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Use of a Single Expert Reviewer Instead of End Users to Evaluate a Decision Support Tool

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**Methods:** We retrospectively reviewed a cohort of patients >2 months old admitted either to OBS or HOSP who had stays < 24 hrs during a 26 month study period at a Level I trauma center, adult and children's university hospital with 40,000 ED census and a 10-bed ED OBS. Exclusions were: elective, day surgery, and pregnancy-related admits; patients with major procedures; and deaths and zero charges. Using a two-sample t-test for continuous variables and chi-square test for discrete variables, we compared total facility charges (CHARGES) in dollars and length of stay (LOS) in hours for the cohort and for selected diseases using ICD-9-CM categories. Significance was set at  $p < 0.01$  or  $< 0.05$ .

**Results:** Adjusting for age, gender, LOS, ICD-9 category and insurance class, linear analysis of covariance (ANCOVA) demonstrated significant difference in log of charges. A similar model without LOS found significant difference in log LOS. OBS admits had a larger percent of non-sponsored patients (17.4 vs 7.5,  $p < 0.05$ ) and fewer patients returning within 72 hours of discharge for readmission to the hospital (1.5% vs 2.2%,  $p < 0.05$ ).

## 20 Factors Important to Emergency Medicine Residency Applicants in Selecting a Residency Program

Lalena M Yarris, MD; Nicole M DeIorio, MD; Robert A Lowe, MD, MPH.  
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**Background:** Little is known about the factors important to applicants when selecting an emergency medicine (EM) residency program. We sought to identify factors important to applicants when selecting a training program, and determine whether there were gender differences in the factors that applicants value.

**Methods:** This observational study surveyed interviewees at an EM residency program from November 2005 to February 2006. Applicants were asked to rate each of 18 factors from "not at all important" to "very important" in their selection of an emergency medicine residency program. Participation was voluntary and anonymous.

**Results:** 73 of 82 interviewees (89%) completed the survey. The factors with the top five mean scores were: how happy the residents seemed (3.9), program personality (3.8), faculty enthusiasm (3.7), geographic location (3.6), experience during interview day (3.5) and pediatrics training (3.5).

**Conclusions:** The top three factors deemed most important to emergency medicine applicants are primarily intangibles, while programs have no control over the fourth most important factor, location. Still, programs aware of these findings may choose to emphasize these intangibles as well as the geographic strengths of their city in order to maximally appeal to potential residents. Further research is needed to investigate in more detail what aspects of the interview-day experience are most meaningful,

as this may be the factor over which program directors have the most control.

## 21 Attending and Resident Satisfaction with Feedback in the Emergency Department

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**Objectives:** Effective feedback is a core component of medical education. Little is known of emergency medicine (EM) attending and resident perceptions of the feedback they give and receive in the emergency department (ED). This study aims to characterize the overall satisfaction of EM attendings and residents with feedback in the ED. We hypothesized that attending and resident perceptions of the ED feedback would differ significantly.

**Methods:** This observational study was conducted in an EM residency program. Attendings and residents received unique but similarly worded web-based surveys. The primary outcome was overall satisfaction with feedback in the ED, measured on a 10-point scale. Additional items assessed satisfaction with specific aspects of feedback and whether attendings or residents were more likely to initiate feedback. The attending and resident responses were compared using a two-sample t-test for continuous variables and a  $\chi^2$  test for discrete variables.

**Results:** 24 of 32 attendings and 15 of 27 residents completed the survey. Attendings were significantly more satisfied overall with feedback in the ED (6.4 vs. 4.5,  $p=0.01$ ). Attendings were more likely than residents to report good or excellent satisfaction with the timeliness of feedback (50% vs. 13%,  $p=0.04$ ), quality of positive feedback (88% vs. 46%,  $p=0.01$ ), quality of constructive feedback (58% vs. 13%,  $p=0.01$ ), feedback on communication and professionalism (63% vs. 20%,  $p=0.02$ ) and feedback on managing patient flow (54% vs. 20%,  $p=0.05$ ). When asked who usually initiates feedback, attendings were more likely to report that the attending usually does (96% vs. 27%,  $p < 0.01$ ). The study achieved 80% power to detect the primary finding ( $\alpha=0.05$ ).

**Conclusions:** Attending satisfaction with the timeliness and quality of feedback they give in the ED is significantly higher than resident satisfaction with feedback they receive. There is also significant difference in their perception of who initiates feedback.

## 22 Use of a Single Expert Reviewer Instead of End Users to Evaluate a Decision Support Tool

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**Background:** Development of a decision support tool (DST) requires end-user feedback during prototype testing. This process is logistically difficult and would be eased if the evaluation of a single expert evaluator accurately reflected that of the end users.

**Objective:** To determine the agreement between physician evaluation of the performance of a case-based reasoning (CBR) DST with that of a single expert reviewer.

**Methods:** Ten EPs and three midlevel providers were presented with the results of a CBR-based DST designed to predict disposition of children presenting to the ED with bronchiolitis. Each rated their agreement with the predicted disposition, the explanatory case and the explanatory dialogue generated by the software. The expert reviewer, a pediatric EP, initially reviewed case notes blinded to the original disposition. A second evaluation was performed after four months when the case notes were reviewed alongside the CBR output. Evaluators used a five-point descriptive scale, which was converted to a numeric scale for analysis.

**Results:** The case notes and DST output of 109 patients were evaluated. Where the end user and expert evaluator agreed on the need for admission, agreement on the CBR tool's prediction of disposition was 88.2%(expected 70.6%)  $\kappa$  0.585  $p < 0.001$ . Where the reviewer and end user disagreed on the disposition, agreement was 61.7% (expected 62.6%)  $\kappa$  -0.026  $p = NS$ . When both subsets were combined, agreement was 84.9%(expected 70.9%)  $\kappa$  0.483  $p < 0.001$ . There was only fair agreement on the value of explanation case provided by the software (observed agreement 69.5%(expected 56.7%)  $\kappa$  0.296  $p < 0.001$ ). There was poor observed agreement on the usefulness of the explanation provided of 61.6%(expected agreement 55.4%),  $\kappa$  0.139  $p = 0.07$ .

**Conclusions:** A single expert reviewer had moderate agreement with end users when evaluating a CBR based DST predictions for disposition. This agreement waned progressively as the subjectivity of the components being evaluated increased.

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