The future of health care is now
Medical and nursing students to learn and train together in the new William N. Pennington Health Sciences Building

By Anne McMillin, APR. Photos by Jeff Ross
The university’s Division of Health Sciences has taken a bold step toward the future of team-delivered health care by initiating interdisciplinary medical and nursing education, a concept whose time has come, but is rarely carried out in practice. The fruition of the goal to educate nurses and doctors together was realized in June with the opening of the William N. Pennington Health Sciences Building on the north end of campus.

Designed to bring nursing and medical students together, the 59,000-square-foot Pennington Health Sciences Building allows a new age of health care education to begin.

Studies have shown that delivering health care through teams focused on the individual patient improves the quality of care while reducing overall costs. To that end, the Orvis School of Nursing and the University of Nevada School of Medicine are seeking to create shared educational opportunities in the new facility.

“The proximity of medical and nursing faculty and students will enhance our interprofessional communication as these students prepare to work together in clinical practice,” says Patsy Ruchala, director of the Orvis School of Nursing. “We will better appreciate each other’s respective disciplines as we interact more.”

Looking at the larger picture, Ruchala also believes the new building demonstrates the university’s commitment to fully developing the Division of Health Sciences by bringing together its multiple disciplines under one umbrella.

“The interprofessional interactions and projects within the Pennington Health Sciences Building will be the start of developing stronger coalitions within the division,” she says.

By teaching nursing and medical students in areas that overlap, students will learn basic skills together, which both need to practice for their respective disciplines.

Dr. Cheryl Hug-English, interim dean of the School of Medicine, agrees: “This building is a wonderful, collaborative educational opportunity for health sciences, not only for nursing and medicine, but eventually for the allied health care fields.”

“We now have a high-tech health care training center to prepare students for the high-tech work setting of today’s health care professions.”

Patsy Ruchala, Director of the Orvis School of Nursing

She adds that since more and more health care is being delivered by teams, this facility will enhance teaching the teamwork ethic to both nurses and physicians early in their careers.

“This building is a huge leap forward and reflects how we in health care education are looking for ways to replicate team-based models so that our students can interact on a...
daily basis.

Situated on the hill west of Peccole Field, the new building will allow for the expansion of the School of Medicine class from 62 to 100 students, for a total eventual enrollment of 400. Orvis School of Nursing will also be able to double its class size for an eventual enrollment of 200 students.

Nursing faculty offices, large and small group study rooms, lecture halls, a modern anatomy lab, standardized patient rooms, simulation labs for teaching and learning clinical skills, multidisciplinary labs where microbiology and pathology will be taught, and conference rooms are arranged on the building's three levels for maximum interaction between medical and nursing students.

The advanced digital and medical technology in the laboratories will allow student education and training opportunities to jump exponentially, according to Gwen Shonkwiler, interim dean of medical education at the School of Medicine.

"Using the new software, we are able to integrate and compress the audio, visual and data training components into one file to offer playback in a secured environment for an enhanced learning experience," she says. Podcasts of lectures will now be possible in the new facility.

The three simulated-patient rooms will add to the University's inventory of human patient simulators—mannequin-like, incredibly sophisticated, computerized machines that can accurately mimic human physiological responses to medical and pharmacological interventions. A new male, female and child human patient simulator will be wired for sound and video and can provide playback for every patient encounter training session.

Elizabeth King '10 (nursing), a master's candidate in the Orvis School of Nursing, toured the simulation lab and saw a demonstration in June and says, "The sim lab is amazing! I actually wish I could have gone to undergraduate nursing school now instead of back when I did. It's very interactive. Almost like a real-life situation. I think it will prepare nurses and doctors to work together collaboratively—something that we need very much."

Adds Shonkwiler: "We also have 'task trainers'—partial mannequins designed for a specific type of examination—that can simulate heart and respiratory sounds, for example, or the human airway for intubation training, or the female pelvis for obstetric and gynecological procedures."

Better camera placement, more computer ports and operating room-caliber lighting are a few of the design features in the building that
New anatomy lab takes Nevada medical education to the next level

Physiology and cell biology professor Carl Sievert is excited. As the anatomy course director at the School of Medicine, Sievert is anxious to begin teaching medical students in the new, larger anatomy laboratory in the William N. Pennington Health Sciences Building. “I love what I’m doing here at the School of Medicine with its focus on the development and progression of medical students,” he says.

Students learn anatomy by studying and dissecting human cadavers obtained through the anatomical donation program. Cadavers are presented on tables, or stations, with several students gathered around each table observing procedures demonstrated on computer screens before doing the procedure themselves.

The new lab will bring the number of stations to 28 from just 15 previously, and each station can handle four or five students. “The extra capacity allows the medical school to gradually build up to the new class size,” Sievert notes. “Each station has a directional speaker system so students can stand at their own table watching a monitor with the sound directly overhead, flowing over the table without noise migrating to other tables.”

In addition to standard room lighting, each dissecting table has its own high-intensity LED directional lighting system for greater visibility during dissection.

Large computer screens allow for better imaging at each station. Additional computer monitors, some up to 52 inches, and a high-resolution camera system mounted over a central demonstration table at each station will record and project dissection techniques and surgical procedures.

Another new technology in the anatomy lab is the virtual human dissector computer program, which offers rotational 3-D imaging of the human body in layers at each station.

The cadaver-handling system in the Pennington Health Sciences Building is also improved and allows for on-site embalming by a mortician with skill in anatomical dissection embalming techniques for long-term preservation of cadavers. This capability allows the School of Medicine to provide opportunities for community physicians and medical supply company representatives to train in new surgical procedures, a popular trend at medical schools across the country, according to Sievert.

The new anatomy lab is so state-of-the-art that second-year medical students who have toured the lab have joked about repeating the first-year anatomy course to take advantage of the improved facilities, Sievert says. “We have a supplemental instruction program in which second-year students help first-year students with exam preparation. This building has spiked interest in that program because second-year students, who have already completed the anatomy course in their first year, want to come back and learn at this new facility.”

Second-year students will also benefit from the new facility by refreshing their anatomy knowledge before heading to their third-year clerkships. And fourth-year students with an interest in surgery subspecialties can use the new anatomy lab to improve their skills before graduating and heading off to their residencies.

Space has also been set aside in the lab for a museum room where donated anatomical material will be on permanent display.

—Anne McMillin, APR
represent improvements over existing facilities. Ruchala agrees that the new technology will greatly enhance the learning opportunities for students: “We now have a high-tech health care training center to prepare students for the high-tech work setting of today’s health care professions.”

She notes that the human patient simulators that nursing students have been using at Orvis’ Redfield campus for the past five or six years are quite good, but those in new building are the latest models.

Students will also take advantage of “standardized patient education” — actors portraying patients with a variety of symptoms or distressed family members—in the new facility in “patient encounter” rooms, which will enhance their interactions with real patients during clinical rotations.

Camron Wipfli ’10 (biology), a second-year medical student who toured the building, says: “The patient encounter rooms are absolutely incredible. It’s like you’re walking into an actual doctor’s office. These are true testing facilities.”

Wipfli notes that the instrumentation in the new rooms is far better than what the school had last year. “The ophthalmoscopes [instruments for viewing the interior of eye] and otoscopes [instruments for viewing inside the ear] are the highest technology there is. Prior, we were just using old-school devices, and we had a very difficult time focusing. The reality is that medicine is constantly modernizing, so training facilities have to keep up. All in all, the new building is making for a much better educational experience for us students and we are really excited about it.”

Says Shonkwiler: “The Pennington Health Sciences Building provides opportunities to create realistic education activities as we work toward building team structures in the health care environment.”

Instead of only one discipline working with patient simulators, teams of nursing and medical students will learn, for example, the

Orvis School of Nursing assistant professor Michele Pelter ’93 (nursing) teaches nursing students in the new skills lab, which is designed to mirror a patient care unit and features birthing beds, infant warmers and an assortment of hospital and clinical beds outfitted with cameras to optimize skills technique refinement.
complicated teamwork necessary to save the life of a person experiencing cardiac arrest, known as “Code Blue” or “crashing.”

This classic situation—when the heart essentially stops beating—is a medical emergency, but isn’t necessarily fatal if the patient is resuscitated immediately. Resuscitation requires a complex choreography of difficult procedures, which can include administering drugs, inserting a breathing tube and intravenous catheters, applying a defibrillator, as well as other measures. Each person on the “crash team” must work quickly and with precision, like a band playing music. In real-life, cardiac arrest is random, and therefore students may or may not have the opportunity to learn how to be part of a crash team. But with human patient simulators and actors, nursing and medical students can practice playing their parts well in advance of a real emergency.

“We are creating relationships between future practitioners in the two fields, while these future health care professionals are still students,” Shonkwiler says. “The goal is to increase communication between medical professionals and provide better patient outcomes.”

Nursing and medical students will all begin classes in the new facility in the fall semester.

The Pennington Health Sciences Building, which adheres to LEED (Leadership in Energy and Environmental Design) equivalent standards, makes optimal use of its site with an offset floor plan of two wings, creating exterior courtyards and a free flow between interior and exterior spaces. The main entrance is on the north side, facing McCarran Boulevard, with direct access to parking and companion buildings. The building design used the site slope for a discreet lower-level receiving area.

Funding for the Pennington Health Sciences Building included $3 million for planning allocated by the 2007 Nevada State Legislature, $31 million in construction bonding approved by the 2009 Nevada legislature’s capital improvement project budget, as well as a naming gift from the William N. Pennington Foundation. Other major benefactors include the Nell J. Redfield Foundation, Thelma B. and Thomas P. Hart Foundation, and Renown Health.

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