

The “structure” of the medical school of the future

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With the advent of dramatic changes in how medicine is taught—from active learning to interprofessional education—medical schools are now rethinking the design of their buildings and classrooms as well. Learn how the University of North Dakota (UND) approached building the medical school of the future for its new School of Medicine & Health Sciences (SMHS), completed this summer.

UND SMHS started its patient-centered learning curriculum nearly 20 years ago. The school has had a required course in interprofessional education (IPE) since 2006, and in 2012 it added team-based learning to the curriculum.

“As a school of health sciences, we have nine programs, and we are by our nature interprofessional,” said Gwen Halaas, MD, MBA, senior associate dean for education at UND SMHS, at a recent meeting of the AMA’s Accelerating Change in Medical Education Consortium in Chicago. “We believe that is the way to address some of the efficiency and quality issues in health care.”

So faculty and administrators at UND SMHS have been working to create more interprofessional learning experiences.

“Medical schools have had learning communities for a long time, but our interprofessional learning communities are designed to change the culture to support IPE and collaboration,” Halaas said. “And I think by having students learn and socialize together throughout their entire programs, they will be much more apt to ... collaborate with and respect each other and communicate easily.”

It had to be healthy

The decision to build the new SMHS came out of a partnership with the state legislature. In conversations about class sizes, it became clear that UND wouldn’t be able to accommodate the

desired increase, so the state did a one-year study with the architects and came up with options ranging from renovation of the existing hospital to constructing an all-new building.

“They recognized that investing a lot of money in a 60-year hospital wouldn’t return the investment as well as building a brand-new building good for another hundred years,” Halaas said.

But this would be the first time the school would have all of its students in one building. About 1,200 students are enrolled in SMHS—300 of those are medical students—and around 800 of them are on campus at any one time. These numbers necessitated having shared spaces instead of owned ones.

“In terms of the design of the building, we had a lot of stakeholders involved in it,” Halaas said. “We talked about what was important: It had to be healthy. It had to have daylight. It had to have a walking path. It had to be able to serve healthy food.”

Administrators of the school actively engaged about 200 people on a regular basis in the design process and surveyed around 850 stakeholders, including alumni. They engaged architects with experience in medical education and made visits to other new medical and health sciences schools. They even piloted the furniture that was selected.

“We wanted everything to be visible to the public and to all of us,” Halaas said.

Look inside

That transparency is now evident in every corner of the building. Its glass exterior walls allow plenty of daylight into the building—not a small consideration in North Dakota—and many of its classrooms feature floor-to-ceiling glass walls.

“You can see everything we do,” Halaas said. “You can see [into] the learning communities and conference rooms all up and down four stories.”

But even more than visibility, the new school emphasizes collaboration and enhanced technology.

There are eight learning communities, and all students are assigned randomly into these communities for the length of their programs. The building features 12 discussion-focused classrooms, each with white-board capability, as well as six scale-up team-based classrooms, which feature small-group tables with stowable monitors. There are also larger “medium–tech” rooms.

And it has only one lecture hall, called the Learning Hall. But even here students can engage in enhanced small-group learning. The Learning Hall seats 200 and features two tables on each of three tiers, along with mobile chairs, so students in the front of each tier can have active conversations with

people behind them.

There are small group study spaces and quiet study spaces, along with a shared recreational eating space.

The new SMHS also features a virtual hospital and clinic.

“We’ve had technology vendors and mannequin vendors in and they have all asked, ‘Can we showcase your space?’ because while it’s not the largest, it is the most sophisticated and the most useful,” Halaas said. “It has a full operating room with a full operating lighting system, six hospital rooms, one task training room, fourteen exam rooms. It really looks like a clinic and a hospital.”

Research too is interdisciplinary—all of the school’s labs are now open labs. And even the librarians are embedded.

Medical students were the first at UND SMHS to move into the four-story, 325,000-square-foot, \$124-million building in Grand Forks, on August 1.

Piloting the medical technology of the future

UND SMHS is one of 32 member medical schools in the AMA’s Accelerating Change in Medical Education Consortium. As part of its grant, the school is piloting using robots to teach medical students telemedicine skills.

“We’re a rural community, and we want to encourage more telemedicine,” Halaas said. “We use it in our simulation center when we’re training students in certain scenarios to be able to call upon the robot as the consulting cardiologist, or if it’s a patient in the home or an institutional setting, to connect with their family physician on the other end.”

It too is taking collaboration and technology enhanced learning to new levels.

“The students have to learn to work with the robot as a member of the team,” Halaas said, “but also to be on the other side of the robot in terms of communicating at a distance with the patient or family or team.”