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Massachusetts General
Hospital Case Study



About Massachusetts General Hospital

The Radiology Department at Massachusetts General Hospital is world-renowned, with roots dating back to 1896 and the making of one of the first x-rays in the United States. Today, Mass General Hospital's Department of Radiology is leading the way by bringing imaging excellence into the community with the establishment of Mass General Imaging-Chelsea and Mass General West Imaging in Waltham. With a staff of over 70 board-certified radiologists, and an exceptionally high volume of studies, the Department has gained distinction for its subspecialty expertise in thoracic imaging, neuroradiology, musculoskeletal radiology, gastrointestinal and genitourinary imaging, interventional radiology, pediatric radiology, emergency radiology, breast imaging, and nuclear medicine. The Radiology Department provides a full-range of diagnostic testing services utilizing state-of-the-art equipment.

Dr. O'Neill and Ms. Mattos presented their results at the 2002 RSNA in a presentation titled "Can Volumetric Acquisition Effectively Reduce Overall Radiologist Workload While Increasing Overall Radiologist Productivity." Their conclusions; Reading Exams in 3D mode increases Radiologist productivity and decreases Radiologist daily stress; Radiologist's desire to physically rescan patients is dramatically reduced in the 3D mode; Reading time is decreased for all exam types in the 3D mode; and perceived exam difficulty is decreased in the 3D mode.

In 2003, MGH transitioned their off-line 3D image manipulation and research protocols to the GE Logiqworks Workstation. Ultrasound scanning protocols have been established for Thyroid, Pelvic TVUS, Sono-Hysterography, Renal and Testicular studies utilizing the GE LOGIQ 9 Ultrasound System for acquisition and the GE LOGIQWorks Workstation for off-line 3D reformatting and manipulation. Both the GE LOGIQ 9 and LOGIQWorks Review Station feature the Exclusive TruScan Architecture, which allows for extensive Raw Data image manipulation and processing on previously acquired ultrasound information. In addition to the off-line 3D manipulation, the GE LOGIQWorks with Raw Data provided MGH with additional savings in image documentation. Sonographers image acquisition was separated from the image documentation and/or labeling which resulted in a significant reduction in actual Ultrasound scan time.

The preservation of Ultrasound data and the ability to manipulate that data well after the patient leaves the exam room is key to improving productivity according to Dr. O'Neill. "Capturing the Raw Data in a volumetric acquisition allows the patient to leave the exam room without having to wait for me to perform a rescan or check that patient at that particular point in time. The data is preserved and in the majority of cases no further manipulation is needed. However, having the Raw Data provides me the opportunity to review the Ultrasound case in further detail and in multiple planes if need be. Furthermore, volumetric acquisition is a huge time savings. There are fewer interruptions, I can review multiple studies with sweeps and feel confident that I have all the data."

MGH currently has plans to staff two remote Ultrasound scanning centers without a dedicated Radiologist on site. Images and volumetric sweeps will be sent to central Reading locations with LOGIQWorks Workstations.



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