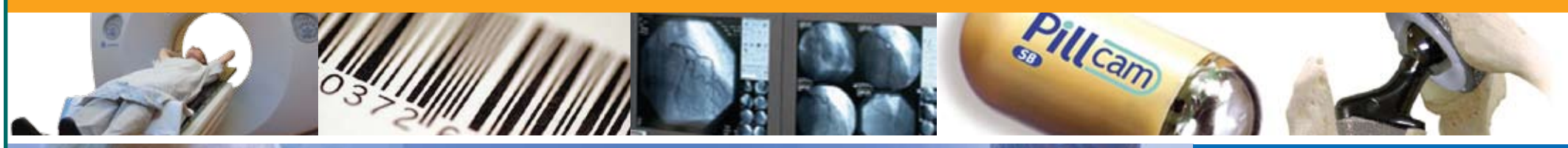


HEALTH NEWS

Bozeman Deaconess HOSPITAL

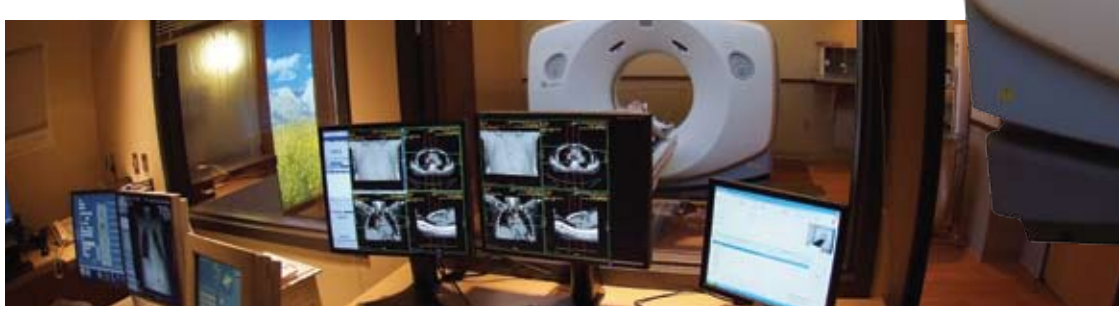
THE MARVELS OF MODERN MEDICINE DECEMBER ISSUE—2007

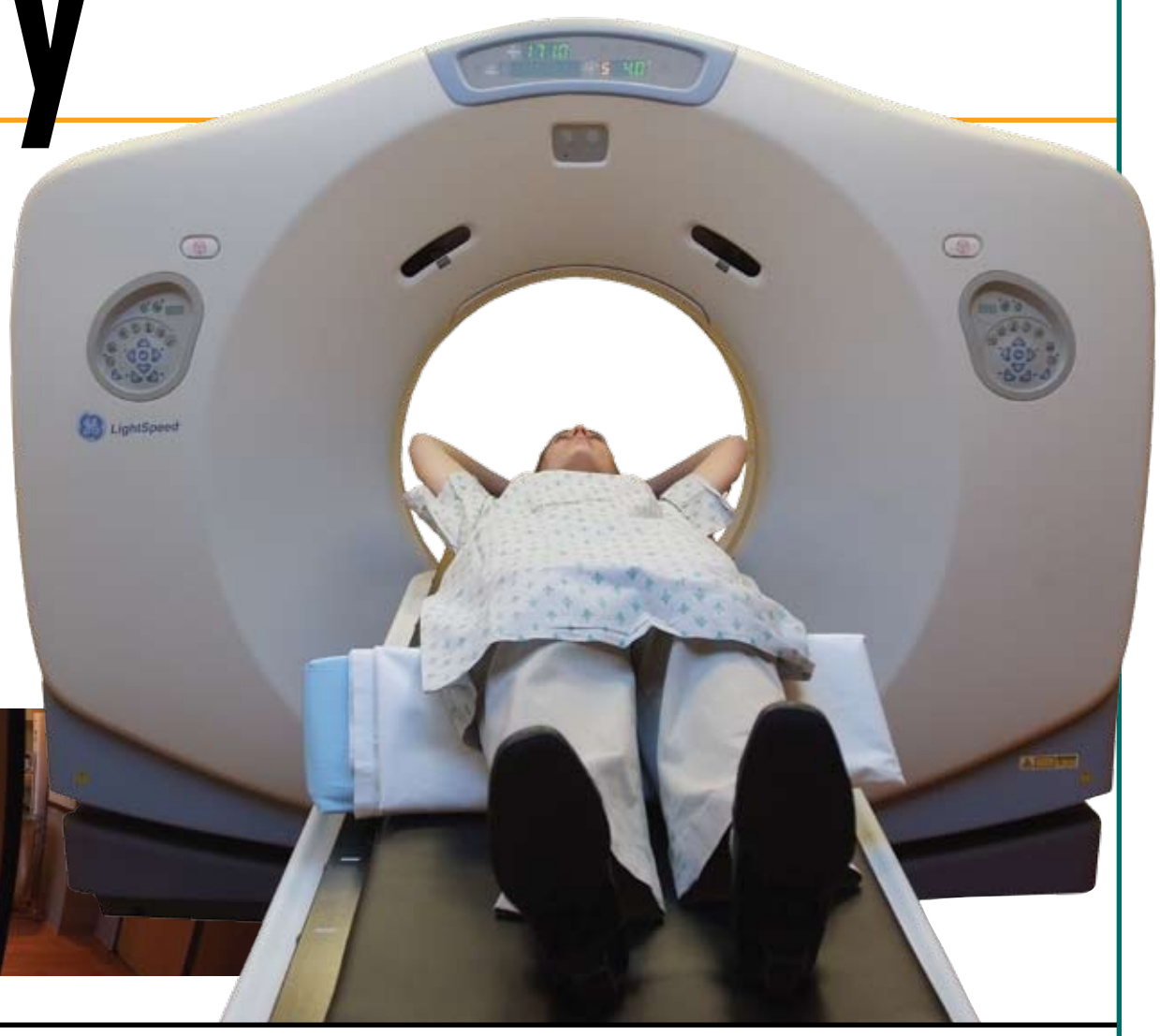
Technology

This special technology issue of Health News will fill you in on the new state-of-the-art medical equipment that makes it possible for people in Gallatin Valley to receive high quality care that rivals urban medical centers.

A 4-D DIGITAL SIMULATOR plans precise cancer treatments, saving healthy tissue. Cutting edge specimen processing technology significantly increases general chemistry turn around time and barcoded specimen collection ensures consistent patient identification. Top-of-the-line video processors and digital imaging detect and treat digestive system disorders and diseases. A secure, web-based picture archive and communication system allows radiologists to view studies in more significant detail. Imaging that's instantaneously acquired and transmitted to treating physicians.

The list goes on. But this is not a shopping list—they're already up and running at your community non-profit hospital. Bozeman Deaconess supports integrated technologies that enhance emergent, surgical, diagnostic and therapeutic medical care. "We're able to provide services other hospitals our size don't come close to offering," says Steven Shaneyfelt, MD, of Bozeman GI Clinic.





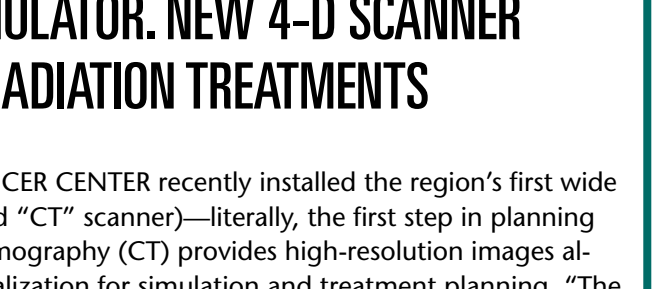
PROGRESS: CANCER CENTER OFFERS REGION'S FIRST WIDE BORE DIGITAL SIMULATOR. NEW 4-D SCANNER PLANS MORE PRECISE RADIATION TREATMENTS

THE BOZEMAN DEACONESS CANCER CENTER recently installed the region's first wide bore digital simulator (Computed "CT" scanner)—literally, the first step in planning radiation treatments. Computed Tomography (CT) provides high-resolution images allowing precise organ and tumor localization for simulation and treatment planning. "The new technology maps four dimensionally (4-D), including tissue in motion, so we can quickly and efficiently acquire all the accurate tissue measurements to plan the most precise radiation treatment possible," reports Bozeman Deaconess Cancer Center manager Brian Pence, BS, RT.

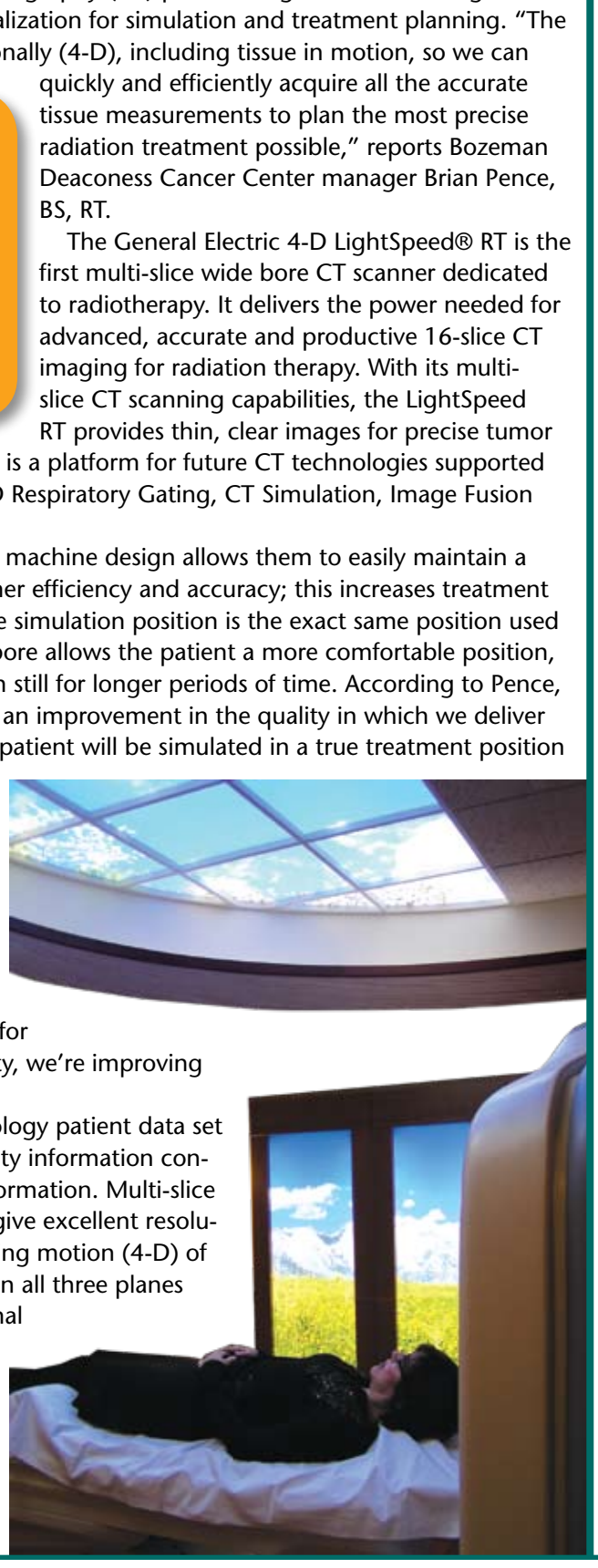
Learn about the Cancer Center's new General Electric 4-D LightSpeed RT CT scanner that acquires tissue measurements for the most precise radiation treatments possible.

The General Electric 4-D LightSpeed® RT is the first multi-slice wide bore CT scanner dedicated to radiotherapy. It delivers the power needed for advanced, accurate and productive 16-slice CT imaging for radiation therapy. With its multi-slice CT scanning capabilities, the LightSpeed RT provides thin, clear images for precise tumor delineation. The LightSpeed scanner is a platform for future CT technologies supported by advanced applications such as 4D Respiratory Gating, CT Simulation, Image Fusion and complex treatment planning.

The best news for patients is the machine design allows them to easily maintain a true treatment position offering higher efficiency and accuracy; this increases treatment accuracy as well. It is crucial that the simulation position is the exact same position used during radiation therapy. The wide bore allows the patient a more comfortable position, which in turn, allows them to remain still for longer periods of time. According to Pence, "the most immediate impact will be an improvement in the quality in which we deliver breast radiation treatment since the patient will be simulated in a true treatment position by opening the area under the arm and moving the rest of the arm out of the field."



The new healing environment of the Bozeman Deaconess Cancer Center, including the newly remodeled simulation room, provides a peaceful and relaxing environment, and that's good news for patients. "By lowering patient anxiety, we're improving care," says Pence.



CT is the foundation of the oncology patient data set offering precise geometric and density information contributing to excellent anatomical information. Multi-slice CT scanners acquire thin slices that give excellent resolution on the X, Y and Z planes including motion (4-D) of the patient. This level of resolution on all three planes greatly facilitates high to most optimal treatment planning and delivery including intensity modulated radiation therapy. The mulit-million dollar Cancer Center has been funded in part with generous contributions.

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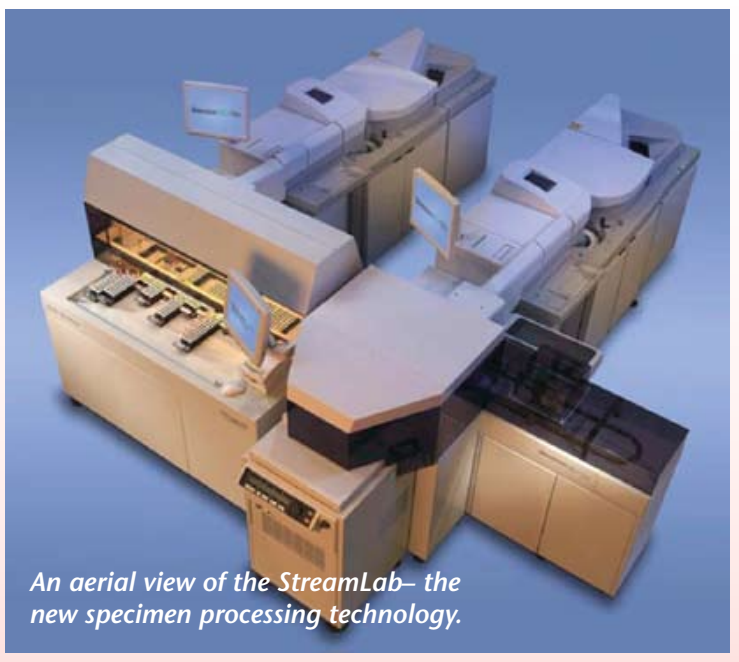
Bozeman Deaconess Synergy Medical Spa—a spa that offers the holistic approach and comfort of a traditional day spa with the conventional and complementary medical modalities you expect including skin care, massage and acupuncture—all under the supervision of licensed healthcare professionals.

A gift certificate to Synergy Medical Spa makes a great holiday gift. To find out more or to make an appointment, call 556-5140

STATE-OF-THE-ART LABORATORY OPENS

Bozeman Deaconess Laboratory Services recently opened a new, state-of-the-art lab outfitted with cutting edge specimen-processing technology.

ACCORDING TO JERRY CRISP, Laboratory Services manager, the new lab was built around the principle of patient safety, quality and cost-effectiveness. "For example, we're now bar coding specimens throughout the entire lab process to ensure consistent patient identification," he said. Crisp says lab data entered into wireless devices carried by phlebotomists communicates directly with the hospital's laboratory information system. The system maintains specimen collection information and alerts the phlebotomist when a stat test is ordered. The phlebotomists are equipped with pagers so that calls for urgent specimen collection can be sent directly to them. And, once the new electronic health records system—a collaboration of area physicians and Bozeman Deaconess—launches, the Lab will have integrated software. Physicians will be able to order lab tests and receive immediate results through their own computer systems.



An aerial view of the StreamLab– the new specimen processing technology.

Mike Long, Laboratory Services outreach coordinator, says new technology and automated systems in the Core Lab are a step above and beyond what hospitals in other towns of comparable size offer. Long says Bozeman Deaconess is the first hospital in Montana with StreamLab, a state-of-the-art automated laboratory specimen handling/processing technology that will significantly reduce the turn-around time in general chemistry. "We also have two new Beckman-Coulter hematology instruments that receive output from the specimen handling system," Long says. "The instruments mirror one another, increasing efficiency and serving as a back-up should one instrument experience down time. They replace our outdated solo automated instrument."

You've read about our new lab, now come see it for yourself! We'd love to show you around. We'll take you on a tour and tell you about the latest technologies we're using.

The Core Lab, where all clinical laboratory testing is done, has moved into Suite 4130 in Highland Park 4 on the Bozeman Deaconess medical campus. The new space features natural lighting, sound insulation and recycled tire flooring. Long says these design features will improve employee morale and productivity. Pathology—where Pap smears and tissue are examined—and the phlebotomy staff will remain in the original Lab location for the time being. Patients will continue to have blood drawn in one of three locations: Outpatient Services (across from the Bozeman Deaconess Gift Shop), the original Lab location or at Bozeman Deaconess Outpatient Services at No. 19th.

The combination of new lab equipment and use of electronic medical records is expected to significantly improve the flow of lab orders and results. The automated system allows the staff to easily handle periods of high workload and the capacity to handle future growth.

Bozeman Deaconess Laboratory Services is a licensed and accredited laboratory that provides accurate, timely, cost-effective and integrated laboratory testing. The full service lab offers a broad range of diagnostic services—anatomic pathology, microbiology, clinical chemistry, hematology and coagulation, transfusion and drug and alcohol testing—using cutting edge methodologies and technology.

In addition to these exciting advances, Laboratory Services is pleased to announce it is now partnering with the Montana State University Clinical Lab Program, to offer clinical rotations for students seeking degrees in clinical laboratory sciences.

For more information about Laboratory Services call Crisp at 585-1006.

Digital X-Ray Imaging Offers A Look Into The Future

Digital technology has revolutionized the way we live. It has allowed us to gather, store, analyze, and utilize increasingly more information at an ever-growing pace. X-ray imaging is no exception—its benefits are clear. No longer dependent on x-ray film, today's digital imaging system makes it possible for radiologists and referring physicians at Bozeman Deaconess and Advanced Medical Imaging to view diagnostic quality MRI, CAT SCAN, nuclear medicine, PET, x-ray, ultrasound and vascular procedures on a state-of-the-art monitor. With the new technology radiologists and clinicians are able to instantaneously view digital images from computers at their offices, their homes and while traveling. Additionally, it enables practitioners at various physical locations to access the same information simultaneously.

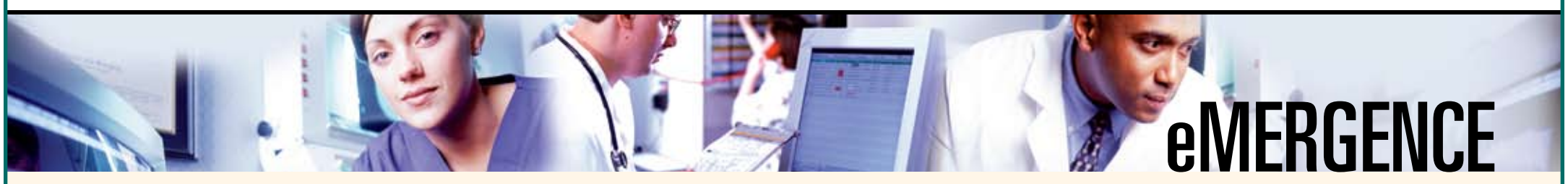
The system, Amicas® PACS (Picture, Archiving, Communication System) allows images to be instantly transmitted via secure web-based software, saving time between diagnosis and treatment. Referring physicians can instantly access images from the specified modalities upon completion of an exam. The functionality of the PACS system gives radiologists and clinicians the ability to review and manipulate imaging through use of a variety of tools and software processing. They can magnify areas of interest, manipulate the grayscales of images (windowing and leveling), and create 3-D imaging. Radiologists can also choose to view bone or tissue using window levels to change contrast. Radiologists can, with PACS, reconstruct, highlight and enhance details to better assess disease progression.

"We're able to read images directly off state-of-the-art computer screens. And, referring doctors now have rapid access to images throughout the hospital and in their offices," Jay Jutzy, MD, of Intercity Radiology/Advanced Medical Imaging said. "This helps patients receive faster, more efficient care." Jutzy says electronic transfer of images and medical reports is fully compliant with patient privacy regulations.

Bozeman Deaconess selected a web-based system because of its rural nature, says Kelly Syvertson, PACS administrator. "The decision to go with non-propriety software enables us to be more creative with our approach, not only within the walls of Bozeman Deaconess but also links with other health care practices and providers." Clinicians at Bozeman Deaconess can route images through a secure broadband connection to other hospitals in Montana and elsewhere. For example, local doctors may consult with doctors at a Level II trauma center and, if needed, the decision to fly a patient out by helicopter is made fast. Consequently, if a patient requires neurosurgery, no time is wasted.

Syvertson and Don Majerus, ARRT, RDMS, Radiology department manager, consider the acquisition of PACS a great addition to Bozeman Deaconess' place in the digital world. PACS will interface with new electronic health records and already is integrated with cutting edge voice dictation and other medical information technology systems.

Picture Archiving and Communication Systems are the way of the future for medical imaging departments and the medical enterprise as a whole. By serving as secure databases for medical images and allowing medical information to be stored, recalled, displayed, manipulated and printed digitally, the benefits are many. It means an increase in the efficiency of imaging departments and the facility by simplifying workflow, enhancing productivity and making information available to multiple users simultaneously. But the greatest benefit is seen in improved patient care, where PACS systems may result in shorter hospital stays, decreased waiting times and faster diagnoses. At Bozeman Deaconess, technology offers a look into the future of healthcare and we hope you'll like what you see.



ELECTRONIC HEALTH RECORDS SET TO REVOLUTIONIZE GALLATIN VALLEY HEALTH CARE

THE GALLATIN VALLEY HEALTH CARE COMMUNITY Electronic Health Record (EHR) initiative, dubbed "eMergence," is poised to revolutionize area healthcare delivery by enhancing quality, safety and efficiency. eMergence is the product of a two-year collaborative effort involving Bozeman Deaconess Hospital and nearly 100 health care providers in the Gallatin Valley. Bozeman Deaconess Health Services donated a significant portion of capital costs for the electronic health record infrastructure and will also manage an independent information technology department to support the Gallatin Valley EHR project.

The technology of the electronic health record software allows health care information to be securely and accurately shared in real time. The traditional paper patient record will be replaced with a tightly integrated and secure electronic database. Patients and physicians alike will rapidly begin to realize improvements in the quality and efficiency of care.

Some of the highlights include:

- The secure electronic transfer of information will ensure that patients' information is where it needs to be when it needs to be there.
- The emergency room physicians will have immediate access to critical patient information to assist them in delivering emergency care.
- Prescriptions will be electronically sent to pharmacies, improving efficiency and eliminating handwriting errors.
- With a shared electronic health record, patients will no longer have to re-register at multiple locations in the local health care system or repeat the same clinical information to multiple providers.

In short, the eMergence electronic health record initiative is here and moving rapidly forward. The first area clinic has just started using the system, and many more are in the queue. Look for more information on this exciting initiative in the next issue of Health News.

Dr. Joseph Sofianek, Medical Associates PC, received Prospera Network's Innovation Award for his work on the Gallatin Valleyelectronic health records project dubbed "eMergence."

"There is no single more important factor in improving patient safety in health care than the use of information technology."

—Institute of Medicine study on patient safety

MELISSA CASPER, MD, OB/GYN, BOZEMAN DEACONESS BIG SKY WOMEN'S SPECIALISTS

Dr. Melissa Casper

Q: WHAT IS POLYCYSTIC OVARY SYNDROME (PCOS)?

A: PCOS is a chronic condition that causes irregular menstrual periods and elevated levels of androgens (male hormones) in women. Elevated androgen levels can sometimes cause excessive facial hair growth, acne, and/or male-pattern hair thinning. Although PCOS is not completely reversible, there are a number of treatments that can minimize bothersome symptoms.

The cause of PCOS is not completely understood, but it is believed that abnormal levels of the pituitary hormone LH and high levels of male hormones (androgens) interfere with normal function of the ovaries. These changes in hormone levels cause the symptoms of PCOS, including absent or irregular menstrual periods, abnormal hair growth or loss, acne, weight gain, infertility, type 2 diabetes and sleep apnea.

There is no single test for diagnosing PCOS; the diagnosis is based upon a woman's signs, symptoms and blood tests. If PCOS is confirmed, the blood glucose level and cholesterol levels are usually measured. All women diagnosed with PCOS should be monitored by a health care provider. While the symptoms may seem minor, untreated PCOS can increase a woman's risk of other health problems over time.

Several treatment options exist. Oral contraceptives are the most commonly used treatment for establishing normal menstrual periods in women with PCOS—they are also effective in treating excessive hair growth and acne. Weight loss is one of the simplest and most effective approaches for managing menstrual irregularities, insulin changes and other symptoms. Metformin, a diabetes medication, can also restore normal menstrual periods and treat the insulin abnormalities associated with PCOS. If PCOS is causing infertility, a number of treatment options are available.

TO MAKE AN APPOINTMENT, CONTACT BOZEMAN DEACONESS BIG SKY WOMEN'S SPECIALISTS AT 556-5150.

NEW TECHNOLOGY PLUS TEAM PRECISION IN BOZEMAN DEACONESS ENDOSCOPY DEPARTMENT

RECENT UPGRADES TO DIGITAL IMAGING and new top-of-the-line Olympus® video processors in the Endoscopy department at Bozeman Deaconess and at Rocky Mountain Surgical Center mean Dr. Steven Shaneyfelt of Bozeman Gastroenterology Clinic, PC and his partners, Drs. Timothy Johnson and Brian Landsverk, can better detect and treat disorders and diseases of the digestive system. The team of board certified gastroenterologists operate in the hospital's outpatient setting where the environment is very safe and comfortable. The nurses on staff at Bozeman Deaconess have advanced cardiac life saving certification and the most up-to-date disinfectant process is used. Best of all, patients have immediate access to emergency care if needed.

Stephen Shaneyfelt, MD, Bozeman GI Clinic, reports on new digital imaging and Olympus video processors in the Endoscopy department at Bozeman Deaconess and partner facility, Rocky Mountain Surgical Center.

"Bozeman Gastroenterology Clinic physicians have a very organized, streamlined process with our Endoscopy department," says Joni Oswald, RN, department supervisor. "The Gastroenterology Clinic provides the patient with information on the procedure, preparation, check-in place and time, medications and special instructions before the patient arrives at the hospital." The Endoscopy department is streamlined, as well. Procedure times are closely monitored, so patients, many of whom are anxious, have very little wait time. "It's extremely important that our team of doctors and nurses have a collaborative approach to patient care," Shaneyfelt says. He says the fact that each nurse has a specific role in the process means patients move from admit to discharge very efficiently. This year alone, the Gastroenterology Clinic group has seen 608 male and 643 female patients in the hospital's Endoscopy department.

Preparation is determined by the procedure, physician preference and the patient's underlying medical condition. For example, when a patient is scheduled for a colonoscopy (an examination of large colon and portion of small bowel), they sometimes anticipate a painful, uncomfortable procedure. "Our nurses provide a calm, professional environment and the gastroenterologists are highly trained, skilled and experienced. With moderate sedation medications most patients have no memory of the procedure," Oswald reports. "The hospital [endoscopy] department provides a platform for us to provide therapeutic interventions," Shaneyfelt notes.

In addition to diagnostic procedures, the group performs procedures to control bleeding and others to diagnose and treat certain problems of the biliary or pancreatic ductal systems, paracentesis (drainage of fluid from a body cavity, most commonly the abdomen), biopsy of the liver and small bowel, 24-hour esophageal pH probe monitoring, esophageal motility studies that evaluate the pressure of the esophagus in various stages along its length, and gastric feeding tube placement.

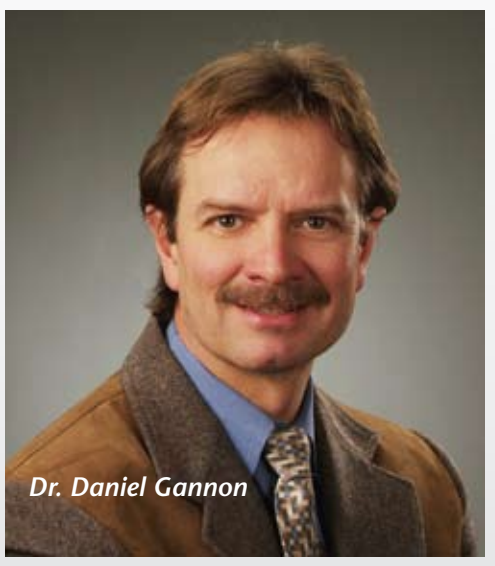
In addition, pill capsule endoscopy is offered. The technology, which sounds like something from a science fiction novel, involves swallowing a pill that has tiny cameras in it. The capsule works by transmitting images wirelessly from a disposable capsule to a data recorder worn by the patient. The images can then be reviewed on a computer screen by the physician. About the size of a large vitamin pill, these tiny imaging systems eliminate the need for costly, invasive procedures used to diagnose and evaluate diseases of the esophagus, small intestine and GI tract.

But what's most important is the hospital's focus on providing the best technology for the benefit of its patients. Says Shaneyfelt, "Because the hospital is committed to offering the most up-to-date technology, we're able to provide services other hospitals our size don't come close to offering."

CUTTING EDGE TOTAL HIP REPLACEMENT SURGICAL TRAINING SITE

In January, Bozeman Deaconess will become one of six medical centers in the country selected for initial use of a new total hip stem, which Bridger Orthopedics & Sports Medicine's Dr. Daniel Gannon helped design!

FELLOWSHIP TRAINED orthopedic surgeon Daniel Gannon, MD, of Bridger Orthopedics & Sports Medicine, was one of six Johnson & Johnson® nationwide design team surgeons to develop a new total hip stem system, the DePuy Tri-Lock, that will soon be available worldwide. Gannon, who is the only surgeon in Montana, Idaho, Wyoming, North Dakota and South Dakota to perform minimally invasive anterior (front) total hip replacement using only one incision, says Johnson & Johnson has selected Bozeman Deaconess Hospital for initial use of the Tri-Lock hip stem system.



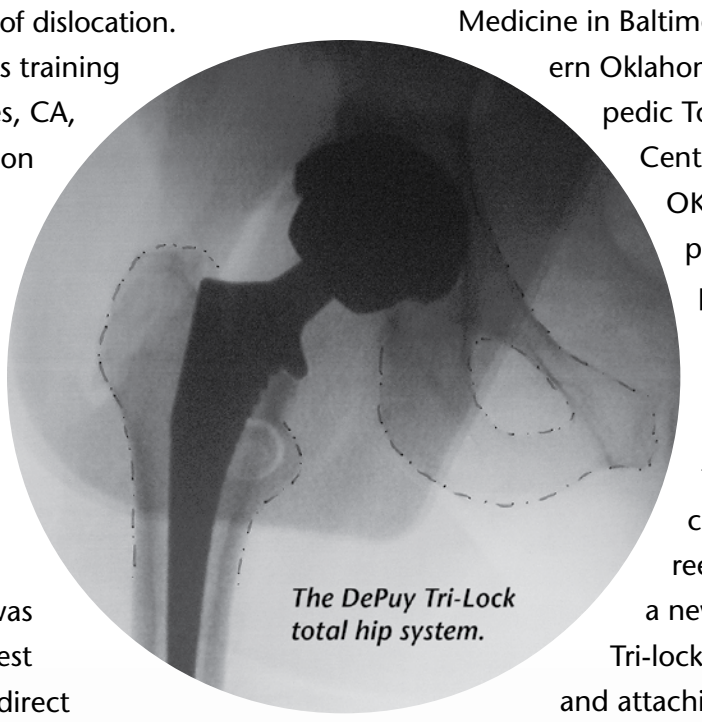
Dr. Daniel Gannon

In addition to launching the new slimmer, shorter and textured hip stem here in January, Bozeman Deaconess has become a surgical learning center. Gannon, who already teaches other out-of-state surgeons in hip replacement surgery, will also begin training other surgeons to use the newer implant. The new Tri-Lock hip stem has unique features that are specifically helpful for installation of total hip replacement on a standard operating table. The surgical procedure Gannon specializes in translates to faster recovery from surgery, shorter hospitalization and quicker return to daily living activities.

In the first 15 years of his 19 years in total knee and hip joint replacement practice, Gannon performed traditional posterior total hip replacements, a procedure that involved cutting through muscle. "The downside of posterior hip replacement," says Gannon, "was that muscles had to be cut and repaired and that slowed recovery time." Four years ago Gannon began using a smaller posterior approach and subsequently trained and was certified in a more minimally invasive two-incision hip replacement procedure. That surgery involved an anterior incision for the acetabulum or cup component of hip replacement; the stem component was inserted through a posterior incision.

Since 2005 Gannon began using a one incision anterior technique that utilizes an intraoperative x-ray called "fluoroscopy" to more accurately place hip implants. Because patients lie on their backs (rather than on their sides as in the traditional posterior surgery) anesthesia is safer. Gannon says anterior hip replacement also reduces the risk of damage to the nerve supply to the muscles. The use of flouroscope offers the opportunity to obtain more accurate restoration of leg length and hip mechanics. Anterior approach hip replacement optimizes the patient's natural gait while reducing risk of dislocation.

During his training in Los Angeles, CA, the one incision anterior hip replacement surgery was performed on a special operating table (referred to as "OSI") that was thought to best facilitate the direct anterior approach. Bozeman Deaconess purchased the same OSI table for one of its operating rooms so that Gannon could perform a total of 80 total hip replacements. Gannon then determined he could replicate results using a standard operating table. "The surgeon has a better feel for soft tissue tightness when using a standard operating table," he reports and not all hospitals can afford the OSI. He's since performed another 120 anterior total hip replacements on a standard operating table.



The DePuy Tri-Lock total hip system.

Meantime, Johnson & Johnson invited Gannon to participate in a six-member design team to develop a slimmer stem component that will make the anterior one incision procedure on a standard operating table easier for surgeons to perform. [*The new stem also can accommodate posterior placement in hospitals where surgeons are not yet trained in anterior surgery.*] The design team in addition to Gannon inluded orthopedic surgeons from Strong Memorial Hospital at the University of Rochester; the Boston University School of Medicine; the University of Maryland School of Medicine in Baltimore; Eastern Oklahoma Orthopedic Total Joint Center in Tulsa, OK; and a private practice in Phoenix, AZ.

The team successfully reengineered a new DePuy Tri-lock stem and attaching instruments. The new titanium stem is shorter, smaller and curved at the tip to better facilitate the anterior approach on a standard operating table. A unique feature is its texture—a courser surface that should facilitate better initial stability and long-term bone growth.

Gannon, a graduate of the Medical College of Wisconsin in Milwaukee, completed a surgical internship at Blodgett Memorial Medical Center in Grand Rapids, MI, and residency at the Grand Rapids Orthopedic Surgery Residency. He was fellowship trained in total joint replacement of the hip and knee at Ohio State University before going into practice in Bozeman in 1989. He is board certified in orthopedic surgery and anticipates recruiting an additional hip and knee replacement partner so he can pursue teaching and continuing to develop the Bozeman Deaconess anterior hip replacement surgery training site program. To date, Gannon has trained surgeons from Phoenix, Indianapolis, Los Angeles, Philadelphia, Tucson and Denver.

The Staff of Bozeman Deaconess Urological Associates.

Bozeman Deaconess Health Group welcomes Urological Associates

UROLOGIST J. BRUCE ROBERTSON, MD, AND THE STAFF OF UROLOGICAL ASSOCIATES, have joined the Bozeman Deaconess Health Group.

Dr. Robertson specializes in the diagnosis and treatment of problems of the urinary system of males and females of all ages. The practice offers a full array of urology services as well as subspecialized expertise in all areas of urologic diseases and problems. Robertson received his education from University of Houston and is a graduate of U.T. Southwestern Medical School. He completed his internship and residency at Vanderbilt University Hospital.

Bozeman Deaconess Urological Associates continues to be located on the Bozeman Deaconess campus. Make appointments with Dr. Robertson by calling 586-2516.

Neurologist Vernon H. Kirk, Jr., MD joins Bozeman Deaconess Health Group

NEUROLOGIST VERNON H. KIRK, JR., MD, has joined the Bozeman Deaconess Health Group and medical staff at Bozeman Deaconess Hospital.

Dr. Vernon Kirk

Dr. Kirk is a graduate of the University of Utah School of Medicine, where he completed residency in neurology. He trained at the Mayo Clinic in clinical neurophysiology and practiced in Ohio before moving to Bozeman. Dr. Kirk is board certified in neurology, neurophysiology, electrodiagnostic medicine and sleep medicine. He performs neurological testing—EMG, EEG and sleep studies. Additionally, he treats patients with a wide variety of neurological disorders including stroke, headache, Parkinson's disease, epilepsy and seizures, peripheral neuropathy, multiple sclerosis, excessive daytime sleepiness, obstructive sleep apnea and insomnia.

Bozeman Deaconess Neurology is located on the fifth floor of Highland Park 4 (address is 905 Highland Blvd, Suite 4500). Dr. Kirk can be reached at 522-2410.

Bozeman Deaconess Hospital Quality Data Now Available Online

HEALTHCARE CONSUMERS now have access to up-to-date quality data on the Bozeman Deaconess website. Consumers, as well as employees, can view information on the following quality measures: heart attack, heart failure, pneumonia and surgical care improvement/surgical infection prevention. Each measure provides a description of why the information is important, the national average, state average, top hospitals' average and how Bozeman Deaconess rates. Rollover the graphs for additional information. This data is updated on a quarterly basis.

The information can be found at www.bozemandeaconess.org/quality.