Safety in the Workplace

This course is part of a series of regulatory requirements for New Caregiver Orientation

- Introduction
- Emergency Codes/Plain Language Critical Event Notification
- Hazardous Materials
- Electrical Safety
- Magnetic Resonance Imaging (MRI)
- Radiation Safety
- Medical Gas Safety

Introduction

Welcome!

Upon completion of this course, learners will be able to:

- Recall the meaning of Code Red
- Clean up an incidental spill

- Locate resources for handling hazardous materials
- Use chemicals safely
- Use cords and outlets properly
- Understand the four levels of MRI Safety Zones
- Define ALARA
- Know how to store medical gas cylinders

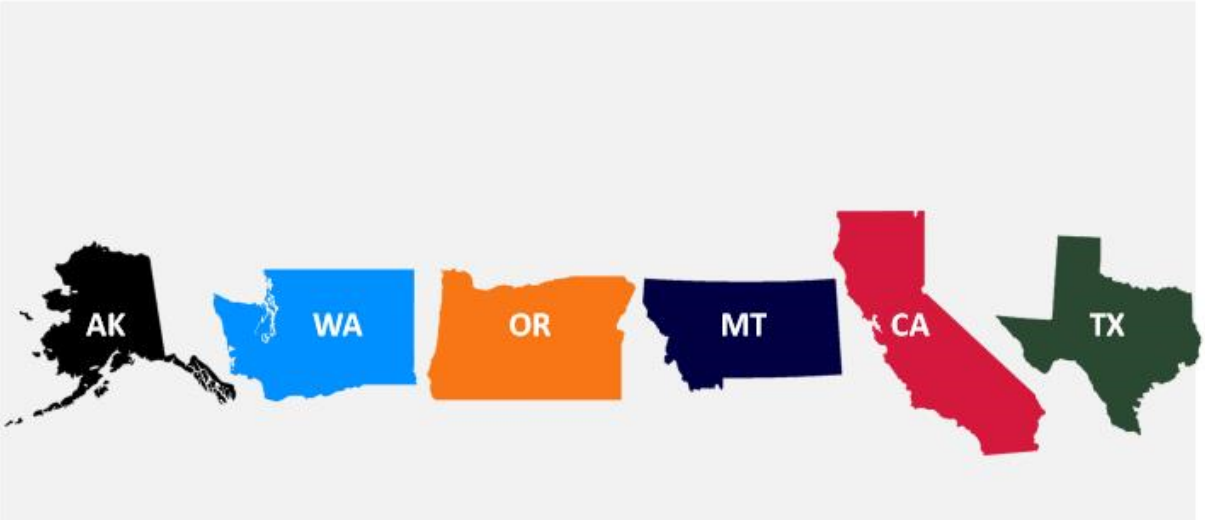
CONTINUE

Emergency Codes/Plain Language Critical Event Notification

Emergency Codes, Plain Language Critical Event Notification, and responses vary by region. All caregivers must be familiar with their specific guidelines.

Where can you find your codes and/or plain language critical event information? It may be on the back of the card with your ID badge. Depending on facility, it may be found on the Emergency Codes Poster.

Click on your state below to review more information about Emergency Codes/Plain Language Critical Event Notification.



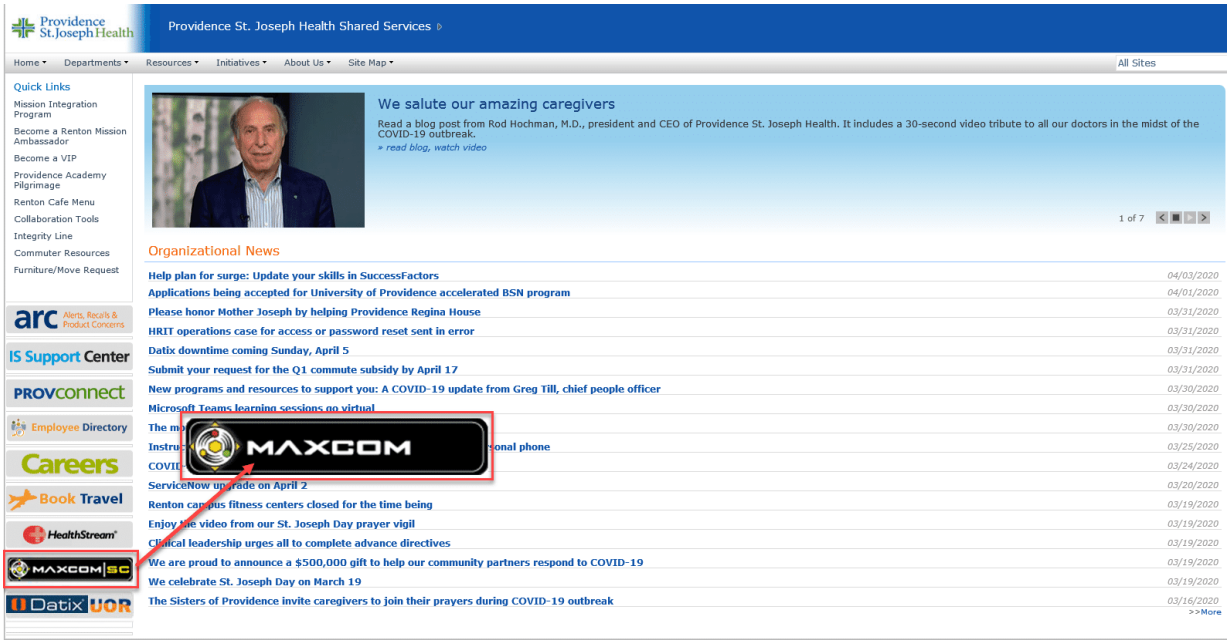
Complete the content above before moving on.

Hazardous Materials

A hazardous material (HazMat) is any item or agent (biological, chemical, radiological, and/or physical), which has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors.

Access the MAXCOM site from your intranet home page.

You'll see a link to MAXCOM in the left navigational buttons.



Hazmat safety is the type of thing most of us don't think about until something happens. And when it does, the first few seconds are critical.

It's important that we are all familiar with hazardous materials we may encounter each day:

- How to use them safely
- What to do if something goes wrong
- What protective gear you need

Being prepared means knowing how to prevent and how to respond to emergencies.

CONTINUE

Usage and Protection

Use chemicals safely by following a few simple guidelines:

When chemicals are stored, be sure hazardous materials are properly segregated and in the proper cabinet. Refer to the chemical's Safety Data Sheet (SDS) for more information.

Don't mix chemicals unless specified by the manufacturer.

Always wear appropriate Personal Protective Equipment issued by your department.

Secondary containers may be used but must be labeled with:

- Name of the hazardous chemical
- Appropriate health and/or physical hazard warnings

These can be handwritten but must be:

- Legible
- Written in English
- Prominently displayed on the container

Kadlec Note: Print your secondary container label off MaxCom

CONTINUE

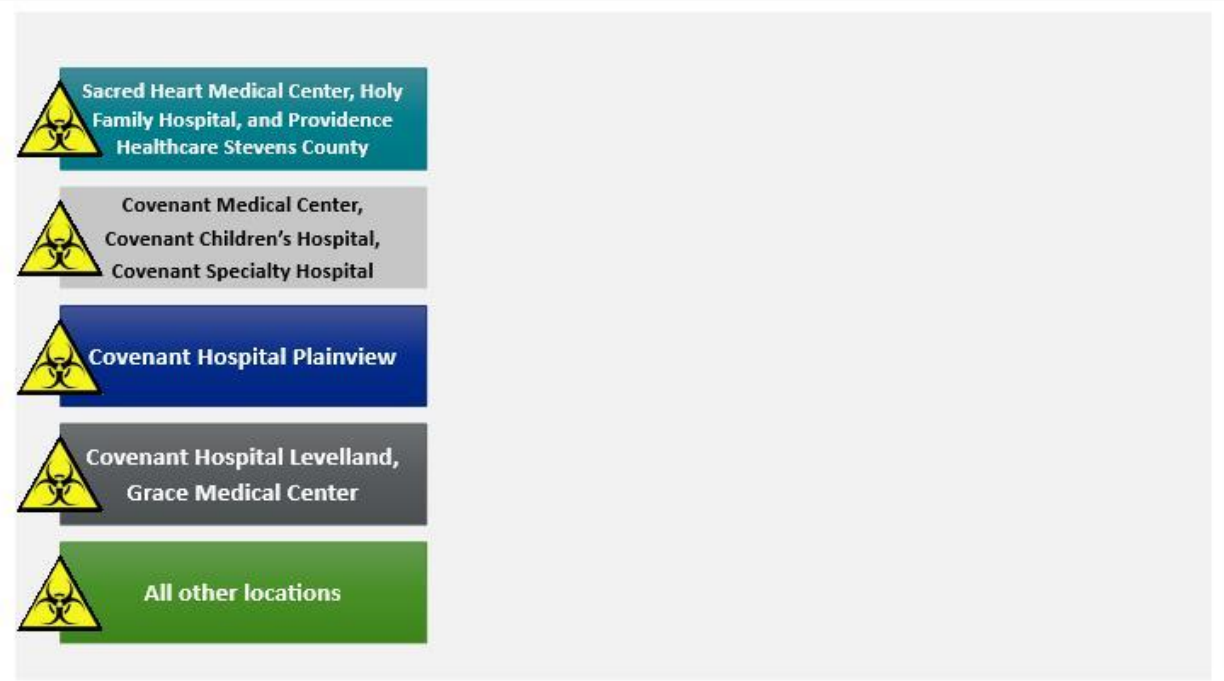
Chemical Emergency Response

All our preparation can reduce but not eliminate emergencies.

An incidental spill is a release of a hazardous substance that does not pose a significant safety or health hazard to caregivers in the immediate vicinity, nor does it have the potential to become an emergency.

Response to a Chemical Emergency varies by region/facility. Each caregiver should be able to clean up their own incidental spills.

Click on your facility below to learn more about chemical spill response in your location.



Complete the content above before moving on.

Electrical Safety

A hot outlet can be an indication of unsafe wiring:

- Unplug cords from the outlet
- Report the hazard

Do not use outlets or cords with exposed wiring. Report damaged outlets or cords. All outside electrical devices (i.e. home medical devices) need to be approved by Facilities and/or Biomedical Engineering.

It is very common to have fires and equipment failures due to bad wiring and wrong amperage used by household and/or homemade power cords brought into the facility.

CONTINUE

Use cords and outlets properly

Only **UL 1363A** power strips can be used within six feet of the patient.

All other power strips in the patient room should be **UL 1363**.

- Do not bend, stretch, or kink power cords excessively
- Do not jerk cords from outlets; pull on the plug
- Do not rest equipment on power cords
- Do not use tape on power cords or plug outlets
- All multi-plugs must be approved by Medical Engineering or Facilities Department depending on your facility policy
- Use only power cords with three-prong plugs, never use:
  - AdaptersTwo-prong plugs
  - Broken three-prong plugs

CONTINUE

When to use Power Strips:

Line-operated medical equipment is used in a patient care room/area, inside the patient care vicinity:	Line-operated medical equipment is used in a patient care room/area, outside the patient care vicinity:	Line-operated medical equipment is not used in a patient care room/area, inside and outside the patient care vicinity:
Strips have to be permanent component of a rack-, table-, pedestal-, or cart-mounted and tested medical equipment assembly	UL strips could be used for medical and non-medical equipment	UL strips could be used with precautions
Strips providing power to medical equipment in a patient care room/area must be **UL 1363A** or **UL 60601-1**	Strips providing power to medical equipment in a patient care room/area must be **UL 1363A** or **UL 60601-1**	
Power strips cannot be used for non-medical equipment	Strips providing power to non-medical equipment in a patient care room/area must be **UL 1363**	

CONTINUE

Magnetic Resonance Imaging (MRI)

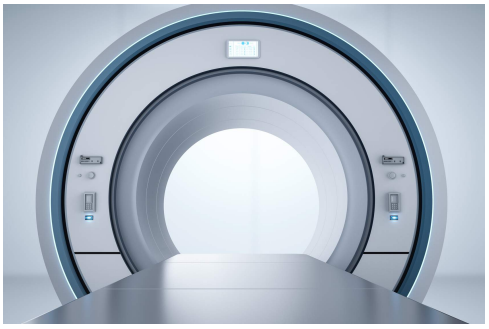
There are many caregivers who may be in an MRI area. These may include someone transporting a patient, Environmental Services staff, or staff monitoring the patient. All caregivers need to be aware of important safety issues when working in or near an MRI treatment area.

Safety is critical and mandatory

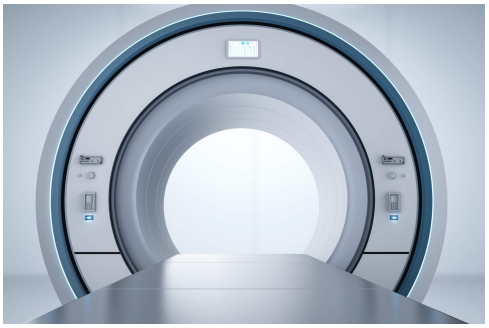
The Static Magnetic Field is up to 60,000 times stronger than that of the earth. The pull of the magnet gets stronger the closer the metal object gets to the scanner. The Static Magnetic Field is always on.

Click the cards below to learn about real examples of ignored safety compliance.

Tearing of brain tissue from movement of an aneurysm clip.



Injury to patient when scissors were pulled out of a nurse's hand and struck a patient.



Patient death when metal oxygen tank accelerated toward the magnet and fractured a patient's skull.

Complete the content above before moving on.

RF fields produce heat and interferes with electronic equipment

Hazards:

- Radio Frequency (RF) fields can induce electrical currents in metal implants or cables, which produce heat, resulting in severe burns (i.e. heat from ECG cables, pulse oximeters, etc.)
- Electronic device failure or malfunction due to electromagnetic interference (i.e. pacemaker, deep brain stimulator, Internal Cardiac Defibrillator).

Only Use Approved Fire Extinguishers

The MR-Safe, UL/ULC approved fire extinguisher has a completely non-magnetic stainless-steel shell and non-magnetic valve, hose, and nozzle.

The unit was tested by Magnetic Resonance Safety Testing Services and shown to be non-magnetic to 3.0 Tesla. The extinguisher can safely be mounted within the MRI room.

CONTINUE

Controlling access to the MRI area supports safety

Four levels of MRI Safety Zones exist

Zone I	All areas freely accessible to the general public without supervision. Magnetic fringe fields in this area are less than 5 Gauss (0.5 mT).
Zone II	Still a public area, but the interface between unregulated Zone I and the strictly controlled Zones III and IV. MR safety screening typically occurs here under technologist supervision.
Zone III	An area near the magnet room where the fringe, gradient, or RF magnetic fields are sufficiently strong to present a physical hazard to unscreened patients and personnel.
Zone IV	Synonymous with the MRI magnet room itself. Has the highest field (and greatest risk) and from which all ferromagnetic objects must be excluded.

If in doubt, leave it out.

CONTINUE

Access Control

You must have permission to enter **EACH TIME** you go in the scan room.

Access is limited to trained MRI staff.

Patients/visitors/ caregivers are screened and then accompanied by trained caregiver.

Removal of ALL Metallic Objects

Thoroughly screen patients **prior** to entering MRI Scan Room:

- Name Badges
- Watches
- Keys
- Cell Phones/Pagers
- Scissors
- Stethoscope
- Hearing Aids
- Jewelry
- Coins
- Hair Accessories
- Any Other Metallic Objects

Inspection is REQUIRED for objects such as:

- Oxygen Cylinders
- Stretchers
- Monitoring Equipment
- Any Other Similar Devices

CONTINUE

MRI Safety Summary

Drag the statements to the correct answer to check your knowledge.

True

All objects are considered

The MRI magnet is always on.

unsafe in the MRI environment until approved.

MRI staff will always follow pre-screening protocols for anyone entering.

Injuries/Deaths have occurred as a result of not following safety precautions.

False

Anyone can go into the MRI scan room at any time.

Complete the content above before moving on.

Radiation Safety

- [ ] Minimize the time you spend near radiation
- [ ] Maximize your distance from the source
- [ ] Use lead shielding such as aprons or walls
- [ ] Wear a dosimeter badge if required when working around radiation

Radiation Policy

It is the policy of Providence Health & Services to maintain occupational radiation exposure levels

As Low As Reasonably Achievable (ALARA)

Do Not Enter any area with these signs posted, unless authorized by the Department or Area Manager.

These signs and labels warn of potential radiation exposure in the area.

- [ ] Don’t fold or crumple lead aprons (causing cracks)
- [ ] Alert others to radiation exposure
- [ ] Shield
- [ ] Use appropriate signage

CONTINUE

Medical Gas Safety

Restrain all Cylinders

All cylinders must be restrained to prevent them from tipping over.

A wheeled cart, wall bracket or similar restraint is acceptable.

They may not be left lying on beds or standing unsupported!

CONTINUE

Keep EMPTY cylinders separate while in storage

Medical gas cylinder storage areas will be designated as either, "FULL", "PARTIAL" or "EMPTY".

FULL cylinders are defined as those which have never been opened. Make sure there are no more than 12 FULL cylinders stored in any smoke compartment.

Once the regulator valve has been opened , the cylinder is considered PARTIAL and it may no longer be stored in the FULL storage area.

Users will **reference the built-in pressure gauge** to ensure there is enough medical gas to meet the patient's need in the PARTIAL storage area.

CONTINUE

Some locations will use an Empty rack and Full/Partial rack system.

The same rules apply: **Empties must be separated**.

Label Storage Areas

Signs must be used to designate storage locations. Cylinders must be separated in different storage racks.

Some departments do not have room for three storage areas and may choose to have two storage areas:

- FULL/PARTIAL
- EMPTY

Separate empty cylinders

Those cylinders defined as empty shall be segregated from all other cylinders that are intended for patient care use.

> **Your facility will determine and document what level is “empty”.**

Only cylinders in storage need to be separated and labeled

Single E cylinders on 2-wheeled carts; cylinders which are attached to a piece of medical equipment, a bed, stretcher or wheelchair; or cylinders available to a patient for use in their room are considered to be “in-use” even if the valve is not connected and gas is not actively being used at the moment.

> “In-use” cylinders, like this E-cylinder on a 2-wheeled cart does not need to be labeled nor does it count toward your total amount of cylinders in a suite.

CONTINUE

Congratulations! You have completed this eLearning module. Click the Exit Course link above to return to HealthStream.