



# Renovation of an Intraoperative MRI (iMRI) Suite

## The Nursing Perspective

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### Background

MSK's 1st Intraoperative Magnetic Resonance Imaging (iMRI) Suite opened in 2008 and was in operation for approximately 10 yrs. The fixed MRI design restricted and imposed utilization challenges. The aging iMRI resulted in increasing downtime and incompatibility with newer adjacent technologies.

### Description of Team

- OR Nursing
- Perioperative Leadership
- Neurosurgery
- Anesthesia
- Facilities Management
- MRI Safety Committee
- Infection Control
- External Contractors

### Preparation & Planning

- Identify alternate location to support MRI critical cases during the construction downtime
- Ascertain suitable technologies which could be substituted for MRI
- Design & construction of the new iMRI suite
- MRI Safety Policy review with updates
- Staff Education, Training & Simulations

Goal: Reopen iMRI January 2022

### Assessment

What was once considered state-of-the-art had become obsolete. The inability to interface with newer technologies limited the ability to provide state-of-the-art care. Changing suite configuration and workflow allowed for greater flexibility, improved room utilization, and the opportunity to create a more efficient and less constrained environment.

Old iMRI Suite



### Implementation

Assembly of a multidisciplinary team was critical to ensure that all the MRI safety protocols, workflows, and technological challenges would be planned and implemented successfully. The nursing perspective was critical to the development of protocols for patient and staff screening, in-room design, in-room workflows, and emergency procedures.

New iMRI Suite



### Outcomes

- Creation of a safer and more efficient iMRI environment.
- Movable magnet allows for the support of both MRI and non-MRI cases.
- Ability to integrate the latest state-of-the-art technologies with the MRI, such as:
  - ❖ Fusion of images with navigation
  - ❖ Stereotactic navigation
  - ❖ Minimal invasive laser ablation
  - ❖ 4K imaging
  - ❖ AV integration
  - ❖ Interactive time-out
  - ❖ Room and lighting controls.
  - ❖ Interactive patient experience

### Implications for Periop Nursing

The new iMRI Suite designed with a movable magnet resulted in the creation of a dual-usage OR.

- This required the development of new strategies and the reexamination of previous operational processes to maximize efficiencies and minimize pre-and post-MRI scan time.
- Development of new safety protocols and workflows highlights the RN's role in such a complex clinical environment. Evolution of a new role for the nurse and MRI Safety Coordinator.
- The MRI Safety Coordinator oversees the overall safety of the suite, evaluating the patient, staff, and equipment.