

lost in the shuffle. Simple measures to appreciate them are very effective.

IMPROVING FIRST CASE SURGICAL START TIMES BY IMPROVING WAYFINDING



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Introduction: Wayfinding refers to a process of navigating from one space to another. On the day of surgery, patients can be confused and nervous. These stressors affect their ability to process information. This project examined ways to improve wayfinding in a large hospital.

Identification of the problem: First case surgical delays are costly when the Operating Room (OR) stands idle waiting for the patient. Late first Cases may cause late starts for the rest of the surgical day resulting in staff overtime and patient dissatisfaction.

QI question/Purpose of the study: Through two Plan, Do, Study, Act (PDSA) cycles, we identified ways to reduce late starts. The first PDSA cycle question: "In the patient's path of travel from hospital door entry to OR transfer, what are causes of delay?" It was found that patients got lost from hospital entry to preoperative area (Preop). The second PDSA question was "With additional temporary signage will start time delays be reduced?"

Methods: PDSA 1: student nurses observed 30 patients' pathways from hospital entry to OR transfer and documented time spent at key stopping points. Their observations were compared to times documented in the electronic medical record (EMR) and confirmed that manual time observations matched EMR times. Signs were added between PDSA1 and PDSA2. PDSA 2 consisted of an EMR review of 200 Cases: 100 pre-signage cases and 100 post-signage cases.

Outcomes/Results: PDSA1 findings: 28 Cases were used in the final analysis. 9 of 16 first case starts were delayed. One reason for delay was time spent finding preop (33minutes). Temporary signage was placed at strategic points noted to cause patient confusion. PDSA2 findings: The 100 pre-signage cases averaged 36.5 min to preop-checkin while the 100 post-signage cases averaged 21.5 minutes (-41.1% change).

Discussion: PDSA1 helped to identify wayfinding from front door to Preop as a delay. PDSA1 also verified EMR use for looking at larger case numbers. PDSA2 demonstrated strategically placed signs reduced patient confusion in wayfinding.

Conclusion: Viewing the wayfinding from the patients' perspective as well as functional and aesthetic design is important.

Implications for perianesthesia nurses and future research: In large hospitals, wayfinding should be studied more. Understanding path of travel is important in Perianesthesia nursing for both inpatient and outpatient surgeries.

EFFECTIVENESS OF MPEWS AT PREDICTING PEDIATRIC RISK EVENTS AND UNPLANNED ICU ADMISSIONS IN A PACU SETTING



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Introduction: Pediatric early warning scores have been studied as a way to help nurses analyze the large amount of care data gathered and synthesize it into a score denoting risk and need for closer monitoring.

Identification of the problem: There is no validated tool for evaluating the risk of pediatric PACU patients based on data obtained in the PACU. This information could be valuable in the determinations of disposition and level of care needed.

Purpose of the Study: To determine the sensitivity and specificity of the Modified PEW System Score (MPEWS) to predict an unplanned ICU admission or risk event within 24 hours of PACU discharge among pediatric PACU patients.

Methodology: This study used a case control design. Cases were selected from patients 0-18 that experienced a risk event or unplanned ICU admission within 24 hours of PACU discharge. Controls were selected randomly from patients that did not have a risk event or unplanned ICU admission after PACU discharge to acute care unit. Patient data was pulled from the electronic medical record and analyzed logistic regression. Area under the ROC (AUC) curve was calculated to determine discriminative power.

Results: A total of 61 Cases and 210 controls were scored. For each increase in MPEWS score, the odds of being admitted to the ICU were 1.57 times the odds from the MPEWS 1 unit lower and the ROC AUC was 0.70, indicating acceptable, but weak, discrimination. However, cutpoint analysis failed to identify an appropriate MPEWS score that resulted in high sensitivity and specificity.

Discussion: Cases were significantly younger than control patients (median age 4.3 years vs. 9.3 years). ROC AUC improved from 0.70 to 0.75 when age was included in the model suggesting that it may warrant inclusion in the scoring algorithm.

Conclusion: The MPEWS showed a statistically significant ability to predict risk events and unplanned ICU admissions, however, it lacked the discrimination needed for clinical decision-making.

Implications for perianesthesia nurses and future research: Though not clinically significant, MPEWS may hold promise in establishing a common language of acuity between PACU and acute care nursing. Future tools developed may consider inclusion of age as indicator of increased risk.

ARE EMPLOYEE LONGEVITY AND JOB SATISFACTION RELATED TO GENERATIONAL DIFFERENCES AMONG THE BABY BOOMERS, GENERATION XERS, AND THE MILLENNIALS?



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Introduction: Currently there are 3 generations in the nursing workforce: Millennials (ages 19-39), Gen Xers (ages 40-54), Baby Boomers (ages 55 and over). Retaining nurses within the healthcare system is a challenge for hospital administrators. Understanding factors important to nurse retention is essential.

Identification of the problem: This study was prompted by a noticeable increase in nurse turnover in the main Operating Room, Day of Surgery Unit, and Post Anesthesia Unit of a 435 bed not-for-profit, general and acute care facility.

Purpose of the Study: The purpose of this study was to investigate the correlation between generational differences and employee longevity and satisfaction.

Methodology: The investigators conducted a Descriptive Correlation Design Study. Perianesthesia nurses were given the opportunity to participate in an anonymous Talent Quest survey concerning current job satisfaction, career outlook, attitudes toward nursing, positive influence of electronic medical record use, the quality of nursing care and demographics.

Results: We analyzed the responses of 34 nurses to a series of 12 questions. The scores for 9 of the questions were similar between all 3 age groups. In contrast, there were statistically significant differences in the responses between the 3 age groups for the 3 questions related to electronic medical records. ($p < 0.05$)

Discussion: Responses from each of the generational groups were similar for many of the questions. The questions specific to the use of an electronic medical record identified a generational group by the data set of responses provided by the individuals. This study doesn't attempt to answer why a specific generational group provided the responses which were given.

Conclusion: We found that the only questions on which there are statistically significant differences between the 3 age groups deal with electronic medical records. We can conclude that Millennials are more likely than Gen Xers to report that electronic medical records positively influence the following outcomes: their job satisfaction, productivity and time management and quality of patient care.

Implications for perianesthesia nurses and future research: This data may indicate how Millennials who have been born and raised into an electronic, digital world may be very proper resources for other generations of the nursing workforce.

and respiratory rate. We evaluated the effectiveness of the RVM in providing information, reducing the incidence of alarms, alarm fatigue.

Purpose of the Study: Combined effects of medication on respiratory function can be devastating. Avoidable respiratory depression is highlighted in the Anesthesia Closed Claim Project, detailing malpractice claims. Patient monitoring lacks useful warning of impending respiratory compromise, with both SpO₂ and EtCO₂ being late indicators, fraught with alarms from patient motion or probe malposition.

Methodology: An RVM (ExSpirom1Xi, Waltham, MA) was used for perioperative care in the post-anesthesia-care-unit (PACU) and on the general hospital floor (GHF). RVM alarms and response to alarms were recorded and analyzed. Alarms were divided into four categories: 1) actionable and addressed, 2) actionable and not addressed, 3) self-corrected, and 4) technical. The action taken to resolve each alarm was recorded and further categorized. Self-corrected alarms resolved without staff intervention, usually by the patient being stimulated by the RVM alarm. Technical alarms were considered a nuisance.

Result: 247 patients (age: 60.9 ± 13.9 yrs., 143 females) were enrolled and monitored in the PACU and GHF for a total of 2321 hours. We noted 605 RVM alarms, ~1 alarm every 4 patient-hours. Of these alarms, 64% were actionable and addressed. 16% were actionable and "not-addressed" and 13% were self-resolved. Only 6% of RVM alarms were technical (nuisance) and didn't require intervention. The most common intervention was direct patient stimulation, accounting for ~2/3 of all interventions in the PACU and ~80% of all interventions on the GHF. With a focus on early warning, none of the patients with MV alarms had respiratory related negative events.

Conclusion: Inadequate respiratory monitoring has led to drug-related respiratory compromise to become the leading cause of preventable perioperative death. Using SpO₂ and EtCO₂ to curtail these deaths led to an increase of nuisance alarms and overburdening of RN staff without clear improvement in mortality. We found the RVM-generated alarms to be mostly actionable, with a high intervention-to-false-alarm ratio, which can improve patient.

THE CLINICAL APPLICATION OF NONINVASIVE MINUTE VENTILATION MONITOR IN THE PERIOPERATIVE SETTING: PRELIMINARY RESULTS FROM 4 SITES WITHIN KAISER PERMANENTE MEDICAL SYSTEM



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Introduction/Identification of problem: Non-invasive respiratory volume monitoring (RVM) has implications for managing the respiratory status of perioperative patients by measuring and reporting minute ventilation (MV) tidal volume,

CLINICAL IMPLICATIONS OF MONITOR ALARMS: A COMPARATIVE STUDY ON SPO₂, ETCO₂ AND RESPIRATORY VOLUME MONITORING IN PERIOPERATIVE SETTINGS



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Introduction/Identification of problem: Physiologic monitors are to improve patient safety, but can also produce excessive nuisance alarms, leading to alarm fatigue. Our goal was to identify the respiratory status monitors that contribute most to alarm fatigue and provide alternatives while maintaining patient safety. We compared the alarm rate of three continuous respiratory status monitors: capnography (EtCO₂), pulse oximetry (SpO₂) and respiratory volume monitoring (RVM).

Purpose of the Study: Nuisance alarms is the leading cause of alarm fatigue, which decreases awareness of patient safety.

Note: All abstracts are printed as received from the authors.