items, e.g., blood collection tubes, ampules, glass slides
  - Scalpels
  - Lancets
  - No controlled substances are allowed!
  - NO PAPER

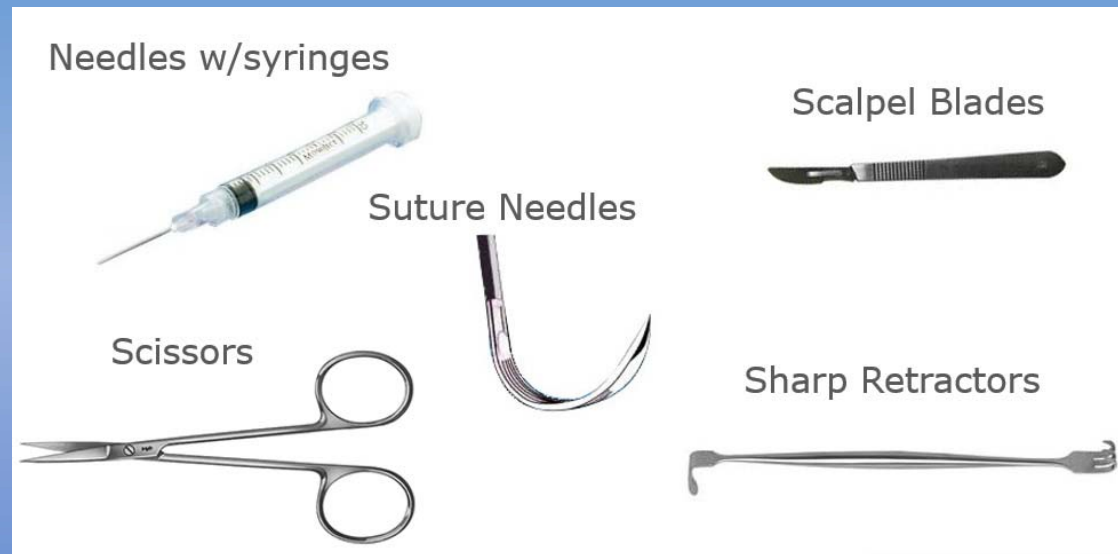


## --- For More Information ---

- **CMC Bloodborne Pathogen Exposure Control Plan-Standard Precautions**
  - In the CMC Infection Control Manual under “Policies and Procedures” on the CMC Forum
- **California Code of Regulations, Title 8, Section 5193- Bloodborne Pathogens.**  
<http://www.dir.ca.gov/title8/5193.html>



# Preventing Needlesticks and Other Sharps Injuries...



# Injuries Related to Work Practices

- **Injuries occur because of the following:**
  - Passing or transferring equipment
  - Recapping contaminated needles
  - Colliding with coworkers
  - Decontaminating/processing used equipment
- **Injuries occur from sharps left in unusual places:**
  - Laundry
  - Mattresses
  - Tables, food trays, or other surfaces
  - Trash containers
  - Linen bins



# The Sharps Safety Continuum

- Prepare to use the device *the moment the sharps are first exposed*
- Take precautions *while using sharps*
- Take precautions *during disposal*
- Take precautions *during cleanup*

# Be Prepared Before Beginning a Procedure

- Organize equipment at the point of use
- Make sure work space has adequate lighting
- Keep sharps pointed away from the user
- Locate a sharps disposal container, or have one nearby
- Assess the patient's ability to cooperate
- Get help if necessary
- Ask the patient to avoid sudden movement

# Be Aware During a Procedure

- **Maintain visual contact with sharps during use**
- **Be aware of staff nearby**
- **Control the location of sharps to avoid injury to yourself and others**
- **Do not hand-pass exposed sharps from one person to another**
- **Use predetermined neutral zone for placing/retrieving sharps**
- **Alert others when sharps are being passed**
- **Activate safety feature of devices as soon as procedure is completed**
- **Observe audible or visual cues that confirm the feature is locked in place**

# Safe Technique-During Procedure

Keep hands behind needles when collecting specimens and administering medications



Activate the safety device immediately after completing the procedure

# Clean Up and Dispose with Care

## *During Cleanup*

- Be accountable for sharps you use
- Check procedure trays, waste materials, and bedding for exposed sharps before handling
- Look for sharps/equipment left behind inadvertently
- Transport reusable sharps in a closed container
- Secure the container to prevent spillage

# Dispose With Care While Disposing of Sharps

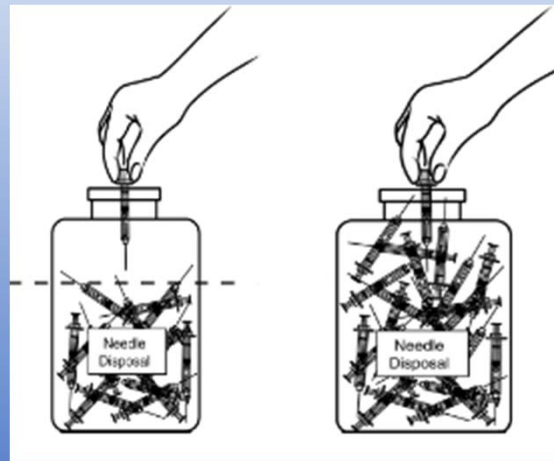
- Inspect container
- Keep hands behind sharps
- Never put hands or fingers into sharps container
- If you are disposing sharps with attached tubing
  - Be aware that tubing attached to sharps can recoil and lead to injury
  - Maintain control of both tubing and the device during disposal





# Dispose With Care After Disposing of Sharps

- Visually inspect sharps container for overfilling
- Replace containers before they become overfilled
- Do not fill container passed the “fill” line
- Keep filled containers for disposal in a secure area



# Clean Up and Dispose With Care If You Find Improperly Disposed Sharps in Work Environment

- **Handle carefully**

- Keep hands behind sharps at all times
- Use mechanical device such as a forceps or suture needle holder if you cannot safely pick up sharps by hand

# Sharps Injuries in the Operating Room

## Needleless/no sharps alternatives

- Use alternative cutting methods such as blunt electrocautery and laser devices when appropriate
- Substitute endoscopy surgery for open surgery when possible

## Engineering controls

- Use round-tipped scalpel blades instead of sharp-tipped blades
- Use blunt suture needle

## Work practice controls

- Use instruments rather than fingers
- Give verbal announcement when passing sharps
- Use “neutral zone” to avoid hand-to-hand passing of sharps



# *You* are Part of the Prevention Process when You

- Adhere to safe practices and assist and support coworkers in safer practices
- Report injuries or blood/body fluid exposures, sharps injury hazards, and near misses
- Participate in training for devices and properly use sharps safety features
- Participate in surveys (e.g., safety culture) and device evaluations

# Transmission Based Precautions

# CONTACT PRECAUTIONS

To prevent transmission of infectious agents via direct or indirect contact.

## Diseases requiring contact precautions

- Chickenpox
- Lice
- MRSA
- Undiagnosed rash
- Scabies
- VRE
- Shingles
- Multi-drug Resistant Organisms



# CONTACT PRECAUTIONS

## Consists of:


- Private room
- Stop sign and Contact Precautions sign outside the door
- Gloves to enter the room
- Gown for contact with patient or environment
- Dedicated equipment



# Contact Precautions Signs

## Contact Precautions

COMMUNITY MEDICAL CENTERS  
**CONTACT  
PRECAUTIONS**




1. PRIVATE ROOM  
2. Put on GLOVES when entering room  
3. Dedicated Equipment (i.e., BP cuff, thermometer, stethoscope, etc.)  
4. Put on GOWN in any contact with patient, secretions, surface or equipment is anticipated. Wear surgical cap if your hair is long.  
5. Wear MASK (with face shield) if there is potential for mucous membrane or eye exposure.  
6. Remove mask, gown, gloves and wash hands or use alcohol hand gel before leaving the room.


ALL Visitors Must Wear Gown & Gloves in the Room

## C. Diff /Contact Precautions

COMMUNITY MEDICAL CENTERS  
**CONTACT  
PRECAUTIONS**



WASH HANDS  
WITH SOAP AND WATER



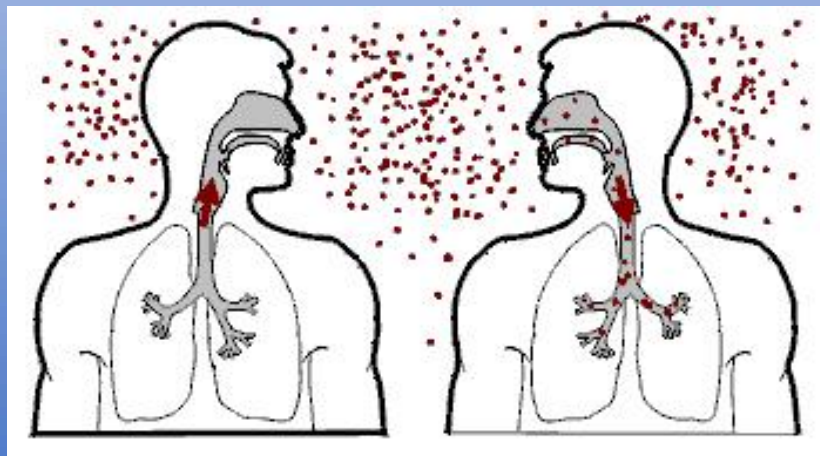
NO ALCOHOL HAND GEL

1. PRIVATE ROOM  
2. ALL VISITORS AND STAFF MUST PUT ON GOWN & GLOVES BEFORE ENTERING THIS ROOM.  
3. DEDICATED EQUIPMENT  
4. REMOVE GOWN, GLOVES IN ROOM AND WASH YOUR HANDS BEFORE LEAVING THIS ROOM



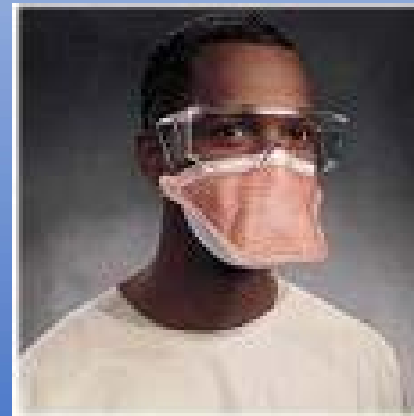
# RESPIRATORY “AIRBORNE” PRECAUTIONS

- Required for diseases that are spread by:
  - Small particles of evaporated droplets that remain suspended in the air for long periods of time
  - Dust particles contaminated with an infectious agent



# RESPIRATORY “AIRBORNE” PRECAUTIONS

- Private room with Negative Air Flow
- Place blue Respiratory “Airborne” Precautions and Stop Sign on the door
- Wear N-95 mask
  - Put on mask prior to entering the room.
  - Take off mask after exiting the room.
  - Must be fit-tested to wear N-95 Mask.
- Keep the room door closed




# RESPIRATORY “AIRBORNE” PRECAUTIONS SIGN

COMMUNITY MEDICAL CENTERS

## RESPIRATORY

### Airborne Precautions

*Private Room / Negative Air Flow Room*



Notify Infection Control before Airborne Precautions  
are discontinued.

1. Put on N95 Mask before entering the patient room.
2. Wash hands or use alcohol hand gel before leaving room.
3. Remove mask after leaving room
4. Keep the room door closed.

Community Medical Centers Door Sign - Infection Control Sign - 11/11/11 Rev. 11/11/11

# RESPIRATORY “AIRBORNE” PRECAUTIONS

- Diseases that require Airborne precautions:
  - Tuberculosis
  - Chickenpox
  - Measles
  - Disseminated Shingles
  - SARS/Avian Flu/Novel Flu



# TUBERCULOSIS

## Screening of patients for TB:



### Signs/Symptoms

- Cough > 3 weeks
- Fever
- Weight loss
- Bloody sputum
- Night sweats
- Suspicious chest
- X-ray

### Risk Factors

- Immunocompromised
- History of TB
- Recent exposure
- Recent immigration from or travel to an area with a high rate of TB
- Homelessness
- Spent time in a correctional facility

# TUBERCULOSIS

- **For patients with a suspicion of TB –**
  - Infection Control will review the medical record
- **A Tuberculosis Suspect Case Report will be completed by Infection Control and faxed to the Public Health Department (PHD)**
- **With submission of “Suspect” report form to the PHD, patient will be placed on a Public Health Department “HOLD”**
  - Infection Control will notify the appropriate Case Manager/Discharge Planner when a patient is put on precautions and placed on a PHD “Hold”
- **Patient MAY NOT be discharged without written consent of the County TB Controller or designee**
  - Discharge of the patient is arranged through the Discharge Planner in collaboration with the PHD



# TUBERCULOSIS

- If patient wants to leave **Against Medical Advice (AMA)** –
  - Try to persuade them to stay
  - If they insist on leaving, try to get an address, if possible
  - Notify Infection Control and the PHD or on nights and weekends, call the Sheriff

# RESPIRATORY “Droplet” PRECAUTIONS

- Required for diseases that are spread:
  - Through the air by large particle droplets
  - Droplets usually travel short distances, i.e. less than 3 feet.





# Respiratory “Droplet” Precautions

- Private room, NO negative air flow.
- Put on regular surgical mask before entering the room.
- Remove mask before leaving the room.



# Respiratory “Droplet” Precautions

- Diseases that require Respiratory “Droplet” Precautions
  - Meningitis
  - Pertussis (whooping cough)
  - Influenza




# Respiratory “Droplet” Precautions Sign

COMMUNITY MEDICAL CENTERS

## RESPIRATORY Droplet Precautions

*Surgical Mask / No Negative Air Flow Room*



Notify Infection Control  
before Droplet Precautions are discontinued.

1. Put on mask before entering the patient room.
2. Remove mask before leaving room
3. Wash hands or use alcohol hand gel before leaving room.

Community Medical Centers - Infection Control - 11/2012 - 11/2012

# **CONTACT/RESPIRATORY/DROPLET PRECAUTIONS**

- **Infection Control places Isolation & Infection information in ISO INF in EPIC**
  - ISO INF fields found in the header information
  - you can also find information in your sticky notes or pt history in EPIC
- **Patient is maintained on precautions until clearance criteria are met**
- **Notify Infection Control before discontinuing Contact Precautions**

# Aerosol Transmitted Diseases (ATD)

- Certain high risk procedures (i.e.; Bronchoscopy & intubation) may require use of a Powered Air Purifying Respirator (PAPR) to help prevent exposure to the employee



# Aerosol Transmitted Diseases (ATD)

ATD is a standard, set by CalOSHA, to help protect healthcare workers from ATDs during high risk procedures.

A few of the ATDs are:

- ✓ Measles
- ✓ TB
- ✓ Shingles
- ✓ (Meningococcal) Meningitis
- ✓ Pertussis
- ✓ Influenza

*CalOSHA ATD Standard, Title 8, section 5199*

# California Code of Regulations for Reportable Diseases and Conditions

- Over 70 reportable communicable diseases
- The duty of every health care provider knowing of, or in attendance on, a case or suspected case to report on a Confidential Morbidity Report (CMR) form and fax to PHD
- CMR generally completed and faxed by Infection Control



# Examples of Reportable Diseases

- Anthrax, Botulism, Smallpox, Tularemia
- Salmonella, Shigella, Campylobacter, E.coli O157
- Sexually Transmitted Diseases: gonococcal infections, syphilis, chlamydia
- TB
- Meningitis: bacterial, viral, fungal



## Best Practice Guidelines for the Prevention of *Clostridium difficile* Infection Transmission

- ✓ Use soap and water for hand hygiene; DO NOT use an alcohol gel
- ✓ Use Contact Precautions for patients with confirmed or suspected *C.difficile* (i.e., put on gloves upon entering the room; put on gloves and a gown for any contact with the patient or the patient's environment.)
- ✓ Monitor compliance with Contact Precautions (compliance monitoring for all patient care providers, including physicians, began 2/1/10.)
- ✓ Immediately notify clinical personnel if you suspect a patient has a *C.difficile* infection.
- ✓ Use bleach (Chlorox wipes or bleach solution) to clean the patient's room.
- ✓ Prescribe antibiotics only when necessary.
- ✓ Educate the patient and patient's family about *C. difficile* infection and prevention strategies. (Education materials soon to be placed on the Patient/Family Education website on the Community Forum.)

# Best Practice Guidelines for the Prevention of Central Line Related Bloodstream Infections

- ✓ Utilize the Central Line Insertion Process Bundle:
  - Perform Hand Hygiene prior to line insertion.
  - Use Maximal Barrier Precautions:
    - Inserter to wear sterile gown, sterile gloves, mask/eye shield, and cap.
    - Patient to be covered with a full body sterile drape.
  - Use a chlorhexidine/alcohol antiseptic (ChloroPrep) for patient skin prep.
  - Place a chlorhexidine impregnated disc (BioPatch) around the line so it touches the skin.
  - Avoid using the femoral vein for central line access, unless absolutely necessary.
- ✓ Have all the necessary supplies readily available in a central line kit or cart.
- ✓ Complete the Central Line Insertion Process (“CLIP”) form/checklist; this is a CDPH requirement.
- ✓ Daily, assess and document line necessity and remove if nonessential.
- ✓ Disinfect catheter hubs, needleless connectors and injection ports with alcohol before accessing.
- ✓ Use caps to cover hubs/connectors/ports when not in use.
- ✓ Change line dressings/caps per hospital policy.
- ✓ Educate healthcare personnel, patients and their families about central line related bloodstream infections and prevention strategies. (Education is available on the Patient/Family Education website on the Community Forum.)

# Best Practice Guidelines for the Prevention of Multi-Drug Resistant Organisms (MDROs), MRSA, VRE, ESBLs, Stenotrophomonas, etc.

- ✓ Maintain strict adherence to hand hygiene: “Gel In & Gel Out”
- ✓ Use Contact Precautions for patients who are colonized or infected with MDROs.
- ✓ Immediately notify Clinical Personnel if you suspect a patient has an MDRO.
- ✓ Review the Infection/Isolation tab on the EPIC census to identify readmitted MDRO patients.
- ✓ Implement an MRSA screening program for early detection and isolation of colonized patients. (Program began at CMC in July 2009.)
- ✓ Prescribe antibiotics only when necessary.
- ✓ Follow CMC’s Reserved Antimicrobials guideline.
- ✓ Maintain clean patient care equipment and a clean environment.
- ✓ Educate healthcare personnel, patients and their families about MDROs and prevention strategies. (MRSA education is available on the Patient/Family Education website on the Community Forum.)

# Best Practice Guidelines for the Prevention of Surgical Site Infections

- ✓ Deliver IV antimicrobial prophylaxis within 1 hour before incision (2 hours for vancomycin and fluoroquinolones.)
- ✓ Use an antimicrobial prophylactic agent consistent with published guidelines.
- ✓ Discontinue the use of prophylactic antibiotic within 24 hours after surgery (48 hours after cardiothoracic procedures.)
- ✓ Proper hair removal (i.e., remove hair with clippers or do not remove the hair at all; razors are not to be used for hair removal.)
- ✓ Control glucose levels in cardiac surgery patients.
- ✓ Maintain perioperative normothermia in colorectal surgery patients.
- ✓ For Class 1 (“clean”) surgical procedures:
  - ✓ Instruct patients to:
    - ✓ Shower with 4% CHG the evening before and morning of the procedure.
    - ✓ Dry a with fresh, clean, dry towel and don clean clothing after each shower.
  - ✓ Screen for MRSA and decolonize if positive
- ✓ Educate the patient and patient’s family about surgical site infections and prevention strategies. (Education materials can be found on the Patient/Family Education website on the Community Forum.)

# Best Practice Guidelines for the Prevention of Catheter Associated Urinary Tract Infections

- ✓ Use indwelling catheters only when medically necessary and remove when no longer needed.
- ✓ Consider alternatives to indwelling catheters, such as condom or in-and-out caths.
- ✓ Use aseptic insertion technique.
- ✓ Use the smallest catheter possible.
- ✓ Properly secure catheters after insertion to prevent movement and urethral traction.
- ✓ Maintain a sterile closed drainage system.
- ✓ Empty collection bag regularly.
- ✓ Maintain an unobstructed urine flow; keep the bag below the level of the bladder and no “dependent” loops in the tubing.
- ✓ Maintain good hygiene at the catheter-urethral interface.
- ✓ Document indication for urinary catheter each day of use.
- ✓ Educate the patient and patient’s family about catheter associated urinary tract infections and prevention strategies. (Education materials can be found on the Patient/Family Education website on the Community Forum.)

## Need additional information?

- Contact CRMC Infection Control at:
  - 459-6553 (5-6553)
  - Email [dl\\_InfectionControl@communitymedical.org](mailto:dl_InfectionControl@communitymedical.org)
  
- Infection Control Policies can be found with other CMC policies on Lucidoc

