



Putting patient comfort first:

A new perspective on improving imaging outcomes



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As value-based care continues to raise the bar on patient experience standards, radiology

departments are tasked with identifying innovative, cost-effective approaches to increase comfort and reduce stress in the imaging suite. Once barely considered among department priorities, patient comfort is increasingly viewed as central to growing an imaging organization's value, reputation and, most important, ability to deliver longitudinally integrated care for better patient outcomes.

In order to improve the patient experience, we must recognize that patients often present to the radiology department in a state of vulnerability. Many come to the exam with little knowledge of what to expect. Additionally, they experience stress and anxiety related to the imaging procedure itself, and apprehension

about what it may reveal. Image quality can be partly reflective of a patient's ability to comply with the needs of the equipment – lying still in an enclosed space or holding breath for the required amount of time. Thus, ensuring a relaxed and comfortable environment is more than just a nice thing to do for the patient: rather, it is fundamental to the acquisition of high-quality diagnostic images.

When patients feel stressed or apprehensive, they are more likely to engage in behaviors that result in low-value images due to motion artifacts or incomplete scans. This is especially true in MR, where all patients confront a confined space, loud noise, and a relatively prolonged exam time. When we consider these obstacles, it's no surprise that up to 15 percent of patients suffer from claustrophobia during an MRI examination¹ – or that one in five MR studies requires a repeat scan due to patient motion.² The question is, how do we engage innovative technology to effectively put patients at ease and maintain workflow, all while running a cost-effective service?

Research has shown a strong correlation between a positive patient experience, clinical effectiveness, and patient safety.³ At the Lahey Outpatient Center in Danvers, Massachusetts, we have implemented a patient-centric approach in our MRI service that has changed the way we view imaging.

In general, MRI exams are very sensitive to patient motion. Any motion can distort the exam, making it difficult to acquire high-quality images. The Philips Ambient Experience MR In-bore Solution was designed to help patients relax and hold still during an MRI examination. In our MRI suite at Lahey, this service innovation has enabled us to support patients with a calming MRI experience that gives them a sense of participation and control during the procedure. The Ambient Experience suite takes a holistic approach to addressing patient comfort from start to finish, through features such as soft dynamic lighting, sound and video projection. This creates a soothing, interactive atmosphere and encourages relaxation before and during the scan.

Additionally, advanced imaging sequences, such as mDIXON XD and Multivane XD, help us decrease exam times to further support patient comfort. mDIXON XD allows our technologists to obtain two sequences simultaneously. Multivane XD provides motion correction to a full range of anatomies, in short scan times. Both applications promote staff efficiency and confidence, which is a critical part of providing a positive patient experience.

As a result of these patient-centric innovations, we have seen a rise in patient satisfaction with a decrease in rescans, improved workflow and patient throughput. Furthermore, these additions have enhanced the work environment for our staff to the point where a number of our technologists specifically request to work in the Ambient Experience-equipped suite.

While installing the Ambient Experience suite did involve an initial additional investment above the MR purchase price, the return on investment we've seen at Lahey has been irrefutable, specifically through the resulting decrease in appointment cancellations and greater workflow efficiency. The technology is simple to use, such that the transition to this new platform took only two weeks. In fact, our technologists have been eager to train themselves on the Ambient Experience equipment just to have the opportunity to work with calmer, happier patients. At a system level, our Ambient Experience MRI suite has been so successful with patients that it has led them to use other services within the Lahey network, effectively serving as a lead generator for the health system.

When it comes to imaging, it's important to remember there is a patient behind every exam, and that a patient's comfort and well-being should determine the technology and practices used to get every image right, every time. The caring process for our patients begins the moment they enter our facility and lasts until they leave, and the technology we use must be designed with the entire patient journey in mind. Solutions that focus on patient satisfaction inevitably enhance imaging outcomes, staff satisfaction and long-term cost savings, and bring us advancements in healthcare that keep people at the center.

1 Dewey M1, Schink T, Dewey CF. Claustrophobia during magnetic resonance imaging: cohort study in over 55,000 patients. *J Magn Reson Imaging*. 2007; 26(5):1322-7.

2 Andre, Jalal B., et al. "Towards Quantifying the Prevalence, Severity, and Cost Associated with Patient Motion during Clinical MR Examinations." *JACR* (2015).

3 Cathal, Doyle. A systematic review of evidence on the links between patient experience and clinical safety and effectiveness. *British Medical Journal* (2013). <http://bmjopen.bmj.com/content/3/1/e001570>

