Infection Control and Prevention

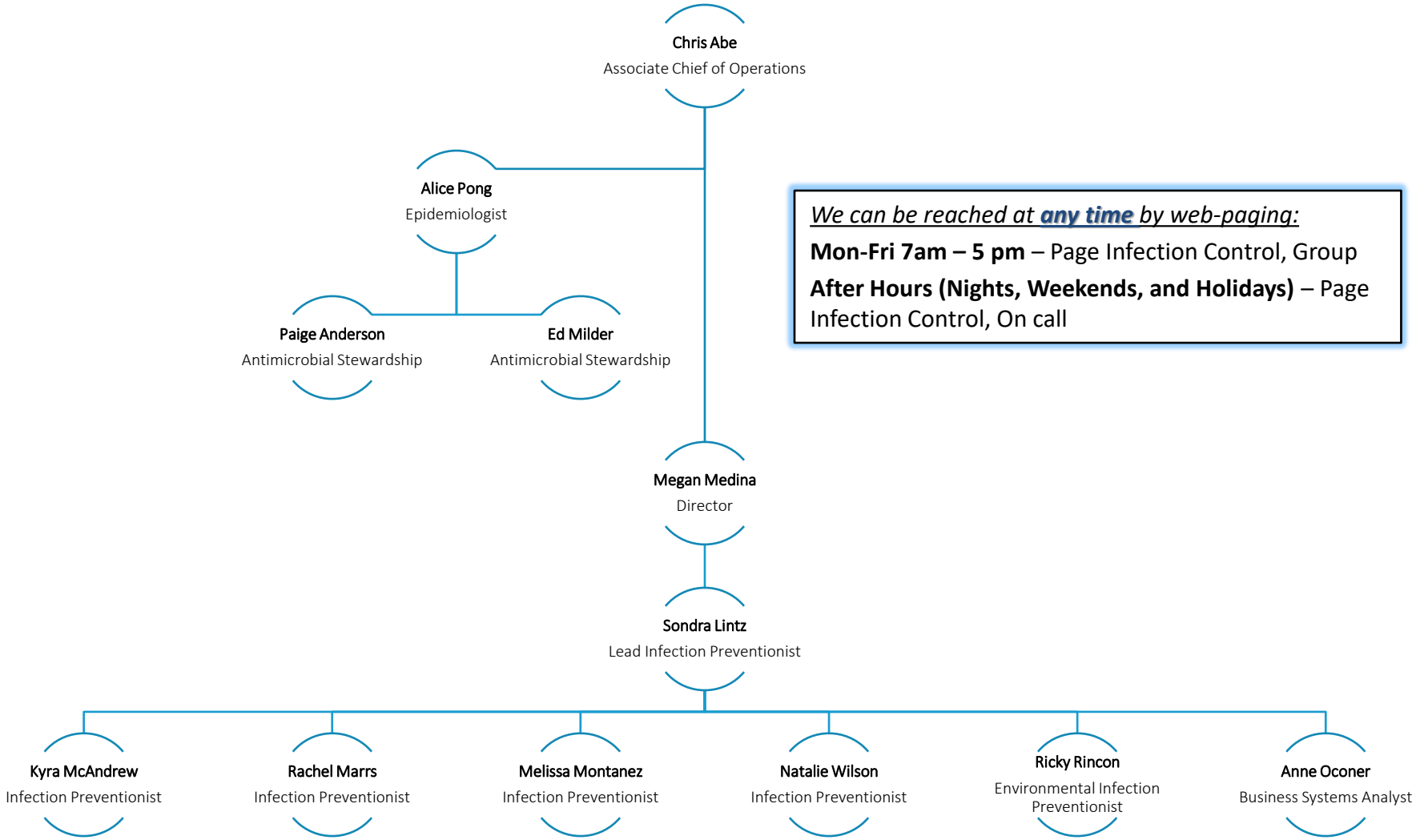
Annual Education for Clinical Staff

Learning Objectives

Upon completion of this self study-module, the learner will be able to:

- Describe the impact of common Hospital Acquired Infections (HAIs) on the healthcare system
- Identify Infection Control methods to minimize HAIs
- Describe proper hand hygiene technique
- Understand how to properly don and doff Personal Protective Equipment (PPE)
- Understand how to access infection control information and up-to-date documents
- Describe standard and transmission-based precautions
- Identify the goals of the antimicrobial stewardship program
- Describe organizational protocols related to COVID-19

Infection Prevention Team



*We can be reached at **any time** by web-paging:*

Mon-Fri 7am – 5 pm – Page Infection Control, Group

After Hours (Nights, Weekends, and Holidays) – Page Infection Control, On call

Tips for Paging Infection Control

Use Available Resources Before Paging

Utilize the Policies & Procedures Manual
Check the COVID-19 Manual
Refer to the Isolation Sign Cheat Sheet
Ask your Charge RN

No PHI

Do not include PHI in your message when sending a page. System is not secure.

Include Contact Info

Include your name and call back information in the message.

Page the Correct Infection Preventionist

Go to the Intranet and click the Web Paging & On-call button on the right. Go to the OnCall tab and search for Infection Control (not Infectious Diseases). Send message to the Contact highlighted.

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After Hours

Infection Preventionists may not be in front of a computer at the time of your page. Be prepared to provide information about your patient.

Hand Hygiene

Gloves are not a substitute for washing your hands.

When using hand gel, be sure to rub hands together until hands are completely dry.

If gel is used multiple times in a row, you need to wash with soap and water to remove the residue of the gel.

Watches and rings impede your ability to wash your hands thoroughly

Appearance Policy - Infection Prevention Guidelines

Wear neat, clean clothes made from tightly woven and non-absorbable fabrics. Change clothes if they become soiled or contaminated.

Bare below elbows –

If a ring is worn, it must be a flat band with no grooves or stones.

Silicone rings are a good option that many people use

If a watch is worn, you must still be able to wash your hands and must clean your watch frequently.

Tie long hair back.

Follow good hand hygiene techniques. Nails must be kept short (1/4 inch) and clean. No artificial nail enhancements or chipped nail polish.

Low-Level Disinfection

Product	Product Name	Uses	Contact Time
	Super Sani-Cloth	Used for all equipment	2 minutes
	Sani-Cloth Bleach	Used for patients with C. difficile, Norovirus and Hepatitis A, Adenovirus	4 minutes
	Oxivir 1	Used by EVS to clean rooms and surfaces	1 minute
	CaviWipes	Used for daily cleaning of giraffe isolettes	3 minutes
	Virex Plus	Used by EVS for room cleaning and floors	4 minutes

Contact time: Amount of time to kill organisms for a specific product, also called **wet** time or **kill** time. The product needs to stay wet on the surface of the item for the entire contact time to be effective.

Environmental Cleaning

Keyboards get especially dirty since they are frequently used as tables. Wipe at least once a shift.

If families' belongings are cluttering surfaces, EVS cannot clean the space. Ask family to reduce the amount of clutter in the room to allow for proper cleaning.

Dusty rooms can harbor pathogens like fungus and mold.

Surfaces that are not cleaned and disinfected regularly can develop bioburden, which can harbor many pathogens, including viruses and drug resistant organisms

Blankets and linens from home should not be used.

Stuffed animals should be kept to a minimum and should not be kept near the patient's airway or lines. They should not be used to prop tubes or equipment.

High-touch surfaces in patient's rooms can become contaminated and can increase the risk of transmission of bacteria, viruses, and fungi. These surfaces should be wiped down at least once a shift

Equipment Cleaning

Know the contact time or “wet time” for the product you are using

Follow the instructions for use for both the cleaning product and the item being cleaned

Example: Giraffe isolettes must be cleaned with Cavi-wipes, a product that meets their IFU. Keep the surface wet for 3 minutes per the Cavi-wipes IFU.

Shared Equipment Cleaning

Any equipment that is shared by health care workers or between patients must be cleaned with a hospital-approved disinfectant immediately after use.

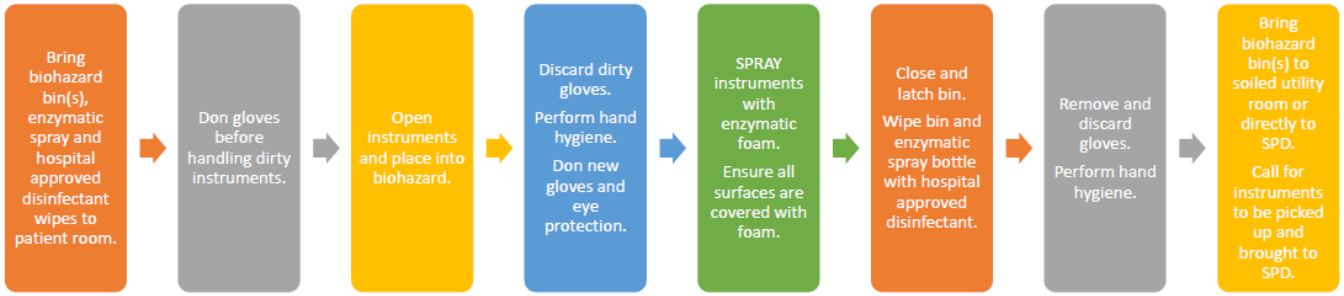
It is best to clean before use as well to ensure the item is clean, especially if left in a room.

If you remove a device from your pocket while in a room, then it needs to be cleaned before you put it back.

High-Level Disinfection

High-level disinfection (HLD) starts at the point of use. If you work in a department that uses scopes or equipment processed by Sterile Processing (SPD), you must understand and be able to speak to this process.

PRE-TREATMENT PROCESS FOR DIRTY INSTRUMENTS



Transportation Instructions

- RT Equipment and Transport are responsible for taking biohazard bins to SPD and bringing clean bins to unit.
- Instruments should be taken to SPD as soon as possible after use (main campus) and at end of day (clinics).
- For RT equipment, contact RT equipment tech at x226229.
- For other instruments, put in a ticket request for Transport to pick up.

- Clean bins are stored in designated clean areas.
- Respray instruments throughout day if not taken immediately to SPD.
- Do not put single use items or trash in bin.
- Label enzymatic spray with expiration date of 28 days.
- Send expired bottles to EVS for disposal.

Updated 3/2023

Processing of equipment (surgical instruments, laryngoscope blades, airways) must begin **right after use** before going to SPD for sterilization.

Place items in the biohazard bin and apply enzymatic spray.

Make sure instruments are open so the spray contacts all surfaces.

Bins are stored in dirty utility rooms until picked up.

Clean bin to be returned the department's **clean** utility room.

What are bundles?

- Small set of evidence-based interventions that, ***when implemented together***, will result in improved outcomes

Which bundles do we use at RCHSD?

- Central Line Associated Blood Stream Infection (CLABSI) Prevention – Insertion & Maintenance of Central Lines
- Catheter Associated Urinary Tract Infection (CAUTI) Prevention – Insertion & Maintenance of Urinary Catheters
- Ventilator Associated Pneumonia (VAP) Prevention
- Surgical Site Infection (SSI) Prevention

Infection Prevention Bundles

Bundle Compliance

Safety cards- Used in rounding and discussion with bedside nurses and respiratory therapists

Process to evaluate bundle compliance

Not an audit, used for learning and communication- an opportunity to discuss issues and barriers with leaders

Why is it important to follow all the bundle components?

Evidence shows that infections can be reduced by following bundles.

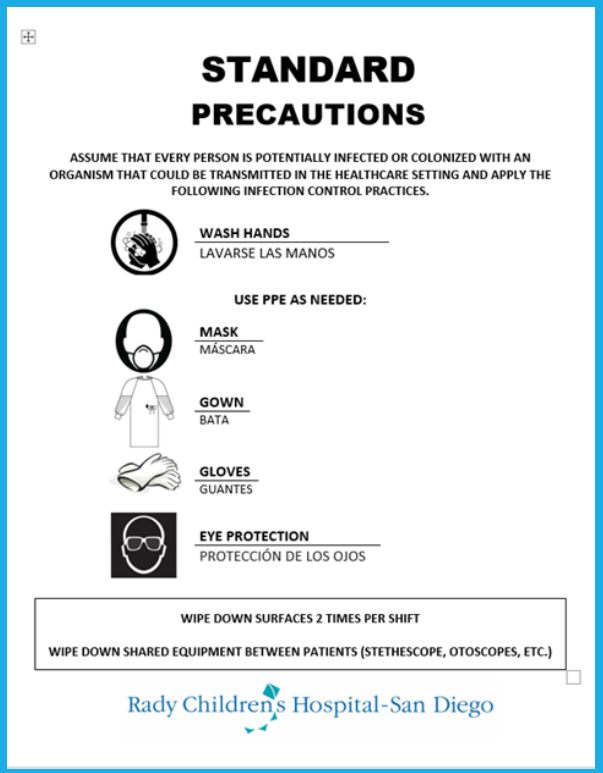
Every component must be done every time to be compliant with the bundle.

Example: Patient has a urinary catheter. Peri-care is completed correctly, but the urine bag is placed above the bladder, and tubing is disconnected and reconnected for transport.

Placing the bag above the bladder and disconnection can cause the patient to be at higher risk for infection.

Standard Precautions

Universal masking (recommended but not required) •Change mask frequently •Always change when exiting an isolation room	Eye protection with Aerosol Generating Procedures and potential for splash or spray	Perform hand hygiene
Use PPE whenever there is an expectation of possible exposure to infectious material	Follow respiratory hygiene/cough etiquette principles	Ensure appropriate patient placement
Properly handle, clean and disinfect patient care equipment and instruments/devices	Clean and disinfect the environment appropriately	Handle textiles and laundry carefully
Follow safe injection practices	Wear a surgical mask & eye protection when performing lumbar punctures	Ensure healthcare worker safety including proper handling of needles and other sharps



Transmission-based Precautions

Does not require a physician order. Anyone can place a patient on precautions.

If a precaution is on the door, those precautions must be followed (a person can choose to wear more PPE than required)

The bedside nurse is responsible for making sure the correct sign is on the door (based on the patient condition) and ensuring that it matches the EMR

If a patient has pending labs for infectious diseases, they need precautions for those diseases- what if it is positive?

The Infection Control Team reviews precautions regularly and contacts nurses to discuss changes

Only the Infection Control team can clear precautions

If removal of precautions is needed, please contact Infection Control to review the patient.

Patients may need to remain on precautions longer than the written policy if they are part of a cluster or outbreak.

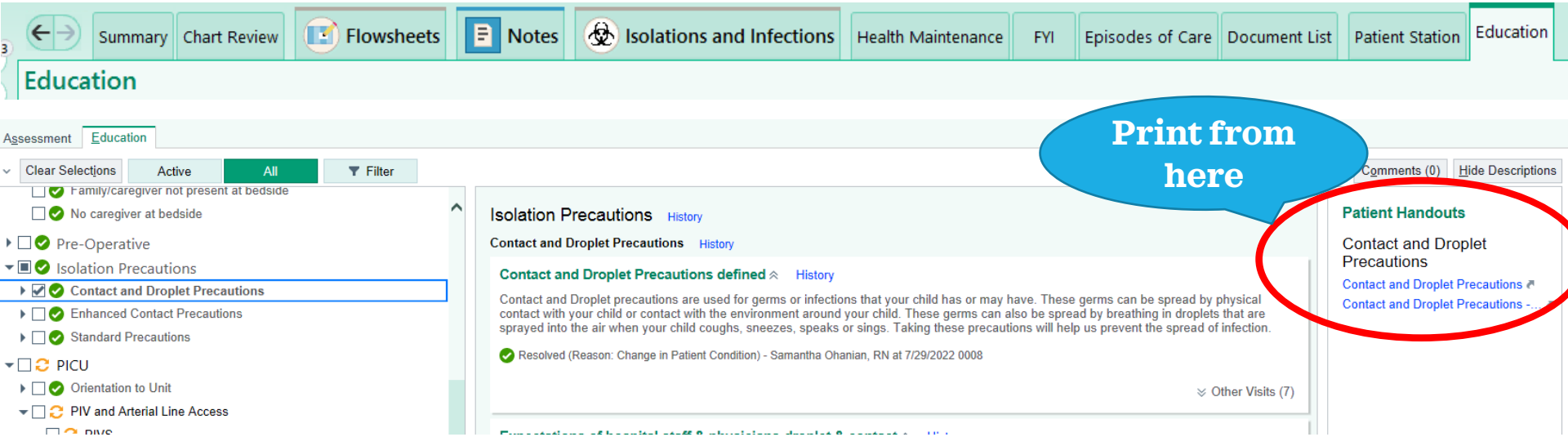
Based on CDC guidelines (see SM 9-11 Standard and Transmission-based precautions)

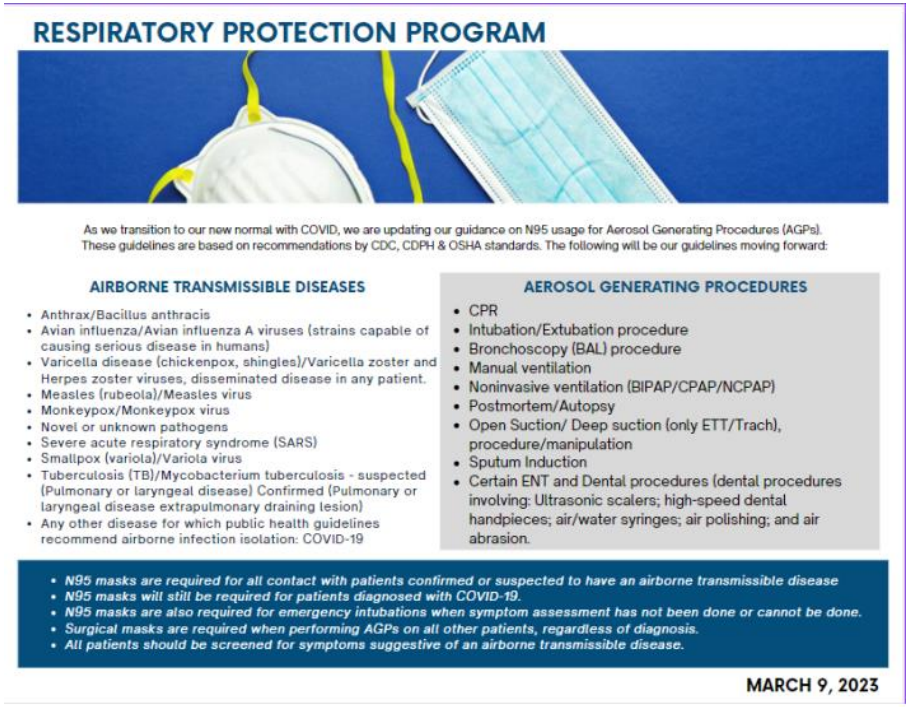
Transmission- based precautions Education for Parents and Patients

On admission, families require education on the type of precautions being used.

If the isolation changes during their stay, they need education on the new precautions

Information sheets can be printed directly from the Education section in EPIC. They are also available on the Infection Control Department Site





RESPIRATORY PROTECTION PROGRAM

As we transition to our new normal with COVID, we are updating our guidance on N95 usage for Aerosol Generating Procedures (AGPs). These guidelines are based on recommendations by CDC, CDPH & OSHA standards. The following will be our guidelines moving forward:

AIRBORNE TRANSMISSIBLE DISEASES

- Anthrax/Bacillus anthracis
- Avian influenza/Avian influenza A viruses (strains capable of causing serious disease in humans)
- Varicella disease (chickenpox, shingles)/Varicella zoster and Herpes zoster viruses, disseminated disease in any patient.
- Measles (rubeola)/Measles virus
- Monkeypox/Monkeypox virus
- Novel or unknown pathogens
- Severe acute respiratory syndrome (SARS)
- Smallpox (variola)/Variola virus
- Tuberculosis (TB)/Mycobacterium tuberculosis - suspected (Pulmonary or laryngeal disease) Confirmed (Pulmonary or laryngeal disease extrapulmonary draining lesion)
- Any other disease for which public health guidelines recommend airborne infection isolation: COVID-19

AEROSOL GENERATING PROCEDURES

- CPR
- Intubation/Extubation procedure
- Bronchoscopy (BAL) procedure
- Manual ventilation
- Noninvasive ventilation (BIPAP/CPAP/NCPAP)
- Postmortem/Autopsy
- Open Suction/ Deep suction (only ETT/Trach), procedure/manipulation
- Sputum Induction
- Certain ENT and Dental procedures (dental procedures involving: Ultrasonic scalers; high-speed dental handpieces; air/water syringes; air polishing; and air abrasion.

- ***N95 masks are required for all contact with patients confirmed or suspected to have an airborne transmissible disease***
- ***N95 masks will still be required for patients diagnosed with COVID-19.***
- ***N95 masks are also required for emergency intubations when symptom assessment has not been done or cannot be done.***
- ***Surgical masks are required when performing AGPs on all other patients, regardless of diagnosis.***
- ***All patients should be screened for symptoms suggestive of an airborne transmissible disease.***

MARCH 9, 2023

Aerosol Generating Procedures (AGPs)

AGPs are procedures that cause the aerosolization of particulates. Regulations on these precautions are followed to protect the healthcare worker from these aerosolized particles

Please review the Respiratory Protection Program (SM 2-20)

Personal Protective Equipment (PPE)

Regulations & Recommendations

- **Occupational Safety and Health Administration (OSHA)**
  - Issues workplace health and safety recommendations regarding PPE
  - Requires employers to:
    - Provide adequate PPE for employees
    - Ensure that PPE is disposable or, if reusable, that it is cleaned, laundered, repaired and stored after use
  - Specifies circumstances for which PPE is indicated

- **Center for Disease Control (CDC)**
  - Recommends when, what, and how to use PPE

PPE Available for use

- **Mask (surgical and N95)**
  - Surgical masks worn as appropriate and for Aerosol Generating Procedures (AGPs)
  - N95 for airborne transmission-based precautions and COVID-19
- **Gloves**
  - Blood, body fluids, secretions, excretions, contaminated items, mucous membranes and non-intact skin.
- **Gown**
  - During procedures and patient-care activities when contact of clothing/exposed skin with blood/body fluids, secretions, and excretions is anticipated
- **Eye protection (goggles), face shield**
  - During AGPs and patient-care activities likely to generate splashes or sprays of blood, body fluids, secretions, especially suctioning, endotracheal intubation and lumbar punctures

PPE Video

Please click this link to view the PPE video
Password is Rady8

PPE is Vital to keeping our staff safe and preventing the spread of infection: the following video provides an overview of Contact and Droplet PPE and COVID-19 PPE.

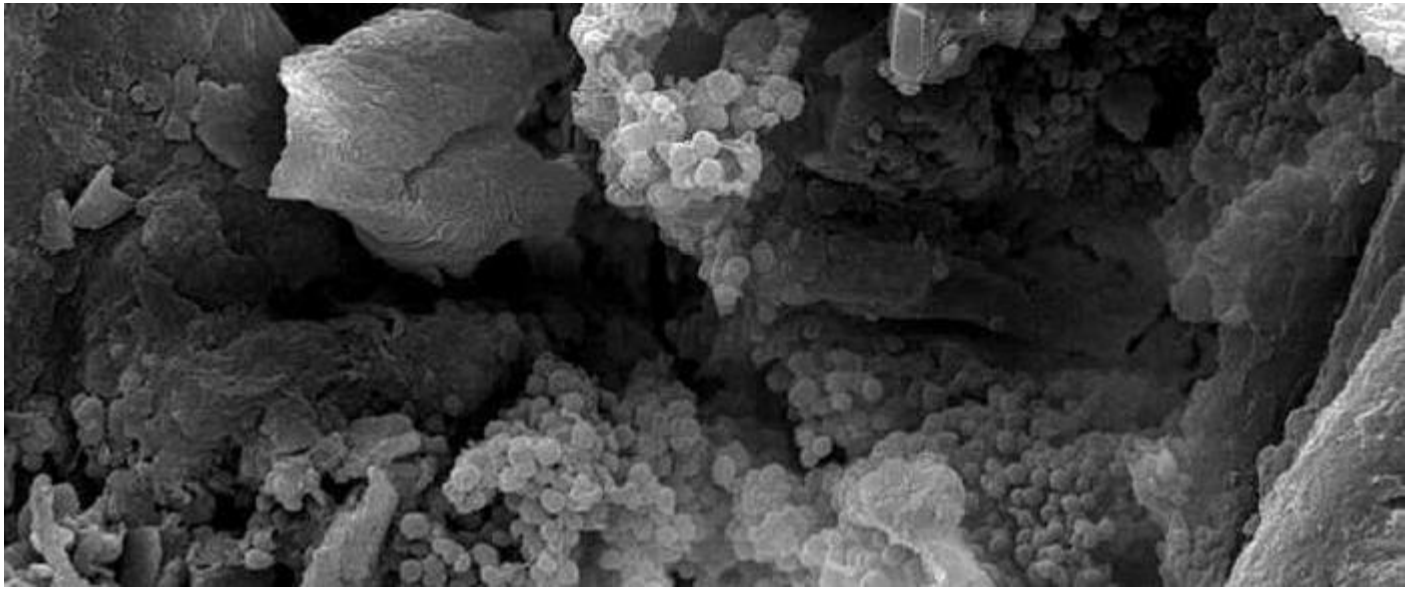
PPE reminders

- Gloves should be worn for a specific task and then discarded and followed by hand hygiene.
- PPE is considered contaminated once you enter a room. If you need to leave, take off the PPE and do hand hygiene. Put on new PPE when you return.
- If you are wearing a mask all day, be sure to change your mask frequently. Surgical masks should be disposed of when leaving a patient room and replaced with a new mask.
- Once you put a mask on your face your hands are contaminated- hand gel or wash before moving to the next task.
- The PPE at Rady Children's is disposable. Please do not save items for later use once they have been worn.
    - Exception: N95 mask (only for the shift and for a single patient or diagnosis (ie, two COVID patients or 1 TB patient). Must be stored properly in a dated paper bag.

Patient Transport

When transporting patients:

- Gowns and gloves need to be removed unless providing direct patient care during transport (examples: CPR or bagging and suctioning).
- If a patient needs care during transport, PPE should be brought with the HCW during transport and donned only if needed.
- **Surfaces like the bed or IV poles should be wiped off and then pushed with bare hands during transport.**
- Gloves should not be worn during transport. They provide the opportunity to transfer pathogens from gloved hands to other surfaces in the hospital, like doors and elevator buttons.
- Masks and eye protection should not be removed to transport a patient.
- Once at the destination, PPE should be donned, if necessary, before contact with the patient.



MDROs & Antimicrobial Stewardship

Multi-Drug Resistant Organisms (MDROs)

MDROs - Microorganisms resistant to one of more classes of antimicrobial agents:

- Methicillin resistant Staphylococcus aureus (MRSA)
- Vancomycin resistant enterococci (VRE)
- Extended spectrum beta lactamase (ESBL) producing bacteria
- Carbapenem-resistant Enterobacterales (CRE)
- Drug resistant Gram-negative organisms
- Clostridioides difficile (C. diff)
- Burkholderia cepacia
- Candida auris

At Risk Patients	Prevention Strategies
• Higher severity of illness • Chronic conditions - hemodialysis • Extended hospital or ICU stay • Prior antibiotic use • Transfers from acute/chronic care facilities • Poor compliance with Infection Prevention practices • Hospitalization outside the US	• Accurate and prompt diagnosis and treatment of infection • Appropriate isolation of the patient • Continued adherence to transmission-based precautions • Judicious use of antimicrobial agents (antimicrobial stewardship)

RCHSD Antimicrobial Stewardship Goals

Using antibiotics wisely to treat infections effectively while avoiding unnecessary use to prevent antibiotic resistance

Reduce antimicrobial resistance

- Antimicrobial-resistant infections cause more than 2 million illnesses and 23,000 deaths each year, costing the U.S. healthcare system over $20 billion each year.
- Antibiotic resistance in children is of particular concern because they have the highest rates of antibiotic use and often have fewer antibiotic choices since some antibiotics cannot be safely given to children.

Reduce antimicrobial related adverse drug events (ADEs)

- Antibiotics cause 1 out of 5 emergency department visits for ADEs
- Antibiotics are the most frequent cause of ADEs in children.
- Seven of the top 15 drugs involved in ADEs are antibiotics.

Reduce *C. difficile* rates

- 250,000 infections per year requiring hospitalization or affecting already hospitalized patients
- 14,000 deaths per year
- At least $1 billion in excess medical costs per year

www.cdc.gov

RCHSD Antimicrobial Stewardship

Specify dose, duration and indication of all antibiotics. Use stop dates for antibiotic orders

Follow Appropriate Antibiotic Use Guidelines (pharmacy website)

Antibiotic "time outs" – reassess the need for antibiotics at 48 hours from initiation

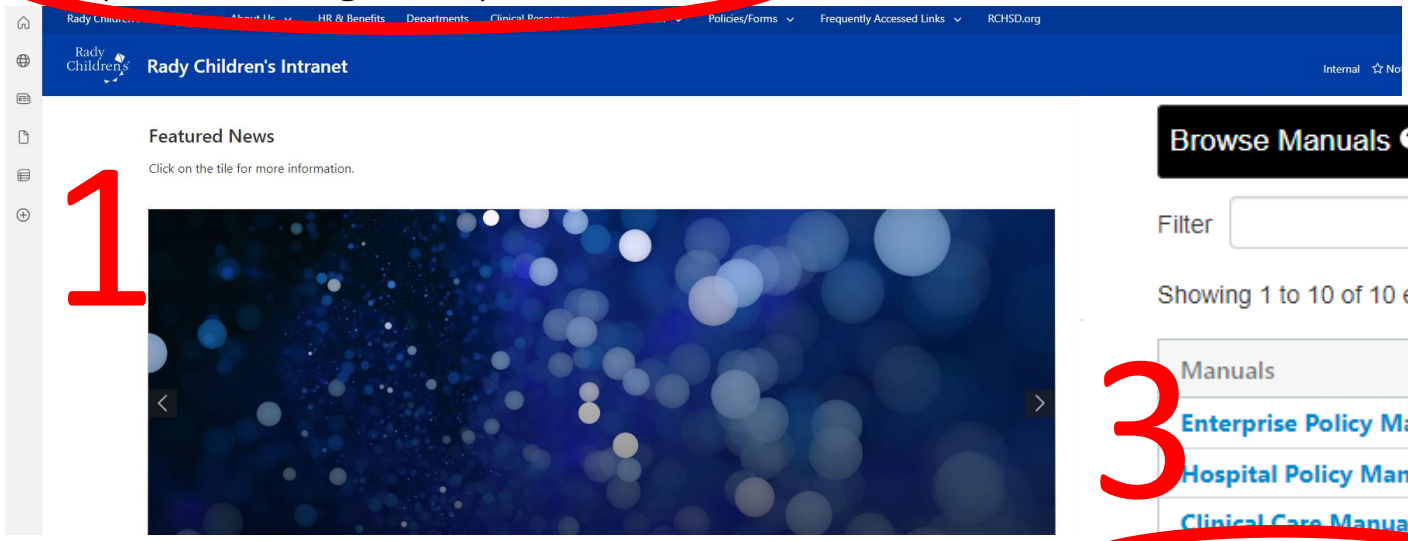
Switch from IV to oral antibiotics as soon as possible

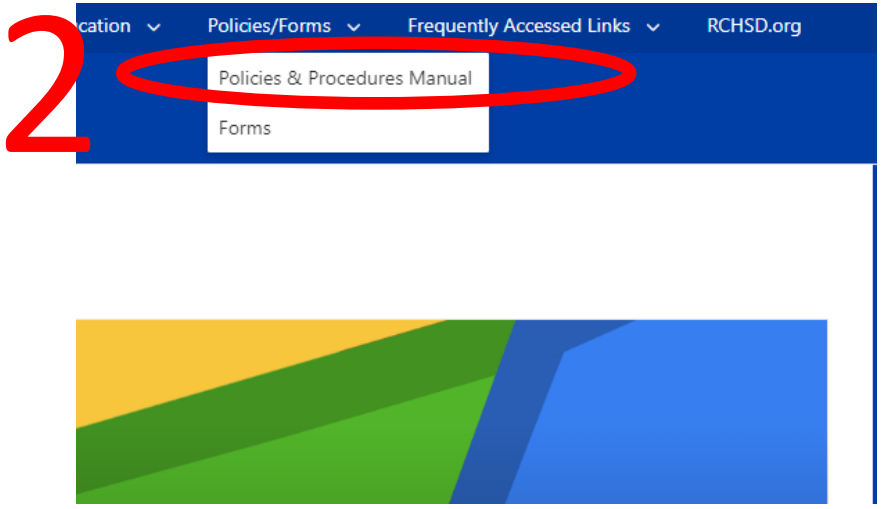
Be aware of local hospital and community bacteria resistance patterns (antibiogram available on the Intranet and in EPIC)

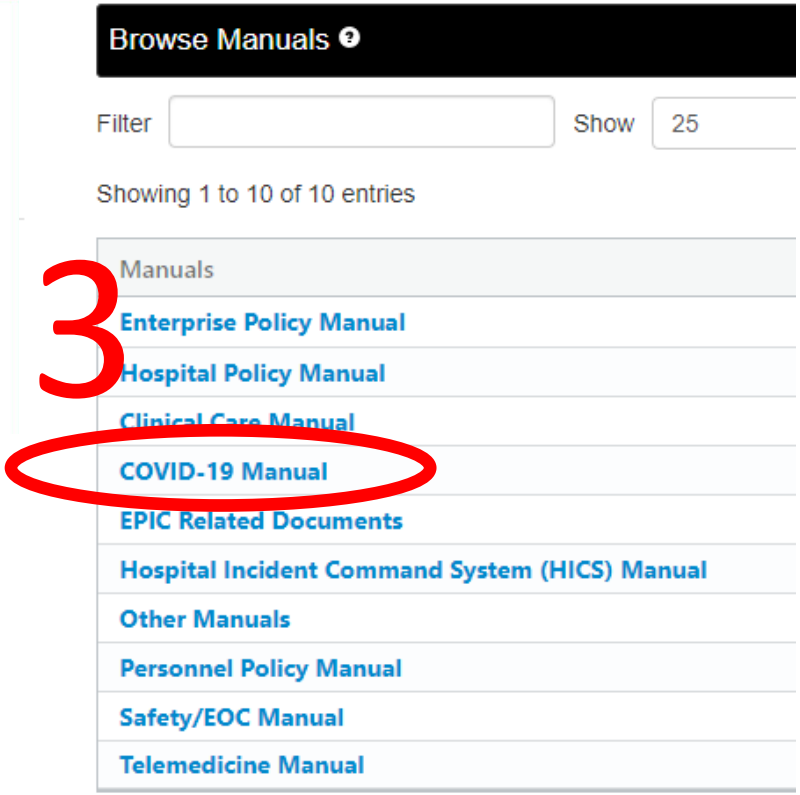
Target antibiotic dosing to the site of infection

COVID-19 Resources

https://rchsdorg.sharepoint.com/







https://rchsd.ellucid.com/manuals/binder/420

COVID-19 Isolation and PPE

CDC guidelines recommend special transmission-based precautions for COVID-19.

N95 mask, eye protection, gown, & gloves

See COVID Manual on the Intranet for the most up-to-date guidance on PPE

Please remember that guidelines may change, and the most current information is in the COVID manual on the Rady SharePoint site, not printed versions of documents.

If Your Patient Has…A RASH!

- Isolate!
- Confirm diagnosis before removing isolation – wait for all infectious labs to result. Do not clear without Infection Control approval.
- "**Contact** *AND* **Airborne**" for Measles and Varicella – Purple sign
- Health care workers must be immunized or immune to Measles and Varicella to care for these patients.
- Decreased childhood immunizations due to the pandemic may cause an increase in vaccine-preventable disease

When TB is Suspected

- Patients and family members wear surgical mask until placed in the proper room.
- Negative Pressure room is required, door should remain closed.
- No additional visitors are allowed.
- Staff must wear a fit tested N95 mask.
- Notify Infection Control as soon as possible so we can provide further guidance/restrictions.
- Patients with active TB cannot be discharged with out the approval from TB Control.
- Infection Control is the liaison between the medical team and TB Control.

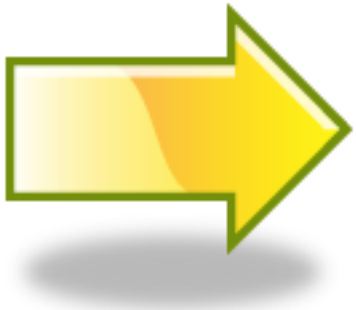
Identify – TB on the differential? Testing for it?

Isolate – Place patient in a negative pressure room. Have family and patient wear a surgical mask. If already admitted to a regular room, work with charge nurse to move patient.

Inform- Notify Infection Control

Thank You

for Preventing the Spread of Infection!



Test Questions

a. True or False. Artificial extended nails are allowed if they are not too long to fit inside your gloves.

2. When equipment that requires reprocessing by the Sterile Processing Department (SPD) is used, where does the pre-cleaning process begin?
a. The Sterile Processing Department
b. Dirty Utility Room
c. At the point of Use
d. All of the Above

3. Did you view the PPE video?
a. yes
b. no

4. You are helping a colleague with a patient on Contact and Airborne precautions for Varicella. What PPE do you wear in this room?
a. Just a Surgical Mask
b. Fit-tested N95 Mask, gown, and gloves
c. None you are just running in quickly; it should be fine.
d. Just gloves

5. Your new admission is a patient admitted to rule out Tuberculosis. The patient has just arrived, and the negative pressure room will not be available for another 30 minutes. Where do you place the patient?
a. In the waiting room
b. In a private room
c. Have the family wait in the hospital lobby
d. In a private room with a HEPA filter from Clinical Equipment Distribution (CED) until the negative pressure room is clean.

6. You wipe down the counter in a *Clostridium difficile* patient's room. Which product do you use and how long must it remain wet (contact time)?
a. Oxivir 1 minute
b. Saniwipes, 2 minutes
c. Bleach, 4 minutes
d. Soap and water, 1 minute

7. Antibiotic resistance in children is of particular concern because they have the highest rates of antibiotic use and often have fewer antibiotic choices since some antibiotics cannot be safely given to children.
a. True
b. False

8. Which of these best describes antimicrobial stewardship?
a. A program focused on maximizing the effectiveness of antimicrobial therapy while minimizing adverse effects
b. A strategy aimed at promoting the widespread use of antibiotics to combat infectious diseases.
c. A policy advocating unrestricted access to all antibiotics.

Key 1. c, 2. FALSE 3. a, 4. b, 5. d, 6. c, 7. TRUE, 8. a