Our Unplanned Intubation Rate is in the Tenth Decile, Now What?

Introduction/Problem

Unplanned Intubations (UI) are associated with extended hospitalizations and respiratory complications. The American College of Surgeons National Surgery Quality Improvement Program (ACS NSQIP) Semi-Annual Report (SAR) has identified our institution to be in either the ninth or tenth decile for Unplanned Intubation for General and Vascular surgery since January 2014.

Aim/Goal

Through a coordinated clinical approach through a designated Faculty Hour team, we aim to decrease the BIDMC surgery rate of unplanned intubations as measured in the ACS NSQIP SAR.

The Team

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- Mary Ward, R.N., Co-Leader
- Sheila Barnett, M.D., Co-Leader
- Sidhu Gangadharan, M.D.
- Michael Kent, M.D.
- Mary Beth Cotter, R.N.
- Jonathan Critchlow, M.D.
- Raul Guzman, M.D.
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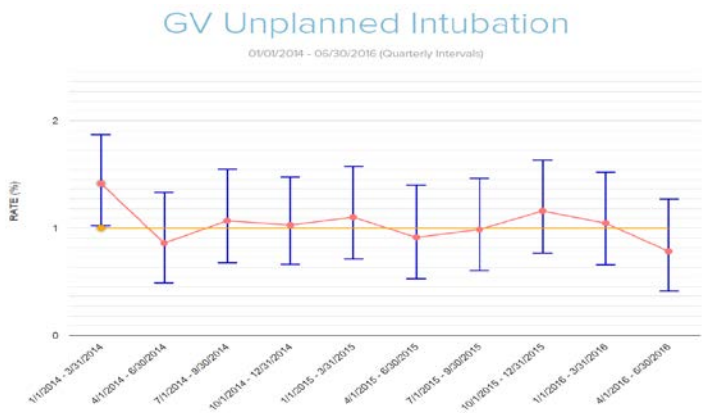
- Stephen Odom, M.D
- Vitaliy Poylin, M.D
- John Pawlowski, M.D
- Somnath Bose, M.D
- Jennifer Wilson, M.D
- Mary Grzybinski, R.N.
- John Ryan, R.N.
- Julia Sheehan, student
- John Tumolo, MPH
- Joseph Ogbonna, MPH

The Interventions

- An interdisciplinary team reviewed our SAR data to look for opportunities for improvement. Unplanned intubations were categorized according to peri-op phase of care: Operating Room, PACU, post-PACU/ Floor Early (<24hrs), or Late (>24hrs). The team conducted a literature review of interventions for controlling post-operative respiratory complications and produced service-specific and generalized recommendations designed to prevent preventable re-intubations.
- **Pre-op phase**: Pre-Admission Testing Staff to identify high-risk patients and better communicate this with the intra-operative anesthesia team.
- **Intra-Op phase**: Performance of a post-operative debriefing between Anesthesia, Surgery and Nursing Staff, use of shorter duration neuromuscular blockers, and acquisition of new monitors for safer transfer between OR and PACU.
- **Post-op phase**: Improved pain control efforts, early ambulation, and nursing education designed to reduce the incidence of sputum retention, aspiration and pneumonia.

Results/Progress to Date



The ACS NSQIP January SAR (7/01/15 – 06/3016) reports that the unplanned intubation rate is now in the 8th decile for General and Vascular Surgery, as opposed to the 10th decile in the previous SAR.

Lessons Learned

- Key pre-operative risk factors were identified: age > 65; baseline functional health status; poor cardiopulmonary or neurological status; opioid dependency; and smoking status.
- Identification of risk factors for reintubation and implementation of specific management strategies has heightened the awareness of unplanned intubation may already be resulting in a decrease in this adverse event.

Next Steps

- **Continued collaboration** between Pre-Admission Testing Staff, Anesthesia and Surgery Staff to identify high-risk patients, both pre and post op.
- Staff survey **to identify educational needs** for nursing and ancillary staff: importance of early ambulation and mobilization and assist in ADL's.
- Create a **patient and family education board**; to be displayed on the unit, describing post operative expectations .
- **Utilization of Incentive Spirometer** in the post-operative period, with audits for patient teaching and compliance.
- Pursue follow-up Faculty Hour Anesthesia group **to target PAT risk stratification** and patient identification.

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