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Ways Simulation Can Accelerate Your Learning Efforts

**How Training, Teamwork and Simulation
Can Accelerate Student Learning**

Medicine traditionally relies on a “see one, do one” approach to learning and experience. In this context, didactic learning tends to be limited to the process of imparting knowledge. Simulation-based learning picks up where didactic leaves off. Simulation makes didactic knowledge come alive in a setting designed to mimic real clinical encounters and lifelike experiences where clinicians can refine their individual and team skills well before ever touching a real patient.



Here are three ways the effective use of medical simulation can accelerate student learning:

Simulation increases engagement

For many adult learners, their least preferred method for learning is sitting through a lecture. Adults approach training readied with a range of professional and life experiences that they are eager and motivated to apply to new situations. Many experts agree that an instructor’s intent should be to facilitate that desire, and challenge learners to fill in gaps when their experience base falls short. The ultimate goal? To turn learners into self-sufficient problem solvers.¹ Simulation is ideal for this.

As an educational approach, simulation offers a framework that is both immersive and experiential. Learners and providers who use simulation experience a higher level of engagement and show greater personal involvement in their training versus those who only experience didactic learning.

“Simulation is unique in that it fits all types of learning styles,” according to Dr. Amar Patel of WakeMed Health & Hospitals, “so it becomes this multi-modal learning environment. Students take far more away from that than eight hours in a classroom.”

“Simulation’s real value is in engagement. Once you’ve got an engaged student, you can teach them anything.”

Charles Pozner, MD
Medical Director, Neil & Elise Wallace
STRATUS Center for Medical Simulation,
Brigham and Women’s Hospital

Indeed, a growing body of evidence shows that clinical skills acquired via simulation transfer directly to improved patient care and better outcomes. When paired with deliberate practice, simulation-based education is found to be superior to traditional clinical education for a wide range of skills acquisition.²

One such study indicates that simulation promotes engagement in several ways:

- **Flow.** Students were absorbed in the task at hand.
- **Interest.** Students demonstrated interest as evidenced by enjoyment, active discussion, and humor.
- **Relevance.** Simulations were relevant, in terms of situational clinical practice, exam preparation, and obtaining feedback on clinical decisions.³

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Simulation maximizes retention

Learners and providers who use simulation have higher retention rates versus exclusively didactic forms of learning.

“Simulation helps students build mental models, which is so important in healthcare,” according to Jennifer McCarthy, EMT-P, an associate professor at Bergen Community College in Paramus, NJ. “Faculty interact with them to build an effective model, so when students are under stress they can draw on that experience.”

Adds Dr. Sharon Griswold-Theodorson, Professor of Emergency Medicine at Drexel University College of Medicine, “Having the opportunity to go through an experience allows people to have that ah-ha moment when they begin to see things differently.”

100%

*Graduate Nurses
now confident in
emergencies*

90%

*OB Clinicians
responded better
to critical events*

17%

*Experienced residents
without simulation training
performed 17% poorer
in ACLS.*

Research confirms the importance of hands-on practice for skills retention.⁴ In a 2010 study, 100% of graduate nurses said that simulation facilitated learning through experience without risk to the patient, and gave them confidence in emergency situations.⁵

In simulation-based team training for obstetric clinicians, 30% of participants said their team’s overall performance showed significant improvement. Further, 90% agreed that their response to critical events improved.⁶

A longitudinal study of internal medicine residents found that Advanced Cardiac Life Support (ACLS) skills acquired via a simulation-based education program did not decay significantly over a 14-month period. These findings are in sharp contrast with baseline data indicating that graduating residents without simulator training showed 17% poorer performance on average, despite three years of patient care and completion of two ACLS courses.⁷



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Simulation ensures learning transfer to the job

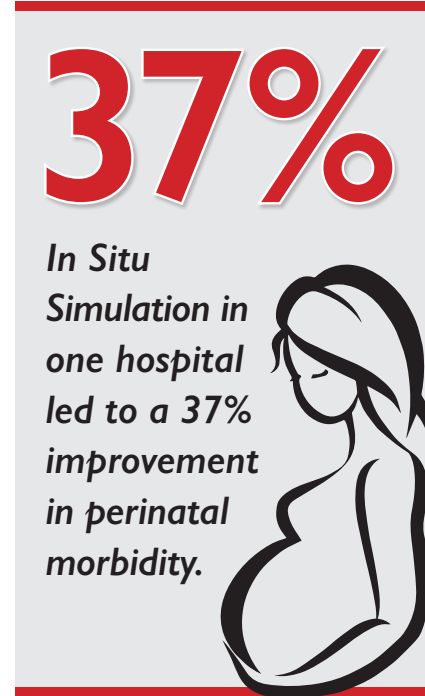
Learners and providers who use simulation, especially in situ, are associated with a higher rate of skill application at the bedside.

Evidence shows that clinical skills acquired in medical simulation laboratory settings transfer directly to improved patient care practices and better patient outcomes. For example, simulation was found to be superior to traditional clinical education for acquisition of a wide range of medical skills, including: advanced cardiac life support, laparoscopic surgery, cardiac auscultation, hemodialysis catheter insertion, thoracentesis, and central venous catheter insertion.⁸

A recent study found that in situ simulation as an interdisciplinary team training methodology reduced perinatal morbidity. The findings indicated that a process shift occurred in the hospital being trained with in situ simulation, resulting in an improvement of 37% in perinatal morbidity.⁹

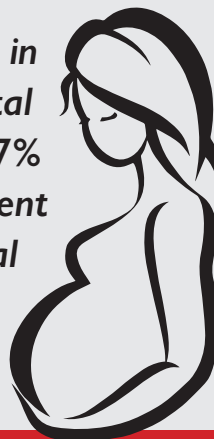
Dr. Robert Anderson, assistant professor at the Northern Ontario School of Medicine, sees simulation as having a tremendous impact on learning outcomes. “You can challenge the way students look at things and make mistakes in essentially a consequence-free environment.”¹⁰

Considering that reimbursement strategies continue to focus on reducing preventable complications while controlling costs, simulation is increasingly popular in teaching and assessing skills in invasive procedures. One study found a 7-to-1 rate of return on simulation training intervention.



37%

In Situ Simulation in one hospital led to a 37% improvement in perinatal morbidity.



Summary

“Does simulation work? You bet it works,” says Dr. Thomas Talbot, medical director, USC Institute for Creative Technologies at the University of Southern California. “It’s sort of a play version of a real life-situation where someone could have a good outcome or a poor outcome. We let users have that experience in a safe environment so they’re free to make mistakes and learn from them.”

The speed and complexity of change in healthcare matched up against some of the constraints of didactic learning point to simulation as an evidence-based training solution that can help improve patient outcomes.

Factors such as competition for clinical sites, limited opportunities for high-quality clinical experiences, a renewed focus on patient safety, and evolving reimbursement strategies have combined to recast medical simulation from “nice to have” to a must-have for effective medical education and training. If you’re not using simulation today, perhaps it’s time to explore how simulation can add to your training efforts.

For help in achieving the benefits others have gained through simulation, find us at www.laerdal.com

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