Infection Prevention

2023 Study Guide

KNOWLEDGE OBJECTIVES

1. **Hand Hygiene:** National Jewish Health follows the World Health Organization (WHO) 5 Moments for Hand Hygiene

   a.

1	BEFORE TOUCHING A PATIENT	WHEN?	Clean your hands before touching a patient when approaching him/her.
		WHY?	To protect the patient against harmful germs carried on your hands.
2	BEFORE CLEAN/ ASEPTIC PROCEDURE	WHEN?	Clean your hands immediately before performing a clean/aseptic procedure.
		WHY?	To protect the patient against harmful germs, including the patient's own, from entering his/her body.
3	AFTER BODY FLUID EXPOSURE RISK	WHEN?	Clean your hands immediately after an exposure risk to body fluids (and after glove removal).
		WHY?	To protect yourself and the health-care environment from harmful patient germs.
4	AFTER TOUCHING A PATIENT	WHEN?	Clean your hands after touching a patient and her/his immediate surroundings, when leaving the patient's side.
		WHY?	To protect yourself and the health-care environment from harmful patient germs.
5	AFTER TOUCHING PATIENT SURROUNDINGS	WHEN?	Clean your hands after touching any object or furniture in the patient's immediate surroundings, when leaving – even if the patient has not been touched.
		WHY?	To protect yourself and the health-care environment from harmful patient germs.

2. **State when hand washing with soap & water is required.**
   a. You MUST wash hands using soap and water any time they are visibly soiled, after contact with blood or body fluids, if you are working with a patient with *Clostridium difficile* infection, after using the bathroom, before eating, and at the end of your work day.

   b. You can always choose to perform hand hygiene with soap and water if you prefer it over hand sanitizer.

   c. Wet hands then apply soap. Scrub all surfaces hands for at least 20 seconds (long enough to sing “Happy Birthday” at least once). Rinse thoroughly. Dry hands with paper towel. Use paper towel to turn off water (See Attachment 1).

3. **State the correct use of Alcohol-based Hand Rub.**
   a. Use of alcohol based hand rub is the preferred choice for routine hand hygiene when hands are not visibly soiled.

   b. Use enough product to allow for 15 seconds of rubbing before dry (See attachment 2).

c. Alcohol rubs are highly effective in reducing most viable bacteria and viruses on hands. Through use of emollients, they also tend to cause less dryness with repeated use than soap and water.

4. Discuss glove use and hand hygiene.

a. Using gloves <u>does not</u> replace the requirement for hand hygiene.

b. <u>Always</u> perform hand hygiene before donning gloves and immediately after removing gloves.

5. **Describe the components of Standard Precautions:** Standard Precautions are minimum infection prevention practices used with every patient during **every encounter**, regardless of suspected or confirmed infection status.They protect healthcare workers from becoming infected and prevent healthcare workers from spreading infections from patient to patient. Standard Precautions are also used to work with contaminated equipment, surfaces and materials.

Standard Precautions include:

a. **Hand Hygiene** (see above)

b. **Use Personal Protective Equipment (PPE)** as needed for the task being performed:
- Wear gloves for potential contact with blood, body fluids, mucous membranes, non-intact skin or contaminated equipment.
- Wear a gown to protect skin and clothing during procedures or activities where contact with blood or body fluids is anticipated (including contact with soiled patient care items).
- Wear mouth, nose and eye protection during procedures that are likely to generate splashes or sprays of blood or other body fluids.
- **Perform safe work practices** that protect the healthcare worker and limit potential spread of contamination include:
  - Keep hands away from face
  - Limit surfaces touched
  - Change gloves when torn or heavily contaminated
  - Perform hand hygiene after removal of PPE
- **Demonstrate/describe the correct sequence of donning and removing PPE** (See Attachments 3 & 4).

c. Safe injection practices
- Follow infection prevention practices (e.g., hand hygiene) and maintain aseptic technique during the preparation and administration of injected medications.
- Use ONE needle, ONE syringe, ONLY ONE time!
- Single-dose or single-use labeled medications are only used on one patient, one time.

d. **Safe handling of potentially contaminated equipment or surfaces** in the patient environment
- Single use device = dispose of after use
- Single patient device = only use with one patient
- *Medical equipment used for multiple patients must be approved for multiple patient use <u>and must be cleaned appropriately between patients</u>.*
- Reusable medical equipment must be cleaned and maintained according to manufacturer's instructions.
- Always wear appropriate PPE when handling and cleaning contaminated equipment or surfaces.

6. Describe Transmission-based Precautions: Some infections require an enhanced level of precaution. The type of precaution is based on how the organism spreads from one person to another. Transmission-based precautions are always used in addition to standard precautions. Movement of the patient throughout the facility should be kept to a minimum. Patients and staff should perform frequent hand hygiene. High-touch surfaces should be disinfected often.

a. **Contact Precautions:** Used for patients with known or suspected infection or colonization with organisms transmitted by direct contact with the patient or by contact with contaminated surfaces.
   - **Common conditions** include multi-drug resistant organisms, scabies, and wounds or abscesses with uncontained drainage.
   - **Describe appropriate PPE:** Wear a gown and gloves when entering room. Use dedicated patient equipment or disinfect equipment between patients.
   - **Universal Contact Precautions** are used in CF clinic for all patients seen in the clinic due to high prevalence of MDROs in the patient group.
   - **Special Contact Precautions** are used for any patient with *C. difficile* infection or other unknown causes of diarrhea. You **MUST** wash with soap & water upon exiting the room. All equipment must be disinfected with bleach or an approved bleach alternative.

b. **Droplet Precautions**: Used for patients with known or suspected infection with organisms spread by droplets in the air when a patient coughs, sneezes or talks.
   - **Common conditions** include influenza, meningitis, pertussis and other respiratory viruses.
   - **Describe appropriate PPE:** Wear a surgical or procedure mask to enter the room.
   - These precautions are often combined with contact precautions as many respiratory viruses can be spread both through the air and through patient secretions.

c. **Airborne Precautions**: Used for patients with *known or suspected infection* with organisms spread by tiny particles that get into the air when a patient coughs, sneezes or talks.
   - **Common conditions** include pulmonary TB, chickenpox, and measles.
   - Patient must be placed in a special Airborne Infection Isolation Room (AIIR) (negative pressure room).
   - If patient cannot be placed in an AIIR immediately, have them wear a surgical mask and place them in a private room with the door closed until they are escorted on an AIIR. Do not perform any procedures or examinations until patient is in an AIIR.
   - **Describe appropriate PPE:**
     - For TB, **staff** must wear N95 mask or PAPR (Powered Air Purifying Respirator) to enter room.
     - For chickenpox or measles, only immune staff can work with patient. Gown and gloves need to be worn.
     - NOTE: Patient needs to wear a procedure mask when not in AIIR. [Staff wear N95 to filter out TB particles. Patient wears a procedure mask to keep particles from getting into the air.]

7. Cleaning, Disinfection, and Sterilization

All reusable medical devices and equipment must be cleaned appropriately between patients. *Patient care staff are responsible for cleaning most equipment between patients.*

a. **Low-level disinfection (LLD)** is required for all high-touch surfaces and for any equipment that touches intact skin
   - Use appropriate disinfectant wipes/spray located in your department (most departments have MicroKill-ONE wipes, E-23 disinfecting solution)
   - Thoroughly wipe or spray all high-touch surfaces and any equipment used during the patient encounter
   - Allow disinfectant the correct amount of **contact time** in order to achieve the claimed disinfection activity (e.g., MicroKill-ONE has a 1-minute contact time, E-23 has a 10 minute wet time)

b. **High-level disinfection (HLD)** is required for most equipment that touches mucus membranes. HLD is performed by MIDC. Staff should remove any visible debris from the device (this is called pre-cleaning) before placing it in a marked leak-proof container for transport to MIDC. Refer to policy for more details.

c. **Sterilization** is required for any device that enters a sterile body site. Pre-clean the device and transport to MIDC. MIDC send this equipment to St. Joseph's hospital for reprocessing.

8. Describe Bloodborne Pathogens

a. Bloodborne Pathogens are microorganisms present in blood and other potentially infectious materials (OPIM) that can cause disease in humans. In healthcare settings, OPIM includes semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, and any body fluid visibly contaminated with blood.

b. The organisms of most concern for healthcare workers are hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV).

c. Describe ways to prevent occupational exposures:
   - Standard Precautions – See above
   - Engineering Controls – Use of safe sharp devices, disposal of sharps in designated containers, use of special containers for storage and transport of biohazard waste
     NOTE: Activate safety feature before disposal
   - Work Practice Controls – Not applying cosmetics or contact lenses in areas where BBP may be present, not eating or drinking in areas where BBP may be present, handling soiled items using appropriate PPE, cleaning and disinfecting work areas regularly
   - Administration of Hepatitis B Vaccine – Offered to all employees upon hire to or transition to a position where contact with BBP possible. Employees initially declining the vaccination can receive it free of charge at any time by contacting Employee Health.
   - Hazard Communication – Use of biohazard signage and red bag waste

d. Explains steps to take if you have a bloodborne pathogens exposure:
   - First Aid First! If skin integrity compromised, wash area with soap and water. If mucous membrane involved, flush with water for <u>15 minutes</u>.
   - Call Employee health to be seen and counseled.
   - Complete an incident report.

9. Describe the management of patients with tuberculosis. It is estimated that 1/3 of the world's population has the bacteria that causes TB in their body. However, not everyone with the TB bacteria in their body becomes sick.

a. Symptoms of active TB infection in the lungs include:
   - Cough lasting 3 weeks or longer
   - Coughing up blood (hemoptysis)
   - Fever
   - Weight loss (unexpected & without trying)

- Night sweats
- Chest pain

b. Latent TB infection (LTBI) is the term used to describe when a person has TB in their body but it does not make them sick.
- People with LTBI will usually have positive skin and/or blood tests. These tests do not differentiate between latent TB and active TB disease.
- People with LTBI do not have TB symptoms and cannot spread TB to others. These patients do not need to be placed in Airborne Precautions
- There are medications that greatly reduce the risk that latent TB infection will progress to TB disease.
- Many people with latent TB infection never develop TB disease.
- If the TB bacteria become active and begin multiplying, the person will begin having symptoms and go from having latent TB to having TB disease.
- People with symptomatic TB Disease can transmit TB to others.
- Those that develop TB disease may do so soon after exposure or not until years later.
- Those with HIV infection are at greatest risk for developing TB disease.

c. Care should be taken when performing any aerosol-producing procedures (i.e., sputum induction, intubation) on asymptomatic patients. Such procedures should be done in an AIIR or negative pressure booth; staff should wear N95 respirator.

d. Consider TB disease in any patient displaying signs or symptoms of TB infection and/or with a history of TB exposure.

e. If TB is suspected:
- Instruct patient to wear a surgical or procedure mask and to practice good respiratory hygiene.
- Immediately isolate patient in an AIIR and initiate Airborne Precautions.
- If an AIIR is not available, place patient in a private exam room with the door closed and ask that they continue to wear the mask while in the room. Place Airborne Isolation or Stop Sign on door for communication to other staff! Move patient to AIIR as soon as possible.
- Do NOT perform procedures that induce coughing or require patient to be un-masked until patient is in an AIIR and on Airborne Isolation.
- If TB is suspected, do NOT send the patient to other departments for appointments or testing without direct verbal communication with receiving department. Patient should be escorted at all times while in facility.
- Contact Infection Preventionist to assist with patient handling and transfer.
- The priority is to get the patient into an AIIR before continuing with examination or testing.
- Failure to follow NJH policies on suspected TB disease puts all healthcare workers, patients and visitors at risk.

10. Covid-19 Policies

a. Universal Masking in all patient facing areas
- Including hallways, cafeteria, and elevators.

b. Patients and visitors self-screen at entrances, and must be masked.

c. If patient is symptomatic for Covid-19
- Please notify the ICC and escort patient down to room.

References and Resources

NJH Infection Prevention Policies including those on Hand Hygiene, Bloodborne Pathogens, Tuberculosis and Standard and Transmission-based Precautions are available on the NJH Spyderweb.
Contact me with any questions: Lindsay Sense, RN, BSN SenseL@NJHealth.org

Attachment 1.

How to Handwash?

WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB

Duration of the entire procedure: 40-60 seconds

0

Wet hands with water;

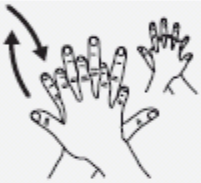
1

Apply enough soap to cover all hand surfaces;

2

Rub hands palm to palm;

3



Right palm over left dorsum with interlaced fingers and vice versa;

4

Palm to palm with fingers interlaced;

5

Backs of fingers to opposing palms with fingers interlocked;

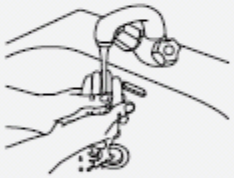
6

Rotational rubbing of left thumb clasped in right palm and vice versa;

7

Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;

8

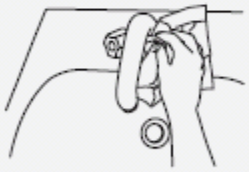


Rinse hands with water;

9

Dry hands thoroughly with a single use towel;

10



Use towel to turn off faucet;

11

Your hands are now safe.

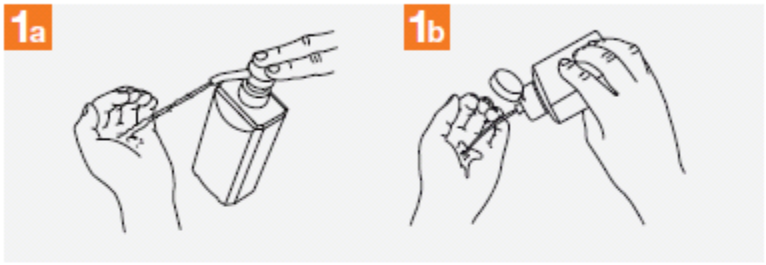
World Health Organization | Patient Safety — A World Alliance for Safer Health Care | SAVE LIVES Clean Your Hands

Attachment 2.

How to Handrub?

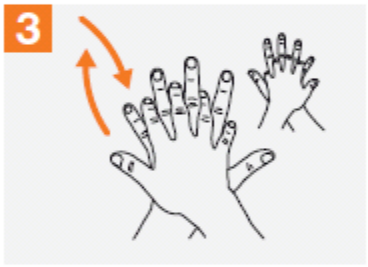
RUB HANDS FOR HAND HYGIENE! WASH HANDS WHEN VISIBLY SOILED

Duration of the entire procedure: 20-30 seconds



Apply a palmful of the product in a cupped hand, covering all surfaces;

Rub hands palm to palm;

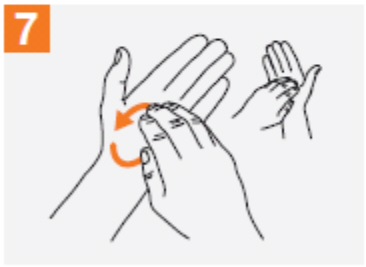


Right palm over left dorsum with interlaced fingers and vice versa;

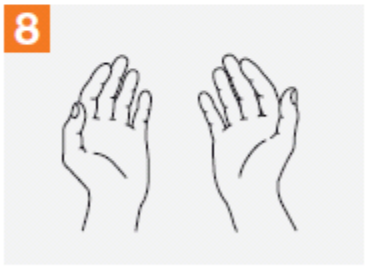
Palm to palm with fingers interlaced;

Backs of fingers to opposing palms with fingers interlocked;

Rotational rubbing of left thumb clasped in right palm and vice versa;



Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;



Once dry, your hands are safe.

World Health Organization | Patient Safety — A World Alliance for Safer Health Care | SAVE LIVES Clean Your Hands

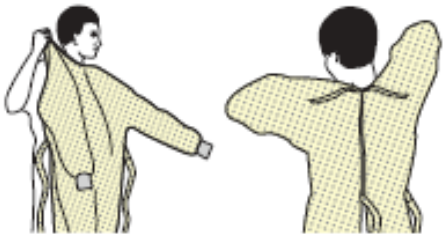
Attachment 3.

SEQUENCE FOR PUTTING ON PERSONAL PROTECTIVE EQUIPMENT (PPE)

The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet or airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the specific type of PPE.

1. GOWN

- Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
- Fasten in back of neck and waist



2. MASK OR RESPIRATOR

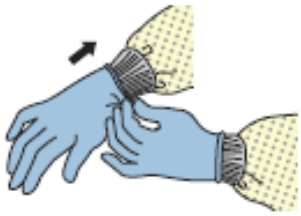
- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator

3. GOGGLES OR FACE SHIELD

- Place over face and eyes and adjust to fit

4. GLOVES

- Extend to cover wrist of isolation gown



USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION

- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene

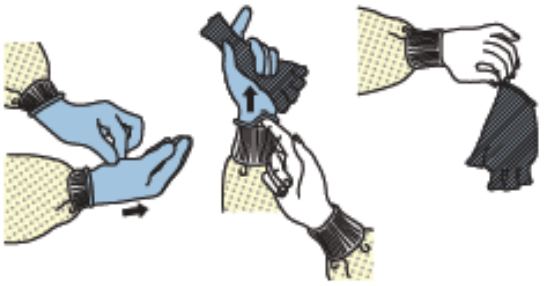
Attachment 4 (Example 1)

HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 1

There are a variety of ways to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. Here is one example. **Remove all PPE before exiting the patient room** except a respirator, if worn. Remove the respirator **after** leaving the patient room and closing the door. Remove PPE in the following sequence:

1. GLOVES

- Outside of gloves are contaminated!
- If your hands get contaminated during glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Using a gloved hand, grasp the palm area of the other gloved hand and peel off first glove
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist and peel off second glove over first glove
- Discard gloves in a waste container



2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band or ear pieces
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container

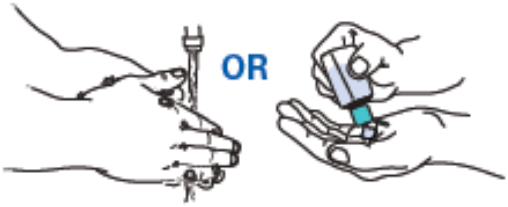
3. GOWN

- Gown front and sleeves are contaminated!
- If your hands get contaminated during gown removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Unfasten gown ties, taking care that sleeves don't contact your body when reaching for ties
- Pull gown away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard in a waste container

4. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container

5. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE

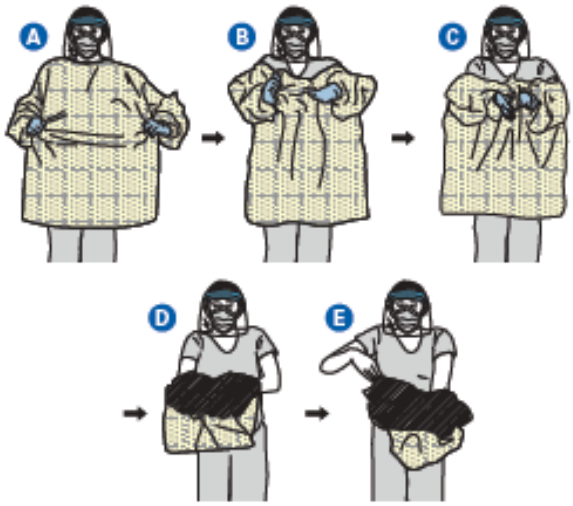
Attachment 4 (Example 2)

HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE)
EXAMPLE 2

Here is another way to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. **Remove all PPE before exiting the patient room** except a respirator, if worn. Remove the respirator **after** leaving the patient room and closing the door. Remove PPE in the following sequence:

1. GOWN AND GLOVES

- Gown front and sleeves and the outside of gloves are contaminated!
- If your hands get contaminated during gown or glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp the gown in the front and pull away from your body so that the ties break, touching outside of gown only with gloved hands
- While removing the gown, fold or roll the gown inside-out into a bundle
- As you are removing the gown, peel off your gloves at the same time, only touching the inside of the gloves and gown with your bare hands. Place the gown and gloves into a waste container

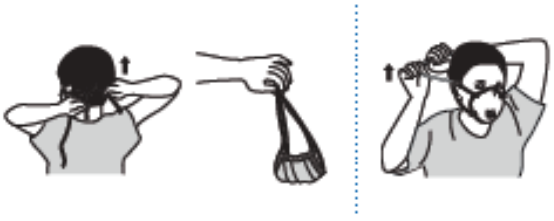


2. GOGGLES OR FACE SHIELD

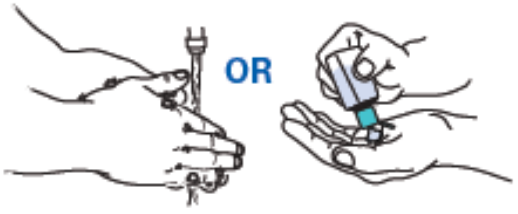
- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band and without touching the front of the goggles or face shield
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container

3. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container



4. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE

Suicide Awareness and Response Skills Review Study Guide

Facts

- Suicide deaths have continued an upward trend since 2009.
- Since 2004, more than one-third (33.6%) of people who died by suicide in Colorado were reported as having recently disclosed their intent. (within a month prior to their death)

Definitions

Suicidal Ideations or Thoughts

Thoughts about how to kill oneself. They can range from a detailed plan to a fleeting consideration.

Examples:

- "I am going to take this whole bottle of pills to end it."
- "I am going to shoot myself."

Passive Death Wishes

Thinking about dying or a desire to be dead, without actively making a specific plan to carry out those thoughts.

Examples:

- "Life is not worth living, nothing ever changes"
- "I bet if I died today you would not come to my funeral"

Risk Factors for Suicide

- History of suicide attempt
- Mental Health and/or Depression diagnosis
- Alcohol or drug abuse
- Family history of a mental health diagnosis
- Family history of alcohol or drug abuse
- History of suicide in family
- Domestic/Child Abuse, including physical or sexual abuse
- Having guns or other firearms in the home
- Being incarcerated (prison or jail)
- Exposed to another's suicidal behavior or death (including family member, peer, or media figure)
- Chronic or terminal medical diagnosis

- Being between the ages of 15 and 24 years or over age 60

Warning Signs of Suicide

- Threatening to hurt or kill oneself
- Seeking access to means
- Talking, writing, or posting on social media about death, dying, or suicide
- Feeling hopeless
- Feeling worthless or a lack of purpose
- Acting recklessly or engaging in risky activities
- Feeling trapped
- Increasing alcohol or drug use
- Withdrawing from family, friends, or society
- Demonstrating rage and anger to seeking revenge
- Appearing agitated
- Having a dramatic change in mood

The ABC of Suicide Risk

Your role at National Jewish Health

Assess for safety concern.

Be sure patient is not left alone.

Call for evaluation.

Assess for safety concern.

1st Ask directly whether the person is suicidal:

- "Are you having thoughts of suicide?"
- "Are you thinking about killing yourself?"

*****Do not ask a patient if they are thinking about "hurting" themselves. You want the patient to know you are asking about killing themselves not self-harm which may be done for other reasons.*****

2nd Ask directly about a plan:

- "Have you decided how you are going to kill yourself?"
- "Have you decided when you would do it?"

Be sure patient is not left alone.

Patients who have expressed suicidal ideations cannot be left alone until they have been evaluated further by:

- Medical Doctor
- Licensed Clinical Social Worker
- Licensed Psychologist

Restroom privileges

Restroom privileges while the patient is under supervision, awaiting a formal assessment or transportation, must occur using a designated safe restroom.

Same-sex staff or a parent must escort the patient to a multi-stall restroom (available on every floor of the Smith building) or use the private restroom on the Pediatric Behavioral Health Unit (A207a).

Call for evaluation.

Tell the treating physician

- May need to be done by a coworker
- Don't leave the patient alone.

Further evaluations can be done by calling:

- Treating provider
    - If here for testing only, contact the MOD or Social Worker.
- Licensed Clinical Social Worker
- Licensed Psychologist.

When does security or police get involved?

Call 911, immediately if the person has a weapon and/or is behaving aggressively

- One time you can leave a patient alone.
- Start removing other staff and patients from the area.
- Call hospital security if you have notified Denver Police

Additional Questions or Help?

Elizabeth Langhoff LCSW

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303-270-2743

OXYGEN THERAPY AND OXYGEN DELIVERY SYSTEMS
2023 Study Guide

ABBREVIATIONS AND DEFINITIONS

SaO_2 : saturation of arterial oxygen

SpO_2 : saturation of oxygen by pulse oximetry

PaO_2 : partial pressure arterial oxygen

$PaCO_2$: partial pressure arterial carbon dioxide

LPM : liters per minute

F_IO_2 : fraction of inspired oxygen

PSI : pounds per square inch

KNOWLEDGE OBJECTIVES

1. State indications for oxygen therapy.

a. Documented hypoxemia - a Pa 0_2 < 60 mmHg or $Sp0_2$ < 88-90% in patients breathing room air

b. Suspected hypoxemia in acute pulmonary disorders, i.e. severe asthma, pneumonia, pneumothorax, aspiration

c. Short-term therapy, i.e. bronchoscopy, lung biopsy

d. Suspected myocardial infarction

2. List precautions to consider when using oxygen.

a. Ventilatory depression may occur in spontaneously breathing patients with an elevated $PaC0_2$ when $Pa0_2$ > 60 mmHg.

b. The potential for fire is increased in the presence of a high oxygen concentration.

c. The potential for fire is increased in the presence of a combination of petroleum-based lubricants or oils and increased oxygen concentration.

d. With FiO_2 ≥ 0.5, absorption, atelectasis or oxygen toxicity may occur.

3. Identify types of storage systems available at National Jewish and give an example of each.

a. Compressed gas oxygen storage system

1) Piped-in wall units

2) Stationary tanks and portable tanks

b. Liquid oxygen storage systems

1) Stationary tank – This can be a TOP-FILL or TOPD and SIDE FILL for portable tanks.

2) Portable tanks.

c. Portable oxygen concentrator (POC) – Commonly used for travel. Maximum flow rate is 4 L/M.

d. Storage of portable tanks
   1) E-cylinders must always be in a cart or lying on side.
   2) E cylinders are not kept with any other combustibles.
   3) E cylinders must have a tag, indicating whether they are full, partial full, or empty.
   4) Full and empty tanks must be kept distinctly separate.
   5) Liquid systems must always be kept upright.

4. List factors to consider in choosing an appropriate oxygen system for patient use within National Jewish Health.

a. Prescribed liter flow

b. Patient's present oxygen storage system, if one is in use

c. Number of hours the patient will need to utilize portable system

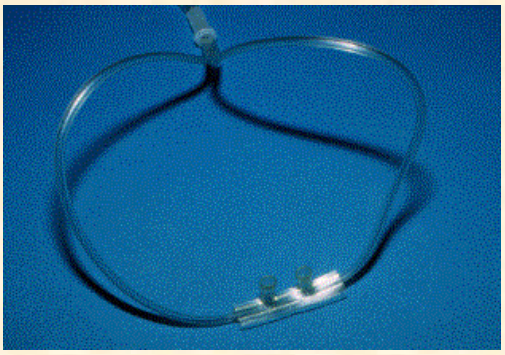
d. Type of oxygen delivery method in use, i.e. nasal cannula

e. If patients have questions about wearing oxygen upon discharge, please refer the patient to their clinic, ACU, or PCU nurse; the DME department; or the Continuity of Care Coordinator.

5. State the types of oxygen delivery methods (low-flow or high-flow) available at National Jewish and give an example of each.

a. **Low flow systems** - A low-flow system is designed to provide only a portion of a patient's inspiratory flow rate - **6 LPM (liters per minute) or below.**

1) Nasal cannula – **For 6 LPM (liters per minute) or below** (Higher flows may produce nasal discomfort due to mucosal drying.)

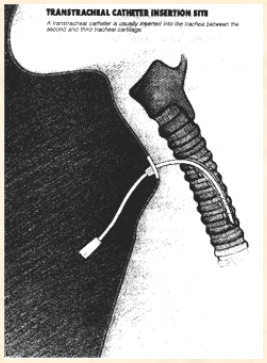


2) Oxygen conserver systems – **for 7.5 LPM (liters per minute) or below**

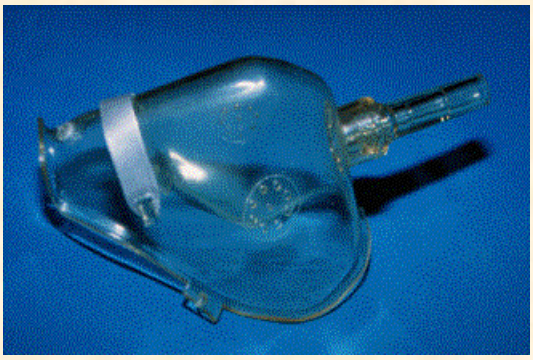
a) An oxygen conserver delivers oxygen to the patient only on inhalation rather than continuous flow. This will allow patients to carry smaller tanks that last longer. It also eliminates the need for an E cylinder and cart and can reduce the cost of oxygen refilling and home delivery. The conserver device setting may vary between manufacturers. It is important to test the patient on the specific device that will be used prior to ordering it.

b) Oxymizer mustache or pendant style – For 0.5 to 7.5 LPM (liters per minute) although this is considered a low-flow device, it is commonly used as a high-flow device at NJH. This is one of the simplest oxygen conserving systems, delivering oxygen with early inspiration.

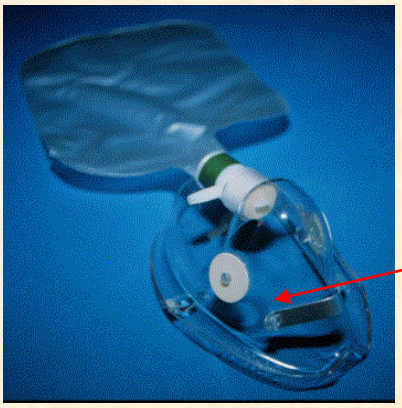
3) Trans-tracheal oxygen catheters - **for 6 LPM (liters per minute) or below. (High flow catheters are available with a physician order.)**



4) Simple oxygen facemask - **for 6-10 LPM (liters per minute)**



5) Non-rebreather mask – **for 10 -15 LPM (liters per minute)**



Note that the non-rebreather mask has an exhalation valve.

6) High Flow cannula – **for 6 LPM or higher**

7) OxyMask OxyKid

The Oxy masks can deliver from 0.5 LPM to 15 LPM.

b. **High flow systems** – A high-flow system delivers a prescribed gas mixture either at high or low F_1O_2 that exceeds patient demands.

Large volume aerosol: Used in our pediatric areas or with tracheostomy patients

Types of devices used with high-flow systems

1) Face tent Trach collar

2) Aerosol mask:

Pediatric aerosol mask

C. **Summary of liter flow parameters and FI02 ranges for the following devices.**

1. Nasal cannula

   a) Adults & children - 0.25 to 6 LPM

   b) Infants - 0.1 to 2 LPM

2. Simple 02 face mask: 6 to 10 LPM

3. Non-rebreather mask: 10 to 15 LPM

6. List indications for utilizing humidity therapy.

Oxygen Bubbler – A bubbler is added to nasal cannulas at 2 LPM and above. Bubblers are currently only being used on the Adult Care Unit (2 Goodman) and the Pediatric Care Unit.

a. To humidify dry therapeutic gases.

b. To improve bronchial hygiene.

   1) Hydrates dry retained secretions.

   2) Improves efficiency of cough.

7. Document the patient's response to oxygen.

a. Clinical assessment to include respiratory rate, pattern of breathing, use of accessory muscles, heart rate, blood pressure, and mental status.

b. Patient's subjective assessment of decrease in shortness of breath and change in well-being, exercise tolerance and quality of sleep.

c. Assessment of physiologic parameters.

1) Arterial blood gas

2) Pulse oximetry ($Sp0_2$) – at rest & during exercise

6) Assesses the oxygen delivery system as needed. For example, determine if the patient needs another type of system or delivery device, i.e., increase from the nasal cannula to the oximizer.

8. **List steps to be taken for stationary and portable oxygen tank issues.**

Leaking Gas Cylinders
There are many compressed gas cylinders in use at National Jewish Health®. If problems develop with those that contain cryogenic liquids, it is imperative that extreme caution is taken to prevent any contact with the material being expelled. Severe skin burns can result from contact with these extremely cold materials. Appropriate personal protective equipment must be worn before any attempt to handle or move a leaking tank.

Procedures for leaking liquid oxygen tanks - Main Campus only
1. Clear patients from the area.
2. Use personal protective equipment to prevent exposure.
3. If the small portable tank is squealing, flip the vent valve several times to remedy problem.
4. If the fill tank is leaking, place the portable unit on the fill tank in the fill position, for several minutes until the leak stops.
5. If problem persists, contact the Oxygen Vendor (Airgas) at (303) 370-7800. Should you require assistance before the service representative arrives, please call the Safety Department at x1747 during regular business hours (7:30 A.M. to 4:00 P.M., M-F). After hours, please contact the Stationary Engineer at x1742 or the Duty Engineer at 720-394-5121.

Procedures for all other gas cylinder tanks
Main Campus- During regular business hours (7:30 A.M. to 4:00 P.M., M-F), contact the Safety Department at x1747 for assistance. After these times you may contact the Stationary Engineer at x1742 or the Duty Engineer at 720-394-5121 for assistance.
Off Campus Locations-
1. Clear patient area
2. Contact Airgas 303-286-4400 (available 24 hours)
3. Notify manager or supervisor

PERFORMANCE OBJECTIVES

1. Determine existing level of oxygen in each oxygen storage system available.

a. Compressed gas - determine level of contents and level of liter flow through the regulator gauge.

b. Liquid system - determine level of contents and level of liter flow through correct reading of gauges.

2. Demonstrate changing the regulator from an empty to full compressed gas tank.

a. Remove the regulator from tank.

b. Attach regulator to new tank.

c. Turn tank on and assesses for appropriate tightness.

d. Set prescribed liter flow.

e. Determine duration of oxygen in E-cylinder at specified liter flow utilizing formula.
(PSI x 0.3)÷LPM = minutes

f. Discuss the procedure for using the tank status card.

g. Discuss the correct procedure for tank storage.

3. Demonstrate the filling procedure for the top-fill portable liquid oxygen systems. Side-fill unit is optional for nurses. Infusion staff exempt.

a. Match portable unit to correct stationary oxygen unit.

b. Demonstrate the filling technique for each system.

c. Follow precautions for filling liquid portable tanks.

1) Fill only until noise changes and oxygen vapors show.

3) Use push release button to remove filled tank.

4. State location of liquid O_2 reservoirs and E tanks within National Jewish Health for emergency refilling & replacement.

a. West Clinic

1) E-Tanks and portable liquid tanks- clinic staff will fill liquid tanks or provide a loaner E-tank. Call 303-557-8906.

2) Page the Nursing Supervisor at 720-240-1477 for back-up if necessary.

b. Center for Outpatient Health (COH)
1) 1st floor – e-tanks in room T111
2) 4th floor – e-tanks and liquid fill concentrator in room T471

c. Night sleep techs will access O2 room A135 to refill liquid O2 tanks. Check/close E tanks upon patient arrival and hook patients up to wall oxygen. If E tank is low, ask patient to contact a family member/friend to bring them another E tank for going home in the morning.

5. Describe the set-up procedure of a nasal cannula.

a. Identify the correct cannula for the specified patient population, i.e. adult, child, infant.

b. Identify liter flow on oxygen delivery device. The liter flow line goes through the middle of the ball.

c. Describe proper nasal cannula fit. The curve of the nasal cannula points down.

d. Humidifier/Bubbler is only used for non-ambulatory patients with liter flow 2 LPM or greater.

6. Describe the set-up procedure for a simple mask.

a. Identify the correct sized mask for the specified patient population, i.e., adult, child, infant.

b. Identify liter flow on oxygen delivery device (E-tank, wall-mounted flow meter.) The liter flow line goes through the middle of the ball.

7. Describe the set-up procedure for a non-rebreather mask.

The non-rebreather mask delivers an oxygen concentration of 60-80%. This mask is available in pediatric & adult sizes. A flow rate of 10 – 15 LPM must be used. Various makes are available.

a. Identify the non-rebreather mask.

b. Identify appropriate liter flow to mask. (10-15 LPM)

c. Identify that the reservoir bag is inflated before attaching mask to patient.

d. Discuss the mechanics of a non-rebreather mask.

1) Reservoir bag holds pure oxygen for inspiration.

2) One-way valve on the side port of the mask and from the reservoir to the mask prevent the inflow of room air during inspiration and prevents exhaled air from entering the reservoir.

References

AARC Clinical Practice Guideline
Oxygen Therapy in the Home or Alternate Site Health Care Facility
—2007 Revision & Update, RESPIRATORY CARE • AUGUST 2007 VOL 52 NO 1

Clinical Practice Guidelines-- Oxygen Therapy in the Acute Care Facility – 2002 Revision & Update, RESPIRATORY CARE 2002; 47(7): 717-720.

AARC Clinical Practice Guidelines (Retired) – Selection of an Oxygen Delivery Device for Neonatal and Pediatric Patients – 2002 Revision & Update. RESPIRATORY CARE 2002; 47 (7): 707-716.

ATS Clinical Practice Guidelines Management of Stable COPD. Feb 2015.

National Jewish Institutional Patient Care/ Respiratory P & P, Oxygen Administration

National Jewish Institutional Patient Care/ Respiratory P & P, Portable O_2 Equipment Issue and Maintenance

EMERGENCY RESPONSE (AED & Zoll R series)
2023 Study Guide

KNOWLEDGE OBJECTIVES

1. State the number to call for the Rapid Response Team (RRT) or Code Blue.

a) The RRT or code blue is activated by calling 5555.
b) The caller will state whether to call the Rapid Response Team or a Code Blue
c) The caller will state the location twice (x2) including room number and clinical area. Example Room A 151, Chemo Infusion Area.
d) The caller will indicate whether person is pediatric or adult.
e) The caller will only disconnect the call when instructed by the operator.

2. State the circumstances when the RRT should be called.

- **General criteria**

a. Worry or concern about a patient: "does not look right"
b. Significant acute change in VS or status
c. Chest pain
d. Skin color – pale, dusky, blue
e. Increasing O2 requirement
f. Seizure
g. Excessive Bleeding

- **Neurological changes**

a. Alteration in LOC; acute mental status change
b. Unexplained onset of lethargy and/or agitation
c. Numbness or tingling
d. Sudden loss or change in speech
e. Sudden loss of movement or weakness of face, arms or legs

- **Respiratory status**

a. Adults:
    1) Consider rates <8 or >30 breaths/min
    2) Consider pulse oximeter unexpected reading <88%
    3) Increasing oxygen demands to maintain baseline O2 saturation

b. Pediatric:
    1) Infant: <30 or >60 breaths/min
    2) Child: <18 or > 30 breaths/min

- **Heart Rate**

a. Adults:
    1) Consider ranges <40 or >160 beats/min
    2) Or >140 beats/min with symptoms

b. Pediatrics:
    1) Infant: <85 or >190 beats/min
    2) Child: <60 or >140 bets/min
    3) Adolescent: <40 or >140 beats/min

- **Blood Pressure**

a. Adults
    1) Consider ranges <80 or >190 systolic
    2) >110 diastolic

b. Pediatrics
    1) Lower range of systolic BP in children 1-10 years of age is 70 mmHg plus child's age in years X 2 mmHg

3. State the circumstances when a Code Blue should be called.

- The victim is unresponsive, not breathing, and/or pulseless.

4. State the correct depth, rate, and compression to breaths ratio in one/two rescuer CPR

- **Adult**

a. Compression depth = 2.0-2.4 inches (5 to 6cms)
b. Compression rate = 100-120 compressions per minute
c. One/two rescuer ratio = 30:2

- **Child/Infant**

a. Compression depth = one third to one half the depth of the chest = approximately 2 inches (5 cms) for children, 1 ½ inches (4 cms) for infant
b. Compression rate = 100-120 compressions per minute
c. One rescuer (child/infant) ratio = 30:2
d. Two rescuer (child/infant) ratio = 15:2

5. State the purpose for the Automated External Defibrillator (AED or AED mode of the Zoll R Series).

a. The AED is used for all patients in cardiac arrest (unresponsive, no respirations and no pulse).

b. The AED will automatically recognize the two cardiac rhythms that cause many adult cardiac arrests – Ventricular Fibrillation and Ventricular Tachycardia. VFib and Pulseless Vtach are life-threatening heart rhythms that do not allow the heart to pump effectively.

c. The most effective treatment for V-Fib or pulseless V-Tach is immediate defibrillation, allowing the heart to return to an organized and effective heart rhythm.

d. **Zoll Plus** pediatric pads (Ped-Padz II) should be used with children 8 and under (< 55 lbs or 25 KGs) so the shock level is appropriate for the size of the child.

6. Identify the personnel who are authorized to use the Zoll R Series.

- All RN staff and Code Responders who have their BLS certification are allowed to use the Zoll R Series

7. Describe the role of CPR with the AED or Zoll R Series

a. When a patient is unresponsive and has no pulse, CPR is begun and continued until the Zoll R or AED becomes available.

b. When the Zoll R or AED arrives, the unit should be turned on, defibrillator pads should be applied to the patient's chest, CPR should be immediately halted to allow for the system to analyze.

c. CPR should only pause while the unit analyzes the heart rhythm or shock is advised.

8. State special considerations for Defibrillator use.

- A number of conditions need to be considered when applying the defibrillator pads. These situations should NEVER delay defibrillation.

a. Medication patches - Medication patches should quickly be removed and the site wiped off with gauze before applying pads. (Defibrillation directly through medication patches could cause them to explode, burning the patient.)

b. Nitroglycerin paste or wet conditions - These may cause poor pad contact or electrical arcing. Wipe off paste, dry wet areas on patient and remove victim from wet area.

c. Excessive chest hair - This may result in poor skin contact with the pad. Quickly shave hair or if there are 2 sets of pads, place the first set onto the hairy chest, rip off pads and then place second set.

d. Implanted pacemaker or defibrillator - Avoid placing the pads directly over implanted pacemakers or defibrillators as the implanted device will likely be permanently disabled.

PERFORMANCE OBJECTIVES

1. State the number to call for Rapid Response Team (RRT) and Code Blue.

2. State the circumstances when the RRT or a Code Blue should be called.

3. Demonstrate the steps of CPR, until the Zoll R Series arrives.

4. Demonstrate how to correctly position the Ambu bag on face.
    - Place the face mask on the manikin with pointed end on the bridge of the nose, and curved end on the chin.
    - Open the airway using the head tilt-chin lift method.
    - Squeeze the bag to deliver enough air to see the chest rise.

5. Demonstrate the steps for defibrillation using the AED

    a. Turn on the power for the AED.

    b. Place pads onto chest of patient as shown on pads and plug pads into AED. State special considerations (i.e. medication patches…)

    c. Clear victim, follow prompts and allow unit to analyze.

    d. If the unit gives a prompt to shock, move high flow oxygen delivery system away from the patient before delivering the shock.

    e. Give warning while checking that no one is touching the patient. "I'm clear, you're clear, we're all clear"

    f. Deliver shock

    g. Resume compressions immediately and continue CPR as directed by AED.

6. Demonstrate the steps for defibrillation using the Zoll R Defibrillator

    a. Turn on the power for the Zoll R Defibrillator by turning the dial.

    b. Place pads onto chest of patient as shown on pads and plug pads into unit. State special considerations (i.e. medication patches…)

    c. Clear victim and press analyze.

    d. If the unit gives a prompt to shock, move high flow oxygen delivery system away from the patient before delivering the shock.

e. Give warning while checking that no one is touching the patient. "I'm clear, you're clear, we're all clear"

f. Deliver shock

g. Resume compressions immediately and continue CPR.

References

BLS for Health Care Providers Student Manual

American Heart Association, Highlights of the 2020 AHA Guideline Update for CPR and ECC

Zoll R Series Product Brochure

Emergency Preparedness Study Guide for Skills Review 2023

Center for Outpatient Health (COH) Building Patient Care Areas

1. Fire Response

1. **R.A.C.E**
   a. **RESCUE** Notify your co-workers of the fire, and assist those who need help getting to a safe area.
   b. **ALARM** Activate the fire alarm pull station, and **notify:**

Location	Response
Main Campus 6:30 a.m. to 8:00 p.m.	Call x5555
Main Campus 8:00 p.m. to 6:30 a.m & Weekends	Call 9-1-1, Call 5555

   c. **CONTAIN:** Close doors and windows in the area to contain the fire and smoke.
   d. **EXTINGUISH/EVACUATE: Only attempt to extinguish a fire if it is small (Less than 24" in diameter), and your safety can be assured**.

   When using a fire extinguisher, remember P.A.S.S.

   Pull Pin
   Aim Nozzle
   Squeeze Handle
   Sweep side to side.

Evacuation

Your Location	Evacuation Area
Basement	Outside via stairwells (Gather in Parking Lot or May Building)
1st thru 5th floors	Persons needing evacuation assistance - the Patient elevator lobby. All others outside via the stairwells (Gather in Parking Lot or May Building)

2. **Persons needing evacuation assistance:**
   a. Move to the Patient elevator lobby.
   b. Open the clear plastic door that says "EMERGENCY EVACUATION ASSISTANCE"
   c. Push the chrome button
   d. Read your location from the sign to the left of the button to the emergency operator.
   e. Wait at this location for evacuation assistance

The fire doors will close in the entire building for all alarms. If an incident is determined to be serious enough, an announcement will be made to evacuate the entire building, in addition to the alarming floors.

2. Tornadoes

When a tornado watch is issued by the national weather service:

- Stay indoors.
- Close drapes, shades, and blinds.
- Close all doors to seal off inner corridors from windows.
- Protect patients from flying debris with blankets and pillows.
- Limit the use of elevators.
- Individuals with disabilities need to inform co-workers of their condition prior to an evacuation. When ordered to evacuate, these individuals should ask for assistance from their co-workers.
- Limit Telephone usage to internal calls and those necessary for providing patient care.

During watch conditions, a tornado could appear without warning.

Tornado Alert (Action Required) Received

- Move patients to the **TORNADO REFUGE AREA IF POSSIBLE** or to a safer areas such as inside corridors, smaller rooms with shielding walls, such as bathrooms and closets, or other areas away from windows, (conditions can change suddenly, be prepared to quickly proceed to the Tornado Refuge Areas).
- Protect patients from flying debris with blankets and pillows.
- **GO TO THE TORNADO REFUGE AREA**

Tornado Refuge Areas – COH

Building	Floor	Primary Refuge - Time Permitting	Secondary Refuge - Immediate	Other Instructions
COH	1st floor	Interior Room, Restrooms, hallway away from windows	Interior Room, Restrooms or hallway away from windows	Do not use stairwells as they all have glass.
COH	2nd floor	Interior Rooms or Interior hallway away from windows	Interior Room or hallway away from windows	Do not use stairwells as they all have glass.
COH	3rd floor	Interior Exam Room or interior hallway away from windows	Interior Exam Room or interior hallway away from windows	Do not use stairwells as they all have glass.
COH	4th floor	Interior workup/exam room or interior hallway away from windows	Interior workup/exam room or interior hallway away from windows	Do not use stairwells as they all have glass.
COH	5th Floor	Interior workup/exam room or interior hallway away from windows	Interior workup/exam room or interior hallway away from windows	Do not use stairwells as they all have glass.
COH	Parking Deck	Inside the building into an Interior Room or hallway away from windows	Lay or crouch down behind solid concrete deck structures	Do not use stairwells as they all have glass.

WAIT IN THE REFUGE AREA UNTIL THE ALL CLEAR IS GIVEN.
If there is storm damage, you could be in the refuge for a period of time while it is made safe to exit.

3. Active Shooter

STAFF RESPONSE IN THE VICINITY OF THE SHOOTER

1. **RUN** - If possible, evacuate area, (patients, visitors, staff), as quickly as possible. Leave everything and get out. Keep your hands visible at all times. Take Shelter in the Neustadt Building.

2. **HIDE**- If evacuation is not possible, **take shelter in a closed room in a clinical suite protected with a badge activated lock**.
   - Keep out of shooter's view.
   - Lock/block door to prevent entry.
   - Cover windows
   - Remain out of public view
   - Silence cellphones
   - Remain Quiet
   - Do not answer door.
   - Wait for Denver Police to assist you or until you receive an all clear

3. **FIGHT** - As a last resort, and only when lives are in imminent danger, take action. The goal of the active shooter is to take multiple lives quickly. Defensive action may be the only chance of survival.

STAFF RESPONSE IN ALL OTHER AREAS OF THE FACILITY

1. Staff should control all entrances and exits to their departments/units by closing and locking doors if possible.
   Stay out of public view until "All Clear" is announced.

Friedenheit Building Patient Care Areas

1. Fire Response

2. **R.A.C.E**
   a. **RESCUE** Notify your co-workers of the fire, and assist those who need help getting to a safe area.
   b. **ALARM** Activate the fire alarm pull station, and **notify:**

Location	Response
Main Campus 6:30 a.m. to 8:00 p.m.	Call x5555
Main Campus 8:00 p.m. to 6:30 a.m & Weekends	Call 9-1-1, Call 5555

   c. **CONTAIN:** Close doors and windows in the area to contain the fire and smoke.
   d. **EXTINGUISH/EVACUATE: Only attempt to extinguish a fire if it is small (Less than 24" in diameter), and your safety can be assured**.

   When using a fire extinguisher, remember P.A.S.S.

   Pull Pin
   Aim Nozzle
   Squeeze Handle
   Sweep side to side.

   Evacuation

Your Location	Evacuation Area
Basement	Outside (Gather in Cafeteria)
1st floor	Outside (Gather in Cafeteria)

3. **Additional Evacuation Information**

   The fire doors will close in the entire building for all alarms. If an incident is determined to be serious enough, an announcement will be made to evacuate the entire building, in addition to the alarming floors.

2. Tornadoes

When a tornado watch is issued by the national weather service:

- Stay indoors.
- Close drapes, shades, and blinds.
- Close all doors to seal off inner corridors from windows.
- Protect patients from flying debris with blankets and pillows.
- Limit the use of elevators.

- Individuals with disabilities need to inform co-workers of their condition prior to an evacuation. When ordered to evacuate, these individuals should ask for assistance from their co-workers.
- Limit Telephone usage to internal calls and those necessary for providing patient care.

During watch conditions, a tornado could appear without warning.

Tornado Alert (Action Required) Received

- Move patients to the **TORNADO REFUGE AREA IF POSSIBLE** or to a safer areas such as inside corridors, smaller rooms with shielding walls, such as bathrooms and closets, or other areas away from windows, (conditions can change suddenly, be prepared to quickly proceed to the Tornado Refuge Areas).
- Protect patients from flying debris with blankets and pillows.
- **GO TO THE TORNADO REFUGE AREA**

Tornado Refuge Areas – Friedenheit

Building	Floor	Primary Refuge - Time Permitting	Secondary Refuge - Immediate	Other Instructions
Friedenheit	Basement	Basement (By break area & restrooms)	Basement (By break area & restrooms)	
Friedenheit	1st Floor	Basement (By break area & restrooms)	Interior Corridor	Shut doors to adjacent rooms to protect from glass

WAIT IN THE REFUGE AREA UNTIL THE ALL CLEAR IS GIVEN.

If there is storm damage, you could be in the refuge for a period of time while it is made safe to exit.

3. Active Shooter

STAFF RESPONSE IN THE VICINITY OF THE SHOOTER

4. **RUN** - If possible, evacuate area, (patients, visitors, staff), as quickly as possible. Leave everything and get out. Keep your hands visible at all times. Take Shelter in the Neustadt Building.

5. **HIDE**- If evacuation is not possible, take shelter in a closed room out of shooter's view.
   - Lock/block door to prevent entry.
   - Cover windows
   - Remain out of public view
   - Silence cellphones
   - Remain Quiet
   - Do not answer door.
   - Wait for Denver Police to assist you or until you receive an all clear

6. **FIGHT** - As a last resort, and only when lives are in imminent danger, take action. The goal of the active shooter is to take multiple lives quickly. Defensive action may be the only chance of survival.

STAFF RESPONSE IN ALL OTHER AREAS OF THE FACILITY

2. Staff should control all entrances and exits to their departments/units by closing and locking doors if possible.
   Stay out of public view until “All Clear” is announced.

Smith Building Patient Care Areas

1. Fire Response

4. **R.A.C.E**
   a. **RESCUE** Notify your co-workers of the fire, and assist those who need help getting to a safe area.
   b. **ALARM** Activate the fire alarm pull station, and **notify:**

Location	Response
Main Campus 6:30 a.m. to 8:00 p.m.	Call x5555
Main Campus 8:00 p.m. to 6:30 a.m & Weekends	Call 9-1-1, Call 5555

   c. **CONTAIN:** Close doors and windows in the area to contain the fire and smoke.
   d. **EXTINGUISH/EVACUATE: Only attempt to extinguish a fire if it is small (Less than 24" in diameter), and your safety can be assured**.

   When using a fire extinguisher, remember P.A.S.S.

   Pull Pin
   Aim Nozzle
   Squeeze Handle
   Sweep side to side.

   Evacuation

Your Location	Evacuation Area
1st floor Smith	Outside (Gather in COH Lobby)
2nd floor Smith	2nd floor May or outside (Gather in COH Lobby)
3rd floor Smith	3rd floor Smith evacuation stairwells if mobility limited or outside (Gather COH Lobby)
4th thru 6th floor Smith	Evacuation stairwells if mobility limited or outside (Gather COH Lobby)

5. **Sedated Patients**
   In the event of a fire alarm; patients under or recovering from anesthesia should be managed in place where necessary. Nurses should close patient room (not exam room) doors and wait at the Nurse's station for further instructions.

   If obvious signs of fire are evident, evacuation to must begin immediately. Otherwise, the Denver Fire Department, Nursing Supervisor, or Security will determine the need to evacuate patients. Employees and/or visitors not receiving or directly involved in providing patient care should evacuate to an area of refuge.

The fire doors will close in the entire building for all alarms. If an incident is determined to be serious enough, an announcement will be made to evacuate the entire building, in addition to the alarming floors.

2. Tornadoes

When a tornado watch is issued by the national weather service:

- Stay indoors.
- Close drapes, shades, and blinds.
- Close all doors to seal off inner corridors from windows.
- Protect patients from flying debris with blankets and pillows.
- Limit the use of elevators.
- Individuals with disabilities need to inform co-workers of their condition prior to an evacuation. When ordered to evacuate, these individuals should ask for assistance from their co-workers.
- Limit Telephone usage to internal calls and those necessary for providing patient care.

During watch conditions, a tornado could appear without warning.

Tornado Alert (Action Required) Received

- Move patients to the **TORNADO REFUGE AREA IF POSSIBLE** or to a safer areas such as inside corridors, smaller rooms with shielding walls, such as bathrooms and closets, or other areas away from windows, (conditions can change suddenly, be prepared to quickly proceed to the Tornado Refuge Areas).
- Protect patients from flying debris with blankets and pillows.
- **GO TO THE TORNADO REFUGE AREA**

Tornado Refuge Areas – Smith

Building	Floor	Primary Refuge - Time Permitting	Secondary Refuge - Immediate	Other Instructions
Smith	Basement	Tunnel/Basement	Tunnel/Basement	
Smith	1st floor Atrium	Tunnel/Basement	Stairwell, Interior Exam room MIDC east or West, Restrooms	
Smith	1st floor Clinic East	Tunnel/Basement	Stairwell to basement, Interior Exam room without glass	
Smith	1st floor Clinic West	Tunnel/Basement	Stairwell to basement, Interior Exam room without glass	Stairwells are on an exterior wall, If in the stairwell, proceed to the basement
Smith	1st floor Clinic North	Basement	Interior Corridor	Stairwells are on an exterior wall, If in the stairwell, proceed to the basement
Smith	2nd Floor	Interior exam rooms or staff work rooms without glass, or Basement	Interior exam rooms or staff work rooms without glass, or stairwell to basement	Stairwells are on an exterior wall, If in the stairwell, proceed to the basement

Smith	3rd Floor	Interior exam rooms or staff work rooms without glass, or Basement	Interior exam rooms or staff work rooms without glass, or stairwell to basement	Stairwells are on an exterior wall, If in the stairwell, proceed to the basement
Smith	4th Floor	Basement, Interior room (restrooms, A442F, A443 Breakroom)	Interior room (restrooms, A442F, A443 Breakroom)	**Stairwells are on an exterior wall, If in the stairwell, proceed to the basement**
Smith	5th Floor	Basement, Interior room (restrooms, A542F, A543 Breakroom)	Interior room (restrooms, A542F, A543 Breakroom)	Stairwells are on an exterior wall. If in the stairwell, proceed to the basement
Smith	6th Floor	Basement, Interior room	Interior room, elevator lobby	Stairwells are on an exterior wall. If in the stairwell, proceed to the basement

WAIT IN THE REFUGE AREA UNTIL THE ALL CLEAR IS GIVEN.
If there is storm damage, you could be in the refuge for a period of time while it is made safe to exit.

3. Active Shooter

STAFF RESPONSE IN THE VICINITY OF THE SHOOTER

7. **RUN** - If possible, evacuate area, (patients, visitors, staff), as quickly as possible. Leave everything and get out. Keep your hands visible at all times. Take Shelter in the COH or BB Building.

8. **HIDE**- If evacuation is not possible, take shelter in a closed room out of shooter's view.
   - Lock/block door to prevent entry.
   - Cover windows
   - Remain out of public view
   - Silence cellphones
   - Remain Quiet
   - Do not answer door.
   - Wait for Denver Police to assist you or until you receive an all clear

9. **FIGHT** - As a last resort, and only when lives are in imminent danger, take action. The goal of the active shooter is to take multiple lives quickly. Defensive action may be the only chance of survival.

STAFF RESPONSE IN ALL OTHER AREAS OF THE FACILITY

3. Staff should control all entrances and exits to their departments/units by closing and locking doors if possible.
   Stay out of public view until "All Clear" is announced.

May Building Patient Care Areas

1. Fire Response

6. **R.A.C.E**
   a. **RESCUE** Notify your co-workers of the fire, and assist those who need help getting to a safe area.
   b. **ALARM** Activate the fire alarm pull station, and **notify:**

Location	Response
Main Campus 6:30 a.m. to 8:00 p.m.	Call x5555
Main Campus 8:00 p.m. to 6:30 a.m & Weekends	Call 9-1-1, Call 5555

   c. **CONTAIN:** Close doors and windows in the area to contain the fire and smoke.
   d. **EXTINGUISH/EVACUATE: Only attempt to extinguish a fire if it is small (Less than 24" in diameter), and your safety can be assured**.

   When using a fire extinguisher, remember P.A.S.S.

   Pull Pin
   Aim Nozzle
   Squeeze Handle
   Sweep side to side.

   Evacuation

Your Location	Evacuation Area
1st floor May	Outside (Gather in COH Lobby)
2nd floor May	2nd floor Goodman or outside (Gather in COH Lobby)
3rd floor May	3rd floor Goodman or outside (Gather COH Lobby)

2. **Sedated Patients**
   In the event of a fire alarm; patients under or recovering from anesthesia should be managed in place where necessary. Nurses should close patient room (not exam room) doors and wait at the Nurse's station for further instructions.

   If obvious signs of fire are evident, evacuation to must begin immediately. Otherwise, the Denver Fire Department, Nursing Supervisor, or Security will determine the need to evacuate patients. Employees and/or visitors not receiving or directly involved in providing patient care should evacuate to an area of refuge. NOTE:MIDC will alarm only when there is smoke or fire within the MIDC.

The fire doors will close in the entire building for all alarms. If an incident is determined to be serious enough, an announcement will be made to evacuate the entire building, in addition to the alarming floors. Elevators will not be operating

2. Tornadoes

When a tornado watch is issued by the national weather service:

- Stay indoors.
- Close drapes, shades, and blinds.
- Close all doors to seal off inner corridors from windows.
- Protect patients from flying debris with blankets and pillows.
- Limit the use of elevators.
- Individuals with disabilities need to inform co-workers of their condition prior to an evacuation. When ordered to evacuate, these individuals should ask for assistance from their co-workers.
- Limit Telephone usage to internal calls and those necessary for providing patient care.

During watch conditions, a tornado could appear without warning.

Tornado Alert (Action Required) Received

- Move patients to the **TORNADO REFUGE AREA IF POSSIBLE** or to a safer areas such as inside corridors, smaller rooms with shielding walls, such as bathrooms and closets, or other areas away from windows, (conditions can change suddenly, be prepared to quickly proceed to the Tornado Refuge Areas).
- Protect patients from flying debris with blankets and pillows.
- **GO TO THE TORNADO REFUGE AREA**

Tornado Refuge Areas – May

Building	Floor	Primary Refuge - Time Permitting	Secondary Refuge - Immediate	Other Instructions
May	Basement	Tunnel/Basement	Tunnel/Basement	
May	1st floor Entrance Lobby	Interior Hallway (By L120 & A194)	Interior Hallway (By L120 & A194)	
May	1st floor Cafeteria	Interior Hallway (By L120 & A194, in Restrooms or by ATM)	Kitchen Serving Area by Offices	
May	1st floor MIDC	Procedure Rooms for sedated patients. Others may be taken to the MIDC East rooms.	Procedure Rooms for sedated patients. Procedure Rooms Corridor	

May	1st Floor MIDC Waiting Room	Interior Hallway (By L120 & A194 or ATM)	Interior Hallway (By L120 & A194 or ATM)	
May	2nd floor Sleep Lab	Tunnel/Basement	Tech breakroom (A200B)	
May	2nd floor PCU, Clinic	Interior Corridor, Nurses Station	Interior Corridor, Nurses Station	**Close doors to patient and exam rooms that have windows**
May	3rd Floor	Goodman Elevator Lobby or stairwells	Goodman Elevator Lobby or Stairwells	**Close all room doors to the corridors**

WAIT IN THE REFUGE AREA UNTIL THE ALL CLEAR IS GIVEN.

If there is storm damage, you could be in the refuge for a period of time while it is made safe to exit.

3. Active Shooter

STAFF RESPONSE IN THE VICINITY OF THE SHOOTER

10. **RUN** - If possible, evacuate area, (patients, visitors, staff), as quickly as possible. Leave everything and get out. Keep your hands visible at all times. Take Shelter in the COH or BB Building.

11. **HIDE**- If evacuation is not possible, take shelter in a closed room out of shooter's view.
    - Lock/block door to prevent entry.
    - Cover windows
    - Remain out of public view
    - Silence cellphones
    - Remain Quiet
    - Do not answer door.
    - Wait for Denver Police to assist you or until you receive an all clear

12. **FIGHT** - As a last resort, and only when lives are in imminent danger, take action. The goal of the active shooter is to take multiple lives quickly. Defensive action may be the only chance of survival.

STAFF RESPONSE IN ALL OTHER AREAS OF THE FACILITY

4. Staff should control all entrances and exits to their departments/units by closing and locking doors if possible.
   Stay out of public view until "All Clear" is announced.

Goodman Building Patient Care Areas

1. Fire Response

7. **R.A.C.E**
   a. **RESCUE** Notify your co-workers of the fire, and assist those who need help getting to a safe area.
   b. **ALARM** Activate the fire alarm pull station, and **notify:**

Location	Response
Main Campus 6:30 a.m. to 8:00 p.m.	Call x5555
Main Campus 8:00 p.m. to 6:30 a.m & Weekends	Call 9-1-1, Call 5555

   c. **CONTAIN:** Close doors and windows in the area to contain the fire and smoke.
   d. **EXTINGUISH/EVACUATE: Only attempt to extinguish a fire if it is small (Less than 24" in diameter), and your safety can be assured**.

   When using a fire extinguisher, remember P.A.S.S.

   Pull Pin
   Aim Nozzle
   Squeeze Handle
   Sweep side to side.

Evacuation

Your Location	Evacuation Area
1st floor Goodman	Outside (Gather in Molly Blank)
2nd floor Goodman	2nd floor May or outside (Gather in Molly Blank)
3rd floor Goodman	3rd floor May or outside (Gather in Molly Blank)

8. **Goodman /May Alarm Setting**
   The Goodman/May alarms are designed to alarm on the:

   - 1st floor,
   - floor of the incident,
   - floor above, and
   - floor below.

   The fire doors will close in the entire building for all alarms. If an incident is determined to be serious enough, an announcement will be made to evacuate the entire building, in addition to the alarming floors.

- When the fire alarm sounds **in your area**, people must immediately evacuate to the evacuation area indicated in the table above or to a lower floor where the alarm is not sounding. Individuals incapable of using the stairs can proceed to the opposite side of the fire doors near the elevator lobby. Elevators will not be operating.

2. Tornadoes

When a tornado watch is issued by the national weather service:

- Stay indoors.
- Close drapes, shades, and blinds.
- Close all doors to seal off inner corridors from windows.
- Protect patients from flying debris with blankets and pillows.
- Limit the use of elevators.
- Individuals with disabilities need to inform co-workers of their condition prior to an evacuation. When ordered to evacuate, these individuals should ask for assistance from their co-workers.
- Limit Telephone usage to internal calls and those necessary for providing patient care.

During watch conditions, a tornado could appear without warning.

Tornado Alert (Action Required) Received

- Move patients to the **TORNADO REFUGE AREA IF POSSIBLE** or to a safer areas such as inside corridors, smaller rooms with shielding walls, such as bathrooms and closets, or other areas away from windows, (conditions can change suddenly, be prepared to quickly proceed to the Tornado Refuge Areas).
- Protect patients from flying debris with blankets and pillows.
- **GO TO THE TORNADO REFUGE AREA**

Tornado Refuge Areas – Goodman

Building	Floor	Primary Refuge - Time Permitting	Secondary Refuge - Immediate	Other Instructions
Goodman	Basement	Tunnel/Basement	Tunnel/Basement	
Goodman	1st floor	Tunnel/Basement	Interior Hallway (By L120 & A194), Tunnel/Basement	
Goodman	2nd floor	Stairwell, Basement/tunnel	Central Nurses Station, Stairwell	Stairwells are locked for reentrance. Once all clear, go to 1st floor or basement elevators to return to your floor.
Goodman	3rd floor	Stairwell, Basement/tunnel	Elevator Lobby, Stairwell, Interior Corridor	Stairwells are locked for reentrance. Once all clear, go to 1st floor or basement elevators to return to your floor.

Goodman	Research Floors (4, 6 - 10)	In the stairwells along the walls, basement/tunnel	Elevator lobby, the stairwells along the walls	Stairwells are locked for reentrance. Once all clear, go to 1st floor or basement elevators to return to your floor.
Goodman	5th Floor Research	In the stairwells along the walls, basement/tunnel	the stairwells along the walls	Stairwells are locked for reentrance. Once all clear, go to 1st floor or basement elevators to return to your floor.

WAIT IN THE REFUGE AREA UNTIL THE ALL CLEAR IS GIVEN.
If there is storm damage, you could be in the refuge for a period of time while it is made safe to exit.

3. Active Shooter

STAFF RESPONSE IN THE VICINITY OF THE SHOOTER

13. **RUN** - If possible, evacuate area, (patients, visitors, staff), as quickly as possible. Leave everything and get out. Keep your hands visible at all times. Take Shelter in the COH or BB Building.

14. **HIDE**- If evacuation is not possible, take shelter in a closed room out of shooter's view.
    - Lock/block door to prevent entry.
    - Cover windows
    - Remain out of public view
    - Silence cellphones
    - Remain Quiet
    - Do not answer door.
    - Wait for Denver Police to assist you or until you receive an all clear

15. **FIGHT** - As a last resort, and only when lives are in imminent danger, take action. The goal of the active shooter is to take multiple lives quickly. Defensive action may be the only chance of survival.

STAFF RESPONSE IN ALL OTHER AREAS OF THE FACILITY

5. Staff should control all entrances and exits to their departments/units by closing and locking doors if possible.
6. Stay out of public view until "All Clear" is announced.

EMERGENCY ACTIONS
Off-Site Patient Care Areas

1. Fire Response

1. **Follow your specific building fire response plan.**
2. **General**
   R.A.C.E
   a. **RESCUE** Notify your co-workers of the fire, and assist those who need help getting to a safe area.
   b. **ALARM** Activate the fire alarm pull station, and **notify:**
   c. **CONTAIN:** Close doors and windows in the area to contain the fire and smoke.
   d. **EXTINGUISH/EVACUATE: Only attempt to extinguish a fire if it is small (Less than 24" in diameter), and your safety can be assured**.

   When using a fire extinguisher, remember P.A.S.S.

   Pull Pin
   Aim Nozzle
   Squeeze Handle
   Sweep side to side.

   Evacuate then call 911 to report the fire

2. Tornadoes

When a tornado watch is issued by the national weather service:

- Stay indoors.
- Close drapes, shades, and blinds.
- Close all doors to seal off inner corridors from windows.
- Protect patients from flying debris with blankets and pillows.
- Limit the use of elevators.
- Individuals with disabilities need to inform co-workers of their condition prior to an evacuation. When ordered to evacuate, these individuals should ask for assistance from their co-workers.
- Limit Telephone usage to internal calls and those necessary for providing patient care.

During watch conditions, a tornado could appear without warning.

Tornado Warning Issued by the National Weather Service

- Move patients to the **TORNADO REFUGE AREA IF POSSIBLE** or to a safer areas such as inside corridors, smaller rooms with shielding walls, such as bathrooms and closets, or other areas away from windows, (conditions can change suddenly, be prepared to quickly proceed to the Tornado Refuge Areas).
- Protect patients from flying debris with blankets and pillows.
- **GO TO THE TORNADO REFUGE AREA provided within your Buildings Emergency plan.**

WAIT IN THE REFUGE AREA UNTIL THE ALL CLEAR IS GIVEN.
If there is storm damage, you could be in the refuge for a period of time while it is made safe to exit.

3. Active Shooter

STAFF RESPONSE IN THE VICINITY OF THE SHOOTER

1. **RUN** - If possible, evacuate area, (patients, visitors, staff), as quickly as possible. Leave everything and get out. Keep your hands visible at all times. Take Shelter outside of the Building where you can remain either out of sight or get within an adjacent building. Call 911 when in a safe area.

2. **HIDE**- If evacuation is not possible, take shelter in a closed room out of shooter's view.
   - Lock/block door to prevent entry.
   - Cover windows
   - Remain out of public view
   - Silence cellphones
   - Remain Quiet
   - Do not answer door.
   - Wait for Denver Police to assist you or until you receive an all clear

3. **FIGHT** - As a last resort, and only when lives are in imminent danger, take action. The goal of the active shooter is to take multiple lives quickly. Defensive action may be the only chance of survival.

STAFF RESPONSE IN ALL OTHER AREAS OF THE FACILITY

1. Staff should control all entrances and exits to their departments/units by closing and locking doors if possible.
2. Stay out of public view until "All Clear" is announced by Police.

CODE BLUE CART

Study Guide

PERFORMANCE OBJECTIVES

1. State the number to dial in the event of a Code Blue.

a. In **patient care** areas (Goodman, May, COH, Friedenheit, Galter, Smith Clinics, Morgridge Academy (School), COH:

1) Dial **5555**

2) Inform the operator of the Code Blue and tell the location **twice.**

EXAMPLE: "Code Blue, ACU, Room 218; Code Blue, ACU, Room 218".

b. In non-patient areas (BB, Hanley, Neustadt, Molly Blank, Southside) call 5555 and 911

2. Identify location of a Code Blue Cart for your work area.

Unit/Area	Code Blue Cart	Zoll R Series (with ECG screen)	Area of Response	Zoll AED Plus (Green)
Adult Care Unit 2 GB	YES	YES	Goodman Building Floors 1, 2, 4-10	NO
Cardiology Unit May Basement	YES	YES	May and Goodman Basement	NO
Imaging Center 3rd Floor Smith	YES	YES	3 Smith	NO
MIDC East Smith East	YES	YES	Smith East Clinics, Cafeteria, Friedenheit North Clinics, Chemo Infusion Suite	NO
MIDC Smith West	YES	YES	MIDC, Smith Clinic West , Pt. Waiting Areas, 1st floor Lobby	YES (traveling AED)
Pediatric Care Unit 2 Galter	YES	YES	PCU, Pediatric Clinic, 2nd floor Galter Lobby, Sleep Lab	NO
Pulmonary Physiology Services 3 May	YES	YES	3 May, and 3 GB.	NO
Rehabilitation Unit 2nd Floor Smith	YES	YES	2 Smith	NO

Unit/Area	Code Blue Cart	Zoll R Series (with ECG screen)	Area of Response	Zoll AED Plus (Green)
Morgridge Academy	YES	YES	School	NO
Molly Blank Building	NO	NO	NA	YES (Phone alcove east entrance)
B'nai B'rith Building (BB)	NO	NO	NA	YES (1st floor, Across from Rm M110)
COH 1st Floor	NO	NO	N/A,AED only	YES (parking entrance)
COH 2nd Floor	YES	YES	COH 2	YES
COH 3rd Floor	YES	YES	COH 3	YES
COH 4th Floor	YES	YES	COH 4	YES
COH 5th Floor	YES	YES	COH 5	YES
OFF CAMPUS				
Sleep Lab DTC	NO	NO	NA	YES
NJH at Highlands Ranch Clinic	NO	NO	NA	YES
NJ at Denver South Swedish Hospital Campus	NO	NO	NA	YES
Western Oncology	NO	NO	NA	AED Available in building
Northern Oncology	NO	NO	NA	YES

3. State your role during a Code Blue event.

Code Responders: See Addendum below

On-Scene Staff

Perform high quality CPR.

- Compressions must be between five to six cm (2 to 2.4inches)
- Performed at a rate of 100-120 compressions a minute.

- Be ready to take over compressions when instructed by Code Lead, when the current compressor has been doing compressions for two minutes, or when the compressor unable to continue.

4. Locate, and turn on the equipment needed for maintaining and suctioning the airway.

a. Backboard

b. Suction Equipment

1) Suction catheter 14 Fr.

2) Tonsil suction device (Yankaur)

3) Suction tubing

4) Suction Machine - Turn on toggle is in between machine and collection HARD container.

d. Resuscitator bag and mask.

e. Oxygen E Tank

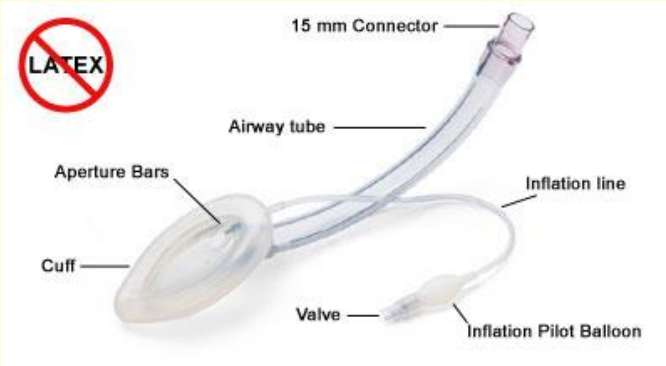
5. Identify the equipment (located on Code Blue Cart) needed for monitoring the heart rate and defibrillating a patient.

a. Defibrillator and correct defibrillator pads for the defibrillator used in unit/area

Zoll R Series **Zoll R One-Step Pads**

Pedi-Padz for use with Zoll R only

6. Intubation equipment drawer



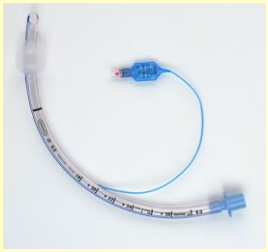
1) **LMA™ (Laryngeal Mask Airway)**

Pediatric sizes: 1, 1.5, 2, 2.5
Adult sizes: 2, 3, 5

2) Laryngoscope equipment - assemble laryngoscope and blade (In tray in bottom drawer)

3) Identify who performs intubation at NJH – MD only.

4) Endotracheal tubes



7. Locate the equipment needed to start an IV.

a. Sharps container

b. IV pole 

c. IV equipment tray

1) IV Securement Set 

a) Tourniquet

b) IV prep pad

c) 1 alcohol prep pad

d) 3 gauze sponges

e) 1 SorbaView 2000 Window Dressing

2) IV catheter - 18 GA (gauge) Insyte – Autoguard

3) IV catheter – 22 GA (gauge) BD Nexiva

4) Continuous flow solution set

6) IV extension sets

7) NS 1000ml

8) Ringers Lactate 1000 ml

8. Locate the most common emergency medications and the filter needle used during a Code Blue.

a. Epinephrine syringe

b. Amiodarone vial

c. Lidocaine bristojets

d. Atropine Abboject

e. Adenosine syringe

f. Dextrose

g. 19 G X 1 ½ inch BD filter needle

Addendum

Code Blue Team Members and Responsibilities

1. Physician-In-Charge of Adult or Pediatric Code Blue Events

a. For Adult Code Blue Events, there are is one physician who is required to respond:

1) Code Lead - Adult MOD
2) Advanced Airway MD - NJH MD *Called only if requested by Adult MOD or Code Team. – they receive all code blue pages*

b. For Pediatric Code Blue events, there are two (2) physicians:

1) Code Lead MD - Pediatric MOD
2) 2nd MD - Hospitalist

2. RN-In-Charge

a. Announces self to the other responders.

b. Assigns other responders to specific roles.

c. Prompts appropriate actions of other team responder.

1) Insures that adequate oxygenation/ventilation and compressions are being performed.

2) Prompts the physician for appropriate medication delivery and timing of medication per ACLS/PALS protocols.

3) Prompts team to obtain vital signs as needed and assessment of EKG rhythm as needed.

4) Assists/coordinates appropriate disposition/transfer of patient.

5) Accurately records times of interventions, vital signs and lab results.

6) Indicates dosages of medication and IV rates.

3. Respiratory Therapist

a. Announces self to physician and RN-in-Charge.

b. Assumes responsibility for airway management (bag-mask ventilation) and assists with intubations and suctioning.

c. Assists with transport of patient as necessary.

4. RN Responders

a. Announces self to other responders.

b. IV nurse will establish an IV line.

d. Administers medication to patient.

e. Monitors vital signs and EKG.

5. Pharmacist

a. Announces self to physician and RN-in-charge.

b. Brings portable emergency medication case.

c. Dispenses medications to designated medication RN as ordered by physician.

d. Prepares IV solution, calculates concentrations and flow rates.

e. Provides drug information.

f. Anticipates needs for additional medication.

g. Records drugs given and time of administration.

6. Cardiology Staff

a. Announces self to physician and RN-in Charge.

b. Performs ordered 12-lead EKG.

c. Perform and calls in results of tests.

7. Security Personnel

a. Announces self to physician and RN-in–Charge.

b. Monitors traffic in area.

c. Lead EMS responders to Code location.

8. Nursing Supervisor

a. Ensures documentation/recording is completed.

b. Comforts and notifies family members.

c. Ensures crowd control.

d. Ensures proper transport arrangement – 9-911 notified as appropriate.

e. Ensures ACLS is followed accurately.

9. Team Dynamics in a CODE

a. Closed loop communication

1) Order given

2) Order repeated by member responsible for task

3) Order confirmed and time documented at completion of task

b. Clear messages of given order

c. Member roles and responsibilities are understood

d. Information is shared by team members.

e. Team members offer constructive intervention as the CODE progresses.

f. Re-evaluation and summarization is done during the code.

References

American Heart Association, ACLS Provider Manual (2020)