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Using Interior Design To Reduce MRI Anxiety

October 1, 2013 by Gena English, Kathy Hathorn, Robyn Bajema, Erin Peavey, and Upali



Having an MRI can be a frightening experience, typically requiring patients to enter a small, enclosed space inside a machine that produces loud clicking or beeping noises as its magnetic fields alternate. Patients are also required to stay completely still, adding to potential stress and anxiety caused by fears related to enclosed places, pain, the unknown, or what the test might reveal. Research shows that more than 30 percent of patients undergoing MRIs experience some form of anxiety. Overall, the patient experience can be less than ideal and is often exacerbated by poor facility conditions, such as lackluster waiting spaces. In addition to their impact on the patients, these conditions can also have operational implications, such as increased sedation, premature termination of the procedure, longer-term MRI fears, and motion artifacts (when patient movement disrupts the process, which yields cost factors related to medication use and repeat scans).

At [Parkland Hospital](#) in Dallas, where an MRI department is utilized by both Parkland and its teaching hospital affiliate, [UT Southwestern Medical Center](#), there are two waiting rooms that serve four magnets, seeing approximately 25 inpatients and 25 outpatients a day. Average wait time for outpatients is between 30 to 45 minutes. During this time, patients wait in a windowless, mixed-gender waiting environment in their hospital gowns. Family members sit in the same room. Furniture has limited flexibility and is fixed against the wall, and the area lacks positive distractions. Long, barren corridors lead to the MRI procedure rooms.

Currently undergoing a massive replacement project, Parkland wanted to explore the financial and operational value of interior design elements beyond the usual idea of aesthetic appeal. In this vein, Parkland engaged [American Art Resources](#) (Houston) and [HOK Architects](#) (New York) in conducting a research study that investigates the impact of design in the waiting environment. They did so with the goal of using this research to inform the design for the new hospital and to contribute to the wider field of healthcare design. The project delves into both inpatient and outpatient experiences, where outpatient approaches focused specifically on the hospital's MRI suites.

Research design and methods

The study had two phases: Phase 1 was designed to establish a baseline for the existing facility and to develop the design for an art and furniture intervention, and Phase 2 tested the design intervention and reported the findings. Validated instruments were used to measure such health issues as the anxiety levels of patients and visitors and patients' fear of MRI procedures, and operational outcomes including patient sedation, motion artifacts, time to complete a successful scan, and premature termination of MRI. Additionally, customized questions on the waiting experience and feedback on the environment, furnishings, and art were asked. Patients filled out three surveys: The first was completed before the MRI procedure, the second immediately after the procedure, and the third weeks after the procedure. Visitors also responded to a survey as they waited for the patient. Lastly, the MRI technicians who monitor the patients during the procedure

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filled out a survey during the MRI.

The study was designed in such a way as to allow this process to be repeated independently by the hospital staff in the future. The information was collected using a relay system in which patients were given a packet during registration that contained all the surveys. Patients, visitors, and technicians self-administered the survey so that no onsite researcher was needed. Two students from the healthcare administration program at [University of Texas at Arlington](#) were used to oversee and observe the process, and to help troubleshoot any issues related to the self-administration process. They didn't interact with any of the respondents.

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