Abstract Poster Presentations

1. **Virtual Laparoscopic Hiatal Hernia Simulator (VLaHHS) for Crural Repair Demonstrates Evidence of Skill Acquisition and Transfer**
   Presenter: **Sofia Garces Palacios, M.D.**

2. **Low-Cost Resuscitative Hysterotomy Procedure Trainer: Improving Emergency Medicine Resident Preparedness and Retention**
   Presenter: **Rosalind Ma, M.D.**

3. **Characterization of Surgical Skill Improvement Using Gestures in the Advanced Training in Laparoscopic Skills (ATLAS) Needle-Handling Task**
   Presenter: **Sofia Garces Palacios, M.D.**

4. **Layered Learning in Action: A Pediatric COSCE That Does More Than Test**
   Presenter: **Ngoc "Kim" Van Horn, M.D., CHSE**

5. **Assessing the Change in Knowledge, Attitude, and Behavior in Medical Residents Through a Point-of-Care Ultrasound Workshop: A Pre- and Post-Intervention Study**
   Presenter: **Tristan Post, M.D.**

6. **A Task-Based Framework for RAMIE Training: Defining Procedure-Specific Metrics to Support High-Fidelity Simulation Development**
   Presenter: **Bryanna Stukes, M.D.**

7. **An Easily Assembled, Low-Cost Task Trainer Improves Resident Comfort with Rectal Foreign Body Removal**
   Presenter: **Joshua Ginsburg, M.D.**

8. **Advanced Gynecologic Surgery: A Porcine Lab-Based Simulation to Improve Surgical Skills**
   Presenter: **Wesley Nilsson M.D., M.B.A.**

9. **The Mega Impact to Resident Readiness in Managing Code Blues**
   Presenters: **Alliana Detorio, D.O.**

10. **Innovation Studios: A Novel Student-Faculty Partnership Model Advancing Group Simulations, Task Trainer Creation, and Virtual Standardized Patient Encounters in Undergraduate Medical Education** Presenter: **Ngoc "Kim" Van Horn, M.D., CHSE**

11. **Facilitating Formative Growth: Innovations in Simulation Education**
    Presenter: **Latoya Frolov, M.D.**

12. **Reducing Non-Actionable Low-Battery Alarm Fatigue in the CMU: A Quality Improvement Initiative**
    Presenter: **Shirley Koshy, M.S.N., RN, CMSRN**

13. **Pupillometry-Based Assessment of Seizure Activity: Trend Analysis in the EMU**
    Presenter: **Sonia Joseph, M.S.N., RN**

14. **Reducing Fatigue from Alarms and Alerts in an Acute Stroke Unit and Epilepsy Monitoring Unit**
    Presenter: **Sonia Joseph, M.S.N., RN**

Emerging Ideas Poster Presentations

1. **Simulations in Pediatric Critical Care for Advanced Practice Provider Education**
   Presenter: **Kathryn Utz, M.P.A.S., PA-C**

2. **SAFE Teaming module**
   Presenter: **Rana Skaf, M.D.**

3. **Development and Validation of a Low-Cost 3D-Printed Intraosseous (IO) Task Trainer for Medical Learner Procedural Education**
   Presenter: **Ahmed Lababidi, M.D.**

4. **Lost in Translation No More: A Dual-Perspective Simulation to Elevate Interpreter-Mediated Care**
   Presenter: **Ngoc "Kim" Van Horn, M.D., CHSE**

5. **Click, Clunk, Create: Designing a Low-Cost Neonatal Model for Hip Dysplasia**
   Presenter: **Ngoc "Kim" Van Horn, M.D., CHSE**

6. **Medagogy: Innovating Pediatric Clinical Education Through AI-Driven Virtual Patient Encounters**
   Presenter: **Ngoc "Kim" Van Horn, M.D., CHSE**

7. **AI-Driven 3D Analysis of Medical Images for Clinical Measurement and Education**
   Presenter: **Qiongjing "Jenny" Zou, Ph.D.**

8. **Optimizing Emergency Department Pain Management for Patients with Sickle Cell Disease in THR Denton and THR HEB**
   Presenter: **Daniel Davila Gonzalez, M.D., Ph.D.**

9. **PM Cardio Queen of Hearts AI Can More Accurately Detect Occlusion Myocardial Infarction (OMI) Than the Current STEMI/NSTEMI Paradigm and Human Interpreters (Emergency Physicians and Cardiologists**
   Presenter: **Sarah Misbah, M.D.**

Oral Presentation Abstracts

1. UT Southwestern Simulation Center GME Core Curriculum TeamSTEPPS 2025

Ellie Jang, B.S.A.; Jeanne Carey, RN; Krystle Campbell, M.H.A.; Daniel Scott, M.D.; Aditee Ambardekar, M.D.

Department of UT Southwestern Medical Center, Simulation Center

Introduction: Using Kern's 6-step approach, we developed a simulation-based core curriculum for all onboarding UT Southwestern interns. The curriculum uses the TeamSTEPPS paradigm to improve teamwork and communication skills among GME learners at UTSW. A pilot version of the curriculum was facilitated in June 2024 with five residency programs, 74 PGY-1 residents, and 13 faculty facilitators. Knowledge pre- and post-tests, as well as video review scores from the pilot, informed curricular enhancements for an expanded curriculum in June-July 2025.

Methods: The interprofessional curriculum consisted of a one-hour asynchronous module via Taleo, followed by a two-hour, specialty-specific simulation-based session. The sessions followed a Simulation 1-debrief-Simulation 2-debrief model with learning objectives that target team structure, communication, situational monitoring, and mutual support. Each residency program's session was led by a trained facilitator within the specialty. Evaluation included pre- and post-curriculum knowledge checks mapped to TeamSTEPPS domains and video scoring of Simulation 1 and Simulation 2 using the Team Performance Observation Tool (TPOT) with AI assistance. Video review is anticipated to be completed by Spring 2026.

Results: Nineteen of 21 residency programs participated as a mandatory component of training and involved 267 PGY-1 residents, 84 nurse residents, four pharmacy residents, and 51 faculty facilitators. Knowledge scores improved significantly from 44.2% to 70.6% post-curriculum ($p=1.4\times10^{-31}$). Each individual domain demonstrated significant gains: Overview ($p=1.1\times10^{-21}$), Team Structure ($p=7.8\times10^{-4}$), Communication ($p=6.9\times10^{-7}$), Situation Monitoring ($p=5.0\times10^{-6}$), and Mutual Support ($p=1.9\times10^{-26}$). This contrasts with the 2024 Pilot, where two domains –Team Structure and Communication – did not show significant improvement.

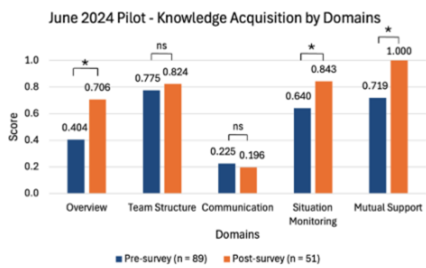

Figure 1. Knowledge acquisition from Pilot (pre n=89; post n=51; 57% completion) via REDCap survey.

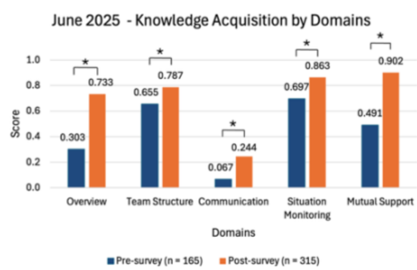

Figure 2. Knowledge acquisition from 2025 cycle (pre n=165; post n=315; 52% matched) via REDCap survey.

	Pilot FY24		
Domain	**Mean Pre Sim %**	**Mean Post Sim %**	**p-value**
Overview	40.4	70.6	2.5E-04
Team Structure	77.5	82.4	0.25
Communication	22.8	19.6	0.35
Situation Monitoring	64.0	84.3	5.2E-03
Mutual Support	71.9	100.0	9.5E-06
Total	**55.3**	**71.4**	**1.3E-05**

Table 1. Knowledge acquisition from Pilot (pre n=89; post n=51; 57% completion) via REDCap survey.

	FY25		
Domain	**Mean Pre Sim %**	**Mean Post Sim %**	**p-value**
Overview	30.3	73.3	1.1E-21
Team Structure	65.5	78.7	7.8E-04
Communication	6.7	24.4	6.9E-07
Situation Monitoring	69.7	86.4	5.0E-06
Mutual Support	49.1	90.2	1.9E-26
Total	**44.2**	**70.6**	**1.4E-31**

Table 2. Knowledge acquisition from 2025 cycle (pre n=165; post n=315; 52% matched) via REDCap survey.

Conclusions: The 2025 cycle demonstrated the feasibility and effectiveness of a core, simulation-based curriculum across a large interdisciplinary and interprofessional cohort. The significant improvement across all TeamSTEPPS domains highlight the curriculum's impact on teamwork and communication competency among learners.

2. How Virtual Reality Curriculum Design Shapes Bioanastomotic Learning Curves in Robotic Simulation

Samy Castillo-Flores, M.D.; Ahmad Assi, M.D.; Roberto Ramírez, M.S.; Angela A. Guzzetta, M.D.; Daniel J. Scott, M.D.; Ganesh Sankaranarayanan, Ph.D.; Herbert J. Zeh III, M.D.; Patricio M. Polanco, M.D.
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Introduction: Virtual reality (VR) training is a core component of robotic surgery education, yet VR curricula vary widely in structure and content. Whether curriculum design influences learning curves for advanced bioanastomotic tasks remains unclear. We compared two VR curricula and their effects on learning curve progression in robotic bioanastomotic simulation.

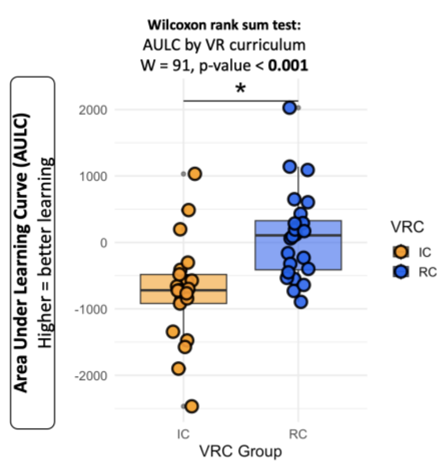
Methods: General surgery trainees who completed VR training and achieved proficiency were included. Trainees completed either an Initial Curriculum (IC; 33 drills) or a Revised Curriculum (RC; 19 content-aligned drills) prior to performing simulated gastrojejunostomy (GJ), hepaticojejunostomy (HJ), and pancreaticojejunostomy (PJ). Proficiency was defined as an OSATS score ≥28 on two consecutive attempts. Learning curves were analyzed using CUSUM methods based on deviations from predefined performance targets for OSATS scores, time to completion, and errors across repeated attempts. Area under the learning curve (AULC) was used to compare learning trajectories between curricula.

Results: Fifty-two trainees (IC: 24; RC: 28) completed 985 bioanastomotic simulation sessions (GJ: 452, HJ: 269, PJ: 264). For GJ, OSATS-based CUSUM analysis demonstrated significantly more favorable learning curve trajectories for trainees completing the Revised Curriculum compared with the Initial Curriculum (AULC: +2,467 vs. −15,601; $p < 0.001$), while time-based learning curves did not differ between curricula (AULC: −2,813 vs. −2,364; $p = 0.23$). For HJ, RC trainees demonstrated higher OSATS-based AULC values than IC trainees (AULC: +1,184 vs. −6,942; $p = 0.004$), along with fewer cumulative errors ($p = 0.02$); time-based learning curves were similar between curricula ($p = 0.41$). For PJ, RC was associated with significantly more favorable learning trajectories for OSATS (AULC: +3,012 vs. −4,885; $p < 0.001$) although time-based learning curve were similar (AULC: −1,925 vs. −4,376; $p = 0.01$).

Conclusions: Trainees completing the Revised VR curriculum demonstrated more favorable bioanastomotic learning curve trajectories compared with those completing the Initial Curriculum. These findings suggest that VR curriculum design influences the efficiency and pattern of skill acquisition in robotic bioanastomotic simulation, particularly for technical performance metrics.

CUSUM analysis-GJ (OSATS)

VR curriculum	AULC
Initial Curriculum (IC)	-15601
Revised Curriculum (RC)	+2467



3. **Accelerating Validity in AI-Assisted Clinical Skills Assessment: Using Item and Factor Analysis to Optimize a Pediatric OSCE Rubric**

Ngoc Van Horn, M.D.[1]; Ameer Hamza Shakur, Ph.D.[2]; Jennifer Myers, Ph.D., M.A.T.[3]; James Willig, M.D., M.S.P.H.[3]; Andrew Jamieson, Ph.D.[2]

[1]Department of Pediatrics, UT Southwestern Medical Center; [2]Lyda Hill Department of Bioinformatics, UT Southwestern Medical Center; [3]Office of Medical Education, UT Southwestern Medical Center

Introduction: Traditional approaches to simulation-based assessment primarily evaluate the scenario itself – its fidelity, rater variance, and generalizability rather than the validity and structure of the assessment instrument.[1] OSCE checklists vary widely in quality and psychometric rigor.[2] The emergence of multimodal AI-assisted OSCEs (MAI-OSCEs) allows far more complex, scalable scoring.[3] Generalizability theory highlights limitations in traditional validation approaches.[4] Modern validity theory emphasizes the need for evidence across multiple sources, including internal structure.[5]

Methods: At UT Southwestern Medical School, we implemented a five-station Pediatric Clerkship COSCE aligned with AAMC EPAs, assessing history-taking, physical examination, documentation, counseling, and oral presentation. Google Gemini Pro 2.5 processed multimodal inputs – text, audio, and video – and generated complete scores for each cohort (~35 learners) in roughly 30 minutes, permitting rapid iteration not feasible with human grading.

We focused on Station 3 (Clinic Note), the rubric with the greatest complexity (37 items). The initial 55-item version (Rubric Zero) was drafted by a pediatric subject matter expert and refined by a three-member pediatric Delphi panel to establish content validity. After pilot testing with 30 students, revisions produced Rubric One, which was then applied to two additional cohorts (n ≈ 60).

Item Analysis
Psychometric evaluation included difficulty index, discrimination index, and Spearman item-total correlations. Items demonstrating poor discrimination (<0.20), weak correlation (<0.30), or extreme difficulty (>90% or <30%) were flagged unless conceptually essential. These results guided creation of Rubric Two, which underwent repeat analysis following AI-assisted regrading. AI enabled rapid testing of multiple rubric versions, accelerating refinement cycles that would otherwise require extensive faculty time.

Factor Analysis
Confirmatory factor analysis (CFA) will evaluate whether items align with hypothesized domains of documentation quality and clinical reasoning based on EPA mappings. Factor loadings ≥0.40 will be considered acceptable. CFA outcomes will inform further restructuring by identifying redundant, misaligned, or cross-loading items. This step integrates psychometrics, content expertise, and AI scoring to iteratively test and strengthen construct validity.

Results: Item analysis of Rubric One identified multiple redundant or low-performing items. Guided revisions improved discrimination indices, strengthened item-total correlations, and reduced structural noise in Rubric Two. AI regrading of more than 80 clinic notes required less than one hour, demonstrating AI's ability to support rapid, unbiased recalibration. The refined rubric exhibited increased internal coherence and stronger alignment between items and targeted competencies. AI-human score correlations improved, supporting the use of AI as an extension of expert grading rather than a replacement.

Conclusion: Simulation assessment literature often emphasizes fidelity, rater reliability, and case design, but the assessment instrument – the rubric – remains underexamined. This study shows that

combining psychometric analysis with AI-assisted scoring creates a practical, scalable method for evaluating and improving item quality, reducing rubric bloat, and clarifying construct structure. CFA will further test whether expert-defined competency frameworks match empirical performance patterns, enabling iterative, evidence-based revision. This hybrid model overcomes human limitations in scoring capacity, supports broader item sampling, and promotes defensible validity evidence.

This work introduces a replicable strategy for generating content and construct validity evidence in AI-assisted clinical skills assessments. By merging psychometrics, expert review, and high-throughput AI scoring, educators can rapidly refine assessment tools while preserving rigor. This methodology has broad applicability across clerkships and institutions, supporting the creation of scalable, data-driven, and clinically meaningful performance assessments.

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4. **Raising the Bar in Simulation-Based Training: Feasibility, Perceptions, and Early Outcomes of the Advanced Training in Laparoscopic Suturing (ATLAS) Curriculum for Surgical Trainees**

Sofia Garces Palacios, M.D.[1]; Angela Guzzetta, M.D., FACS[1]; Kaustubh Gopal[1]; Dmitry Nepomnayshy, M.D., M.Sc.[2]; Ganesh Sankaranarayanan, Ph.D.[1]; Daniel J. Scott, M.D., FACS[1]

[1]Department of Surgery, UT Southwestern Medical Center, Dallas, TX
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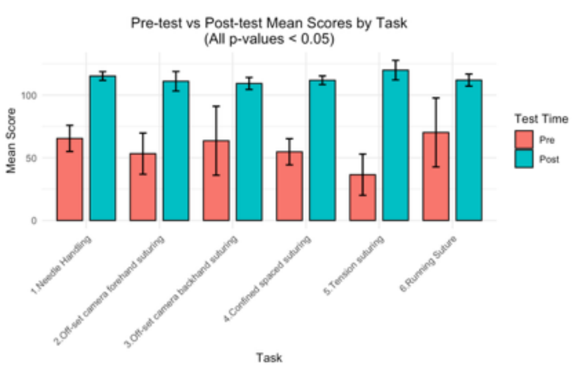
Introduction: Although Fundamentals of Laparoscopic Surgery (FLS) certification is mandatory for general surgery trainees, gaps in advanced laparoscopic suturing skills remain. The Advanced Training in Laparoscopic Suturing (ATLAS) program was developed to address this need; however, its feasibility as a structured curriculum within residency training has not been evaluated. This study reports the experience and outcomes of a two-year pilot implementation of the ATLAS curriculum in an academic program.

Methods: Beginning in early 2024, the ATLAS proficiency-based simulation curriculum was offered to FLS-certified residents (optional) and MIS fellows (required). Participants completed a proctored baseline assessment (pre-test), followed by self-directed training until national “basic” proficiency benchmarks were achieved and a post-test. Feasibility measures included total time, number of sessions, attrition rate, and faculty/proctor time. Pre- and post-curriculum surveys assessed participant perceptions. Learning outcomes were analyzed using the Wilcoxon Signed-Rank Test.

Results: Eighteen trainees enrolled (2 PGY-2, 4 PGY-3, 7 PGY-4, 3 PGY-5, 2 MIS fellows); five (2 PGY-4, 1 PGY-5, and 2 MIS fellows) completed the curriculum, yielding a 75% attrition rate. Among completers, the average total training time was two hours 39 minutes (SD ± 31 min, range 2:04-3:20) with an average of 5.4 trials per task. Average proctoring time for testing was 54 minutes per trainee, and a single expert faculty member conducted four one-hour live tutoring sessions. Performance analysis revealed statistically significant improvements for all tasks, with all participants surpassing the basic proficiency level (Figure 1). Surveys revealed notable training gaps: 80% of trainees reported low confidence in laparoscopic suturing at baseline, and none had prior simulation experience beyond FLS. All respondents agreed that additional simulation opportunities should be available during residency, and 100% of those who completed training rated the curriculum as very effective, reporting increased comfort and improved OR performance and stating they would recommend the curriculum to their peers.

Conclusion: These data suggest there is a need for the ATLAS curriculum and that completion results in significant skill improvement. Alternative implementation strategies, including scheduling flexibility or mandatory requirements, may address the high attrition rate observed. Integration into residency training should be further explored.



5. Utilizing the 'Poverty Simulation' as Training for Managing Student-Run Free Clinics

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UT Southwestern Medical School

Introduction: Student-run free clinics (SRFCs) at UT Southwestern Medical School serve diverse, vulnerable populations across Dallas-Fort Worth, exposing early trainees to social determinants of health, especially poverty. To prepare incoming first-year managers, the standardized Community Action Poverty Simulation (CAPS) was introduced as experiential training, aiming to promote poverty awareness and foster empathy among future clinic leaders.

Methods: CAPS is an immersive, interactive simulation originally developed to highlight poverty's structural challenges. At UTSW, the event included 60 participants (incoming and outgoing SRFC managers and undergraduates), simulating life as families and community members facing daily obstacles to health care and social resources. The simulation comprised assigned roles, community events, and unpredictable challenges, culminating in a facilitated debrief and post-event survey.

Results: Of the 71 registrants, 60 attended, and 98.3% completed the survey. Participants overwhelmingly supported the CAPS model (Figure 1):

- 98.3% would recommend the simulation for future SRFC managers.
- 89.8% endorsed its use for all incoming medical students.

Key lessons reported included:

- Greater empathy and understanding of patients' emotional stresses
- Complexity in navigating fragmented health care and social resources
- Insight into prioritizing urgent life needs over health care decisions
- Appreciation for family dynamics and the necessity of support systems
- A broadened perspective on patient care and systemic inequities

Areas for improvement included clearer instructions for community member roles, improved scheduling logistics, and ensuring the simulation remains sensitive to participants with lived poverty experience.

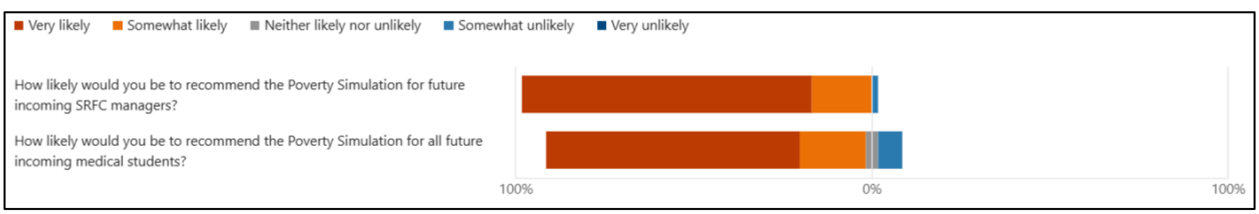

Figure 1: Likert scale responses to recommending the event to other managers and medical students.

Conclusions: The Poverty Simulation proved an effective, well-received tool for sensitizing medical trainees to the realities of poverty and its impact on health access and decision-making. Nearly all participants appreciated the opportunity and recommended integrating CAPS into future training for SRFC managers and incoming medical students. This intervention supports a culture of empathy, resilience, and stewardship in clinical education, with potential broader applications for medical curricula addressing health equity.

6. Enhancing Nurse Residency with Mobile, Low-Fidelity Simulation

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Clinical Education and Professional Development (CEPD) – Practice Transitions, UT Southwestern Medical Center

Introduction: Newly licensed nurses require intentional, structured experiential learning to develop clinical judgment, situational awareness, and critical-thinking skills during their transition to practice. Traditional high-fidelity simulation can effectively support this development; however, there are barriers related to cost, infrastructure, staffing, and scheduling. To mitigate these limitations, the UTSW Nurse Residency Program implemented a mobile, low-fidelity simulation framework designed to bring realistic clinical deterioration scenarios directly to the clinical units. This framework leverages mobile simulation technology to generate dynamic physiologic responses, while low-fidelity manikins and task trainers provide hands-on practice without requiring a dedicated simulation center. The objective of this project was to operationalize and evaluate this mobile framework as a scalable, resource-efficient strategy for strengthening critical thinking in newly licensed nurses.

Methods: A structured eight-week implementation plan guided the development and deployment of the mobile simulation framework, which included: (1) standardized scenario design targeting early clinical deterioration patterns common in acute-care environments; (2) mobile technology integration through iSimulate to simulate vital sign trends, EKG changes, lung and heart sounds, and real-time patient responses; and (3) low-fidelity skills stations for physical assessment, device management, and basic clinical interventions. The mobility of the system allowed simulations to be conducted at the bedside, in conference rooms, and in unit-based huddle spaces, enabling flexible delivery without workflow disruption. Faculty and preceptors were trained using facilitator guides and rapid-cycle debriefing tools to ensure consistent execution. Outcomes were evaluated through pre- and post-simulation resident surveys, faculty observational checklists emphasizing critical-thinking behaviors, and structured debriefing documentation.

Results: Implementation of the mobile, low-fidelity simulation framework significantly increased resident access to simulation-based learning and ensured consistent exposure across specialty units. Residents demonstrated measurable gains in clinical judgment, timely recognition of patient deterioration, and structured communication using SBAR and closed-loop methods. Faculty noted improvements in assessment organization, prioritization, hypothesis generation, and escalation behaviors indicative of maturing critical-thinking skills. Preceptors reported enhanced resident readiness for independent decision-making and improved ability to connect theoretical knowledge with clinical cues encountered during simulations. The mobile framework proved cost effective, operationally efficient, and highly adaptable, allowing simulation to occur in real clinical environments without reliance on high-fidelity equipment or dedicated simulation suites.

Conclusion: The mobile, low-fidelity simulation framework represents a practical, scalable, and sustainable approach to strengthening critical thinking in newly licensed nurses. By combining portable technology with simple yet effective physical simulation tools, organizations can expand experiential learning opportunities, reinforce clinical judgment, and improve readiness for independent practice.

7. From Clicks to Shocks: Can Virtual Practice Improve Real-Time Performance?

Rosalind Ma, M.D.; Kavita Joshi, M.D.; Chrissy Chan, M.D.; Sonika Raj, M.D.; Daniel Testa, M.D., Joseph Martinez, M.D.; Jessica Hernandez, M.D.

Department of Emergency Medicine, UT Southwestern Medical Center

Introduction: Recognizing and managing cardiac arrhythmias during cardiac arrest is a critical skill for emergency medicine (EM) physicians. Traditional teaching methods, such as lectures and static rhythm strips, often lack the dynamic and hands-on experience necessary to replicate real-life scenarios. Simulation has been shown to improve competence and comfort in various health care fields. This study aims to determine if a low-fidelity, self-directed online simulation tool is more effective than a traditional lecture-style video in improving EM residents' diagnostic accuracy, response time, and comfort in cardiac arrest management.

Methods: In this randomized controlled trial, 24 PGY-1 emergency medicine residents completed a pre-intervention survey on knowledge and comfort and a baseline high-fidelity simulation assessing rhythm recognition accuracy and time-to-shock. Participants were then randomized to either a 20-minute online self-directed simulation or a 20-minute traditional lecture video on arrhythmia management. All residents repeated the survey and completed a second high-fidelity simulation. Primary outcomes were accuracy and time-to-decision to defibrillate; secondary outcomes were changes in knowledge and comfort. Pre-/post-intervention performance was compared between groups.

Results: Table 1 represents preliminary outcomes, with further data analysis ongoing. Both groups demonstrated improved comfort with rhythm recognition and shock decisions following their respective interventions. The video group showed increased rhythm recognition accuracy (92%→100%) and reduced mean time to shock (9.38→4.33 seconds), while the simulation group achieved the greatest efficiency gains, decreasing time to shock from a mean of 16.33 to 4.75 seconds. Accuracy in the decision to shock reached 100% post-intervention in both groups. Knowledge scores remained high across groups, with modest improvement in the simulation cohort (95%→97%).

Conclusions: Both educational modalities improved resident comfort and performance in cardiac arrhythmia management; however, the online simulation demonstrated a greater improvement in efficiency, reflected by the largest reduction in time to decision to shock. These findings suggest that low-fidelity, self-directed simulation may offer an advantage over traditional video instruction in developing rapid, real-time decision-making skills during cardiac arrest. Further study with larger samples is warranted to validate these results and assess long-term retention.

Table 1: Mean Pre- and Post-Intervention Outcomes by Study Group

	Pre-intervention	Post-intervention
Video group		
Comfort on decision to shock	3.58	4.33
Comfort on rhythm recognition	3.25	3.92
Knowledge correct %	98%	98%
% correct on rhythm recognition	92%	100%
% correct on decision to shock	100%	100%
Time to decision to shock	9.38 seconds	4.33 seconds
SIM group		
Comfort on decision to shock	3.17	3.67
Comfort on rhythm recognition	2.92	3.58
Knowledge correct %	95%	97%
% correct on rhythm recognition	83%	83%
% correct on decision to shock	92%	100%
Time to decision to shock	16.33 seconds	4.75 seconds

8. Reducing Falls in Hospitalized Adult Psychiatric Patients Through Simulation Training

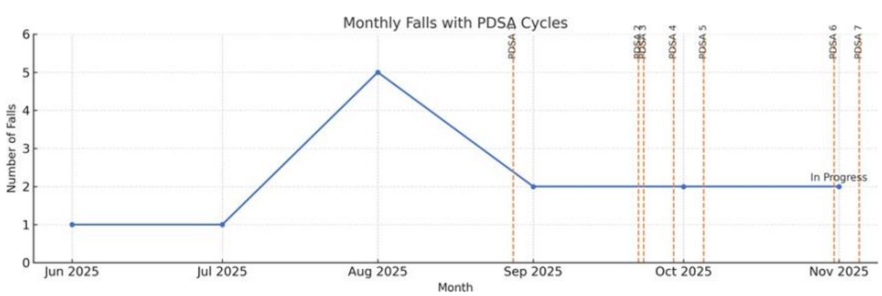
Natalie Ramirez, B.S.N., RN, PMHN-BC[1]; Kateleen Collins, B.S.N., RN[2]
[1]Education Department, UT Southwestern Medical Center; [2]Neurosciences Department, UT Southwestern Medical Center

Introduction: Psychiatric patients are impacted by an elevated risk for falls due to behavioral symptoms, medications, and complex comorbidities. The adult psychiatric inpatient unit at UT Southwestern consistently ranks among the highest departments in the hospital system for falls. Traditional education has had a limited impact due to the unique framework of care provided for psychiatric patients. Simulation-based education is shown to improve competency and safety practices. This project implemented a fall-themed escape-room simulation to strengthen fall-prevention knowledge and reinforce safe behaviors.

Methods: Guided by systems thinking and the Plan-Do-Study-Act (PDSA) model, the project used an escape-room simulation in which staff applied the "5 Ps" to identify hazards and solve clues. Pre- and post-tests measured knowledge gain, and participation, feasibility, and facilitator consistency served as process measures. Fall counts, fall-related injuries, and fall rates per 1,000 patient-days were monitored throughout implementation. Seven PDSA cycles refined the intervention by clarifying expectations, improving facilitator tools, organizing materials, standardizing timing, increasing night-shift access, and resolving a QR code malfunction.

Results: Sixty-two of 88 staff members (70%) completed the simulation. Baseline falls totaled one in June, one in July, and five in August (one injury). During implementation, fall counts stabilized at two in September and one in October, with no fall-related injuries, despite increased patient-day totals. Two early November falls were recorded, with rates pending census completion. Continuous monitoring showed early stabilization of fall trends following rollout.

Figure 1
Monthly Falls with PDSA Cycles



Conclusions: The escape-room simulation improved staff knowledge, engagement, and early fall-prevention outcomes on a high-acuity psychiatric unit. Refinements across seven PDSA cycles enhanced fidelity and sustainability, while fall-rate monitoring demonstrated reduced variability and absence of injuries. The escape-room model of simulation-based training appears to be a feasible, scalable approach to strengthening safety culture and reducing preventable harm in psychiatric inpatient settings.

Emerging Ideas Oral Presentation Abstracts

1. Intuagen: Generating Clinical Intuition Through Patient Simulation

Darlene King, M.D.[1]; Chinthak Murali, Ph.D.[2]; Ramcharan Chandrashekar, Ph.D.[2]; Zain Hussain, B.S.[3]; Amogh Anoo, B.S.[4]; Chris Harder, B.S.[4]; Aryan Tyagi, B.S.[4]; Gonzalo Alvarez del Real, B.S.[4]. Juan Arce, B.S.[4]

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Idea Description: Generative artificial intelligence (GAI) allows for the rapid creation of custom chatbots that can be prompted to portray patients. This provides an opportunity for educators to make "standardized patients" on demand and have lessons be more engaging and interactive. Our team is using GAI to portray fictional psychiatry patients to enhance resident education. Our AI Avatar patients are visual avatars that receive speech input and produce audio output in real time to provide an interactive interview experience.

Goals: We have two goals for this project. The first is to develop a process of generating interactive psychiatry AI patients on demand that is incorporated into a website front-end for clinicians to design their own custom AI psychiatry patients. The second goal is to create a library of highly realistic and challenging AI patients that can be used to evaluate psychiatry residents' diagnostic and interview skills to further enhance graduate medical education training.

Collaborators: Our collaborators include Adam Brenner, M.D., Vice Chair of Education for the Psychiatry Department and Director of the Psychiatry Residency Program Director at UTSW; the Department of Bioinformatics-BioHPC; UT Dallas Capstone Design Programs; Nvidia; and IBM.

Implementation Plan: We plan to perfect our AI Avatar pipeline and avatar creation process hosted on the UTSW BioHPC environment. Once we have our avatar generation process functional, we will create a pilot website for UTSW Psychiatry department internal use. Experiences internally will help us further refine the website and avatars as we receive more feedback. We will then correct deficiencies highlighted by the pilot and partner with a national entity to launch the website for other academic centers to use.

Challenges: Achieving realistic facial expressions, vocal intonations, and emotional expressions, in addition to sourcing high-quality data to build our custom large language model for our patient cases, and designing an accurate evaluation algorithm to assess resident interview skills were challenges.

Resources in Use: UT Southwestern's BioHPC environment and its partnership with Nvidia and IBM have provided us with the computational power and education on synthetic data generation. UT Dallas Capstone students have provided us with computer science manpower we wouldn't otherwise have due to lack of funding.

Resources Needed: High-quality clinical data to base patient avatars off of, funding to support computer science graduate students to further develop the system, funding for computational resources, institutional IRB support, and institutional informatics support to obtain data from ambient listening to build our resident evaluation algorithm were needed.

2. Evaluating the Impact of Simulation-Based Competency Training on Emergency Department Procedural Sedation Outcomes

Rosalind W. Ma, M.D.; Kavita Joshi, M.D.; Jessica Hernandez, M.D.; Angela F. Gardner, M.D.

Department of Emergency Medicine, UT Southwestern Medical Center

Introduction: Procedural sedation is a core skill in emergency medicine (EM). Previously at our institution, competency was ensured through completion of a minimum number of sedations or completion of observed sedations in the GI lab. In 2023, the EM faculty competency process transitioned to a standardized, high-fidelity simulation-based check-off within the Simulation Center that focused on pre-/post-sedation evaluation, procedural sedation documentation, management of adverse events, patient disposition, completion of equipment checklist for safety, management of sedation level, and team communication. This project aims to evaluate whether this transition impacts patient safety and efficiency by comparing procedural sedation adverse outcomes in the emergency department (ED) before and after the competency training change.

Methods: We plan to perform a retrospective analysis of all ED procedural sedation encounters from 2016-2025. Cases will be identified using CPT codes, sedation flowsheets, and procedure logs, then stratified into two cohorts:

- Pre-transition: GI lab-/anesthesia-based competency
- Post-transition: Simulation-based competency

Outcome measures will include adverse events (hypoxia, hypotension, airway interventions, unplanned intubation, naloxone/flumazenil use, and escalation of care).

Results: As this is an emerging concept, data collection and analysis have not yet begun. We anticipate identifying whether simulation-based competency maintains or improves sedation-related patient outcomes and efficiency compared to the prior live-sedation model.

Challenges: Anticipated challenges include:

- Complex multiyear data extraction across evolving documentation systems
- Inconsistent sedation documentation practices
- Defining and standardizing adverse event criteria
- Distinguishing competency-related effects from broader operational or system changes

Resources: Existing resources include simulation faculty, Simulation Center infrastructure, EM faculty collaborators, and access to the Epic analytics team. Additional needs may include dedicated data analyst support, IRB consultation, and potential funding for data abstraction and statistical analysis.

3. **Building a Simulation-Ready, Validated Assessment Tool for RAMIE: Integrating Scoping Review Findings, Task Analysis, and Delphi Consensus**

Bryanna N. Stukes, M.D.[1]; Ganesh Sankaranarayanan, Ph.D.[1]; Inderpal Sarkaria, M.D.[2]; Takashi Eguchi, M.D., Ph.D.[2]

[1]Department of Surgery, UT Southwestern Medical Center; [2]Department of Cardiovascular and Thoracic Surgery, UT Southwestern Medical Center

Idea Description: RAMIE remains one of the most technically demanding procedures in thoracic surgery, with proficiency requiring 50-70+ cases and early-phase adoption associated with preventable complications such as anastomotic leaks and recurrent laryngeal nerve injury. Current training is constrained by low case volumes, uneven trainee exposure, and limited simulation resources. Existing RAMIE simulators are partial-task, anastomosis-focused, lack anatomical realism, and rely on basic metrics without robust validation. No simulator provides full-workflow coverage or procedure-specific performance assessment.

Our idea is to develop the first simulation-ready, consensus-based, validated RAMIE assessment tool grounded in the training gaps and methodological insights identified in our scoping review and task analysis.

Foundational Work (Completed):

- Scoping Review (2003-2025)
  Databases: PubMed, Embase, Google Scholar
  60 abstracts screened, 24 full texts included
  Analyzed domains: anatomical fidelity, task coverage, scaffolding, objective metrics, validation evidence

  Key finding: No simulator addresses the RAMIE workflow. All simulators lack substantial fidelity, replication, and/or associated metrics for validation.

- Task Analysis
  Consolidated RAMIE to 22 steps (11 abdominal, 11 thoracic)
  Defined granular subtasks, hazards, and error categories
  Identified failure modes (e.g., conduit devascularization, misidentification of tissue planes, anastomotic tension)
  Mapped performance elements to GEARS/OSATS while introducing RAMIE-specific anchors (perfusion assessment, lymphadenectomy precision)
- Draft Metric Development
  Domains: safety, precision, economy of motion, tissue handling, perfusion-related decisions
  Output: structured rubric with step-level anchors and error definitions

Current Work (In Progress): Delphi Consensus

A Delphi panel of 10-15 RAMIE experts is being deployed to refine content validity.

- Round 1 demonstrates:
  Strong agreement on the global structure of the rubric
  Need for detailed anchors for high-risk tasks (conduit creation, lymphadenectomy, intrathoracic anastomosis)
  Recommendations for error taxonomy refinement and clearer criteria for perfusion assessment
  Reduction of 22 steps to eight essential steps
- Remaining Delphi rounds will finalize task relevance and scoring.

Next Steps: Integration Into Simulation & Validation

Following Delphi completion, we will:

1. Prepare 20-30 de-identified RAMIE operative videos for rater-training
2. Conduct inter-rater reliability testing (ICC)
3. Perform discrimination testing between trainees and experts
4. Assess feasibility and scoring time to ensure simulation compatibility
5. Develop a prototype simulation assessment module tailored to the finalized rubric

Challenges

• Variability across RAMIE techniques complicates anchor standardization.
• Needs multicenter engagement to ensure generalizability.
• High-risk steps require clear, validated definitions to avoid ambiguity during scoring.

Vision & Resources Needed: This project aims to produce a validated, full-workflow RAMIE assessment tool that can be integrated into VR, physical, or hybrid simulators with future AI-enabled performance analytics.

4. Stringing the PEARLS: Adapting the Promoting Excellence and Reflective Learning in Simulation (PEARLS) Debriefing Framework to Address Gaps in Clinical Reasoning and Communication Skills in Pediatric Clerkship Comprehensive Objective Structured Clinical Examinations (COSCEs)

Erica Scott, M.D.[1,2]; Ngoc Van Horn, M.D.[1]
[1]Division of Emergency Medicine, Department of Pediatrics, UT Southwestern; [2]Department of Emergency Medicine, UT Southwestern

Idea Description: Medical students commonly demonstrate gaps in clinical reasoning and in their ability to communicate effectively with patients, family members, and members of the interprofessional health care team. During the Pediatric Clerkship Comprehensive Objective Structured Clinical Examination (COSCE), these gaps become particularly evident. Although we previously used the traditional Promoting Excellence and Reflective Learning in Simulation (PEARLS) debriefing model, faculty continued to observe unmet learner needs in diagnostic explanation, thought-process articulation, and communication skills. To address this, we created an adapted, medical student-specific PEARLS model with explicit, structured prompts targeting clinical reasoning and communication development.

What are you hoping to achieve?
This project aims to:
1. Strengthen students' ability to articulate their clinical reasoning and justify diagnostic decisions.
2. Improve communication skills with patients and family members.
3. Enhance readiness for interprofessional collaboration by practicing communication that mirrors real-world health care encounters.
4. Improve the educational value and consistency of Pediatric COSCE debriefings.

Do you have any collaborators?
This work is a collaboration between the UT Southwestern (UTSW) Simulation Center, the UTSW Standardized Patient Program, and Pediatric Clerkship faculty and leadership.

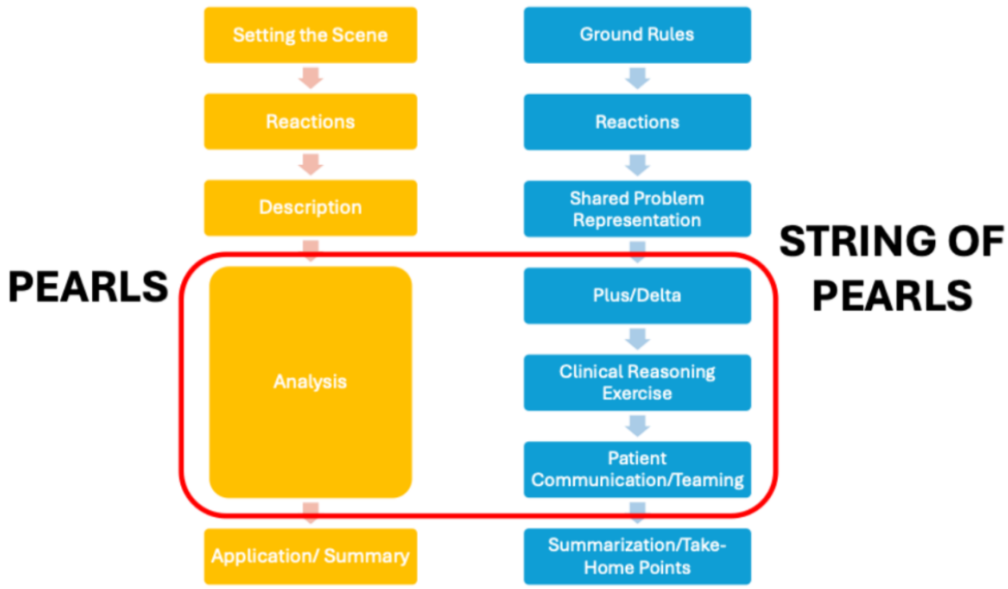
What is your implementation plan?
We are currently in the data-gathering phase. The adapted PEARLS model is being used during Pediatric COSCE sessions at the UTSW Simulation Center. All debriefings are video recorded and reviewed for quality, fidelity to the adapted model, and facilitator consistency. Students complete open-ended plus/delta evaluations, and these written responses will undergo qualitative thematic analysis to assess the perceived educational impact and identify areas for further refinement.

What are some of the challenges you are facing?
Current and anticipated challenges include: Ensuring consistent application of the adapted PEARLS model across faculty facilitators and providing sufficient training and calibration for faculty and standardized patients.

What resources are you planning to use?
We plan to use UTSW Simulation Center rooms, qualitative analysis tools, and methodological frameworks.

What resources do you need?

Additional trained faculty facilitators; ongoing professional development in simulation debriefing and educational coaching, including resources for scaling the model to additional clerkships if successful


Setting the Scene
Reactions
Description
Analysis
Application/ Summary
Ground Rules
Reactions
Shared Problem Representation
Plus/Delta
Clinical Reasoning Exercise
Patient Communication/Teaming
Summarization/Take-Home Points
PEARLS
STRING OF PEARLS

5. Preparing Clinicians for Palliative Extubation: A Simulation-Enhanced Learning Model

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Idea Description: Palliative extubation (PE), also called compassionate extubation, is the withdrawal of mechanical ventilator support at the end of life to allow for natural death in patients whose ongoing life support is not achieving its intended goals. It's an essential skill for palliative physicians to perform but equally crucial for any physicians who work in the critical care setting. There is no one-size-fits-all way to conduct palliative extubation, and variability exists among physicians. To be competent in this medical procedure, one requires both technical and nontechnical skills. Technical skills include appropriately optimizing comfort while accounting for individual variability, such as a patient's pathophysiology and treatment modalities. Nontechnical skills include educating, counseling, and compassionately reassuring family and medical staff. Given the variability in the practice of palliative extubation and the technical and nontechnical skills involved, simulation-enhanced teaching provides an optimal setting for training and practice. We aim to develop a simulation-based curriculum to build competency in palliative extubation for both hospice and palliative fellows in training at UT Southwestern and for ICU residents. Simulation-based learning to teach palliative extubation has been implemented at another academic center, and we plan to adapt the curriculum to address variabilities and resources specific to UT Southwestern. One of the challenges is developing a curriculum that addresses the wide range of variability in how palliative extubation is conducted at UT Southwestern. Another challenge is accounting for the different resources available across hospitals affiliated with UT Southwestern. To do this, we will collaborate with palliative and ICU faculty across UTSW and its affiliated medical centers and develop a curriculum that provides more standardized training while allowing room for adaptation to variability across settings.

6. SIM-Possible: Reimagining the MS1 Integrative Simulation Experience

Ngoc Van Horn, M.D.[1]; Sarah Cunningham, MS2[2]; Julie Nguyen, MS2[2]; Rachel Prince, MS2[2]; Heath Yancey, MS3[2]; Sonika Raj, M.D.[3]; Brandon Robinson, M.D.[3]; Kavita Joshi, M.D.[3]; Erica Scott, M.D.[1,3]

[1]Department of Pediatrics, UT Southwestern Medical Center; [2]School of Medicine, UT Southwestern Medical Center; [3]Department of Emergency Medicine, UT Southwestern Medical Center

Idea Description: This project aims to revise all MS1 Integrative Block simulations to ensure alignment with block objectives, NBME expectations, EPAs/EPOs, teaming competencies, and the current Colleges Curriculum. The effort uses a structured Kern's + Delphi needs assessment to identify instructional gaps and develop validated, comprehensive simulation packages.

What is your idea? The idea is to redesign each block's simulation using a mixed-methods process including needs assessment, expert consensus building, scenario redevelopment, and creation of a new validated post-simulation evaluation tool. Each SIM package will include a prebrief, scenario, debrief guide, facilitator handbook, train-the-trainer guide, and a validated pre-/post-knowledge quiz.

What are you hoping to achieve? The goal is to produce a standardized, high-quality simulation curriculum that strengthens student learning, improves NBME-related performance, and supports development of teamwork and communication competencies. Deliverables include needs assessment results, validated assessment tools, and facilitator-ready simulation packages for implementation in AY 2026-2027.

Do you have any collaborators? Collaborators include: one to two SIM-interested medical students, one to two SIM faculty experts, the block course director and participating faculty, one to two teaming experts, and an instructional design specialist. These team members contribute to needs assessment, scenario development, dry-run evaluation, and validation.

What is your implementation plan?
1. Systematic Review: Analyze objectives, NBME trends, TBL topics, and curricular alignment using Kern's + Delphi processes.
2. Simulation Redesign: Build complete SIM packages with validated knowledge quizzes.
3. Evaluation Tool Development: Create and validate a new measure assessing knowledge and teamwork.
4. Dry-Run Testing: Pilot scenarios for clarity, feasibility, and fidelity.
5. Implementation: Deliver revised SIMs to AY 2026-2027 students.
6. Data Analysis: Evaluate pre-/post-knowledge gains, SET-M scores, and NBME performance changes.

What challenges are you facing? Major challenges include faculty time constraints, coordinating multidisciplinary contributors, achieving consensus across blocks, aligning EPAs/EPOs with scenario objectives, and maintaining consistent Delphi participation.

What resources are you planning to use? Planned resources include NBME data, block syllabi, TBL materials, existing simulation content, Kern's and Delphi frameworks, SET-M evaluation instruments, and Simulation Center support.

What resources do you need? The project requires protected faculty time, administrative and statistical support, SIM Center access for dry-runs, and assistance with assessment validation and curricular mapping.

7. Integrating AI-Supported OSCEs with Narrative Reflection

Benjamin Popokh, MS4
University of Texas Southwestern Medical School

Idea Description: In mathematics education, the introduction of the calculator created a temporary "calculator gap": a period during which students questioned the need to learn foundational skills that technology could now perform for them. Only once curricula evolved did learners reengage, focusing on higher-order reasoning rather than manual computation.

Medical education now faces a parallel challenge. With the rise of AI scribes and automated clinical tools, students increasingly ask: *Why learn to take a history or write a note by hand if technology can do it for us?* This project seeks to bridge this "calculator gap in medicine" by exploring how technology can free time not to replace clinical reasoning but to deepen human understanding through narrative medicine.

I propose an experimental OSCE model with three cohorts:

1. Traditional group: Students perform the OSCE and type a standard note outside the room.
2. AI-augmented group: Students use an AI scribe and edit its output.
3. Narrative reflection group: Students use the same AI scribe but spend their remaining time writing a brief narrative note on the patient's life context and humanity.

At one to three months post-OSCE, participants will be assessed on recall of the patient's condition, workup, and management. I hypothesize that the narrative reflection group will show superior retention and empathy, suggesting that humanistic reflection may convert time saved by automation into deeper patient understanding. This could support clinical practices spending the time saved by automation in further, genuine thought for a given patient rather than adding additional patient load to a physician's day.

Goals:

1. Evaluate the educational impact of integrating AI-assisted documentation with narrative reflection.
2. Define pedagogical strategies for using automation to enhance, not erode, clinical reasoning and empathy.

Implementation Plan: Conduct a pilot study within a medical OSCE program; collaborate with educational technology and humanities faculty; integrate AI scribe platforms with structured reflection prompts.

Challenges: This idea will require IRB approval, standardization of AI scribe outputs, ensuring consistency across OSCE evaluators, and balancing assessment validity with experimental design.

Resources Needed: Access to AI scribe software, Simulation Center support, faculty mentors in medical humanities and informatics, and limited funding for data collection and analysis.