

MRI Suite Safety



Calculator

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The MRI Suite Safety Score:

A recurring theme of many of our recent presentations has been process management: evaluating and quantifying where you are and determining where you would like to be. This can apply to any number of quality assurance factors for imaging providers, from no-show appointments, to repeat scans, to patient throughput. Today, however, we will help MRI facilities put a score to the safety provisions of their practice to help identify how effective your current safety practices are and, more importantly, identify ways to improve safety for your patients and staff.

We start with the rose-colored presumption that your safety score is perfect, 100 percent, except as modified by the factors below:

01. Do your referring physicians frequently refer patients with contra-indicated implants or patients with unknown medical histories?
Almost Never: -0
Occasionally: -1
Too Frequently: -2

02. Do you pre-screen patients with a telephone appointment confirmation?
Yes: -0
No: -1

03. Do you use a single standard clinical screening form for every patient and visitor, or ask only those questions that seem relevant to each person?
Standard Form: -0
Relevant to Individual: -3

04. Do you have private screening areas for patient interviews?
Yes: -0
No: -1

05. Do you gown your patients prior to their MRI exam?
Every Patient: -0
Only Some: -2
Street Clothes are Fine: -4

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- 06 Do you screen patients, visitors and equipment with a ferromagnetic-only detector?
Yes, at the door into Zone III: +3
Yes, at the door to Zone IV: +1
No: -1
- 07 Is your waiting room shared between post-screened MRI patients and patients for CT or any other modality?
No: -0
Yes: -4
- 08 Do you have clearly defined 4-Zones with real physical separations between them conforming to the current ACR *Guidance Document for Safe MR Practices*?
Yes: -0
No: -4
- 09 Is the main door between Zone II and Zone III kept locked all the time to prevent unauthorized access?
Yes: -0
No: -3
- 10 Are there any unsecured doors into Zone III or Zone IV areas, even 'staff' entrances?
No: -0
Yes: -5 (for each door)
- 11 Do you use combination or keypad locks for access controls with codes that could be shared beyond authorized staff?
No: -0
Yes: -2
- 12 Do housekeeping or transport staffs have independent access to the MRI suite without MR staff supervision?
No: -0
Yes: -5
- 13 Does engineering / maintenance or security have independent access to the MRI suite without MR staff supervision?
No: -0
Yes: -4

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- 14 Do any non-MR clinical staff (anesthesiologists, E.R. staff, cardiology) have independent access to the MRI suite without MR staff supervision?
No: -0
Yes: -3
- 15 Does the technologist at the console have a direct view of the outside of every door entering the magnet room?
Yes: -0
No: -5 (for each door into the magnet room)
- 16 In addition to the view of the door, does the technologist at the console have a view of the 10-15 feet of approach to each magnet room door?
Yes: -0
No: -3 (for each door)
- 17 Does your facility provide mild sedation?
No: -0
Yes: -1
- 18 Does your facility image non-emergent fully anesthetized patients?
No: -0
Yes: -2
- 19 Does your facility image emergent / trauma patients?
No: -0
Yes: -2
- 20 Does your facility do image-guided biopsies or other minor interventional procedures?
No: -0
Yes: -1
- 21 Are all incidental, support and transport items appropriately labeled under the current FDA / ASTM criteria as to their safety in the MRI room?
Yes: -0
No: -2
- 22 Does your facility provide MR-Safe or MR-Conditional loaner incidental equipment for patients (i.e. wheelchairs, walkers, gurneys)?
Yes: -0
No: -2

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- 23 Does your facility provide a secured 'quarantine' area where ferromagnetic materials brought to the MRI suite can be secured?
Yes: -0
No: -3
- 24 Are all clinical devices / supplies for use in the magnet room (i.e. medication pumps, patient monitors, oxygen cylinders, ventilators) tested Safe or Conditionally Safe under the current FDA / ASTM criteria and labeled for that use?
Yes: -0
No: -3
Labeled, but testing criteria unknown: -5
- 25 If you have more than one magnet with different strengths or formats, is each piece of MR Conditional equipment identified with the safe limits of use?
Yes: -0
No: -2
- 26 Do your technologists have ready access to implant and medical device safety testing information for patient screening?
Yes: -0
No: -3
- 27 Has the cryogen vent (quench pipe) been inspected within the last year?
Yes: -0
No: -2
- 28 Is the magnet room equipped with an emergency exhaust fan that has been verified as operational?
Yes: -0
No: -2
- 29 Is the magnet room equipped with a passive pressure relief system (not including an out-swinging door)?
Yes: -0
No: -1

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- 30 Do you have an individual designated as your facility's 'MR Safety Officer' as prescribed by the ACR *Guidance Document for Safe MR Practices*?
Yes: -0
No: -2
- 31 Have you met to review MRI safety within the last year with code-teams, fire department, security, police or any other first-responders that might be called to your MRI facility?
Yes: -0
No: -1
- 32 Have you have emergency resuscitation and contrast reaction equipment and medications readily accessible?
Yes: -0
No: -2
- 33 Do you have the equipment and staff to quickly remove a coding patient from the magnet room?
Yes: -0
No: -2
- 34 Have you run a code drill within the last year within your MRI suite?
Yes: -0
No: -2
- 35 Do you require staff training to assure at least one person on duty in the MRI suite has current CPR / BLS certification?
Yes: -0
No: -2

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While every facility should strive to have a score of 100, some facilities, by virtue of built-in limitations or higher-risk applications, simply inherit a higher risk. Some of these factors can be corrected, but if you provide emergent scans, for example, you will always assume a higher risk.

Since we're distilling safety down to quantitative values, the next logical step is to share with you the curve for grading the safety scores.

100 – 92	A (Ahead of the pack)
84 – 91	B (Better focus on areas for improvement)
76 – 83	C (Check your liability insurance coverage)
68 – 75	D (Don't say you weren't warned)
67 or below	Take a long, hard look at your practices!

While there is a long list of potential risk factors to bring you down from your target score of 100, there are also a number of proactive steps you can take to improve safety:

Have you conducted a comprehensive MRI suite risk evaluation / safety audit within the last year?

Yes: +5

Have you developed regular (annual or more often) staff safety training programs for all MR and incidental staff?

Yes: +5

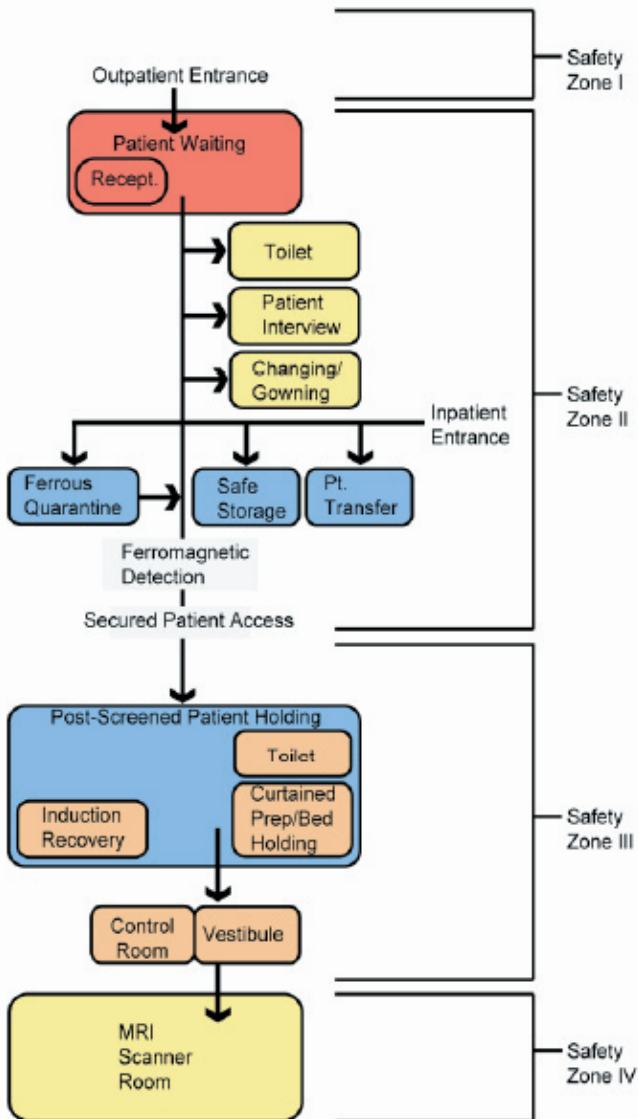
Do you have a written implementation plan for improving MR safety?

Yes: +5

These 'extra credit' tasks won't improve safety by themselves, but they can lay the groundwork for significant improvements in the safety of your patients and staff in the months and years ahead.

MRI safety is a multivalent issue, involving clinical, operational and physical interventions. MR imaging providers often benefit from consultations with safety experts to identify and correct safety lapses in such a way that the protections do not negatively interfere with throughput or clinical practice.

If your score caught you by surprise, then it's time to take a close look at your facility, your clinical practices and your operational standards. Particularly if you were unaware of any of the risk factors, it would be wise to bring in outside expertise to provide you with a comprehensive MRI Suite Evaluation.



4-Zone Suite Functional Layout Prototype

For additional information on MRI Suite safety, efficiency and operational issues, sign up for the MRI Newsletter at www.MRI-Planning.com