confidence, knowledge and efficiency in diagnoses and treatment of acute strokes. The e-learning effectively taught them the NIH scale and gave them the background required for rapid acquisition of knowledge during the simulations. Future steps include clinical performance analysis and Neurology resident participation.

11 Attending Faculty at an Emergency Medicine Residency Have Poor Agreement on Rating Residents Using the ACGME Milestones

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Background: In 2012, the Accreditation Council for Graduate Medical Education (ACGME) implemented 23 milestones to assess the proficiency of emergency medicine (EM) residents. The milestone and their progressive levels have been validated only in that residency leadership faculty were asked to rank the order through which the residents should progress in each category. No other validation method has been applied to date. One way to determine the validity of an evaluation tool is to examine the inter-rater reliability when the tool is applied to the same subject by different evaluators.

Objectives: Our study examined the inter-rater reliability of EM faculty members in assessing EM residents using the milestone levels.

Methods: This observational cross-sectional study was performed at an academic EM residency. Twenty faculty members evaluated 25 randomly chosen residents using eight ACGME EM milestones. These milestones were scaled on a 1-9 scale to represent the milestone levels. The specific milestones evaluated were chosen by residency leadership as those in which the average EM attending would have sufficient knowledge of the resident in order to properly evaluate them.

Individual and average Intraclass Correlation Coefficients (ICC) were calculated to determine the reliability of attending assessment.

Results: Each resident was assessed by an average of 16 attendings (min=10, max=20). Individual ICCs did not exceed a threshold of 0.72 (min=0.396, max=0.516). However, average ICCs were greater than 0.9 for each milestone examined.

Conclusions: Although agreement increases with a higher number of evaluators, there is low agreement between individual attendings evaluating the same resident on milestone levels. This means that EM faculty may require further education on the milestones or that the milestone levels require further refinement to become a valid assessment tool or both. The major limitation of this study is the small sample size of raters and residents evaluated.

Table 1. Attending evaluation intraclass coefficients by milestone.

Milestone	ICC individual	ICC average
Communication	0.39674	0.92934
Diagnosis	0.46124	0.94482
Diagnostic studies	0.48240	0.94908
Disposition	0.45488	0.94347
Emergency stabilization	0.51663	0.95531
History and physical	0.42507	0.93666
Multi-tasking	0.43501	0.93902
Team management	0.41651	0.93454

ICC, intraclass correlation coefficients

12 Basic Back: A Low Fidelity Simulation Model for Lumbar Puncture

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Introduction: Industrial models for lumbar punctures (LPs) are expensive and with a residency of thirty doctors, a need arose for a partial task trainer that is low fidelity, low cost, easily reproduced, re-usable and effective at simulating the procedure.

Educational Objective: To be used for teaching and assessing procedural skills in LPs; and to describe its integration into a milestone based, procedural competency education module.

Curricular Design: This is the second of multiple low fidelity simulation models that I have devised. The materials (and costs) per model are as follows: Wire Chaffing stand $2.99, three-Wooden letter O's (vertebra) $4.50, Wooden dowel $1.00, Plastic tubing $1.00, piece of Vinyl (skin) $1.00, 3"x5"x2" piece of foam $0.50. Total cost ~$10.50, as compared to a professional model which lists $510 to $2200 per model.

The educational session begins with a written self-assessment of the participant's knowledge of the indications, contraindications, anatomic considerations, equipment, procedure, complications, and aftercare. The assessment tool is a structured open-ended questionnaire. During a didactic session, participants are encouraged to take notes on their self-assessment form (in red ink). Forms are collected and a pre-printed completed procedure overview sheet is provided for the learner to keep. In the practical session learners are paired off one-to-one with an attending or credentialed senior resident who reviews again the learners understanding from indications to aftercare. Faculty has the opportunity to evaluate senior residents in the "level 5" milestone (teaches procedural competency and corrects mistakes).

Impact/Effectiveness: This process incorporates all learning styles (visual, auditory and kinesthetic) in a simple, inexpensive, and reproducible manner. Resident feedback has been excellent, stating that the anatomy / landmarks are spot-on and the interactive multifaceted learning session improved understanding of the material.