

**MR ENVIRONMENT AND PATIENT SCREENING:
INCREASING PATIENT ACCESS**

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Insuring safety in the MR environment continues to be somewhat difficult at any single facility and is considerably more challenging in a large, geographically dispersed hospital system. This situation is further complicated by the sheer number of systems (presently nearly 50 MR machines); the variation in manufacturers, field strengths and gradient specifications of the systems; and the variable siting of the units in outpatient and inpatient settings and in new and older, retrofitted spaces. The intention of this paper is to outline a practical approach to maintaining MR safety in such a large, diverse system.

Most important to this process is the establishment of a centralized administration with local representatives who jointly oversee the daily operations of all MR facilities in all subspecialties. This group is responsible for devising and enforcing MR safety guidelines and standard operating procedures for MR-technologists that are strict yet practical in all inpatient and outpatient environments. A knowledgeable subgroup of physicians, representative of the entire system, is recruited to serve as the MR safety director and safety officers. This overall arrangement helps to maintain consistent security measures for the MR suites; a uniform screening process for implants and foreign bodies in patients, family members and non-MR personnel; a uniform screening procedure for patient renal status (1-4); a standardized decision-making process regarding patient implants; and a standardized process to adjust coils and pulse sequences to accommodate conditional implants.

The need for standardization is further supported by the fact that our physicians work and our patients are treated at numerous different facilities. It therefore only makes sense that our patients are screened for foreign bodies and implants in the same fashion; submitted to the same security and safety measures at each facility; scanned with the same imaging protocols; and the studies are interpreted by the same, centralized imaging group across the entire system.

The size of such a system can clearly be problematic, but the size and breadth of the system can also be advantageous. Patients with implants that are unsafe in one machine can more easily be referred to another machine in which it is safe for him/her to be examined. When the patients' implants and/or clinical condition demand more specialized scanning with unique safety precautions (e.g., vagal nerve stimulators, deep brain stimulators, cardiac pacemakers), these patients can always be referred to central sites with more advanced hardware and software and more extensive monitoring capabilities (5). On the other hand, these considerations introduce significant practical concerns for outpatient scheduling which are somewhat mitigated through efforts such as centralized scheduling, standardized MR safety screening forms and processes, and on-line safety screening forms incorporated into the electronic medical record that cross encounters. These issues clearly become more difficult for inpatients.

The goals of this abstract are the following: [1] review a practical organization for administration of MR safety in a large hospital system; [2] present a practical strategy for MR safety guidelines which are concordant with those outlined by the ACR and JCAH in all inpatient and outpatient settings(6-8); [3] outline practical daily processes for maintaining inpatient and outpatient safety in the MR environment; [4] present a uniform method of screening for patient renal status; and [5] introduce an electronic version of an MR safety screening form.

References

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