Reducing 30-day Readmissions after HPB Surgery

Marty Sellers MD MPH, Sebastian Perez MSPH, Catherine Blair PA-C, Lori Little PA-C
Pauline Chandler RN, Neha Sharma MPH, Joyce Jones BS, Juan Sarmiento MD

Aim Statement

We aimed to decrease 30-day readmissions in patients undergoing Hepato-Pancreato-Biliary surgery at Emory University Hospital to ≤12% by December 2017.

Background

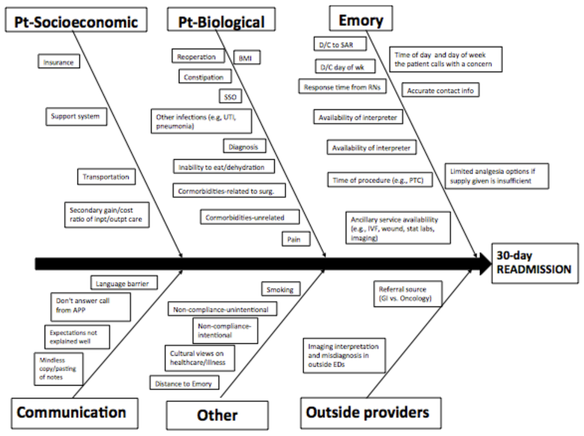
Hospital readmission within 30 days proves costly for patients (physiologically and financially) and hospitals (financially). Factors predictive of readmission after hepatobiliary surgery are known. Our 30-day readmission rate over the prior 30 months was 14%. This is favorable, compared to the national average (18%), but we observed reasons for readmission that were seemingly subject to intervention and, thus, felt we could improve our readmission rate further. Our project included identification of modifiable factors that, if effectively targeted, would decrease our percentage of 30-day readmissions. We aimed to achieve an initial reduction by more than 15% (to ≤12% 30-day readmissions), expecting a benefit on 30-day emergency department visits as well. We feel improvement methods in this high-acuity patient population might also be applicable in other surgical disciplines.

Measures and Baseline

- Primary measure used is percentage of patients readmitted within 30 days after undergoing HPB surgery.
- The denominator includes all patients who underwent HPB surgery from January 1, 2014 and March 31, 2017.
- The numerator includes any patient readmitted within 30 days of surgery, regardless of original length of stay.
- From January 2014 through June 2016, an average of 14% of patients were readmitted within 30 days of HPB surgery.
- A random review of readmissions identified 30% that were felt to be avoidable.

Analysis

- Ishikawa diagram listing factors leading to undesired outcome:



- Modified FMEA. All factors not listed below had total scores of ≤ 27. These listed factors guided our selection of action/tests of change plan:

	Score 1,3 or 9 (9 meaning most frequent)	Score 1,3 or 9 (9 being most severe impact)	Score 1,3 or 9 (9 being the hardest error to detect)	Total
Misdiagnosis at outside ED	3	9	9	243
Support System/Family	3	9	3	81
Patient Expectations	9	3	3	81
Malnutrition	3	9	3	81

Actions/Tests of Change

1. 2015, quarter 4 (Q4): Phone call on post-discharge day 3 for assessment of status and any concerning symptoms; a standardized questionnaire is used, assessing:
   - Fever
   - Gastrointestinal symptoms, including oral intake
   - Genitourinary symptoms
   - Wound appearance, including any drainage
   - Jaundice
   - Anemia symptoms
2. 2017, Q1: Additional pre-op clinic visit with Advanced Practice Provider (APP) to coincide with anesthesia testing to reinforce expectations and importance of nutrition, "exercise," appropriate family support structure, and what is "normal" after their proposed operation.
3. 2017, Q1: Specific discharge teaching by APP to reinforce the above-mentioned expectations, incorporating the specifics of their operation and hospital course. This is in addition to discharge teaching done by the floor nursing staff.
4. 2017, Q1: One week post-discharge clinic visit with APP to:
   - Proactively identify any issues that might lead to an ED visit/readmission:
     - Jaundice
     - Wound
     - Hydration/nutrition status
     - Prescription refill (e.g., analgesic, antiemetic)
   - Reinforce expectations of recovery and establishment of "normal" symptoms.

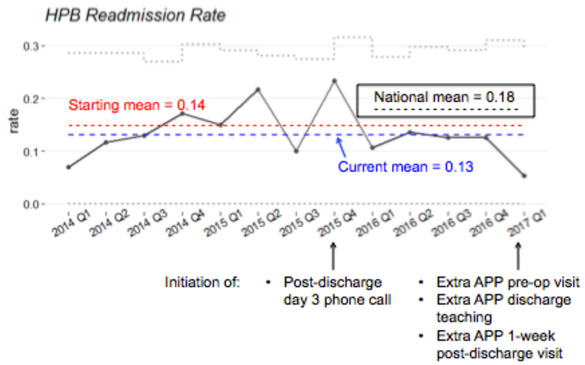
Measures

Biweekly meetings continue to be held to review readmissions and to scrutinize the reason(s) behind any readmission. Understanding these reason(s) led to identification of modifiable factors, and we expect they will lead to ongoing refinement of our tests of change.

.

Results

- Run chart showing quarterly readmission rates and implementation of tests of change:



- As expected, similar results were seen with ED visits within 30 days also.

Reflection/Follow-up

- Early results are encouraging. We have seen a reduction in 30-day readmission rates with our described interventions. In retrospect, we think mere awareness that many readmissions were identified as avoidable led to some decrease in readmissions, but we feel active and ongoing efforts will further optimize readmission rates after HPB surgery. The common focus of each intervention, especially those beginning in 2017 Q1, is to enhance the patient/family education component of their disease process and to properly set expectations for their recovery phase.
- Our biweekly meetings are ongoing, and next steps will include formal regression analyses of factors predicting readmission to see if any of those can be effectively targeted to achieve lower readmission rates. It is admittedly slightly premature, but we think sustained readmission rates ≤10% are possible, even after these complex surgeries.