
UND SMHS Strategic Plan Individual Unit Report for 2023

GOAL 3 for **EDUCATION AND FACULTY AFFAIRS**

Mission of Education and Faculty Affairs: *Education and Faculty Affairs sustains a vibrant, inclusive and dynamic environment that enables learners and educators to achieve academic and professional excellence.*

Education and Faculty Affairs and its units provide resources, services and support for academic units as each carries out its strategic initiatives in alignment with UND SMHS Strategic Goals and the OneUND Strategic Plan.

Units Reporting to Associate Dean for Education and Faculty Affairs: Education Resources; Library Resources; Information Resources; Simulation Center; Interprofessional Education; Medical Accreditation

LEARNING

One UND Strategic Plan Goal 3: *Deliver more educational opportunity online and on-campus.*

UND SMHS Strategic Plan Goal 3: *The SMHS will identify opportunities to employ state-of-the-art technologies to enhance education. Describe if/how your unit has addressed this goal.*

EDUCATION RESOURCES/MEDICAL EDUCATION

Teaching, Learning and Scholarship (TLAS) has doubled our faculty development offerings year-over-year from 2019 to 2020 (23 workshops) and doubled our outreach to 806 in 2020-2021 (from 427) including a workshop on using Zoom for teaching); the curation of a website of teaching and learning resources of past offerings, articles, and handouts; dozens of consultations with faculty on course design, curriculum design, a department-wide workshop on distance and online design practices; and leadership roles in identifying and proposing the addition of technologies for learning including SimTutor (interactive learning), virtual reality, recommendation for purchase and implementation of a new Learning Management System for the medical curriculum, coauthoring of telehealth curriculum, assisted with generation of more than 20 new interprofessional education objectives (which will spur creation of new learning opportunities) and a resulting points/badging system for same, coauthoring of geriatric telehealth experiences and a game to teach about geriatric care for HRSA grant, and authoring of modalities principles document for medical curriculum redesign that has increased the amount of online and asynchronous learning events; and offering the inaugural year-long Teaching Academy for 10 faculty across all SMHS programs.

- ER has advocated for and is currently designing new curriculum that emphasizes the use of asynchronous educational materials in areas where face-to-face is not required
- ER has led the Interprofessional Telehealth Simulations Using Remotely Operated Biomedical Telepresence Systems (ROBOTS) initiative as part of the American Medical Association's Accelerating Change in Medical Education consortium
- ER is leading the way in SMHS with VR technology with two VR computers with medical curriculum resources on them. ER is also experimenting with stand-alone VR headsets (no computer needed) that cost \$400 and could be deployed across the curriculum once appropriate VR learning resources are identified
- ER successfully advocated for a video production studio that will provide technology for faculty to create media for use in interactive, asynchronous learning, including VR and SimTutor:
 - "Plug-and-play" video production for individual faculty to create, edit, and annotate high-quality video learning on the fly
 - Lecture recording station with lighting and sound equipment, document camera, and tablet for annotation

- Media production station with high-end video and audio software, lighting, and sound
- Innovative software for building animated white-board lectures, comic-based instructional modules, interactive lectures with quizzing, 3D animated lip-synch avatars
- Chroma green screen to allow video backgrounds to be added to video of lecturer (like weather studios use) such as placing the lecturer inside a cell or anatomical structure to demonstrate and teach
- VR camera for building interactive environments that allow students to explore and demonstrate knowledge
- ER is exploring the use of VR technology to measure and promote situational awareness during VR patient encounters by measuring student gaze path and duration and comparing it to expert gaze path and duration. This could be used to create real-time algorithms
- ER is working with Geriatrics on a patient panel game to illustrate the long-term effects of geriatric interventions across a patient panel. This will be used by students and clinicians, thus making it also a means of reducing disease burden under Goal 8.
- ER offered the inaugural year-long Teaching Academy program of faculty development for 10 faculty and will do so again this year with a focus on building interactive online learning. Faculty will be trained in the theory and practice of high-quality interactive active learning using SimTutor, Captivate, and other tools and equipment available in the Recording Studio.

We designed and ran simulations that have resulted in five years of data on students from 5 professions who have participated in telehealth simulations using various forms of telehealth technologies. We have used what we learned to outfit every simulation room with telehealth technology that can be used just-in-time with low technical support and skill levels. We have analyzed data and presented it at multiple conferences. Data collected is being used to modify simulations to account for learning outcomes that have emerged from analysis of the data.

The pandemic has compelled adoption of a number of technologies that facilitate remote learning. In addition, we have implemented self-directed, asynchronous learning for medical students that allows them to view lectures on their own time, in their location of choice and at their own speed. Between accreditation prep, COVID and implementation of the revised curriculum there have been tremendous changes. Most for the better, some need adjustment, however we need more data.

INTERPROFESSIONAL EDUCATION/SIMULATION

IPE is actively engaged in this area with respect to the simulation experience with 3 current and separate IP activities in the state-of-the-art simulation center

- PharmD (NDSU) student and Medical (UND) student opioid scenario
- Nursing (UND) and Medical (UND) student sim experiences
- Remotely Operated Biomedical Telepresence Systems (ROBOTS), a sim experience that introduces telehealth learning across a chronic disease multi-scenario case (Medical, PT, OT, Nursing, Social Work students from UND)

As well, our anchor course for IPE, the Interprofessional Health Care Course (IPHC), was converted from a 5 week in-person class to an online version. This allowed for synchronous and asynchronous learning, and also increased the availability of the course to more students in different professions, some off campus.

It's likely that the telehealth elective will have ongoing intermittent interprofessional components and will rely on high quality technology for clinic service and education. This will be through the Bemidji VA. The VA has high quality telehealth service delivery. Dr. Van Eck and Dr. Johnson, with the AMA, developed a telehealth "playbook" for imminent national distribution. Other IPE/C telehealth learning opportunities are being developed.

OFFICE OF MEDICAL PROGRAM ACCREDITATION AND QUALITY IMPROVEMENT

As stated in last year's report to the FC, the medical education program, at the outset of the current pandemic the medical education program received guidance from the AAMC and the LCME regarding expectations of student learning in the clinical setting. UMEC and administration leaders created plans to deliver the medical curriculum online. The Office of Medical Accreditation became involved in communications with the national organizations to ensure that our modifications met accreditation requirements utilizing online education and state of the art technologies. During the current academic year much of the preclinical curriculum was delivered using remote learning and many adjustments were required using state of the art technologies.

LIBRARY RESOURCES

Librarians are committed to providing high-quality information sources to support all programs at SMHS. This year, Library Resources was able to add several new subscription resources that vastly expand the information available to SMHS students and faculty, residents, and practicing clinicians.

INFORMATION RESOURCES

Information Resources supports academic programs delivering course materials, instructions and assessments to students and faculty by implementing and maintaining appropriate technologies and systems.

2. Describe how your efforts are being assessed.

EDUCATION RESOURCES/MEDICAL EDUCATION

Number of outreach activities, number of resources created and provided, number of meetings and consultations with faculty, purchase of learning technologies, hours of curriculum generated, number of students impacted.

INTERPROFESSIONAL EDUCATION/SIMULATION

Sim has standardized assessments, including for IPE sim experiences.

IPHC uses the standard RIPLS to assess student satisfaction with the course. The online synchronous/asynchronous version scored with nearly identical high satisfaction compared to previous versions of in person.

OFFICE OF MEDICAL PROGRAM ACCREDITATION AND QUALITY IMPROVEMENT

Student feedback utilizing end of course and clerkship evaluations, weekly feedback activities in the preclinical phase, town hall forums, and the Independent Student Analysis (ISA) provide assessments of how satisfied medical students with efforts of the medical education program.

LIBRARY RESOURCES

Usage of library subscriptions is the primary way in which librarians measure the utility of the electronic collection they curate. Resources that are not well-utilized will be carefully considered when annual subscriptions are renewed.

3. Describe how your unit analyzed these data and what assessments were determined.

EDUCATION RESOURCES/MEDICAL EDUCATION

Number of outreach activities, number of resources created and provided, number of meetings and consultations with faculty, purchase of learning technologies, hours of curriculum generated, number of students impacted.

INTERPROFESSIONAL EDUCATION/SIMULATION

Sim experiences score well and will continue, with new opportunities for IP sims going forward. We anticipate that more IP telehealth learning will take place as this is more relevant in clinical practice for

nearly all health science specialties and professions. In addition, opportunities are being explored for collaborations with other health care systems and health sciences schools.

Telehealth needs became more obvious and necessary during the pandemic, it's likely that will continue and we will look for more opportunities to provide high quality telehealth teaching. It's evident that students enjoy and find value in IP sims.

OFFICE OF MEDICAL PROGRAM ACCREDITATION AND QUALITY IMPROVEMENT

Student analysis of their educational experiences during the COVID pandemic are found below. It was found that no matter how good the technology may be, there remain many challenges to remote learning. Of special importance to students is communication and mental wellbeing.

Background: Beginning in early 2020, medical schools across the country faced an upheaval of their usual structure and activities with the onset of the COVID-19 pandemic. Like other institutions, UND SMHS was forced to adapt in order to continue delivering quality education while protecting student's safety and supporting local healthcare needs. At the time of the survey, M4s had experienced clinical interruption/changes since March of 2020, including approximately eight weeks of time in which no students were allowed on clinical sites in accordance with AAMC and LCME recommendations. The M3 class completed the remainder of the preclinical curriculum remotely and was five months into an alternative 4-week rotating core clerkship schedule when the survey was administered. The M2 and M1 classes in the preclinical curriculum had lectures, and educational activities shifted to primarily remote delivery.

Strengths: Aside from the M1 class (21% dissatisfaction), students felt satisfied with the school's response with regard to student safety (> 88%). Students were satisfied with the adequacy of signage to encourage social distancing and the amount of cleaning/sanitizing supplies available. M3s and M4s were also satisfied with the adequacy of PPE during clinical rotations (84% and 91%, respectively). In the M2-M4 classes, the majority of students that experienced a mandatory quarantine for COVID-19 exposure were satisfied with the adaptability of the curriculum.

M3s also report high satisfaction in regard to the adequacy of clinical learning experiences provided by their four-week clinical rotations (76%), which replace the usual eight-week rotation blocks. M2s who were transitioned to remote learning had reassuring high levels of satisfaction with the quality of the alternative clinical activities (80%).

Concerns: Students were overwhelmingly dissatisfied (33% overall) with the communication between administration and students during the COVID-19 pandemic. Students in clinical rotations showed a lack of confidence in regard to being notified if they had taken care of a patient that later tested positive for COVID-19 (26% dissatisfaction). Notably, in the M1 class, 15 of the 49 respondents were dissatisfied with the curriculum's adaptability when they experienced a mandatory quarantine for COVID-19 exposure.

M4s were 23% dissatisfied with the quality of alternative clinical activities, which were virtual activities that were initially offered from March to June. M3s had considerably less dissatisfaction (14% with an additional 21% N/A response rate). Half of the M3s (24 of 48) that had to delay taking the USMLE Step 1 exam due to test site closures felt that there was inadequate time to prepare for the exam during their third-year rotations.

Summary: Most students felt that the school adequately supported student safety during the COVID-19 pandemic. Many students had instances in which they had to quarantine due to exposure or self-isolate with a positive test, and most of these students felt that the alternative activities were appropriate when this occurred. However, the M1 class was dissatisfied with the adaptability of the curriculum when they experienced a quarantine. This class was mainly receiving remote, virtual instruction, however, if a student was feeling ill or had responsibilities to care for other household members, there may not have been enough flexibility in the curriculum to account for these circumstances. There was concern among some students that they would not be adequately notified about exposures to COVID-19 in their clinical settings. The responsibility for notification of exposures to patients or hospital staff that later tested

positive for COVID-19 should be both the responsibility of the hospital systems as well as the school. A significant concern in the midst of the pandemic is inadequate communication from the administration, which is consistent with an expressed dissatisfaction with communication from the administration in other areas of the survey. Ultimately, M3s and M2s were highly satisfied with the school's effort to maintain the quality of their education, while the M1s and M4s showed a more significant percentage of dissatisfaction overall.

LIBRARY RESOURCES

This is a goal that Library Resources plans to formalize in the coming year.

4. Describe how your unit will implement any further changes and what barriers may exist.

EDUCATION RESOURCES/MEDICAL EDUCATION

We will continue to work with faculty and programs to provide training and assist with the creation of asynchronous learning events using SimTutor and 360-degree interactive Virtual Reality modules and the Recording Studio as it is configured now for lecture recording and for additional functionality as it is installed beginning December 2022.

We also piloted a Teaching Academy in 2021 to provide training on curriculum design with a special emphasis on flexible hybrid online learning technologies and techniques, which was also the focus of all of our faculty development across the school. The number of faculty who need this help and the number of courses and modules that can be created is limited significantly by staffing in the unit. We therefore requested a faculty position for Director of Curriculum Design and Evaluation position to provide additional skillsets and capacity needed for increased curriculum evaluation needs so that our current instructional designer can continue to support these levels of outreach and faculty development. We have identified a candidate through interviews and are in the process of finalizing the hire.

INTERPROFESSIONAL EDUCATION/SIMULATION

Sim experiences are often re-evaluated for a possible IP component, it's certain more of those will be built, as well as increased telehealth teaching and learning.

Barriers include technology available for more telehealth teaching that is competency based. The Director of Interprofessional Education served on an American Medical Association subcommittee for the development of telehealth competencies for students and residents. Other barriers include developing consistent IP telehealth experiences across multiple health care systems, along with experienced trainers.

We anticipate building more activities in telehealth as this has quickly become a routine part of many clinical practices where our clerkships and electives take place, particularly during the COVID-19 pandemic.

OFFICE OF MEDICAL PROGRAM ACCREDITATION AND QUALITY IMPROVEMENT

Following the medical student's analysis of their survey data, the ISA student leadership has proposed a number of action items intended to improve areas of identified student dissatisfaction related to problems of remote learning (including wellbeing and communications). As a result of these proposals, medical students will remain engaged in ongoing student led efforts (referred to as the ISA 2) intended to bring about changes where possible.

LIBRARY RESOURCES

Library Resources' has established the goal of communicating directly with each academic department to review current and improved information literacy integration. Virtual teaching and remote work have been challenges in conducting this work. Library Resources is staffed with embedded librarians.

PROVIDE A RATING OF YOUR PROGRESS ON THIS GOAL: ● On Track; ● Delayed; ● Behind

● Education and Faculty Affairs units are on track with progress on Goal 3