

# **MRSO Exam Prep Course**

## **Module 14**

### **American College of Radiology (ACR) Manual on MR Safety**

The goal of the American College of Radiology (ACR) is to ensure the safety and quality of MR exams.

The ACR Guidance Document for MR Safety Practices 2013 was created in an effort to develop a safety standard in the MRI industry. Many of the suggested practices that should be conducted in a conventional MR facility are defined in this document. One of these characterizes MR employees. The American College of Radiology defines three tiers of MR professionals.

- **Non-MR personnel:** These professionals include firemen, anesthesiologists, transporters, nurses, and others. Because the Magnetic Resonance Safety Director (MRMD) determines who is deemed an MR employee and what level they will be, these folks may differ for each institution.
- **Level 1 MR personnel:** These professionals are usually MR Tech aids and management. They must have a rudimentary awareness of the MR environment as well as some of the primary safety risks related to it.
- **Level 2 MR personnel:** These professionals are usually the radiologists and MR techs on duty. These people require a higher degree of MR safety training. It is critical to realize that yearly competencies are necessary to retain a level 1 or level 2 MR employee position. If these are not completed, these persons will revert to non-MR employee status.

## Section 14.1 MR Professionals

The next stage in maintaining patient safety is to identify responsibilities within a hospital. The MR medical director, MR safety officer, MR safety expert, and MR technician are the positions that should be specified.

- **MR Medical Director (MRMD):** This person has the responsibility is to create MR safety rules for the facility and have them evaluated annually. They are also in charge of determining who will be assigned as level 1 or level 2 MR workers. They will also outline the training that each of them will need. The MRMD will also determine who will serve as the facility's MR safety officer. The attending radiologist can consult the MR medical director as a physician in cases of safety that are not clearly defined. It is critical to remember that each hospital does not require its own MR medical director, but each facility should have access to a responsible MR medical director. This implies that a single MR medical director can be in charge of several institutions.
- **MR Safety Officer (MRSO):** The MRSO is in charge of enforcing the rules and procedures established by the MR medical director. These employees are in charge of the MR facility's safety and have a greater level of MR understanding than even MR level 2 staff. An MR technician can confer with these people if the hazards of doing an MR operation on a patient need to be assessed further. An MR safety officer, like the MR medical director, can be accountable for many facilities/MR units as long as one is appointed/responsible for each MR facility.

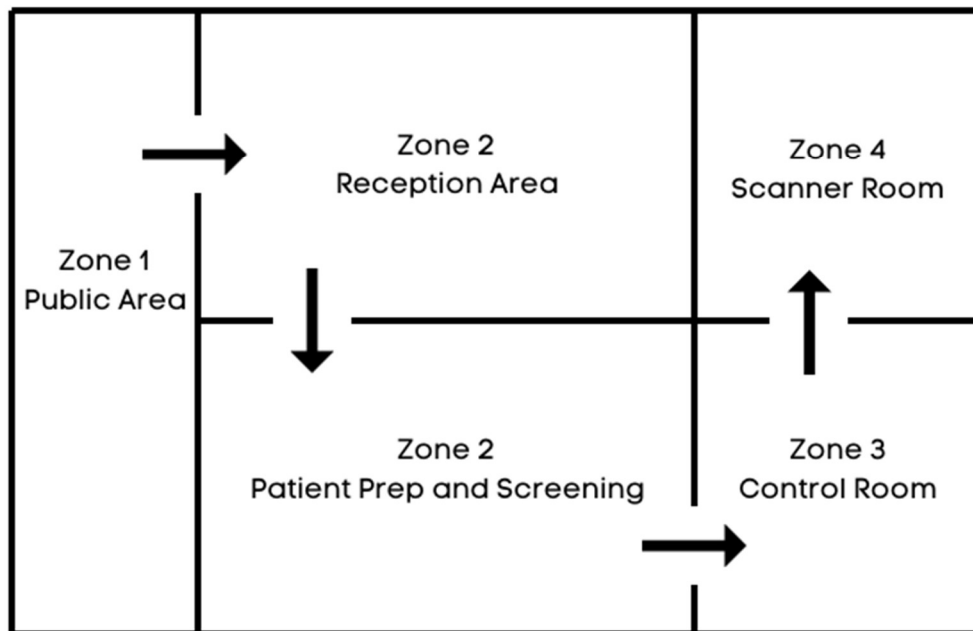
- **MR Safety Expert (MRSE):** The MRSE is solely consultative. These persons do not need to be on-site, but they should be designated when both the MR medical director and the MR safety officer want further information on the safety of scanning an MR patient with a specific safety issue.
- **MR Technician:** A professional who has been designated as someone who is in charge of enforcing safety regulations and procedures as well as running the day-to-day operations of the MR environment/facility. These persons are normally level 2 MR workers and do not need to be MR safety officers.

## Section 14.2 MRI Zones

In MRI, the ACR determines zones. The following list outlines MRI zones:

- **Zone I** is limited to a location that is safe for the general public to visit. This implies that, according to the ACR, these people should never be subjected to a magnetic field stronger than 400 milli-Tesla and should never be exposed to changing magnetic fields from the MR device.
- **Zone II** is where patients are prepared for their MRI. This includes completing the MR screening form and switching the patient. This region necessitates the monitoring of a patient.
- **Zone III** is a region with access to Zone IV. It is preferable to have few to no MR hazardous objects in this area, however, if that is not possible, basic safety standards should be adopted and enforced. Patients who have not been screened should not visit this area unless escorted by a Level 2 MR employee. Level 1 MR employees may access Zones III and IV without the presence of a Level 2 MR staff. However, a Level 1 MR professional may not accompany a patient into Zone III or IV unattended by a Level 2 MR personnel.
- **Zone IV** contains the MR environment. This is the region with a magnetic field that exceeds the occupational limitations. It is critical to recognize that the zones do apply to MR mobile units. We must refer to the definition of each MR zone in MRI to determine locations to change patients and screen patients.

# MRI ZONES



**Image 14.1**

As an MRSO, it is important to know the ACR Manual on MR Safety. It is a guideline for many safety MRI facilities and a great resource for you to use during your career path. We have taken the time to highlight some important parts of the manual, but we strongly encourage you to fully read and understand the manual prior to finishing this module.