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Overtraining in Simulation-Based Mastery Learning - Performance Translation of Ultrasound-Guided Peripheral Intravenous Catheter Placement from a Simulator to Humans

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**Table 2.** Patients per hour based on training quarter.

Quarter	n	Pts/hr	SD
1	11	0.898	0.092
2	22	0.941	0.113
3	23	0.957	0.129
4	23	1.014	0.091
5	7	1.081	0.073
6	6	1.075	0.079
7	12	1.072	0.079
8	5	1.181	0.87

### 31 Nursing Lectures During Conference Time are Well Received by Both Residents and Faculty

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**Background:** As a way of increasing department cohesiveness between nursing staff and faculty/residents quarterly nursing lectures were added to the resident weekly conference curriculum. Nursing was given leeway to discuss topics which they thought were areas of concern in the department.

**Objectives:** To determine the quality/receptiveness of lectures given by nursing during resident conference compared to those given by faculty/resident.

**Methods:** A retrospective observational study. Location: a suburban teaching hospital with an annual census of 90,000 patients. Study period: July 2016 through November 2016. One month prior to nursing lectures the topics of discussion were forwarded to the associate and program director to assure validity to resident training. Upon agreement, nursing would give a 45 minute lecture with an additional 10 minutes for questions. Following the completion of the lecture the residents/faculty were given a closed end questionnaire to evaluate their performance. Areas of evaluation include: content, organization, style/effectiveness, knowledge, professionalism, interpersonal skills/communication, and practice based learning. All lectures were evaluated on a 1-6 scale. A 1 indicating "expectation not met" and 6 meaning "expectations exceeded". Nursing lectures were compared to other lectures presented on that same day. Statistics: Two-tailed Wilcoxon signed-rank test. This study was considered to be exempt from IRB approval.

**Results:** A total of 100 lecture evaluations were examined. Only 48% of evaluation forms completed, evaluated nursing lectures. The overall score for nurses was

5.7 (6 to 5.8 95% CI) versus the faculty/resident score of 5.8 (6 to 5.5 95%CI) (p=NS). With respect to the individual evaluation areas of content, organization, style, knowledge, professionalism, interpersonal skills/communication, and practice based learning nursing versus resident/faculty score were: (5.8, 5.9), (5.7, 5.9) (5.7, 5.9), (6, 5.8) (6, 5.9) (6, 5.9) (6, 5.8), respectively (P=NS). Of note, only 2% (N=2) of evaluations had any derivation from the different evaluation areas with most assigning the same numeric value across the complement of questions.

**Conclusions:** Overall nursing lectures were well received and scored equivalently to resident/faculty lectures.

### 32 Overtraining in Simulation-Based Mastery Learning - Performance Translation of Ultrasound-Guided Peripheral Intravenous Catheter Placement from a Simulator to Humans

Kule A, Iwasaki H, Adams W, Reed T/Loyola University Chicago, Stritch School of Medicine, Maywood, IL

**Background:** Competency-based medical education, such as mastery learning, is increasingly recognized as a more effective technique than the traditional fixed curriculum. Simulation-based mastery learning (SBML) has been shown to improve skill translation from simulators to humans. Although there is interest in exploring the effect of overtraining, there hasn't been an investigation assessing whether overtraining in SBML impacts skill translation to humans.

**Objectives:** Evaluate the impact of overtraining in ultrasound-guided peripheral intravenous catheter (USGPiV) placement with SBML on skill translation to humans.

**Methods:** This was a prospective, randomized study of 48 medical students naive in USGPiV placement who received SBML instruction using a blue phantom simulator. Sample size was determined based on initial estimates for 80% power. All students pretested, watched an instructional video, received hands-on skills training using deliberate practice with feedback, and post-tested until MPS was met on a 19 item checklist developed by 6 experts using the patient safety approach to standard setting. Subsequently, students were randomized to 0, 4 or 8 successful extra simulation attempts to MPS, after which USGPiV placement on a human subject was assessed by a blinded rater-trained expert.

**Results:** Success rates within each of the three extra attempt group were analyzed using a generalized linear mixed effect model that accounts for clustering of students within their class year. Those assigned to 0 and 4 extra attempt groups achieved a 50% success rate of IV placement on the human volunteer; students assigned to 8 extra attempts achieved a 62.5% success rate. For all

possible pairwise comparisons, there wasn't a significant difference in the probability of success among the three treatment groups ( $p = .58$ ).

**Conclusions:** In this study, we found that for novice medical students who underwent SBML instruction in USGPIV placement and achieved MPS on a simulator once, there was no evidence that any extra attempts resulted in a higher probability of successful USGPIV placement in a human volunteer. USGPIV success rates were in line with other studies assessing trained providers. These results support the impact of SBML training on skill translation and question the need to over-train on a simulator if SBML is employed in an era of increasing cost and time consciousness.

Assignment	Valid N	Successfully Placed IV	Odds Ratio (95% CI)	P
0 attempts (reference)	16	8 (50%)	--	--
4 attempts	16	8 (50%)	1.00 (0.22 - 4.50)	.99
8 attempts	16	10 (63%)	1.96 (0.43 - 8.85)	.38

Note: Valid N is the number of cases used to compute the estimate. IV = Intravenous therapy. CI = Confidence interval for the estimate.

### 33 Participation in an Emergency Medicine Bootcamp Increases Self-Confidence at the Start of Residency

Lewis J, Schoenfeld D, Dubosh N, Ullman E /Beth Israel Deaconess Medical Center, Boston, MA

**Background:** The transition from medical student to resident physician can be a difficult and stressful period. An emerging trend in medical education is the development of specialty-specific electives or "bootcamps" designed to review critical topics and skills prior to the start of residency. We developed a 4-week bootcamp with over 120 hours of intensive EM specific training including simulation cases, procedural skills sessions and case based lectures, which was offered during the last month of medical school with the goal to increase clinical and procedural experience prior to residency. The effect of participation in an EM bootcamp on participant confidence remains relatively unstudied.

**Objectives:** The goal of this study was to determine the effect of the EM bootcamp on intern confidence at the start of residency.

**Methods:** This was a prospective survey-based study of new EM interns who graduated from our affiliated medical school. Surveys were sent to all affiliated students who matched in EM from the classes of 2015 and 2016. Each intern was asked to assess their confidence as compared to their co-residents one month into the start of residency on a 1-5 Likert scale, with "1" being the lowest, "3" average and "5" the highest. Responses were confidential and contained no program or personal identifiers. Results were dichotomized to  $\geq 3$  or  $< 3$  and a

Fisher's exact test performed.

**Results:** Our affiliated school matched 23 students into 18 EM residency programs from the classes of 2015 and 2016. Thirteen participated in the EM bootcamp. The survey was completed by 91.3% of graduates. Thirteen participants and 8 non-participants responded. Self-assessed confidence was significantly higher in participants compared to non-participants (13/13 vs 4/8 = 3,  $p < 0.02$ ).

**Conclusions:** Graduating medical students matching in EM who participate in the bootcamp had higher self-assessed confidence compared to non-participants at the start of residency. Half of non-participants rank their confidence significantly lower than average compared with their peers. Future studies with subsequent graduating EM matched students are needed to assess the effect of the bootcamp on resident confidence in specific domains and ultimately overall performance in residency.

### 34 Post-Interview Communication Between EM Residency Programs and Applicants

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**Background:** In August of 2013 the NRMP published the Match Communication Code of Conduct. As part of this code of conduct there is a section on discouraging unnecessary post-interview communication. This section states "Program directors shall not solicit or require post-interview communication from applicants, nor shall program directors engage in post-interview communication that is disingenuous for the purpose of influencing applicants' ranking preferences." There is much variability in interpretation of NRMP Match Communication Code of Conduct.

**Objectives:** This study sought to determine the frequency in which EM programs are communicating with applicants, the communication medium, and the communicator. Our hypothesis is that despite the Match Communication Code of Conduct there are applicants who are contacted by EM program directors.

**Methods:** We undertook a cross-sectional bi-site study in which applicants to two EM residency programs were surveyed following the 2015-2016 application cycle. An anonymous and voluntary internet-based surveying service was used to collect data. All applicants at the two EM residency programs were invited to participate. This study was deemed IRB exempt.

**Results:** 81.3% (65/80) of applicants were contacted by EM programs. The majority of applicants were contacted by email, followed by phone and mail. The majority of applicants, 65.2% (45/69) were contacted by the program director.

**Conclusions:** A majority of applicants surveyed were contacted by EM residency programs, primarily by the program director. Further clarification of this NRMP rule