

New MRI Equipment at a Rural Hospital

By Bobbi Jo Weir, RT(R)(CT)(MR)

Blue Mountain Hospital District (BMHD), founded in 1949, is a critical access community hospital providing healthcare to approximately 7685 residents in rural Eastern Oregon. BMHD is located in John Day, Oregon, and serves the 4528 square mile area with a 25 bed hospital and 52 bed nursing home.

The hospital staff consists of approximately 130 FTEs, including six family practice physicians, one general surgeon, and one family nurse practitioner. The hospital offers three ICU/CCU beds, two birthing suites, and a med surg floor. The surgery department has two operating suites and a three bed recovery unit, while the ED has two trauma bays and one minor procedure room. As a level IV trauma center in the Oregon State Trauma System, BMHD provides 24 hour ED coverage and medical evacuation to tertiary care centers, with a helipad on site. Providing the quickest possible care for rural patients is a priority for the BMHD ambulance department, which is staffed by three full time paramedics and 25 volunteer EMTs.

As an additional service to the community, the district hosts an array of specialists from nearby facilities. These visiting physicians and their staff provide specialty care ranging from clinic appointments to surgical procedures.

The imaging department consists of a five FTE team, who yield approximately 600 exams in all available modalities per month. BMHD had been working toward upgrading imaging equipment since 2010, when the CT department replaced a 4 slice scanner with a 64 slice scanner, and the mammography department acquired a digital mammography unit. In 2012, the aging fluoro/x-ray equipment was replaced with a new digital fluoro/x-ray machine. Then 2013 saw a 1.0 Tesla MRI replaced by a large bore 1.5 Tesla scanner. Plans to upgrade from a CR to DR image reader and replace the dexta scanner are in the works.

BMHD has had MRI services for the last 10 years; however, the old scanner, though there permanently, was housed in a trailer. This older scanner had a removable docking table that could be taken into the hospital via a hydraulic lift built into the side of the trailer. ED, inpatients, and patients with walking disabilities could be transported to and from the scanner safely using this table.

Ferromagnetic materials are extremely dangerous in the MRI exam room because the MRI is a giant magnet with tremendous force. It will attract these materials whether they are as small as a bobby pin or as large as a patient bed. The force by which the object is drawn

into the magnetic bore is unstoppable and incredibly dangerous for any person or object between the two. A non-MRI approved gurney or wheelchair cannot, under any circumstance be taken near the MRI exam room. The risk for falls and slips is much magnified with ill patients who are not in full control of their actions, as is the injury risk for employees who are attempting to assist these patients.

With the purchase of the new large bore scanner, a permanent modular building was placed outside the ED entrance and a sidewalk was built to ensure safe passage to and from the main building. See Figures 1 and 2. The new 1.5 Tesla scanner has a permanently attached patient couch; therefore, staff was left with no safe way to transport patients who could not walk of their own volition.

In late 2013, the BMHD imaging department applied for and received the AHRA & Toshiba Putting Patients First grant. The platform used to attain the grant was the importance of an MRI compatible wheelchair and gurney and the immediate need for these tools at BMHD. The acquisition of an MRI compatible wheelchair and gurney (see Figure 3) has improved patient comfort by eliminating the need for patients who are unable to walk easily to make



Figure 1 • Emergency department entrance on left; MRI on right. Long walk for patients.



Figure 2 • Another view of the walkway.



Figure 3 • The equipment: MRI compatible wheelchair and gurney.

the painful journey from the shielded area into the scan room. Patients can be transported directly from their bed-sides to the exam table with one piece of equipment and little chance for slips, falls, fatigue, and pain. The likelihood of staff injury diminishes vastly when patients can be properly transferred from a wheelchair or gurney directly to the exam table.

Our goal in the imaging department is to provide a smooth, unproblematic experience for patients. Providing safe, comfortable transportation to and from an exam is an integral part of that experience. Thanks to the AHRA & Toshiba Putting Patients First grant we are able to accomplish this goal every day. 🌱

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