Technology

Technological advances help Huntsman Cancer Institute (HCI) toward its mission of improved patient care through progressive cancer treatment. Here are some examples of cutting-edge technology HCI offers.

**Combined PET/CT Scanner**
This technology combines metabolic imaging from positron emission tomography (PET) and anatomic information from computed tomography (CT). The combined PET/CT scanner reduces the number of procedures a patient must undergo. It also allows physicians to view the metabolic activity of a tumor and evaluate its size, shape, and relationship to other critical body structures. PET/CT also reveals the extent that a cancer has spread, so doctors can properly stage and classify it.

**da Vinci® Surgical System**
From a computer console in the operating room, HCI surgeons control small instruments that access a patient’s prostate. More than 400 da Vinci procedures for prostate cancer patients have been performed at HCI, more than any other hospital in the Intermountain West. The system’s precision and less invasive approach spares nerves and the bladder and aid in more complete removal of the cancer. Patients also benefit from smaller incisions and faster recovery time.

**Breast Tomosynthesis and Digital Mammography**
Digital mammography records high-resolution images of the whole breast in a process similar to a digital camera. Breast tomosynthesis scans multiple breast images from different angles and composes them into a three-dimensional view. Breast tomosynthesis and digital mammography help physicians detect breast cancers more precisely, prevent unnecessary biopsies, and reduce call-backs for additional imaging. HCI is among a few in the Intermountain West to have breast tomosynthesis capabilities.

**Minimally Invasive Surgery Rooms**
HCI features two operating rooms equipped to perform minimally invasive surgery (MIS). In MIS procedures, doctors make small incisions through which they pass tubes that hold a telescope and video camera as well as miniature instruments for cutting, removing, and repairing tissues. Less pain, fewer complications, and quicker recovery create better patient outcomes with MIS compared to conventional surgeries.

**Novalis® Shaped Beam Surgery™**
Brain tumor surgery is technically difficult and poses risks of nerve damage. Radiation therapy provides a non-surgical way to treat brain cancers. The Novalis® is a linear accelerator that delivers precisely targeted doses of radiation powerful enough to destroy a tumor without harming surrounding structures. The technique is helpful for treating recurrent and metastatic brain cancers, as well as for tumors in surgically risky locations.

**Intraoperative Magnetic Resonance Imaging (iMRI)**
Currently used in brain tumor surgery, the iMRI is an MRI scanner that makes images in the operating room before surgery ends. If more tissue must be removed, surgeons can go back to work immediately. Previously, MRIs had to be taken after the surgery was complete, and if tumor tissue was still present, the patient would have to undergo another surgery. HCI’s IMRI is the only one in the Intermountain West. Worldwide, only 20 are in operation.