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The Pyloric Learning on Repeat Ultrasound Simulator (PyLORUS)

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goals on a 4-week rotation.

Curricular Design: This project was conducted at a PGY 1-4 EM program training 16 residents a year. PEM rotation occurs in the PGY 1 and 4 years in a dedicated PED at a level II peds trauma center with a level IV NICU and PICU. Pediatric and family medicine residents also rotate in the PED, which is staffed by PEM-boarded attendings. Using a modified Delphi process, 10 PEM attendings and 4 EM chief residents created a sticker chart (Table 1) of observable and measurable educational activities. The activities were then categorized by ACGME Milestones for purposes of evaluation and feedback. The goals achieved were denoted by the placement of a sticker on the card. EM interns who completed the entire chart, or who had the highest number of completed activities in each 4-week block, were recognized. The chart was introduced in the summer of 2023. Rotational scores were entered by the residents into New Innovations on a 1-5 scale. The project was reviewed by the IRB.

Impact/Effectiveness: Core metrics for the PEM rotation universally increased, suggesting that a sticker chart of learner activities improved PGY 1 EM learner experience. Overall rotational scores for the rotation from EM residents for AY 22-23 (pre-chart), AY 23-24 (chart year 1) and AY 24-25 (chart year 2) increased from 4.09, to 4.34, and then 4.56. Resident scores on the quality of feedback faculty provided improved from 3.96, to 4.10, then to 4.42. Resident perception of whether the goals of the rotation were met started at 4.07 and improved to 4.31 and then to 4.57. Positive qualitative feedback from attendings, residents and nurses prompted the development of a second card, using a Bingo style, for the senior teaching resident rotation using a similar Delphi process. That card, shown in Table 2, is being implemented this academic year.

Table One: EM PGY 1 Sticker Chart

Emergency Stabilize (PC1)	Identifies unstable child	Initiates basic stabilization	Reassesses after stabilization attempt	Admits a patient to the PICU	Discusses airway equipment, sizes	Manages child with complex PMH	Participates in neonatal resus
History & Physical (PC 2)	Performs observed H+P	Performs observed GU exam	Completes HEADSS assessment	Uses Peds BP table	Identifies SIRS vitals	Performs Trauma Survey	Uses Peds Triage Assessment
Diagnostic Studies (PC 3)	Discusses benefit & risk of CT	Interprets peds Xray	Interprets peds EKG	Uses decision rule	Uses Chooses Wisely	Interprets POCUS	Uses PECARN TBI rule
Diagnosis (PC 4)	DKA	Peds rash	"Fussy" baby	SCIWORA	Appendicitis	ALTE/ BRUE	Acute otitis media
Pharmaco-Therapy (PC 5)	Orders ingestion antidote	Orders ABX for sepsis <60 min	Differentiates epinephrine dosing	Describes glucose dosing	Calculates bum IVF volume	Manages acute agitation	Status epilepticus dosing
Reassess & Dispo (PC 6)	Calculates asthma score	Reassesses hydration status	Makes a PCP appointment	Arranges specialist f/up	Calculates bronchiolitis score	Works with access coordinator	Plan change after re-assessment
Multi tasking (PC 7)	Assesses multiple patients	Assists RN or tech	Prepares discharge instructions	Provides early PO challenge	Edits patient pharmacy in EMR	Provides UA cup and instructions	Creates an EMR "dot" phrase
Procedures (PC 8)	Intubates	U/S Guided IV placed	Laceration repair	Lumbar puncture	Procedural sedation	Dislocation reduction	FB removal
Patient Safety (SBP 1)	Discusses "no ABX" with parents	Describes abuse reporting process	Provides observed dc instructions	Knows weight-based dosing	Completes state form (i.e, dog bite)	Completes patient safety form	Confirms drug dose with pharmacy
Local Goals (See notes)	All charts completed (SBP 4)	Oral rehydration (PC 5)	Logs 10 resuscitation (PC 1)	Manages siblings (PC 7)	Nursemaids reduction (PC 8)	Arranges a transfer (PC 6)	Uses AAP guideline (PBL 1)

Table Two: EM PGY 4 Bingo Card

Intubation <1 yo (including simulation)	Teaches pediatric ventilator settings and vasopressors	Performs neonatal resuscitation (including simulation)	Teaches a learner about vaccine preventable illness's: diagnosis & recommendations	Describes congenital heart abnormalities to a learner
Teaches common pediatric toxic ingestions	Leads a pediatric resuscitation	Creates personal list of medication dosages to memorize	Teaches a learner the placement of an IO	On shift management of a patient with metabolic derangement
Teaches how to perform a pediatric LP	Teaches the management of refractory hypoglycemia	Teaches something new not otherwise listed (Wild Card)	Foreign body ingestion at rural site	Successfully conducts a difficult conversation
Teaches congenital adrenal hyperplasia management	Demonstrates use of the infant warmer	Discusses infant feeding: how much and how often	Demonstrates how to determine correct size of peds CVC	Teaches delivery of medications via ETT
Teaches the evaluation of fever <28 day old	Teaches recognition of child abuse	Places umbilical line (including simulation)	Demonstrates how to hold a conversation on human trafficking	Teaches management of mucous plug in community setting

10 The Pyloric Learning on Repeat Ultrasound Simulator (PyLORUS)

Quinn Bushman, Thomas Sanchez, Hannah Park, KeriAnne Brady, Richard Shin

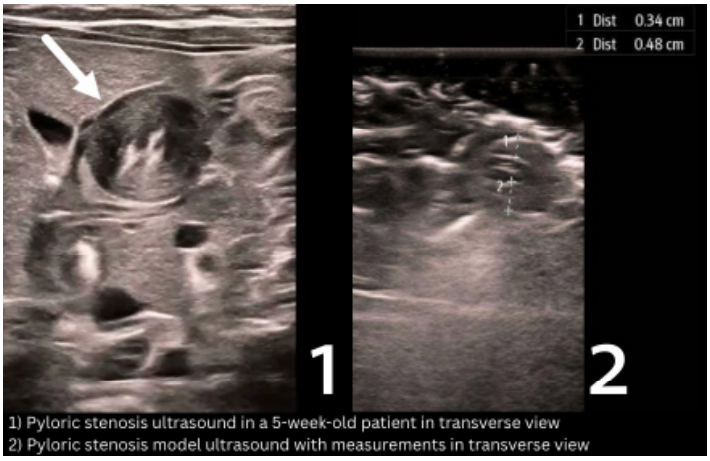
Introduction: Hypertrophic pyloric stenosis is the most common surgical cause of nonbilious vomiting in infancy and requires prompt diagnosis for optimal outcomes. Ultrasound is the imaging standard for diagnosing pyloric stenosis, with point-of-care ultrasound (POCUS) demonstrating high sensitivity and specificity when performed by trained emergency medicine (EM) physicians and pediatric EM providers (1). Developing an ultrasound training model for EM residents to identify pyloric stenosis addresses a critical educational need. It enables residents to gain hands-on experience recognizing the characteristic sonographic findings of pyloric stenosis, such as increased pyloric muscle thickness and channel length, and to practice reproducible and accurate measurement techniques. Such training improves diagnostic confidence and expedites patient care in the emergency department.

Objective: Our aim was to create a simulated model of pediatric pyloric stenosis using inexpensive and readily available materials. Creating an open-source, reproducible, and durable model would allow for effective teaching and familiarization with this skill for all EM residents.

Design: We used ballistic gel, a water balloon, and a Gastrostomy tube (G-tube). An empty water balloon was placed around the stoma end of the G-tube, with the G-tube balloon inside. The G-tube balloon was inflated with cornstarch-thickened water to simulate muscle. The balloon was tied to

the G-tube tubing with suturing material. The balloon was inflated with water through the feeding tube port, representing the stomach contents. The material was then placed in a kidney-shaped emesis basin and layered with melted ballistic gel. The feeding tube port was placed externally to the model and served as the access point for simulating infant feeding.

Impact: This model received approval from ultrasound faculty before its implementation, and it was incorporated into a scheduled conference day for residents. All residents surveyed (100%) reported that the model was an effective teaching tool, significantly boosting their confidence in evaluating pyloric stenosis after the session. Our goal is to enable all EM educators to construct this model, enhancing the educational experience for evaluating pyloric stenosis and improving the use of POCUS.



1) Pyloric stenosis ultrasound in a 5-week-old patient in transverse view
2) Pyloric stenosis model ultrasound with measurements in transverse view

11 Simulation-Enhanced Remediation: A Competency-Guided Framework for Targeted Learner Development

Ryanne Mayersak, Josh Kornegay

Introduction / Background: Remediation in competency-based medical education (CBME) remains challenging across specialties, including Emergency Medicine (EM). Traditional strategies—extra shifts, passive review, or unstructured feedback—rarely address specific gaps or generate milestone-aligned evidence of improvement. Simulation offers a safe environment for deliberate practice and direct assessment of communication, teamwork, professionalism, and clinical reasoning. With video review, feedback becomes more objective and defensible, yet its use in structured remediation and individualized learning plans (ILPs) is limited. This innovation introduces the SCORE framework, a simulation-centered remediation model integrating targeted scenario design, structured debriefing, and video-assisted reflection to support learner growth and program accountability.

Educational Objectives: • Integrate simulation into ILPs within a competency-based model.

- Design focused simulations targeting communication, professionalism, procedural skills, or clinical reasoning.
- Use structured debriefing, video reflection, and standardized documentation to support assessment.

Curricular Design: The SCORE Framework includes four steps:

1. Gap Identification: Map performance concerns to milestones or EPAs.
2. Tailored Simulation: Use a standardized template to design individualized scenarios with observable behaviors.
3. Structured Debriefing & Video Reflection: Apply PEARLS and advocacy–inquiry with video review to build insight and a reflective portfolio.
4. Competency-Aligned Assessment: Use milestone-linked checklists and calibrated faculty ratings to support reliable documentation.

Impact / Effectiveness:

Implementation at a large academic EM program improved learner clarity, confidence, and reflective ability. Faculty reported greater transparency and defensibility in remediation. Video-assisted simulation provided objective data for advancement decisions and strengthened alignment with CBME principles. Ongoing evaluation tracks milestone progression, rater consistency, and scalability. Integrating simulation, coaching, and reflection reimagines remediation as a structured, supportive process that fosters meaningful learner growth.

12 Night of Reflection: A Creative Model for Psychological Safety and Social Connection in EM

Kirlos Haroun, McKenzie Warshel, Kamna Balhara, Rodney Omron,

Introduction: Physicians frequently experience emotional distress, vicarious trauma, and second victim experiences following adverse clinical events. Despite growing attention to burnout, few graduate medical education (GME) programs offer structured, reproducible models for reflection and recovery. Preliminary work within our emergency medicine residency demonstrated that a facilitated Night of Reflection—integrating art-based reflection, mindfulness, and mixed-level dialogue—created a psychologically safe space for residents and faculty to process emotionally charged encounters. Building on initial success, we examined feasibility, retention, and cultural integration across two consecutive years.

Educational Objectives: To (1) create psychologically safe spaces for structured reflection, (2) normalize vulnerability across hierarchical levels, (3) strengthen community and belonging, and (4) introduce practical coping strategies to support physicians following distressing events.