

and charge nurses in Oregon EDs between July and August, 2008. We calculated descriptive statistics and chi-square tests were used to determine factors associated with use of propofol.

Results: We obtained a 100% response rate among Oregon EDs (N= 54). Nurses are allowed to administer propofol in 35% of EDs surveyed, and 20% allow propofol administration to children. Of EDs using propofol, 95% require competency validation and 47% require annual continuing education for procedural sedation. In EDs performing procedural sedation, 36% perform sedation >3 times/week, 42% perform sedation 1–3 times/week, and 21% perform sedation <1 times/week. Frequency of sedation was not associated with use of propofol by nurses ($p=0.2$). Non-supportive hospital administrative policies (50%) and staff discomfort with use of propofol (nurse administration=37%; nurses=46%; physicians=11%) were described as barriers for hospitals that did not allow nurses to administer propofol.

Conclusions: Despite national and regional guidelines supporting nurse-administered propofol for procedural sedation, a minority of EDs in Oregon allow nurses to administer this medication. Further education and training may facilitate administration of propofol by nurses in the ED setting.

611 **Participation Rates and Emergency Medicine Provider Perceptions of an Error Reporting System With User-Centered Design**

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Background: Error reporting is an essential means to improve patient safety, but physicians tend not to participate. Reasons for this are unknown, but may relate to poor ease-of-use of current systems.

Objective: To compare reporting rates between two reporting systems and to explore provider perceptions of these systems.

Methods: Our emergency department (ED) participated in a four-month pilot which replaced a commercially available system with one designed using human factors principles, including a user-centered design and feedback loop that included weekly summaries of hazards called Helmet Fire (HFi). A retrospective before/after comparison of the usage rates by emergency medicine (EM) providers (attendings, residents, PAs) was conducted. An electronic survey instrument was then developed, piloted, and sent to all 91 providers to assess perceptions.

Results: Two hundred and ninety-nine event reports were received from providers during the 15-week pilot period compared to 5 in the 24 months preceding. Adjusted by patient volumes, this results in rates of 1098 vs. 3 per 100,000 visits, respectively ($p<0.001$). Seventy-four (81%) survey responses were received. Seventy-two percent reported submitting reports using HFi. Respondents indicated that the system was more

effective than other reporting systems they had used (75%). Reasons included very brief reporting sessions (87%) and being excellent or very good at identifying dangers (79%), collecting pertinent information (74%), and impacting safety (66%). Eighty-nine percent felt the HFi touchscreen format was helpful. Most respondents (90%) felt the HFi format allowed collection of issues they wanted to report on. The vast majority (99%) were comfortable with the data being analyzed outside the institution and 37% felt this increased their willingness to participate.

Conclusion: An error reporting and analysis system developed using human factors principles led to a dramatic increase in provider participation. Reasons seem to be related to ease of use and feedback. Further study is necessary to determine if the increase is sustainable.

612 **The Effect of the 2003 EMTALA Rule Change on the Cost of Emergency Care**

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Background: A 2003 change in the Emergency Medical Treatment and Active Labor Act (EMTALA) provided new rules for hospitals and on-call specialist coverage. Following this change, hospitals reported larger and more frequent payments to specialists to provide call.

Objectives: To examine changes in the cost of emergency department (ED) visits following the 2003 EMTALA change, using a large sample of West Coast Hospitals.

Methods: This was a longitudinal, retrospective study using administrative data from 2001–2006 on acute care hospitals in California (273), Oregon (52), and Washington (67). We estimated the marginal cost of three types of ED visits: (1) discharge home from ED; (2) admission from ED for injury-related diagnoses; (3) admission from ED for other diagnoses. We used a multivariate translog regression model, adjusting for hospital size, teaching status, ownership, market competitiveness, Medicare wage indices, and county per-capita income. We compared marginal costs before and after 2003 and generated 95% confidence intervals through bootstrapping.

Results: In California, following the 2003 EMTALA change, the marginal cost of an ED visit resulting in admission with injury-related diagnosis showed a large and statistically significant increase (\$13575, 95% CI \$3565–\$26487). There was no significant change in the marginal cost of other ED visits for California hospitals. Hospitals in Washington demonstrated a similar but non-significant trend for injury-related admissions. No changes were observed in Oregon hospitals.

Conclusions: Our results are consistent with the hypothesis that the cost of on-call coverage has risen, led by hospitals in California. Increased costs are not associated with all ED visits, but are primarily confined to changes in injury-related admissions, reflecting the increasing expense of maintaining broad specialist call panels to provide service to these patients.