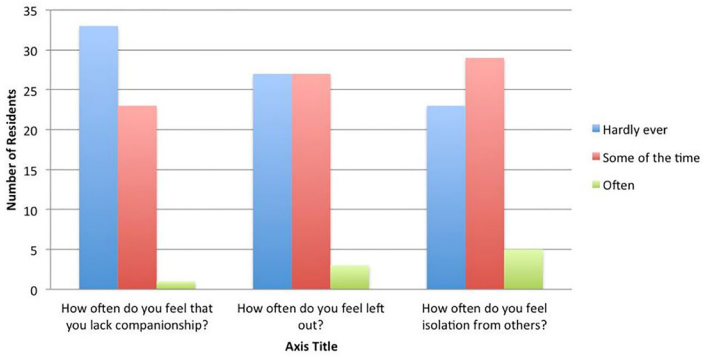

Figure 1. Social Isolation.

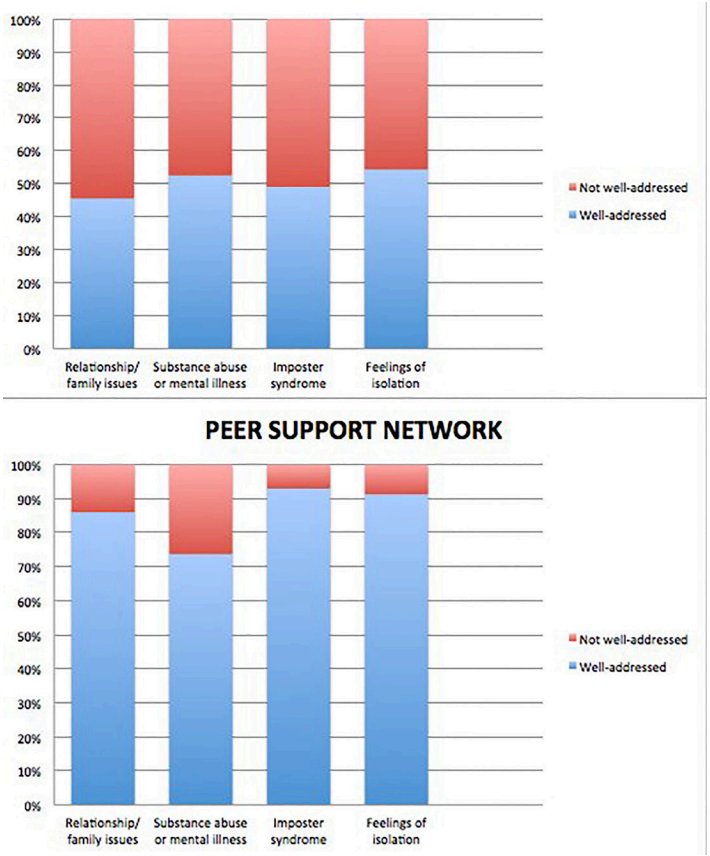

Figure 2. Comparison of Mentorship.

30 Non-Emergency Medicine Residents: Creating an Efficient Workforce

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Background: Non-Emergency Medicine (EM) residents make up to one fourth of the resident workforce. While educational objectives vary by specialty and differ from traditional EM objectives, assessing and improving efficiency remains constant. Current literature has established a correlation between a trainee's specialty and its relation to primary care leading to clinical success during an EM rotation, but does not discuss how this relates to efficiency.

Objectives: We aim to assess productivity of non-EM residents from various specialties and to develop a model that describes efficiency, defined as patients seen per hour (pts/hr), weighted by month of training.

Methods: We performed a retrospective review of non-EM resident patient logs from July 2014 to June 2016. Current training month and the average patients seen per hour were extracted. Rotating residents, who hail from Anesthesia (Anes), Internal Medicine (IM), Medicine/Pediatrics (M/P), Obstetrics/Gynecology (Ob/Gyn), Physical Medicine and Rehabilitation (PMR), Transitional Year (TY), spent one month rotating within our suburban Emergency Department (ED) whose annual patient volume exceeds 120,000. For each resident, the mean number of patients per hour and standard deviation (SD) was calculated. Linear regression was used to develop a model that describes expected efficiency for a non-EM resident per month of training.

Results: We analyzed data from 110 non-EM residents over 24 months. We found the average pts/hr was similar amongst specialties, except for IM PGY2, whose average pts/hr was higher (Table 1). An inexperienced non-EM resident sees 0.873 pts/hr. In addition, non-EM resident efficiency increases quarterly (Table 2) and they are able to see an additional 0.012 pts/hr based on their current month of training. Linear regression was used to develop a model to describe predicted efficiency for a non-EM resident. The model predicts that pts/hr = 0.873 + (0.012 x training month) ($F(1, 108)=59.10$, $p=0.00$, $R2$ of 0.35).

Conclusions: An efficiency prediction model allows for individual goals and expectations to be set for ED staffing and non-EM resident workflow. Residents rotating in the ED later in training are more productive. This model may assist strategic placement of the EM rotation in a non-EM resident's curriculum.

Table 1. Mean patients per hour by specialty.

Specialty	PGY	n	Pts/Hr	SD
Anes	1	10	0.913	0.152
IM	1	14	1.024	0.074
IM**	2	26	1.102	0.083
M/P	1	6	0.963	0.149
M/P	2	5	1.049	0.088
Ob/Gyn	1	12	0.999	0.081
PMR	1	6	0.948	0.148
TY	1	31	0.935	0.105

** Statistically different than Anes, PM&R, and TY

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

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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