2021 ASEU
SECTION 3 – Environment of Care

Learning Objectives:

After reading this section the learner will be able to:

1. Initiate and/or respond to emergency safety codes when need is identified.
2. Identify resources available to staff to reference in an emergency situation.
3. Initiate actions to effectively manage a fire situation. (R.A.C.E.).
4. Explain how to use a fire extinguisher (P.A.S.S.) using the BullEx training system
5. Explain evacuation priorities.
6. List general rules to maintain electrical safety.
7. Verbalize how to obtain a manufacturers' Safety Data Sheet (SDS) from the Emanate Health intranet.
8. Identify the need to report any spills, episodes or leaks immediately and initiate clean up procedures as necessary.
9. Identify how to segregate waste into the various waste streams, following the Waste Disposal Chart.
10. Identify sources of radiation in the medical environment.
11. Identify hazards to be aware of when working in an MRI area or near a magnetic field.
12. Properly handle and store the green portable oxygen cylinders.
13. Identify how and who can shut off piped in oxygen in an emergency.

A. Emergency Safety Codes

Most of the emergency safety codes may be initiated by the person who discovers the problem. Staff has immediate access to the switchboard operator by dialing "**6"** from any hospital telephone. Staff will state code name and location of the situation. The Operator will overhead page the code.
A few of the emergency safety codes may only be initiated by the administrative person in charge, or designee.
These include Code Triage Internal/External and Code Orange External.
Off-site buildings and parking lots:

- If have an outside line, dial 911 and report the situation.
- If only have hospital lines (DID) dial 9-911 and give street address.
- If safe and time allows, dial "**6"** to report the situation. The Operator will notify Administration, Nursing Supervisor and Plant Operations.

CODE PROCEDURES

There is an Emergency Reference and Response Guidebook available to all staff. The **RED** flipchart can be found in your department and contains all of the emergency safety codes with a quick response guide for staff to use. In most cases, it is located with or near the T-Packet.

CODE BLUE - Medical Emergency for Adult (over 8 years old)

CODE WHITE - Medical Emergency for Child (0 to 8 years old)

If happens in the hospital:

- Dial "**6**"
- Indicate "Code Blue" or "Code White" and the location.

If happens in the off-site buildings

- Call the paramedics by dialing "9-911."
- State medical emergency and exact location.

If happens in parking lots:

- Call the paramedics by dialing "911."
- State medical emergency and exact location.

Response by:

- Charge Nurse on unit
- Staff from the immediate area
- ACLS trained personnel
- Nursing Supervisor
- Emergency Department Physician
- Respiratory Therapy Personnel
- Pharmacist
- Pediatrician and Pediatric RN (If Code White)

CODE YELLOW - A Bomb Threat that is received by verbal or written communication.

In house:

- Dial "**6"** to notify the PBX Operator.
- PBX Operator will notify Hospital Administration, Nursing Supervisor or designee, who will then determine the need for a Code Yellow overhead page.
- PBX Operator will notify the police as instructed.

Off-site:

- Dial 9-911 or 911 to notify the Police Department.

Response:

- Close all doors.
- All staff to survey their immediate areas and report any unusual or suspicious objects within their area to their supervisor.
- Remain on your unit until an all clear is announced.

CODE TRAUMA (Tier 1) - Notification that potential life threatening trauma patient(s) may be arriving to the Emergency Department. Immediate response is required by designated nursing and ancillary service staff to deliver needed treatment, equipment and supplies.
Activated by Emergency Department Physician on duty

- Dial "**6**"
- Indicate "Code Trauma" and the exact location.

Response by:

- Emergency Department Physician and Staff
- Nursing Supervisor
- Respiratory Care Practitioner
- Laboratory Phlebotomist
- Radiology Technician
- Central Services Personnel
- Security

CODE RED - Fire (Review Section on Fire Safety)
Activated by any staff person that discovers the fire

- Dial "**6**"
- Indicate "Code Red" and the exact location.

Response by:

- "Fire Response Team (Nursing Supervisor, Plant Operations, EVS, Respiratory, and Patient Transport
- Any available staff

Return to your unit until an "All Clear" is announced.

CODE ORANGE- INTERNAL- HAZMAT SITUATION. (Review Section on Hazardous, Bio-hazardous Materials and Waste)
Activated by Person that discovers the spill or leak.

- Dial "**6**"
- Indicate "Code Orange Internal" and the exact location.

Response by:

Code Orange Response Team (Department Director, Nursing Supervisor, Plant Operations, Environmental Services, Safety Officer, & Department Personnel)

If spill involves Chemotherapy:
Response by:

- Pharmacy and Chemotherapy Nursing Staff
- All others avoid area unless otherwise requested

Remain on your unit until an "All Clear" is announced.

CODE ORANGE– EXTERNAL OR STANDBY – HAZMAT SITUATION
Activated by:

- Hospital Administrator, Nursing Supervisor or designee

Response by:

- Emanate Health Hazmat Decontamination Response Team, Emergency Department, Plant Operations, Environmental Services and Security

CODE PINK - Notification of a possible infant abduction from the hospital.
Activated by: Nursing personnel on the floor where the abduction has occurred.

- Dial "**6**"
- Indicate "Code Pink" and the exact location.
- "Code Pink and the location" will be overhead paged.
- The facility will be secured.
- The local Police Department will be notified in an actual abduction has occurred.

Response by:

- All hospital staff to secure all exits, stairwells and elevators from the facility and to keep all staff, patients and visitors in the facility until an all clear is sounded.
- Staff will report any suspicious activities to Security or police.

Return to your unit until an "All Clear" is announced.

CODE PURPLE - Notification of possible child abduction from the hospital.
Activated by: Nursing personnel on the floor where the abduction has occurred.

- Dial "**6**"
- Indicate "Code Purple" and the exact location.
- "Code Purple and the location" will be overhead paged.
- The facility will be secured.
- The local Police Department will be notified in an actual abduction has occurred.

Response by:

- All hospital staff to secure all exits, stairwells and elevators from the facility and to keep all staff, patients and visitors in the facility until an all clear is sounded.
- Staff will report any suspicious activities to Security or police.
  Return to your unit until an "All Clear" is announced.

CODE STROKE – Notification of a patient presenting with signs and symptoms consistent with an acute stroke (B.E.F.A.S.T.)
Activated by Physician, Rapid Response Team, Critical Care Nursing personnel, Stroke Team

- Dial "6"
- Indicate "Code Stroke" and exact location.

CODE MH – Notification of patient presenting with Malignant Hyperthermia, need active assistance
Activated by: Registered Nurse, Anesthesiologist

- Dial "6"
- Indicate "Code MH" and exact location.

CODE SEPSIS- Used to activate needed personnel and protocol for patients with suspected or actual sepsis
Activated by: Physician, rapid response team, critical care nursing personnel

- Dial "6"
- Indicate "Code Sepsis" and exact location.

CODE SURVEYOR – Notification of surveyor on campus
Activated by: Nursing administration

- Dial "6" Indicate "Code Surveyor"

CODE HONOR – Code established to honor and show respect to patients and their families and friends for the gift of organ donation.

- Administrative Nursing Supervisor or Charge Nurse will initiate the process and advise PBX.

CODE STEMI – Notification of a patient presenting with signs and symptoms of a myocardial infarction (MI) at Inter-community Hospital, used to activate the Code STEMI team
Activated by: Registered nurse, Physician

- Dial "6"
- Indicate "Code STEMI" and exact location.

CODE POLAR – Used to activate needed personnel or supplies for the induction of therapeutic hypothermia after cardiac arrest
Activated by: Registered Nurse, Physician

- Dial "6"
- Indicate "Code POLAR" and exact location.

CODE GRAY - Security Code to help manage and or control a violent or potential violent situation. (Review Section on Workplace Violence).
Activated by: any staff, volunteer or physician who identifies the situation as needing additional staff response.

- Dial "6"
- Indicate "Code Gray" and the exact location.

Response by: Staff in the immediate area, any available personnel, and Security personnel.

CODE SILVER – Security code in the event that a weapon is being used or hostage has been taken.
Activated by: Any staff, volunteer or physician who identifies the situation.

- Dial "6"
- Indicate "Code Silver" and the exact location.
- Evacuate area if safe to do so.

Response by: Operator - will notify Administration, Security and will dial 9-911 notify police.

- Police Department – will be in charge upon arrival

- Security - will assist police
- All uninvolved staff - to stay away from the area

CODE SILVER-ACTIVE SHOOTER SITUATION- Quickly determines the most reasonable way to protect your own life. Patients and visitors are likely to follow the lead of employees and managers during an active shooter situation.
If able, Dial 6, and report the Code Silver Active Shooter including:

- The location.
- The number of suspects/description, victims wounded, if applicable.
- The type of weapon(s) involved.
- You may also call 9-911from hospital/facility phone or 911 from personal phone

Run (Evacuate)

- Have an escape route and plan in mind.
- Leave your belongings behind.
- Keep your hands visible.

Hide (Seek cover/protection and warn others of the situation)

- Hide in an area out of the active shooter's view.
- Block entry to your hiding place and lock the doors.
- Silence pager or cell phone.
- Call 911 from personal phone, or 9-911 from hospital/facility phone.

Fight (Take Action)
As a last resort and only when your life is in imminent danger act with commitment and attempt to disarm and disable the active shooter.

All Emanate Health Facility Personnel
Upon hearing a Code Silver or Code Silver – Active Shooter, **DO NOT** go to the area specified. This is an extremely dangerous and sensitive situation that should only be handled by trained authorities.

- Staff should close all patient and unit doors.
- Upon arrival of law enforcement, Security and Plant Operations should provide logistical and manpower support. Obtain building plans and telephone numbers to give to Police upon their arrival.
- Security should assist the Police Department by establishing a command post for negotiators and communications.

All Clear

- When the incident has been resolved, an "All Clear" will be overhead paged.
- When "Code Silver, All Clear" is announced three (3) times, anyone in need should get medical help as required and complete an Incident Report.
- Return to normal work duties, unless otherwise directed.
- A post-incident debriefing meeting will be set up for staff to review the incident

TELEPHONE OUTAGE- Refer to your T-packet for instructions on using the emergency telephones. Not all areas have one.

EMERGENCY OPERATIONS PLAN (EOP) - Refer to this plan for specific details which can be accessed via the Intranet. T-Packets are located in every hospital department. This packet contains important information from the EOP. Every staff member has the responsibility to know the location of this material in his/her department. Read this information before a disaster strikes!

CODE TRIAGE- (Internal, External, Internal/External) Unexpected incident or event that can affect normal hospital operations such as fire, earthquake, flood, riot, toxic cloud, hazardous materials incident, etc.

Internal and External

Activation: Initiated by Hospital Administrator, Nursing Supervisor or designee.

Response:

- Initiate the Hospital Incident Command System (HICS).
- Activate department-specific plan.
- The person in charge in each department will assume the duties as outlined in the "T-Packet".
- Send any pre-assigned personnel to report to treatment areas as outlined in the "T-Packet".
- Ascertain department ability to function and report status and capability to continue services to the Hospital Command Center (HCC). Complete and submit the Personnel/Damage/Injury Report Form.
- Staff each department to fulfill job responsibilities. (Use call tree if necessary).
- Communicate any additional staffing needs to the Labor Pool.
- Utilize reporting forms for:
    - Supply requests
    - Emergency messages
    - Patient Chart (Multi-Casualty Incident Patient Chart) for patient treatment and tracking purposes.

CODE TRIAGE (All Clear)

Disaster situation is no longer impacting hospital. OK to resume normal operations.

TYPES OF DISASTERS THAT CAN AFFECT THE FACILITY INCLUDE: EARTHQUAKE

Immediate Action:

- Drop, Cover and Hold On
- Take cover and hang on
- Immediately get under a desk, table, bed or other piece of furniture to prevent falling debris from landing on you
- Avoid windows, doorways, hanging items, file cabinets, and bookshelves

When shaking stops:

- Check on those in immediate area
- Reassure one another
- Provide for immediate care needs. Any injured people should be taken to the Triage Area
- Report status of unit to immediate Supervisor and/or Administration by completing a Personnel/Damage/Injury Report form located inside the T-Packet

RIOT OR CIVIL UNREST/DISTURBANCE

All entrances to the facility will be secured and automatic doors deactivated to prevent access by unauthorized personnel with the exception of the Emergency Entrance.

- Employees must use designated entrance when arriving or departing from the facility. (QVH- Basement entrance by Materials Management, ICH- TCU Patio Door, FPH- North Cafeteria Door).
- Keep all doors, windows, blinds closed and minimize lighting as needed.

BOMB THREAT (Code Yellow)

Person who receives bomb threat:

- Remain calm
- Do not interrupt caller
- Signals Co-worker to notify the PBX Operator dialing "6" (Operator to notify Administration, Security and Police)
- Prolong conversation as long as possible to gain details; i.e., type and location of device, time of detonation, etc. (See Phone Threat Record inside Red Flipchart).

Administrator or designee will determine the need to activate the Code Yellow page.
Staff actions if Code Yellow is announced:

- Remain calm and alert. Do not alarm patients or visitors.
- All staff to survey their immediate areas and report any unusual or suspicious objects within their area to their supervisor.
- Close all interior fire doors.

If a suspected object or bomb is found:

- DO NOT TOUCH! Do not allow anyone to handle suspected object under any circumstance.
- Evacuate anyone in the immediate area.
- Isolate the area and notify police.

FLOOD RESPONSE PLAN

Notify Plant Operations, Security, and Environmental Services of the situation, location and severity of the flooding.

- Evacuate all people from the area of the flooding
- Disconnect all electrical equipment and relocate any portable equipment
- Follow directions from Plant Operations, Security and EVS

SHELTER IN PLACE

Any incident where the need to remain indoors is determined by Administration and /or

other agencies.

- Follow direction from Incident Commander
- All building occupants (staff, visitors and patients) will remain inside. NO ONE may enter or exit the building until the "All Clear" is announced or approved by the Administration or Incident Commander.

EXPLOSIVE EVENTS- EXTERNAL (Chemical, Biological, Radiological, Nuclear and Explosive)

- Advance Notification is received by local authorities via telephone, radio, ReddiNet.
- Administration will determine the need to activate EXTERNAL.
- Radiation Safety Officer will be contacted in the event of a radiation exposure.
- Contamination Prevention- all entrances will be locked to prevent contamination of the facility
- The Hazmat Decontamination Response Team will set up outside the ED and will establish a Decontamination Zone.
- The Hazmat Decontamination Response Team will set up, assess and decontaminate as needed.

CONTAGIOUS PATIENTS

Any suspected /confirmed infectious case will be immediately reported to Administration/Nursing Supervisor.

- Staff treating suspected cases must immediately use the appropriate personal protective equipment (PPE) and initiate isolation precautions.
- Administration will notify/contact the following as necessary:
    - Infection Control Department
    - California Department of Public Health
    - Center for Disease Control
    - EMS Medical Alert Center
    - Police Department

DRILLS AND EXERCISES

It is important to participate in all drills and exercises in order to prepare for many types of emergencies that could affect the hospital. **Practice makes perfect!**

B Fire Safety and Evacuation

Upon discovery of a fire or the smell of smoke the following procedures must be followed in a quick and calm manner: (R.A.C.E.)

- **CALL OUT: "CODE RED" and LOCATION**
  R Remove all persons from the fire room. Close but do not lock doors in the immediate area of the fire. **REMAIN CALM!**

  A Activate nearest fire alarm pull station. One can always be found at the entrance to an exit stairwell. Call, or have someone else call the switchboard

operator by dialing "**6"** and give the following information: CODE RED and the exact location of the fire. The operator will page this three times. Allow the operator to terminate the call. This will help ensure that all necessary information is obtained.

Note: In Off-Site Locations:

- If there is an outside line, dial 911 and report the situation.
- If there is only a hospital line (DID) dial 9-911 and give street address.
- If it is safe and time allows, dial "**6"** to report the situation. The Operator will notify Administration, Nursing Supervisor and Plant Operations.

C Contain the fire area. Close ALL doors. Clear the corridors of all equipment. Be prepared to evacuate patients.

E Extinguish and/or Evacuate.

- **Extinguish:**
  - Obtain a fire extinguisher from the immediate area and return to the fire room. Check the door to the fire room for heat. **IF IT IS HOT, DO NOT OPEN THE DOOR!** If it is not hot open the door SLOWLY. Smoke and fumes may be present and caution should be exercised when entering the location.
  - Prepare the fire extinguisher for use and then enter the room **only if safe to do so** and after you have notified others of your actions.
- **Evacuate:** The order to evacuate will be given by the Administrator, Nursing Supervisor (or designee), or the Fire Department. A Code Triage Internal may also be announced. Unless otherwise directed, it will affect only the floor(s) where the fire is located.
  - If ordered to evacuate the fire zone, move the patients horizontally first, then vertically if necessary via the STAIRWELL FARTHEST FROM THE FIRE. It is crucial that when patients are moved from floor to floor, affected floors are notified and doors are unlocked and manned.
    NEVER EVER use elevators in a Code Red (fire) situation!

Fire Alarm Systems

The fire alarm system may sound automatically when a smoke detector senses smoke or when the fire sprinkler system senses water flow. Every room that houses patients overnight has smoke detectors that can set off the fire alarm system.
The hospital Operators will announce the Code Red situation.

- **At FPH**, each Nurse's Station is equipped with an enunciator panel that will light up and beep in the event that a smoke detector is activated in a patient room.
  - A RED LED lights up next to the room number that triggered the alarm.
  - The beep is a different sound than the fire alarm chime.

- A RED DOME lights up above the patient room door.
- When the enunciator panel alarm goes off, staff should look at the panel and above patient doors to see which room triggered the alarm. Code Red (R.A.C.E.) procedures should be carried out immediately! The Switchboard Operator will know that an alarm is active on the nursing unit, but will not know the specific room. Once this information is received, a new announcement will be paged.

Fire Alarm Response - Staff must initiate these actions when either a "Code Red" is paged **OR** the fire alarm begins to ring.

- Close all doors - patient rooms, storage rooms, offices, all corridor doors to slow the spread of the fire.
- Check to ensure that the automatic fire doors are closed.
- Do **NOT** use the elevators.
- Give instructions to visitors to stay behind closed doors until all clear is heard.

Fire Extinguisher Use

Most of the fire extinguishers are the A-B-C type, for use on all types of fires. Halon extinguishers, with green lettering on the labels should be used on computer and medical equipment fires. K type extinguishers are located in the kitchen and are used for a kitchen type fire. CO2 extinguishers are used in procedure rooms and Water Mist non-metal extinguishers for used in the MRI scanning rooms. Staff is educated on the proper use of a Fire Extinguisher using the BullEx system during fire drills and other training sessions throughout the hospital.

Before you enter the room, check that the extinguisher seals are intact and pressure gauge shows ready.

To use the fire extinguisher, follow the P.A.S.S. procedures:

P Pull the pin.
Break the seal and pull the pin.
A Aim the nozzle at the base of the fire.
Stand between 6 to 8 feet away from the fire.
Hold the hose, aim at base of fire.
S Squeeze the lever.
Squeeze trigger handles together.
S Sweep from side to side.
Use sweeping motion at the base of the fire.

Fire Drills

Fire drills are conducted to maintain the readiness of staff to respond to a fire emergency and to minimize the likelihood of injury to patients, visitors and staff. Staff participation is essential to maintain current knowledge of equipment and procedures.

Response to a fire drill is no different than to an actual fire situation. Staff should treat all fire drills as if there is a real fire. When staff arrives to the specified location, they will find out if it is a real situation or a drill. In addition, a **Fire Response Team** has been identified, and should respond to a fire drill and real fire alarms at each campus.

This team is composed of staff from various departments such as; Nursing Administration, Environmental Services, Plant Operations, and Security. Other staff may be called on for additional support such as Patient Transport and Respiratory Therapy.
To evaluate staff knowledge, drill activities are observed and staff is questioned about their role and responsibilities during a fire situation. Observers are placed in the fire area, as well as other parts of the building.

Evacuation

Evacuation from the fire area is to be done in the following order:

- Fire room
- Room across from fire room
- Rooms adjacent to fire room
- All remaining rooms

If an evacuation is ordered, each room is emptied as follows:

- 1st Ambulatory persons
- 2nd Semi-ambulatory persons
- 3rd Non-ambulatory persons

First move the patients horizontally beyond the nearest fire doors, then if necessary vertically (down) via the STAIRWELL FARTHEST FROM THE FIRE. The only time vertical evacuation is up is when there is not an exit on the bottom level.

Evacuation Routes/Assembly Points

It is **YOUR** responsibility to know the evacuation routes from your department and to assure staff stays with any evacuated patients. Be aware of all exits from your workstation. All departments have emergency maps posted. Ask for any clarification. See T-packets and Evacuation and Assembly Points policy for evacuation locations.

Evacuation Techniques

There are several methods that can be used when evacuating people who cannot walk out on their own. Stryker Evacuation Chairs ~~and Med-Sleds~~ are available for use by hospital staff trained in their use to move patients safely down a stairwell. In addition, there are several types of patient carries as listed below:

Patient Carries

- Pack Strap Carry
  Used for the conscious patient who is unable to walk.
  - Bring the person to a sitting position.
  - Swing the person's legs to the side of the bed.
  - Place your back squarely against the patient's chest and bed.
  - Move forward and carry the person on the upper portion of your back.
  - Put the patient's arms across your shoulders and cross their arms in front of your chest.
  - Pull downward on the arms, leaning forward bending only at your shoulders.

- Swing Carry

Used only with two carriers.

- The person at the head sits the person up; the person at the feet swings the legs to the side of the bed.
- The carriers join their arms under the patient's knees and lock their arms behind the back of the patient and lean forward.

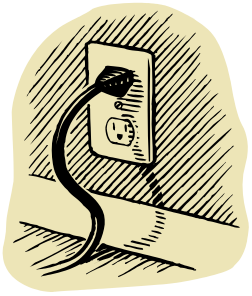
- Extremity Carry
  Used with a patient who is immobilized with a cast or is in traction.
  - The person at the head of the bed will lock his/her arms around the patient's chest.
  - The person at the foot of the bed will slide one leg out, step between the legs, and grasp each leg securely in each arm.
  - Both carriers then move forward and away from the bed.

- The Cradle Drop
  Used for an unconscious patient.
  - Place blanket on the floor
  - Grip the patient under shoulders and knees
  - Slide the patient to the end of the bed
  - Bending on one knee, pull the patient toward you and onto the blanket.
  - Wrap the blanket around the patient
  - Pull the patient out headfirst on the blanket

- Newborn Evacuation
  At Queen of the Valley: A Wee Vac stretcher is used. There are 4 stretchers that can hold up to six babies each. Two stretchers are located in NICU, one stretcher is located in the Nursery and one stretcher is in the Pediatric Unit.
  - Assemble the stretcher as directed
  - Place infants in the pockets
  - Secure infants with Velcro strap

Interim Life Safety Measures (ILSM)

Emanate Health implements Interim Life Safety Measures (ILSM) to minimize the possibility of injury or damage due to fire, smoke, fumes or other threats. These measures are in addition to, or exceed standard life safety practices. When life safety deficiencies are identified, or when construction or remodeling activities occur that affect the function of life safety systems at the facility for more than 4 continuous hours, the local fire department will be notified and additional actions will be taken to compensate for any hazards posed by life safety deficiencies up to and including a fire watch. The Plant Operations Staff, Construction Manager, and Security will ensure the interim measures are followed.



C. Electrical and Equipment Safety

Electrical Safety

A safety ground path is provided within the hospital electrical wall outlet circuits. This is to safely conduct stray electrical current to earth/ground, so they do not go through your body and cause a harmful or potentially fatal electrical shock.

The general rules to maintain safety are:

- All electrical plugs must be three prongs and have an intact ground pin. Exceptions: Equipment certified as being "double insulated" or equipment that will only be used in office areas and will not come into contact with patients.
- All medical equipment must have specially approved hospital grade, three prong plugs on their power cords. However, if a patient brings in their own medical device, staff should inform Biomedical Engineering to perform an electrical safety inspection prior to use. It is discouraged for patients to utilize their own medical equipment.
- Fused multi-outlet plug strips cannot be used to provide power to additional fused multi-outlet plug strips (piggy-backed).
- Generally, all electrical appliances are required to be Underwriter Laboratory (UL) listed and approved for individual service, safe device usage.

Home and personal care electrical medical devices should not to be used in patient care areas. Exceptions must be approved by Nursing Administration and if they are 2 prong power cords, the medical device must have the symbol of one square inside another square on the device as mentioned above.

All medical equipment items must undergo an electrical safety check done by a BioMedical Engineer prior to use.

All other hospital-owned electrical equipment must undergo an electrical safety check done by Plant Operations/BioMedical staff prior to use.

Emergency Power

Emergency Power is the supply of emergency electrical power generated by the hospital. If for any reason, Southern California Edison (SCE) is not able to supply electricity to the hospitals, electrical power will be provided by the hospital emergency

generator(s). The generator(s) will come on line immediately after the loss of normal SCE power. California Title Code 22 requires that you have a hospital grade flashlight quickly at hand.

Only the red emergency power outlets at Queen of the Valley, Foothill Presbyterian Hospital and Emanate Health Hospice/Home Health are supported by the emergency generators. Life support equipment should always be plugged into the **red** emergency power outlets.

All outlets at Inter-Community Campus are supported by the hospital emergency generators. This eliminates the need for designated emergency outlets.

Extension Cords
Extension cords can be an electrical hazard as well as a trip hazard due to their excessive length, tendency to curl while on the floor, potential presence of frayed insulation, exposed wires, etc.

Electrical extension cords are not allowed in the hospital, except for special occasions approved by Plant Operations and/or the Safety Director.

Relocatable Power Taps (RPT's)
RPT's are for temporary use only as long as they have the correct UL Listing. They must be UL1363A or UL60601-1 for medical equipment in patient care areas. UL1363 is for non-medical devices. RPT's must be approved by the Plant Operations department prior to use.

Equipment Power Cords
The following applies to electrical cord handling and wear conditions:

- Replace any cord when the insulation is cracked or torn, when there are exposed wires, when an electrical spark occurs, or there is evidence that an electrical spark has occurred.
- Replace any cord or plug that appears damaged, is missing the ground prong, or heats up when used.
- Keep cords away from heat and water. Do not run them under rugs or through doorways, windows or holes in walls.
- To remove a plug from an outlet, grasp the plug and pull. DO NOT hold the power cord and pull/yank the power cord to unplug the unit.
- Never break off or bend the third prong on a grounded plug.
- Plugging too many cords into one outlet can overload the circuit. Multi-outlet adapters are not allowed in the hospital.
- Never attach device cords to floor, wall or other object with metal tacks or pins.

Common Electrical Hazards

- Power cords with frayed or exposed wires
- Broken or cracked plugs
- Plugs with missing or damaged grounding pins

- Three or two-wire adapters
- Too many plugs in one power outlet
- Faulty lamp sockets
- Burned out indicator lights or liquid spilled on equipment
- Using damaged or dropped equipment
- Any equipment that gives a shock, becomes overheated to smell or touch

Electrical Shock

An electrical shock is the flow of electrical current through your body, onward to earth ground. Usually, this passing of electricity through your body occurs from touching a "hot" electrical source, perhaps inbound to your hand, and then outbound through your feet-shoe (damp) soles to ground.

The shock may cause you to be thrown back from the electrical energy source, which in turn may limit the severity of the shock to your body. This is caused by human muscle reaction and body response.

The electrical current may cause your hand muscles to contract and clench the electrical contact point tightly, keeping you from letting go. This is a very dangerous situation even at low voltages.

Leather shoe soles are especially dangerous when wet and are therefore more conducive to electrical current than rubber soles.

Rescuing a Shock Victim

To rescue someone who is getting an electrical shock and is unable to let go of the circuit, remember the following critical points:

- If you do so safely, disconnect the equipment by unplugging the plug or turning off the wall switch.
- Do not touch the victim or the source of the electrical shock.
- If power cannot be shut off immediately, use a non-conductive item, such as a rope, rolled sheet, wooden broom handle, chair, etc. to pull or push the victim free. Never use your bare hands to free a victim who is frozen by electric shock, otherwise you may also receive the same electrical shock and become a victim too!
- Call a qualified person to shut off power at the main service panel.
- When you have freed the victim from the power source, send/call for medical assistance.
- While waiting for help to arrive:
    - Tend to the victim
    - Check for a regular pulse
    - Make sure breathing is regular
    - Check for bleeding and broken bones

Reporting Electrical/Equipment Hazards/Malfunctions

- Remove equipment from service.

- Be sure to tell your supervisor and inform your department personnel as soon as possible.
- Attach an "Out of Order" tag to the equipment, describe the problem, add name of person reporting the problem and the date. (Obtain these tags from BioMed)
- Send work order by clicking on the "BioMed/Plant Ops" tab on the EMANATE HEALTH intranet. Follow instructions on the site.
    - Emergency – Safety Issues
    - Urgent – Patient Care Issue
    - Routine – Up to 3 Days
    - Deferred – Over 4 Days
- Put a copy of the work order on the equipment to alert co-workers.
- Emergency repair requests should also be followed up with a telephone call or page to the BioMedical Staff or Plant Operations Department.

	Plant Operations Department	**BioMedical Services**
ICH Campus:	17598	15818
QVC Campus:	22400	22506
FPH Campus:	33106	33181

Responding to Alarming Equipment

All staff using and/or maintaining medical equipment devices, with related alarm systems, must be assessed and proven competent to operate the equipment/device and manage its associated alarm mechanism of that equipment/device.

Physical Plant / Life Safety Alarms

- All staff is responsible to respond to alarm activation.
- Panic Alarms/Security Alarms – Campus Safety Specialist will respond immediately to activation of panic/security alarms. Will call for additional assistance or police as needed.
- Code Blue Buttons -- Nursing or appropriate personnel are to respond immediately to alarm activation.
- Fire Alarms and Systems -- All staff will respond immediately to activation of the fire alarm by clearing corridors of all people and closing doors.
- Medical Gases Alarm Panels -- Staff to notify Plant Operations for any medical gas alarms.
- Nurse Call Alarms – Staff to notify Plant Operations staff immediately. Nursing to make more frequent rounds to patient rooms and obtain additional staff as needed until system is repaired.
- Blood Bank Refrigerator Alarms -- Laboratory staff will notify Plant Operations. If unable to be corrected immediately, blood needs to be moved to another refrigerator.

- Medication Refrigerator Alarms -- Nursing and Pharmacy staff will notify Plant Operations or BioMedical Engineer, as appropriate, of the refrigerator alarm. If unable to be corrected immediately, medications need to be moved to another

refrigerator, which has the proper temperature, until the refrigerator temperature has stabilized.

D. Hazardous Materials and Waste Management

Hazard Communication Standard and Workers' Right to Know

The Hazard Communication Standard also known as the Workers' Right-To-Know Standard (Act) contains written information about workplace hazards, hazardous chemicals and material substances. The manufacturer's product label and SDS disclosure document is a fast and easy way to obtain information about how to work safely with a specific product. One basic concept of the "Workers' Right to Know Act" is the Employee's right to manufacturers' SDS material.

Safety Data Sheets (SDS)

Manufacturer's Information Found on the SDS

The format of the Safety Data Sheet requires 16 specific sections, ensuring consistency in presentation of important protection information:

Section 1: Identification includes product identifier; manufacturer or distributor name, address, phone number emergency phone number; recommended use; restrictions of use.

Section 2: Hazard(s) Identification includes all hazards associated with the chemical; required label elements, pictograms or hazard symbols.

Section 3: Composition includes information on chemical ingredients; trade secret claims.

Section 4: First-Aid Measures includes important symptoms/effects, acute, delayed; required medical treatment.

Section 5: Fire-Fighting Measures lists suitable extinguishing techniques, equipment; chemical hazards form fire.

Section 6: Accidental Release Measures lists emergency procedures; protective equipment; proper methods of containment and cleanup.

Section 7: Handling and Storage lists precautions for safe handling and storage, including incompatibilities.

Section 8: Exposure Controls/Personal Protection lists OSHA's Permissible Exposure Limits (PELs); Threshold Limit Values (TLVs); appropriate engineering controls; personal protective equipment (PPE).

Section 9: Physical and Chemical Properties lists the chemical's characteristics.

Section 10: Stability and Reactivity lists chemical stability and possibility of hazardous reactions. It is broken into three parts: reactivity, chemical stability, and other information.

Section 11: Toxicological Information includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.

Section 12: Ecological Information (non-mandatory) provides information to evaluate the environmental impact of the chemical(s) if it were released to the environment.

Section 13: Disposal Considerations (non-mandatory) provides guidance on proper disposal practices, recycling or reclamation of the chemical(s) or its container, and safe handling practices.

Section 14: Transport Information (non-mandatory) – provides guidance on classification of information for shipping and transporting of hazardous chemical(s) by road, air, rail, or sea.
Section 15: Regulatory Information (non-mandatory) – identifies the safety, health, and environmental regulations specific for the product that is not indicated anywhere else on the SDS.
Section 16: Other Information – includes the date of preparation or last revision of the SDS.
The SDS is an important source of information where you may find the manufacturers' printed disclosure(s) on a variety of important chemical substance(s), concerns related to safe usage, and health hazards.
Working safely includes:

- Following common sense procedures.
- Employing safe handling practices while abiding by the safety guidelines on health and physical hazards.

Symbols
Hazardous materials (hazmat) have international image reminders and icon designs identifying various classes of hazardous materials, hazardous conditions, safety awareness aids for recognizing hazardous materials found in the workplace, community or at home. These graphic reminders are represented by symbols.
The SDS can be obtained by:

- Going to the EMANATE HEALTH intranet and clicking on the Safety Data Sheets tab
- Visiting www.3eonline.com
  For both of the above methods:
  User name is "citrusvalley"
  Password is "sds"
- Telephone 3E Company at 1-800-451-8346.
  - Give 3E the product name, Manufacturer's Identification, particulars, product number, barcode, etc.
  - Give your fax number

Personal Protective Equipment (PPE)
Another area of great importance is that information addressed by the manufacturers' SDS disclosing materials that require safe handling and the PPE suggested as a safety control measure in the prevention of personal injury. This information is further discussed elsewhere in this safety handling and training disclosure and is part of the right-to-know employee workplace knowledge base. It is a good practice to refer to the availability of pertinent information as outlined in the sixteen (16) elements shown above in the Manufacturer's Information Found on the SDS.
Training
Each staff member is to be trained during General Orientation, at the time of initial job assignment, through the Annual Safety Education Update, and whenever a new substance or chemical is introduced into the workplace. Training and hazard awareness is the responsibility of your Director.

Emanate Health Responsibilities

- Have a written Hazard Communication Program.
- Provide awareness and safety training.
- Provide product safety information.
- Make available or provide access to a manufacturer's copy of their SDS.
- Provide appropriate Personal Protective Equipment (PPE).

Staff Responsibilities

- Read the label and SDS of new chemicals that you are working with.
- Follow warnings and safe practices, instructions.
- Use appropriate Personal Protective Equipment (PPE).
- Learn about emergency procedures for spilled workplace chemicals.
- Act in a sensible manner, be a safe and responsible worker.

General Responsibility of Everyone

- Never use hazardous material substances you're not trained to use.
- Never place a chemical substance into an UNLABELLED container.
- Never mix substances without asking your supervisor first and checking the SDS.
- Always ask your supervisor if you have a question about any substance.

Responsibility for Proper Container Labels

- If chemicals are dispensed into another container it is the responsibility of the user to label the NEW container as follows:
- Chemical name: identity of hazardous ingredient(s), contents.
- Cautions: appropriate hazard warnings, physical and health, acute and chronic.
- Name and address of manufacturer or other party of origin.
- Property NAME, or Department NAME, or your NAME: who owns it as a contact in case of a need-to-know situation.

Code Orange (Internal)

Hazardous Material or Waste Spill Episode

You are to immediately inform your supervisor of a spill condition. Spill procedures are found in your department Emergency Reference & Response Guide.

You should call a Code Orange Internal by dialing "6" and give the exact location if you find a hazardous spill or chemical leak and if:

- You are not trained to clean up the spill.
- You do not have the proper equipment (spill kit and personal protective equipment).
- You do not know the chemical or substance.
- You think the chemical is extremely hazardous (strong acid or base, reactive, flammable explosive and/or toxic). Chemotherapy drugs are in this category
- If is a Major spill -- more than 10 inches (25 cm) in diameter, smaller is considered a Minor spill. For minor spills, follow department specific policies

and procedures.

Injury from Chemical Substances and Treatment

- If inhaled: Remove patient to fresh air. If breathing is a difficulty, go to the Emergency Department.
- If substance comes in contact with skin: Immediately wash skin with soap and plenty of water for five minutes. Remove contaminated clothing and shoes. Go to the Emergency Department.
- If ingested: Treatment is based on what the substance is. **Mandatory**, Go to the Emergency Department.
- If substance comes in contact with eye(s): Immediately flush eye(s) with plenty of water for at least 15 minutes. Use eye wash station. Go to the Emergency Department.

Protecting the Environment & Hospital & E-Waste

California Recycling of Spent Battery & Electronic Waste

California and federal Environment Protection Agency (EPA) have laws, statutes, governing the disposal of hazardous materials into landfills. Laws are on the books that promote proper recycling, disposal, labeling, and mercury battery phase out. It is unlawful to dispose heavy metal containing items into landfills. Heavy metals from rechargeable batteries have the potential to leach slowly into the soil, ground water, and surface water.

The EPA believes that some manufacturers of rechargeable batteries and rechargeable consumer products may not be complying with the Mercury-containing Rechargeable Battery Management Act, ("Battery Act") while others may be unaware of the Act's requirements.

Please review the following types of wastes and dispose of safely, both at work and at home.

Recycling Trash & Other Discards	What Does the World Recycle?
Computers	Plastics
Aluminum Cans	Batteries
Rechargeable Batteries	Paints
Motor Oil	Cardboard
Cell Phones	Computers
Car Batteries	Cell Phones
Computer Paper	Aluminum Cans
Inkjet Cartridges	Food Waste
Florescent Lamps	Motor Oil/Cooking Oil
	Mail

Simple Ways to Recycle

If you want to get started in the "green scene," but do not know where to begin, here are some simple

ways to get started:

- Reduce -- Use less stuff.
- Recycle -- Take advantage of convenient recycling programs offered by your local municipal government.
- Reuse -- This particular "R" offers fun and interesting potential. Think about inventive uses for items that you are discarding.
- Power Down – Do not waste electricity. When you walk out of the room, turn the light switch to the "off" position. This also helps reduce our electric bill!
- Don't Be a Drip -- Turn off the tap. Repair dripping faucets and showerheads.
- Shop Smart -- Select products with genuine eco-friendly features.
    - Energy Star – This label indicates that various products, such as refrigerators, washing machines, dryers, televisions and printers, meet energy efficiency guidelines set by the U.S. EPA and United States Department of Energy (DOE). Water Sense - This label indicates products and programs that meet the EPA's standards for water efficiency.
    - Green Seal – This non-profit organization rates products based on its standards of environmental responsibility.
- Don't Tire Out -- Keeping tires at their proper pressure improves gas mileage, according to the DOE. Plus, when properly inflated, tires are safer and more durable. You can also improve your gas mileage by 1-2 percent by using the manufacturer's recommended grade of motor oil. Also, helps reduce SMOG!

Waste Disposal

It is important to properly dispose of all types of waste. Use the following charts to determine what container to use.

		
Regular Waste	**Pharmaceutical Waste**	**RCRA Waste**
• **No Sharps** • Empty IV bags and tubing • IV bags that are not empty but only contain standard plain solutions with no additives or only have electrolytes as an additive. • Empty med vials and containers. • Paper, trash, wrappings • Dressings • Chux • Diapers • Gloves • Empty Foley bags and other drainage bags. • Disposable patient items. • Sanitary napkins. **No Needles** **No Sharps** **No Hazardous Materials** **No Bagged Surprises**	**Non-Controlled Substances** Dispose in original container, do not pour or inject into waste container. • All syringes with residual medications. • IV Bags and tubing with medication other than electrolytes and have residual solution left. • Partially used medications: **Example**: Vials, tablets, ampoules, capsules, powders, liquids, creams, lotions, eye drops, suppositories. • Unused meds to be returned to Omnicell. • Expired meds to be returned to Pharmacy. **Controlled Substances (FPH)** Dispose of controlled substances into the Cactus Smart Sink. • Partially used or wasted narcotics must be taken out of the package and placed into the proper section of the Cactus Smart Sink. ✓ Left side for pills and capsules ✓ Middle for patches ✓ Right side for liquids • Unused or expired meds must be returned to the Pharmacy. **Controlled Substances (ICH/QVH)** Must be made irretrievable prior to placing into waste container. • Narcotic patches must be cut up before being placed into container. • Liquids and injectable items should be squirted into absorbent material (gauze, swab, paper towel, etc.) before being placed into container. • Pills and capsules should be crushed before being placed into container. • Expired meds to be returned to Pharmacy.	• **Ignitable waste (I)** Alcohol, Alcohol based solutions (Betamethasone Soln, Cleocin Soln, Decadron Soln, Prednisone Soln, Alprostadil, Ammonia, Benzoin, Flexible Collodion, Gel products (Testosterone, Hurricane) • **Corrosive waste (C)** Silver Nitrate Sticks • **Reactive waste (R)** • **Toxicity characteristic waste (D)** Heavy Metals (Barium 100 mg/L (READI-CAT 2) Chloroform 6 mg/L, Insulin [m-Creosol] 200 mg/L, **All Insulins** Mercury as preservative [Triple/Double Antibiotic Ointment], Silver 5 mg/L,) • **Toxic Waste (T)** • **Acutely Hazardous (P)** Nicotine, Warfarin • **Toxic Constituents (U)** Chloral Hydrate, Chemos (Cyclophosphamide, Melphalan, Mitomycin), Phenols (**Throat Lozenges, Chloraseptic Spray**) See RCRA List

			
Sharps Waste	**Trace Chemo Waste**	**Bio-Hazardous Pathology Waste**	**Bio-Hazardous Red Bag Waste**
• **All Sharps** Example – Needles, broken glass vials, broken ampoules, blades, scalpels, razors, pins, clips, staples, etc. • All **empty** syringes and needles with trace amounts of medication. • Trocars, introducers, guide wires, sharps from procedures specimen devices in endoscopy, etc.	• Trace Chemo • All supplies used to make and administer chemotherapy medications. **Examples**: Tubing, empty bags, bottles, vials, syringes, gloves, pads, masks, gowns, wipes, needles, etc. **Return all unused Chemo to Pharmacy**	• **No Sharps** • Blood and all other potentially infectious material (OPIM). • Pathology waste includes all biopsy materials and all human tissues and anatomical parts that emanate from surgical, obstetrical autopsy and laboratory procedures. **Examples**: Specimens, tissues, etc.	• **No Sharps** • Blood and all other potentially infectious material (OPIM). • Blood tubing or bags • Hemovacs & Pleurovacs • Soaked/dripping bloody dressings. • Intact glass or plastic bottles with bloody fluids or other potentially infectious material. • Suction liners with bloody fluid or other potentially infectious materials. • Contaminated waste from isolation patients. **All disposable items soaked with blood or other potentially infectious material.**

E. Radiation Safety

Radiation

Radiation is electromagnetic and atomic particulate energy that exists in our environment as natural or man-made sources. Natural sources come from sunshine, cosmic rays and radioactive materials deposited in the earth during its formation. These sources contribute to a normal "background" level of radiation that everyone is constantly being exposed to every day. Man-made sources such as those used in X-ray, CT and Nuclear Medicine are ionizing sources of radiation with much potential to cause harmful effects.

Radiation Protection

There is a definite correlation between the amount of radiation exposure received and damage done to body tissues. This "no threshold" effect simply means the more you get, the higher the probability for damage. Keep in mind there is no safe dose of radiation. While it is highly unlikely small exposures will cause damage, there are no guarantees it will not. For this reason, hospital personnel must be aware of radiation sources in the medical environment to help keep their exposure "As Low As Reasonably Achievable."

This policy is termed "ALARA." There are three main rules of radiation protection:

- TIME -- Less is better.
- DISTANCE -- Far is good.
- SHIELDING -- More is best.

The less time spent near a source and the more distance between you and the source will help keep your exposure ALARA.

Always wear a lead apron while in or near an X-ray field and always face towards the X-ray source. Also, always wear your dosimetry badge, if you have been issued one.

Radiation Contamination vs. Exposure

Radioactive Contamination

Radioactive contamination occurs when radioactive material is deposited on or in an object or a person. Radioactive materials released into the environment can cause air, water, surfaces, soil, plants, buildings, people, or animals to become contaminated. A contaminated person has radioactive materials on or inside their body.

Radiation Exposure

Radioactive materials give off a form of energy that travels in waves or particles. This energy is called radiation. When a person is exposed to radiation, the energy penetrates

the body. For example, when a person has an x-ray, he or she is exposed to radiation.

Radiation Sources in the Hospital
Patients who have had an X-ray, CT, MRI, Ultrasound procedure and Radiation Therapy (beam therapy) are not radioactive. Patients who have had a Nuclear Medicine scan are radioactive and remain so for hours to days depending upon the radiopharmaceutical used. Routine Nuclear Medicine examinations pose minimal risks from exposure and no special precautions are necessary.
The exception is Nuclear Therapy patients treated with Iodine-131, or radioactive implants. These patients are highly radioactive and precautions must be taken to keep exposure levels ALARA.
These patients must be isolated in a separate room and radiation warning signs posted and room access restricted to nursing staff caring for the patient. These patients will be cleared for discharge by the Radiation Safety Officer (RSO). Always remember that NOTHING may be removed from a nuclear therapy patient room until checked and cleared by the RSO.

Radiation Safety Issues
The TREFOIL sign is the international symbol for radiation warning. It may be magenta on a yellow background or black on yellow. This sign will be posted at entrances of all areas where radiation is being used.

Pregnant personnel or those who think they might be pregnant should be especially careful during the 1st trimester and always proceed with the ALARA concept in mind. Pregnant personnel are restricted from caring for nuclear medicine therapy patients.

The Radiation Safety Officers (RSO) and the Radiation Safety Committee are responsible for radiation safety throughout Emanate Health. The RSO for ICH and QVH campuses can be reached at extension 12891. The RSO for FPH can be reached at extension 33118. They are available to answer any concerns you might have about radiation and safe radiation practices.

GLOSSARY

- ALARA: As Low As Reasonably Achievable
- DOSIMETRY BADGE: Measures your radiation exposure
- THRESHOLD: The exposure level highly probably for harm
- BACKGROUND: Naturally occurring radiation
- REMS or RADS: A unit of measurement of radiation
- MILLIREMS or MILLIRADS: 1,000th of a unit
- MICRO REMS or MICRO RADS: 1,000th of a 1,000th

F. MRI Safety

Magnetic Resonance Imaging (MRI)

Preventing Accidents and Injuries in the MRI Suite

If you work in and around the MRI areas you will need specific training before doing so. Everyone needs to know that MRI areas have certain hazards and caution must be practiced! The following will alert you to safety concerns:

- The magnetic field is hundreds of times more powerful than the magnetic field of the earth. While there are no known effects from the magnetic field itself, there are certain hazards to be aware of when working near a magnetic field. The following types of injury can and have occurred during the MRI scanning process:
    - There are many types of hazards associated with the MRI magnet. Metallic things (ferromagnetic - those having magnetic attraction) can become projectiles and injure the patient or the staff if they are brought into the MRI scan room.
    - Patients with certain implanted devices can also have injuries. Some devices can move and injure the patient and others my stop working and could cause life threatening injuries.
    - Objects left on patients can actually burn the patient.
    - Injury or complications related to equipment or device malfunction caused by the magnetic field can occur. For example, if a patient has an insulin pump and it is not removed before the scan, the pump can fail to operate.
    - Additional injuries include acoustic injuries related to the loud knocking noise that the scanner makes.
    - Adverse events related to the administration of MRI contrast agents.
- The most important thing to remember is the **magnetic field is always on**, even when not in use. The magnet field stays on, even when disconnected from an electrical source. This means that “pulling the plug” will not cause the magnetic field to go down.
- The magnetic field may extend several feet beyond the scan room. The magnetic field is strongest at its center. The strength can increase dramatically by moving only a few inches closer to the opening of the magnet. As you approach close to the magnet, ferromagnetic objects can become projectiles. Small objects can be drawn in to the magnet at speeds as high as 40 mph!

Risk Reduction Strategies

- The MRI Technologist on duty is the Safety Officer who is responsible for

implementing and enforcing safety procedures in the MRI area.

- Systems to support safe MRI practice are in place.
- In general, do not bring any device or equipment into the MRI environment unless it is proven to be MR Safe or MR Conditional. Check with the technologist on duty to verify that any object brought near the MRI scanner is safe or conditional.
- Access to MRI sites is restricted. If you have a reason to be near the MRI scanner, you personally will need to be screened so that we can assure you that any implanted devices you may have or any metal objects you routinely keep on your person are MRI safe (Nurses who need to attend to a patient, Respiratory Therapist, EVS personnel, etc.).
- Patient's nurse will screen each patient before they arrive in the MRI department. Please call the MRI tech and notify them if you answer yes to any questions on the screening form. Trained personnel in the MRI department will screen patients again, providing two separate opportunities for them to answer questions about any metal objects they may have on them, any implanted devices, drug delivery patches, tattoos, and any electrically, magnetically, or mechanically activated devices they may have. If the patient is unconscious or unable to answer questions, the patient's family member or surrogate decision maker will be questioned. If this person is unsure, other means to determine if the patient has implants or other devices that could be negatively affected by the MRI scan will be used. Even in an emergency, the patient must be screened. The ultimate decision about whether or not it is safe to scan a patient resides with the Radiologist.
- The MRI Technologist will need to have the patient's complete and accurate medical history to ensure that the patient can be safely scanned. Please call the MRI Department to alert them about any implanted device in a potential patient. They will be able to research the device to determine if it is safe to scan the patient. Whenever possible the brand name of the device is important in order to determine if it can be safely scanned.
- Annual safety about the MRI environment will be given to all medical and ancillary staff that may be expected to accompany patients to the MRI area. Staff, patients and their families will be given appropriate materials (i.e., guidelines, brochures, or posters) that explain the potential for accidents and adverse events in the MRI environment.
- Precautions will be taken to prevent patient burns during scanning.
- Only equipment that has been tested and approved for use during MRI scans will be used.
- A proactive plan for managing critically ill patients who require physiologic monitoring and continuous infusion of life sustaining drugs while in the MRI suite will be in place.
- All MRI patients will be provided with hearing protection (i.e., ear plugs).
- Never attempt to run a cardio-pulmonary arrest code or resuscitation within the MR magnet room itself. The patient will be moved away from the MR magnet prior to the code team arriving.

Ferromagnetic Objects include:

Buffing machines	Oxygen cylinders	Scissors
Chest tube stands	Pulse oximeters	Staples
Clipboards (patient charts)	Pacemakers	Tools
Gurneys	Pagers	Vacuum cleaners
Hairpins	Paper clips	Watches
Hearing aids	Pens and pencils	Wheelchairs
Identification badges	IV poles	
Insulin pumps	Prosthetic limbs	
Keys	Shrapnel	
Medical gas cylinders	Sandbags (with metal filings)	
Mops	Steel shoes	
Nail clippers and nail files	Stethoscopes	

G. Portable Oxygen Safety and Emergency Oxygen & Med Gas Shutdown

Portable oxygen cylinders are designed for use in order to provide patients with a continuous source of oxygen during their course of treatment when it is necessary for them to be away from the main piped gases located in their room (i.e. Diagnostic treatments, GI Lab, Radiology, etc.).

Portable Cylinders

When transported or ambulating patients who require a source of oxygen while away from their room; the oxygen is supplied to them from a small portable oxygen cylinder. We utilize the **green** 'E' size cylinder to accomplish this.

These cylinders hold 24 cubic feet of compressed oxygen at a pressure of 2,100 pounds per square inch (PSI). With this high pressure being applied inside the cylinder it makes these cylinders a potential missile if they are mishandled, abused or mistreated. This is why the use of these cylinders must be taken very seriously.

Storage of the Green Cylinders

Oxygen cylinders must be secured in an appropriate holder at all times and separated when stored as listed below:

- E size Oxygen cylinder racks are color-coded and labeled: Full/Unopened and Empty/Opened
- Wheelchair holder
- Gurney holder
- Portable cart or stroller is used when ambulating patients
- No more than 12 full cylinders are to be stored in one fire compartment at any one time

- NOTE: After use, do not leave the cylinders standing upright, unsecured or laying on the floor. Cylinders must be secured on a cart, chained to the wall, returned to the main cylinder storage area or placed in the appropriate labeled cylinder rack.

Use of the Regulators and Cylinders

It is important to be aware of the danger of fires at the interface of oxygen regulators and cylinder valves. The following are steps to be taken each and every time staff is handling these items.

- The flow meter and supply to regulators are turned off when oxygen is not in use.
- Regulators, tanks and flow meters are inspected for any damage prior to use. Look for leaks, cracked seal, any visible signs of oil, grease, tapes/adhesives, petroleum jelly or paint.
- Prior to use on a patient, the caregiver must check to see if the oxygen cylinder is full or empty by observing the regulator gauge. Crash carts should be kept in the **green** zone which is 1800 to 2200 psi. If the gauge is in the **red** zone, it should be removed from service and stored in the empty storage area.
- The Grab & Go E-cylinders have an incorporated regulator already in place that cannot be removed, so these are returned to the tank storage area with the regulator in place.
- Cylinders and regulators will be handled with clean, non-oily hands, no fresh hand lotion to prevent possible ignition.

Materials Management will maintain the correct level of oxygen cylinders for each department. If more cylinders are needed, place a work order through Meditech. Grab & GO E-cylinders come from the manufacturer with the Oxygen regulator already in place so all you have to do is verify Oxygen pressure on the manometer – turn the dial on top from OFF Towards the "PLUS SIGN" (+) for flow needed from 0.5 to 25 LPM.

To Stop Use of the Regulators and Cylinders

- Turn the dial to "OFF".
- The Grab & Go cylinder regulator cannot be removed so return to empty cylinder storage area when empty.

Emergency Oxygen Shut Down / Main Oxygen System Shut Down

In the event of a catastrophic failure of the main oxygen supply system the main shut off valves can be used to terminate the oxygen feed into the facility. This may only be done by **personnel authorized** to shut down the main oxygen supply. At the time the decision is made to shut down the Main Oxygen Supply System a **Code Triage Internal** should be initiated.

Authorized Personnel:

Prior to initiating the Main Oxygen Supply System Shut Down, collaboration between the following disciplines will occur to determine the need and extent of potential patient impact:

- Plant Operations Department staff
- Respiratory Therapy staff
- Nursing Supervisor

Notification:

Anytime the main piped oxygen supply is terminated for any reason the all patient care areas and personnel must be notified immediately!

Oxygen Zones Shut Down

In the event of an emergency that requires the shutdown of any oxygen supply to an individual section of the facility, the zone shut off valves will be used to terminate the oxygen feed to the area(s) affected. These zone valves are located throughout the facility. Each shut off valve has signage that indicates the rooms served by the zone valve. Only **authorized personnel** may be allowed to terminate the oxygen zone supply valves.

Authorized Personnel:

- Prior to initiating the Oxygen Supply Zone Shut Down, collaboration between the following disciplines will occur to determine the need and extent of potential patient impact:
  - Plant Operations staff
  - Respiratory Therapy staff
  - Unit Charge Nurse
  - Nursing Supervisor

Notification:

Anytime the piped oxygen zone supply needs to be terminated for any reason the following personnel must be notified immediately!

- Nursing Supervisor
- Plant Operations
- Respiratory Clinical Supervisor and/or the Lead RT on duty
- Person in charge of the unit/area where the shutdown is required

Assigned Actions:

- Respiratory Therapy will take appropriate actions to provide portable oxygen to patients, based upon their medical condition.
- Plant Operations must evaluate the cause and the extent of the failure in the zone and determine the feasibility of repairs. The oxygen zone will not be used until determined safe to do so.
- The main oxygen should not be turned back on until it is safe to do so. The Plant Operations staff will perform purity checks on the system and purge gas lines as needed until safe readings are maintained.