



**Oxford
Medical
Simulation**

Case Study

Interprofessional Simulation with
Nova Southeastern University

NSU Florida

OVERVIEW

Simulation is about creating a safe experiential learning environment that helps students learn faster, learn deeper, and hold on to knowledge longer. For institutions like Nova Southeastern University, that means creating frequent opportunities for simulation and offering students the chance to engage with different departments and various healthcare specialties to overcome traditional learning barriers. It also means arranging simulation for multiple campuses with unique logistical and simulation fidelity challenges.

Nova Southeastern University provides students with innovations in teaching, research, service, and learning. NSU's Health Professions Division (HPD) is playing a pivotal role in leading the university to new levels of excellence. The division comprises seven distinctive colleges—allopathic medicine, dental medicine, health care sciences, nursing, osteopathic medicine, pharmacy, and optometry—that offer more than 60 degree and certificate programs.



“ In a perfect world, we would have Oxford Medical Simulation available, in VR headsets, to every participant—but that wasn’t possible; we had to get a little creative. ”

THE PROBLEM

One of the significant challenges facing modern healthcare is delivering effective patient management across various healthcare professions. Poor interprofessional management frequently leads to adverse outcomes for patients, which is why interprofessional education (IPE) is so necessary. Interprofessional education often integrates simulation-based experiences to improve communication, team-based decision-making, and the execution of cross-disciplinary care plans.

Melissa Morris, MSN, RN, CPN, CHSE, Director of Simulation and Interactive Technology, and Dr Elizabeth Swann, PhD, ATC, Director of Interprofessional Integration, created an experiential Interprofessional Day bringing together over 2,000 students, faculty and staff. Their vision evolved into the largest IPE day in the university’s history, connecting students from over sixteen disciplines scattered across eight cities and two countries. Despite limited resources and COVID restrictions, the team leveraged distance and experiential learning to create a powerful IPE day.



THE SOLUTION

NSU knew the objectives and precisely what they wanted to create—an interprofessional scenario that brought students into a collaborative space with defined learning objectives to assess their teamwork, communication, and cooperation across varying roles and responsibilities.

Working with OMS Educational Specialists and Support, the team designed a solution to bring their IPE vision into reality. The unique multiplayer capabilities of OMS enabled NSU to bring three students and one faculty from multiple campuses across multiple cities, into a single virtual patient room, recording their interactions as they managed a virtual patient. The chosen students, one pharmacist, one medical doctor, and one physician assistant used the single-player version of OMS to familiarize themselves with the controls, actions, and virtual environment. The participants were then brought together virtually, in the multiplayer IPE simulation scenario.

Melissa explained a little about how the recording developed, “We went back and forth a lot on the nature of the simulation—should it be scripted, should it be live, raw? It’s an ongoing debate in simulation, when should the simulation be prepared, when should it be natural, and it’s a continuum. But, I felt strongly that the scenario should be script-free, a genuine simulation experience. And in the end, that was the pathway we chose.”

Learning Outcomes

- Understand the roles and contributions of the professions they will be working with in the future
- Identify the qualities of an effective team, including techniques to facilitate teamwork and how to handle team conflicts
- Gain needed experience in interprofessional teamwork and collaboration



A little anxiety makes you work better, but too much pressure shuts you down. OMS and NSU created a scenario with this in mind; getting students comfortable was purposeful, as was avoiding a script and letting them have that little bit of anxiety in the IPE simulation. Students were pre-briefed, just as they would be with in-situ simulation, and given a simulation overview. They then entered the virtual simulation, where together they had to treat George, a 28-year-old male with a history of Type 1 Diabetes, presenting with nausea, vomiting, lethargy, and abdominal tenderness. Clinical findings show tachycardia, tachypnea, and borderline hypotension. Facilitators recorded the interaction of the students, replaying and debriefing the scenario on IPE day.

IPE by the Numbers

- 2 Countries
- 8 Cities
- 16 Specialties
- 62 Faculty/Facilitators
- 33 Debriefing Groups
- 2,000+ IPE Participants

Over 2,000 students took part in the 4-hour IPE day. In groups of 33 (plus one or two facilitators for each group), students were pre-briefed on the OMS scenario and then watched the pre-recorded simulation, after which they divided into pre-assigned breakout rooms. Within each breakout, they worked together to discuss the case, devise a plan of care, and complete a questionnaire associated with the simulation. The teams then rejoined for a deeper debriefing discussion.

NSU provided facilitators with the recorded simulation and debriefing outline. This allowed each group to customize the discussion and tailor the debriefing to account for students across the IPE spectrum.

Research shows that observing a simulation session and subsequently debriefing carries many of the same benefits as participating directly.¹ Here, debriefing an observed experience played a vital role in the learners' engagement and outcomes.

Through using Oxford Medical Simulation's immersive virtual reality platform, NSU was able to share the experiences of just three students to successfully teach 2,000 more.



1. Lai A, Haligua A, Bould MD, et al. Learning crisis resource management: Practicing versus an observational role in simulation training - a randomized controlled trial. *Anaesthesia Critical Care & Pain Medicine* 2016;35:275-281.

THE OUTCOMES

Without a doubt, creating an engaging IPE day provided great results for students. Additional outcomes included improved interprofessional communication with students and faculty and greater alignment of the roles and responsibilities of professionals to the university's learning outcomes.

In the recorded simulation, students made mistakes. One of the medications given was incorrect. Many of the facilitators and faculty focused on the error in medication. However, the more pressing activity for the IPE team was why didn't anyone else in the simulated scenario speak up? IPE participants immediately noted the importance of communication.

Making communication second nature between specialties is vital, which means there will be more IPE for the students at NSU.

Melissa, whose passion for VR is contagious, has a lofty goal when asked how the team would improve. "Everyone in headsets, participating in OMS IPE scenarios, would be ideal". But barring that, both Elizabeth and Melissa see a day with more IPE: more recorded scenarios, focused facilitator training, and the utilization of ever-improving, aligned IPE competencies.

The team also recognizes the potential IPE has to bring even more disciplines together. "We want more students involved, from medical sonography students to nutrition students. For example, if you're reviewing a diabetes simulation, how can a nutritionist be a part of that conversation? With IPE, we can better set up students for professional success." The IPE event showcased why interprofessional education is vital to create confident providers willing to speak up, and debriefing is the key to helping students develop this essential skill.

Simulation is active learning. In future, the NSU team plans to offer more scripted and unscripted scenarios that provide rich, experiential learning. This will allow facilitators to engage students in interprofessional discussions and develop their communication skills, which ultimately aids more effective collaboration and improved patient outcomes.

“**What comes out of an IPE day event is an incredible amount of learning for everybody involved, because they get to see mistakes.**”





KEY LEARNINGS

Increased support and preparation for facilitators

Simulation can highlight where your limitations are—for effective simulation, change how you prepare facilitators. Provide facilitators with the toolkit to have debrief conversations that address student vulnerability and avoid completion-focused facilitation.

Simulation is an action verb

The effort of bringing students together and measuring success is just one piece of simulation's capabilities. OMS provides data and analytics that allow institutions to view their learner's behaviors in light of competency frameworks like IPEC, NCLEX, ACGME, etc.

Align professional responsibilities

Connecting the roles and responsibilities of learners with real-world job responsibilities is critical. Ensure instructors, learners and facilitators know the primary responsibilities demanded by the roles portrayed. Without precise alignment between education and job

responsibilities, learners will not feel prepared to confidently and competently enter professional positions.

Recording the session was an unexpected win

Recording made complex location dynamics and logistics secondary to development and learning. Recording the session was minimally disruptive. The recorded session also provided a uniform scenario that showed the same communication and errors, providing consistent fidelity in simulation. Virtual simulation also offered cost savings for the required distribution across multiple campuses.

Creating institutional champions for simulation


There is always a need for more simulation. IPE helped expose more faculty to simulation, which created more champions. NSU faculty saw the value of getting people to practice and participate in clinical experiences, and they continue to realize that value more and more.




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