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Development of a Complex Discharge Process

Authors
Krystal Hawkins, MSW, LCSW, ACM-SW; Alisa Kanuit, MSW, LCSW; Ashley Kappmeyer, LCSW, ACM-SW; Cassandra Scaman

Background
Northwestern Memorial Hospital is consistently at high capacity, causing long wait times in the Emergency Department and potential delays in care for those waiting for a bed. One of the drivers of the capacity constraints is patients who remain inpatient past their clinically indicated discharge date. In particular, patients with complex discharge barriers (such as psychosocial, clinical, and financial barriers) often extend the length of stay beyond what is clinically necessary. Therefore, a complex discharge process was developed to decrease avoidable inpatient days and support the hospital’s throughput efforts.

Objective
Design and implement a reliable method to proactively identify patients who may have complex discharges and a process to improve timely transition to the next level of care for those patients.

Planning/Research Methods
A multi-disciplinary team of Social Work, Medicine, Nursing, Financial Counseling, Legal, Revenue Cycle, Ethics, Utilization Management, and Performance Improvement was assembled to review the existing structure and develop a complex discharge process. The team used the DMAIC improvement methodology to guide the project:
- Define: drafted charter and assembled team
- Measure: created high level process map, worked to identify data source for baseline data, and updated charter to incorporate data measurement tool into intervention
- Analyze: completed detailed process map, analyzed process and data to understand barriers to timely discharge and placement, and hosted Rapid Improvement Event to identify solutions
- Improve: convened subgroups to further develop interventions identified above, implemented changes, and measured progress
- Control: built sustainment plan with the complex discharge social workers and the social work manager that includes key metrics to monitor progress

Implementation Methods
Three primary interventions were developed by the multidisciplinary team:
- Two complex discharge team social workers, who prioritize complex patients, coordinate with leadership and community resources as needed, and house resources and tips in a complex discharge toolkit
- A report to proactively identify patients who may have complex discharge and placement needs based on an algorithm that incorporates psychosocial, clinical, and financial triggers
- An escalation pathway to ensure all appropriate parties are informed and involved in decision-making related to placement needs for these patients

Results
Decreased average length of stay for complex Northwestern Memorial Hospital inpatients by 22.4 days and average avoidable days for those patients by 21.2 days (results from May 2017-November 2017 compared to baseline period of October 2015-May 2017). The annualized length of stay reduction is 2195 days, the equivalent of adding 6 beds, helping to address the inpatient capacity constraints.

Contact
Cassandra Scaman | Performance Improvement Leader | Northwestern Memorial HealthCare
Enhancing Efficiency in Hospital Endoscopy Utilizing the DMAIC Framework


Background
The complexity and variety of procedures performed in a hospital endoscopy unit presents unique challenges for hospitals related to efficient scheduling, patient flow, workflow, staffing, and allocation of equipment and resources. Mayo Clinic in Arizona has approximately 25 physicians who perform endoscopic procedures in its hospital endoscopy unit. To meet the growing demand, the unit moved into a newly constructed space in 2015, which doubled the unit’s procedural capacity. Moving into a new, larger space revealed several inefficiencies that were previously masked in the smaller unit and presented an opportunity to optimize use of the new space, improve efficiency, increase patient throughput, and ultimately increase revenue.

Objective
The objectives of the project were to:

- Accommodate increasing procedural volumes with existing resources
- Improve procedure room utilization by standardizing procedure durations and improving room turnover
- Grow revenue through increasing capacity and reducing patient no-shows and last minute cancellations

This abstract specifically focuses on the impact of standardizing procedure durations and reducing turnover time on room utilization.

Planning/Research Methods
A multi-disciplinary team consisting of physicians, administrators, nurses, technicians and other support staff was formed to define the goals and objectives of the project. The DMAIC (Define, Measure, Analyze, Improve and Control) framework was used to provide structure as the team moved the project forward. Stakeholders from various areas were engaged in surveys, brainstorming, focus groups, observations, and interviews to help gather the ‘Voice of the Customer.’ The stakeholder feedback revealed over 100 opportunities, and an impact-difficulty grid was used to determine the primary areas on which to focus and tactics to pursue. Baseline data was analyzed to evaluate inefficiencies related to scheduling procedures. Process mapping and time studies were conducted to develop current and future state workflows and to define baseline and target metrics for the room turnover process.

Implementation Methods
Interventions related to room turnover and scheduling were identified and implemented in April 2017. Specifically, appointment durations for the different types of endoscopic procedures were standardized, and scheduling rules were implemented to ensure consistent, equitable scheduling among the various endoscopists. Streamlined and standardized room turnover workflows were implemented, as support staff are assigned to different procedure rooms from day to day. Data was gathered and analyzed for two time periods between April and September 2017 to measure whether the interventions were impactful. In addition, to foster a culture of quality improvement and encourage staff engagement, a continuous improvement board was placed in the main hallway of the unit to provide a mechanism for staff to suggest improvement opportunities or future projects.

Results
The results of implementing standardized scheduling and streamlined room turnover demonstrated the following improvements:

- Average number of procedures per day increased by approximately 18%
- Turnover times in each of the rooms decreased by approximately -27%, -17%, -30%, and -23% respectively
- Room utilization increased by approximately 9% during the high demand period and 5% during the lower demand period

A counterbalance measure taken through a pre- and post-survey indicated that 89.4% of staff felt the changes either improved their areas of interest or did not have a negative impact.

Contact
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Improving Throughput and Patient Access Timelines: A Blood & Marrow Transplant Example

**Authors:** Rebecca J. Davis, MHA; Mario A. Cuartas, M.S.; Stacy A. Girard, MBA, Dawn A. Brooks, CMA, Jeanne M. Palmer, MD

**Background:** In any specialized practice, such as blood and marrow transplant (BMT), extended timelines in obtaining insurance authorization and scheduling oftentimes delay patient care for highly acute patients. In BMT, this timeline is delayed further when non-transplant physicians diagnose hematologic malignancies without a smooth, consistent, and reliable referral process for transitioning patients to a dedicated transplant specialist or center. As Mayo Clinic in Arizona operates within a highly competitive and diverse Phoenix metropolitan market with many referral sources and access points, this complexity resulted in a gap in coordination of BMT specific referrals, increasing timelines between initial referral, financial authorization, and scheduling of new patient consults. Such delays created dissatisfaction amidst patients, referring providers, and internal Mayo Clinic staff.

**Objective:** To reduce the timeline from receipt of BMT referral to clearance for patient scheduling by increasing coordination of BMT referrals with external referring providers, improving communication with patients and referring offices, developing a primary contact for all BMT referrals, and reducing delays in scheduling of new patient consults. Primary metrics of success include decreasing the timeline from time of referral receipt to obtaining financial authorization for transplant, increased referral volume, and improved patient and referring provider satisfaction for new patient referrals.

**Planning/Research Methods:** A team comprised of administrators, physicians, appointment specialists, medical practice secretaries, revenue cycle analysts, and a medical assistant was formed to initiate the project. The team’s activities included:

- Engaging key stakeholders and resources (physicians, patients, secretaries, referring providers, transplant coordinators, and the Central Appointment Office) to understand current referral coordination practices, challenges, and areas for improvement.
- In analyzing declining referral volumes by provider, unfilled consult appointment rates, and stakeholder feedback, current challenges were arranged into 5 general themes: (1) complex phone trees and portals were cumbersome to external providers wishing to refer patients, (2) patients and referring providers lacked a “go-to” contact in BMT, (3) poor outside medical record retrieval, (4) delays in financial authorization, and (5) patient and provider frustration in the hand-off from outside provider to Mayo Clinic provider. In prioritizing interventions available to address these themes, identification of a primary contact for referral coordination was selected as having the most potential impact, while also addressing other challenges identified simultaneously.

**Interventions Implemented:**
A medical assistant within the BMT team was dedicated to full-time referral coordination for BMT patients. All BMT referrals were routed directly to such referral coordinator via sharing of their direct contact information (name, dedicated BMT referral phone number, dedicated BMT referral email box) with referring providers and the Mayo Clinic central appointment office. Responsibilities of this individual include: primary point of contact for referring providers and offices, primary point of contact for potential/future patients, retrieval of all outside medical records and pathology slides, coordination with revenue cycle team members on obtaining financial authorization, triaging and scheduling all new patient consults, and standardized follow-up with referring provider offices to notify them of patient referral receipt, scheduling, and appreciation for the referral.

**Results:** All BMT referrals that resulted in a scheduled new patient consult (182) after the implementation of the BMT Referral Coordinator role, from May 1, 2017 through November 30, 2017 were analyzed and compared to previous referrals.

- Results showed a 56.7% decrease in the timeline between referral receipt to approved financial authorization, at which point the patient is cleared to be scheduled (22 days average prior to intervention vs. 9.52 days average post-intervention)
- Patient satisfaction was positively impacted, as evidenced by an average 8% increase in top-box scores on the access section of the Press Ganey survey (62% top-box scores pre-intervention vs. 70% post-intervention)
- Unfilled new patient appointments decreased 60.7% for allogeneic transplant physicians and 64.3% for autologous transplant physicians post-implementation
- New BMT referrals increased by 44.6% between Q2 (56 total) and Q3 2017 (81 total), and an additional 6% between Q3 and Q4 (86 total), with the BMT Referral Coordinator implemented mid- Q2 2017.

**Contact** – Rebecca J. Davis, MHA, Operations Manager, Mayo Clinic, davis.rebecca2@mayo.edu
Split Flow Model of Care: A Solution for Emergency Department Patient Flow

Author:
Jeneen Carman, DNP, RN, CEN

Background:
Emergency Departments (EDs) across the United States struggle to deliver efficient care in a timely manner. Overcrowding in an ED is defined as a situation in which function is hindered by the fact that the number of patients waiting to be seen, undergoing assessment and treatment, or waiting for departure exceeds the physical or staffing capacity of the department. Factors such as increasing patient volumes, a reduction in the number of EDs, and higher inpatient census appear to be compounding the problem. Emergency Departments (EDs) play a dynamic role, not just as a department in an individual hospital, not just in healthcare as an industry, but also in society at large. The consequences of overcrowded EDs combined with extended wait times create a significant quality and safety issue for the ED.

Objective:
The aim of this project was to determine if the implementation of a Split Flow Model of Care would impact the left without being seen (LWBS) rate in an adult academic medical center’s emergency department (ED).

Planning and Research Methods:
An interdisciplinary team with key stakeholders determined that a split flow process had the highest likelihood to positively affect LWBS rates. The project design was a quantitative non-experimental before and after study that utilized retrospective data. This study compared data from two separate six-month time frames: September 1, 2015 through February 28, 2016 and September 1, 2016 through February 28, 2017. The two time periods were chosen in an effort to provide an adequate sample size while assuring that seasonal patient volume trends were as similar as possible. The project study used data collected from the electronic medical record pre and post-implementation of the Split Flow Model of Care.

Implementation Methods:
The population for this project included all adults, 18-years and older, who presented to the ED for treatment of a medical complaint during the periods of data collection. Triage nurses in collaboration with a provider in triage assessed patients upon arrival and placed the patients in one of two patient flow streams – those with lower acuity and a likely discharge disposition and patients with higher acuity that would require more extensive diagnostic testing and/or a likely admission disposition.

Results:
A Kruskal-Wallis Test did not reveal a statistically significant difference in left without being seen (LWBS) rates across the twelve months of the study period \( x^2 (11, n=12) = 11.0, p = .44 \). However, clinical significance was noted with the reduction in the LWBS rate when comparing the two time periods following the implementation of the Split Flow Model of Care. Additional outcomes of the project are included in the table below:

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<th>Before</th>
<th>After</th>
<th>Change</th>
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<td>LWBS Percentage Rate (avg)</td>
<td>4.1%</td>
<td>1.6%</td>
<td>61.0%↓</td>
</tr>
<tr>
<td>Number of Patients Who LWBS</td>
<td>1015</td>
<td>379</td>
<td>62.7%↓</td>
</tr>
<tr>
<td>Revenue Lost</td>
<td>$380,805</td>
<td>$151,600</td>
<td>$229,205↑</td>
</tr>
<tr>
<td>Patient Volume</td>
<td>25,387</td>
<td>24,280</td>
<td>4.4%↓</td>
</tr>
<tr>
<td>Inpatient Boarding Hours</td>
<td>38,648</td>
<td>58,896</td>
<td>52.4%↑</td>
</tr>
<tr>
<td>High Acuity Patient Percentage</td>
<td>36.3%</td>
<td>49.9%</td>
<td>37.5%↑</td>
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Contact:
Jeneen Carman | Assistant Vice President | Erlanger Health System | jeneen.carman@erlanger.org
American College of Healthcare Executives 2018 Poster Session
Strategic Innovations to Meet Access Demands in the Cyber Era
Mario E. Zamarripa, MBA, Mary Dyson, Andrea Knapp, Barbara Hicks

Background: Mayo Clinic’s brand is synonym of world class healthcare in every specialty with access to state of the art technology and research. Mayo Clinic’s commitment to its patients goes above the delivery of healthcare, and ensures an unparalleled patient experience. On a yearly basis the Office of Access Management at Mayo Clinic Arizona receives over 25,000 online requests with an increasing rate of 25% year over year. The growing demand caused an increase in the response time and maintained the same request to appointment conversion rate.

Objective: Improve response time from 96 hours to 48 hours and increase appointment conversion rate by two percent, by April 1st, 2017.

Planning:

The initial baseline measurement revealed a 38% request to appointment conversion rate in March 2016. The sample size consisted of 1,412 online requests. During the analysis it was discovered that on average two percent of the request were not converted due to the timeliness of the response. The process improvement team decided to review all online appointment requests that were submitted from March 1st to March 31st 2017. The counterbalance that was utilized for this project was collected based upon staff satisfaction and patient satisfaction. Patient satisfaction was measured based on the speed of answer and call abandonment rate. The average speed of answer in 2016 was 1 minute and 12 seconds with an abandonment rate of 4.3%. The employee baseline satisfaction score was 3.34 in a Likert Scale of 1-5: 1 being Very dissatisfied and 5 Very Satisfied.

Implementation Methods:

Quality improvement tools that assisted with the identification of leading causes for the quality deficiencies were:

- Cause and Effect Diagram (Fishbone)
- Stakeholders’ Survey
- Likert Scale
- PDSA (Plan, Do, Study, Act)
- Hypothesis Testing

Upon analysis of the data the current turnaround time for an online request was five days from patient submission. The staff in the Central Appointment Offices was primarily focused on taking incoming phone calls on Mondays and Tuesdays without any focus on the incoming online requests. Work assignments were restructured to give the same priority for online requests as incoming phone calls. This revision allowed for three designated employees to work online requests on a weekly rotation with minimal incoming phone call interruptions. The team implemented a strategy where two employees immediately addressed requests as they arrived and the third person worked the oldest requests. In observations with the staff, the improvement team discovered that the following factors affected the response time to online requests:

- Staff continued inflow of incoming calls and diminished the prioritizing of online requests
- A strong correlation was found that as time progressed from the submission date, the number of attempts to reach the requester increased while the probability of conversion decreased. This resulted in multiple calls/voicemails without resolving the appointment request
- Denial responses required a phone call to deliver the message with a reach rate of 17% in the first attempt

Results:

At the completion of this project the following results were achieved:

- Increased conversion request to appointment conversion rate from 38% to 41%
- Response rate, excluding weekends, from submission averaged 36 hours
- Reduce the number of incoming calls inquiring about Online request status by 27.5%
- Implementation of a hybrid model utilizing the First In First Out and Last In First Out strategy allowed managing these requests to achieved over 80% response time within 24 hours
- 41% of all observed requests (n=2325) converted to an appointment with a response time less than 36 hours, this is statically significant from baseline (.38 VS .41 p-Value=0.00).
- Increased staff satisfaction from 3.34 to 3.73

Contact: Mario E. Zamarripa, MBA • Office of Access Management Operations Manager • Mayo Clinic in Arizona • Zamarripa.mario@mayo.edu
Title: “Geriatricizing” a Medicine Care Model

Authors:
Ali Torbati, MD, Andrea Bianculli, Michael Gitman, MD, Kerri Scanlon, RN, Andrea Restifo, RN, Corey Karlin-Zysman, MD, Charles Kast, MD, Evangelos Loukas, DO, Ankita Sharma, DO, Jolly David, NP, Lorraine Domaradzki, NP, Susan Wirostek, RN, Ann McGrath, RN, Maude Martocci, RN, Liron Sinvani, MD

Objective:
Medicare patients account for over 50% of hospital days at a cost of over $1 trillion per year. Yet, hospitalization of older adults often results in poor outcomes. Furthermore, the number of geriatric healthcare providers dedicated to the care of hospitalized vulnerable older adults is currently insufficient. Our objective was to create an age-friendly care model by integrating geriatric-focused providers and practices into a standard medicine unit without adding any additional resources.

Planning/Research Methods:
In early 2016, senior leadership at a 738-bed suburban, quaternary, academic medical center in Manhasset, New York, initiated a care model redesign project with the goal of being more patient-centric, efficient, and outcome driven. An executive steering committee appointed a physician and nurse leader on each medicine floor across the hospital supported by project managers to be accountable for spearheading the care model change. The project was rolled out unit-by-unit beginning in October 2016 and concluding in January 2018. To better care for the hospital’s geriatric population, a 40-bed medicine unit was designated the Geriatric Care Model Unit and the team planned to cohort the target population beginning in June 2017. This target population included patients 75 years and older with a history of or who present with a “geriatric syndrome” (fall, frailty, pressure ulcer, failure to thrive, dementia, and/or delirium). Furthermore, an ACGME certified Geriatrician-Hospitalist was assigned as the physician lead for the unit supported by a multidisciplinary team including a nurse practitioner with extensive experience caring for geriatric patients.

Implementation Methods:
Successful implementation of this project depended upon constant communication between the admitting hospitalists stationed in the Emergency Department and the hospital’s Patient Logistics Center. Patients were cohorted to the unit according to the above-mentioned criteria. The ACGME certified Geriatrician-Hospitalist directly cares for a quarter of the unit census (10-12 patients) and also assists in an administrative capacity helping to lead educational sessions for the unit staff. Each day, the team (nurse manager, staff nurses, case manager, social worker, pharmacist, nurse practitioners), led by the geriatrician-hospitalist, conducts bedside daily multidisciplinary rounds on all patients on the unit. Daily rounds include a checklist of geriatric-focused best practices including early mobilization, cognitive status, VTE prophylaxis, pain management, history of bowel movement, and a medication review. In addition, brief “tuck-in rounds” were implemented in the afternoon on all patients on the unit to ensure engagement with patients and caregivers.

Results:
Preliminary data comparing four months prior to and after initiation of the Geriatric Care Model revealed the following: an increase in the percentage of patients over 75 years of age (46% vs. 52%); a decrease in average number of bedrest orders (27.0 vs. 24.5), a decrease in time to physical therapy (4.73 days vs. 4.22 days); a decrease in the use of benzodiazepines (48.75 vs. 39.25 average per month); and increased physician documentation of delirium (1.0 vs. 9.5 patients/month). While the population on the unit was older, risk adjusted readmission rates remained the same (1.05 vs. 1.02) and risk adjusted mortality rates decreased (0.38 vs. 0.28).

Conclusion:
The Geriatric Care Model highlights an innovative approach to “geriatricize” a medicine care model without increased resource utilization.

Contact:
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Implementation of a Patient Blood Management (PBM) Program Improves Patient Outcomes While Conserving Precious Resources

Authors: Elizabeth Black; Pierre R. Tibi MD, FACS; Alejandro Chapa MD; Larry P. Burns, Jr., MBA, FACHE; Roland D. Black

Background: Blood transfusion was the most common procedure performed during hospitalizations in the U.S. in 2010 with 1 in 10 patients undergoing an invasive procedure receiving transfusion according to the Statistical Brief #149 presented from H-CUP. The percentage of all inpatient stays with a red blood cell transfusion also nearly doubled from 2000 to 2013 according to the Statistical Brief #215. However, many studies have shown the association between blood transfusions and negative outcomes including increased complications, length of stay, infections and mortality. Despite the availability of clinical practice guidelines, there continues to be significant variability in clinical practice among hospitals and practitioners. Increased education and awareness of both the risks and costs of transfusions could potentially reduce transfusion overuse, thereby improving patient outcomes and conserving precious resources.

Objectives: Implement a Patient Blood Management Program at YRMC’s 262 staffed-bed short term acute care facilities in Arizona. Program to include increased emphasis on patient advocacy through education and awareness of safe and effective blood management strategies, as well as creation of a multi-disciplinary PBM leadership team to promote staff education, development of evidence-based “best practice” guidelines and to collect and analyze data regarding program implementation results.

Planning/ Research Methods: A team comprised of clinical and non-clinical staff was formed to lead the PBM Program in the 2nd half of 2012. Key stakeholders and resources were engaged to review current blood transfusion practices and utilize EMR and Blood Bank/Lab reports to track blood product utilization.

Implementation Methods: Educational outreach to clinical staff began utilizing current medical and scientific blood management research. Transfusion guidelines and orders were revised to promote a restrictive transfusion strategy and facilitate application of evidence-based rationale for transfusion. A Transfusion Review Committee was formed to review possible inappropriate transfusion events on a quarterly basis, with Notifications of Review and research being provided to applicable practitioners. On-going educational opportunities for the community were initiated to promote greater patient awareness of the risks, benefits and alternatives of treatment choices and enhance the doctor-patient collaboration. Regular distribution of blood utilization reports was initiated to key stakeholders including data analysis and procedural recommendations to improve best-practice in blood management.

Results: Notable decreases in the transfusion of Red Blood Cells (RBCs) and Fresh Frozen Plasma (FFPs) were realized in the post-PBM Program with no increases noted in morbidities and mortality despite an increased patient population and a comparable yearly case mix index. The reduction in blood product use not only limits patient exposure to risks associated with blood transfusion, but has also resulted in significant savings to the hospital and conservation of a precious resource. Note: As of 2016, less focus had been placed on appropriate use of platelets (PLTs) and implementation of a restrictive PLT transfusion strategy as average use of platelets was 380 units/year over a 9-year period. However, increased attention to platelet use is forthcoming.

- Reduction in RBC / FFP transfusion: 3175 / 988 units/year at baseline to 2291 / 713 respectively (through 12/16) (28% decrease).

- Savings of $3,789,635* have been realized when reviewing the decrease in transfusion of RBC’s and FFP’s during the 4.5 years pre-PBM Program and 4.5 years post-PBM Program (through 12/2016) utilizing activity-based cost analysis (delivered cost/unit) against costs associated with the Patient Blood Management Program. This represents a cost savings of 18%.

*Savings realized through 2016 do not reflect additional revenues to YRMC due to increased patient recruitment through the PBM Program, predictable escalation of product use in absence of a Program and unquantifiable reduction of HACs associated with blood product transfusion.

Contact: Elizabeth Black • PBM Program Data Analyst • Yavapai Regional Medical Center • eblack@yrmc.org
**Title:** Improving CPOE Order Sets for Quality Improvements and Standardizing Order Set Templates

**Author:** Sharon E. Secondus BSc, MSc

**Objective:** According to quality standards of EMRs, Order Entry/Sets play a role in the delivery and quality of healthcare. In order to improve Health Quality and reduce the risk of medical errors. In the effort to reduce the 1.8% risk of medical errors, mismatched orders sets need to be improved through the process of reviewing and updating order sets.

**Method:** The Lean Six Sigma methodology- DMAIC (Define, Measure, Analyze, Implement and Control) with a cross-functional team:
- Define the problem statement
- Measure the mismatches in the order sets while transitioning
- Analyze the risk of errors and responses from healthcare providers.
- Implement strategies to eliminate the risk
- Control the continuous process of the implemented change through template design

A 200-bed healthcare facility, located in NH and strong affiliation with other pioneer hospitals. The cross-functional team of Information technology department and Quality department. Upon the transition from the paper order sets to CPOE - Computerized Physician Order Entry, some vital information was lost creating a risk of medical error and information loss during EMR downtimes. In the transition, mismatches were found in both CPOE and paper order set, which made it hard to quickly review and update the order sets. The quality and safety department is fully in charge of the order sets changes and fully handles the paper downtime order sets. The order sets are updated within every 3 years or according to national regulatory guidelines and updated in the CPOE after the changes are updated in the paper order sets. However, some department works solely with the paper order sets. In order to move toward tracking performance within the departments. Surveys were carried out based on physician satisfaction (both paper and CPOE), department outcomes and patient satisfaction. The reviewing and updating process between the paper and CPOE takes 1 month or more till updated order set up to date. Measuring the mismatches found according to the departments was an integral part of the physician survey carried out in correlation to - provider satisfaction, patient satisfaction, and quality improvement. Using brainstorming, interviewing, starbursting techniques to enhance communication, implement and test the Lean process. Also, in order to maintain the new and lean process, new templates to control the outlook and layout in order set.

**Result:** Achieved a 20% reduction in mismatches in both paper order sets and CPOE by introducing a new and lean process to updating and reviewing order sets, thereby reducing the reviewing and updating time by 2 weeks. Following the Implementation and Control stages of DMAIC, the implementation stages carried out testing of the new process and correction of mismatches in both paper and CPOE. Financially, the errors found were equivalent to $5,000. Lastly, in order to control the new process, new templates were used to match the outlook of the CPOE and ease of tracking performance analysis within the departments.
Managing of Mental Health/Substance Abuse Patients in the Emergency Department

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Purpose: To reduce the LOS in the ED and improve the medical management of the psychiatric patient while promoting a safe, violent free environment for the patient and care team.

Relevance/Significance: According to the Agency for Healthcare Research and Quality (2010), an estimated one in every eight emergency room visits involve a mental health and/or substance abuse condition. With growing volumes of patient needs and an extremely finite set of inpatient resources to address, the onus is on hospital Emergency Departments to provide a safety net for patients seeking care.

Strategy and Implementation: In order to address the gaps in emergency medicine related to the mental health/substance abuse population, Houston Methodist Hospital (HMH) implemented a six-pronged approach. First, a dedicated physical space was established within the ED that promoted safety for the patient and the care team. This included anti-ligature doors, psych safe patient rooms and bathrooms, staff technology for room monitoring and nurse station panic buttons to supplement police officers onsite 24-7. Second, HMH hired a highly trained team of mental health technicians, nurses and midlevels to aid in the facilitation of the patient care plan. Third, a rapid screen care team was put into place through a third party contract. This team was responsible for partnering with the onsite clinical team to facilitate treatment and placement of the patient internally/externally. Fourth, telemedicine was implemented to address the deficient in consult care by psychiatric professional. Fifth, HMH solicited a partnership with an external sobering center to offer care both onsite and off in order to facilitate expedited care of substance abuse patients needing assistance. Sixth, the ED Pharmacy staff implemented a focused initiative to address patient medications to provide expedited assistance to patients who had fallen off their medicinal protocols. Finally, a structured rounding program was put into place by spiritual care and social work in order to promote the patient’s holistic wellbeing and offer further support in the care process.

Evaluation/Outcomes: Preliminary Data indicates the following:

- Violent patient incidences in the ED Psych Patient Area has reduced from 2016 to Q3 2017 to zero
- Admit Decision Time to ED Departure Time for Psych Patients reduced by 30% from 2016 to Q3 2017
- ED Arrival to Departure for Psych Patients Discharging reduced by 36%.

Implications for Practice: The impact of the actions above is to directly influence the quality and timeliness of the care for psychiatric patients in a forum that is becoming somewhat of a last resort for patients seeking help. This holistic model of action is intended to reduce the LOS for patients seeking care, provide better medical management of their needs and to ensure that patients and their clinical caregivers are kept safe while doing so.
1. Title: Patient Acceptance and Results of a Direct Access Screening Colonoscopy (DASC) Program in a Community-based Hospital Setting

2. Objective of program: Screening colonoscopy rates in the United States are below acceptable levels, which leads to an increase in preventable colon cancer rates. Studies demonstrate that primary care physicians encouraging their patients to schedule a screening colonoscopy by calling a gastroenterologist office leads to low uptake rates. The objective of this program is to increase screening colonoscopy rates through the creation of a program to allow direct scheduling with a hospital through an outreach program. By marketing screening colonoscopies directly to patients, we hope to increase compliance as they will call their hospital to schedule a screening, rather than the gastroenterologist office.

3. Planning/research methods:
   - Call screening protocols developed in conjunction with Gastroenterology (GI) Medical Director
   - Medical Director obtained consensus of participating physicians
   - Existing GI RNs were trained on protocols and screening process for patients
   - Dedicated phone number and e-mail established for interested patients.
   - 1:1 meetings were held with each interested GI office

4. Implementation methods
   - Marketing tactics included social media posts and automated e-mails to both identified existing hospital patients and non-hospital patients living in hospital’s service area
   - Existing patient’s customized call-to-action was to schedule a colonoscopy via DASC hotline or e-mail
   - New patients received a link to take an online assessment. Depending on the results, patients were given general information about colon health or given a call-to-action to schedule a colonoscopy.
   - The health system’s call center was educated on how to connect patients to the DASC hotline
   - Independent marketing meetings were held with local primary care physicians at various forums
   - Associate education sessions conducted emphasizing importance of screening and new process available to patients. Associates also educated via monthly associate newsletter.

5. Results (e.g., cost savings, increased productivity, improved quality of care)
   - New patient capture: 65% of patients screened had no encounters, outpatient or inpatient, at the hospital in the previous two years
   - Volume: Averaged 13 calls per month
   - Patient Acceptance: 53% of callers met screening criteria to have the procedure
   - 66% of patients heard of the program through marketing efforts and the other 34% were referred by their physician

6. Lessons Learned:
   - Such a program brings new patients to a hospital
   - Direct-to-consumer outreach was more effective than physician education in terms of driving numbers

7. Conclusion: A direct access screening colonoscopy program is an effective way to increase patient compliance for screening colonoscopies.
**Sustaining Success for a top performing ACO in New York State**

**Authors:** Richard J. Salhany, MBA, FACHE, Pietro Carpenito, MD, Sandra Conrad, RN, MSN, Jasmin A. Eversley-Danso, B.S.

**Objective:**
The aim was to reduce the Medicare spend per beneficiary and improve the quality metrics in order to participate in the distribution of shared savings as part of the MSSP for multiple years.

**Planning Research Methods:**
Richmond Quality, LLC ACO approached Year 2 of the CMS MSSP with an even more intense focus on expense reduction & quality improvement. The strategic plan consisted of utilizing ACO Staff and clinical analysts to intensify the concurrent clinical review of practice behaviors. This afforded the physicians opportunities to become aware of the gaps in care & more compliant with the quality metrics.

**Implementation Methods:**
The implementation of various processes assisted the ACO in reducing the Medicare cost per beneficiary and improving their quality scores:

- Deployment of ACO Staff / Clinical Analysts to bring PCP Offices up to the next level of care
- Increasing frequency of concurrent patient chart audits targeting areas of below threshold
- Sharing audit outcomes with physicians and office staff regularly
- Implementing formalized Annual Wellness Visits & a Chronic Care Diabetes Protocol
- Working to improve EMR and attestation of Meaningful Use to bring all practices up to date
- Fine tuning office workflow, processes and division of clinical documentation
- Focusing on the Patient Satisfaction aspect of the Quality Score in each practice

**Results:**
- Richmond Quality, LLC was only 1 of 5 ACO’s in New York State to achieve shared savings.
- The ACO achieved a $7,389,470 savings in their second year- almost double the amount of savings from Year 1. CMS retained 50% of the savings leaving the remaining $3,473,744 for ACO expenses and distribution to participating physicians.
- In addition, of the 5 successful ACO’s in New York State, Richmond Quality, LLC ACO achieved the highest quality score of 95.9%.
- As a result of our success, additional physicians have joined the Richmond Quality, LLC ACO and are willing to enter into physician integration strategies with the Medical Center.

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Title: Empowering Patients in Pain Management: Analgesic Alternatives to the IV Push Opiate “Rollercoaster” Effect

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Objective of the Program: Patients’ experiences of pain may worsen when exposed to the opiate-induced hyperalgesia and hyperkantifeia or “rollercoaster effect”. An initial analysis of patients discharged from this pilot unit over the 2016 calendar year indicated that patients receiving opiates via IV push had a longer lengths of stay (LOS) than via oral or patient controlled analgesia pump (PCA) modalities. Based on these findings, the purpose of this project was to:

1. Set expectations regarding the use of IV push opiates on an inpatient medicine unit
2. Empower nurses to explore more non-pharmacological forms of pain management strategies
3. Increase interdisciplinary discussion and collaboration related to patients’ pain management plans

Planning/Research Methods: Local leadership including the Nurse Manager, Medical Director and primary pharmacist discussed possible strategies to improve patient satisfaction with pain management. In discussing recent literature findings they felt the best strategy would be to reduce repetitive IV pushes of opiates. They then met with unit nurses, hospitalists and pharmacists to discuss the project idea. The teams were receptive to project work with many commenting that standards to opioid push medications are both good for patients and empowering to team members.

Implementation Methods: In order to set standards for the use of IV push opiates, the team developed a pharmacy hard stop protocol. The protocol was as follows:

1. Order entered for IV push opioid with a frequency other than once
2. Pharmacists will page ordering provider to assess if patient meets exclusion criteria
3. If the patient meets exclusion criteria, the pharmacist will verify the order
4. If the patient does not meet exclusion criteria, the pharmacist will void the order and instruct the ordering provider to choose an alternative strategy

Once the protocol for the pharmacy hard stop and exclusion criteria were developed, the team discussed other strategies that should be employed to empower the team. A Non-Pharmacological Pain Management Toolkit was developed. This toolkit was a one page summary of non-pharmacological strategies to help support pain management that were posted throughout the unit. The team also discussed any concerns with patients’ experiences of pain or concerns regarding the new hard stop policy during interdisciplinary rounds. Lastly, the team displayed posters in patient rooms to help inform patients that pain management was a priority and also outline resources available to them. This project approach allowed all members of the team (including patients) to participate in improvement efforts related to pain management.

Results:

1. Decrease in the percent of patients who received repetitive IV push opiates:
   a. Baseline data showed approximately 50% of unit patients received repetitive doses of IV push opiates.
   b. This decreased to 32% after the hard stop protocol went into place.
   c. This is an 18% reduction for the unit.

2. Decreased Unit LOS:
   a. Baseline LOS data showed a risk adjusted observed to expected ratio of 1.26.
   b. After the project interventions went live this ratio improved to 0.88.

3. Improved Patient Satisfaction Related to Pain
   a. Scores related to the question “How often did hospital staff do everything they could to help control your pain?” increased from a baseline of 74.3% to 86.4%.
   b. Scores related to the question “How often was your pain well controlled?” increased from a baseline of 53.2% to 71.4%.
   c. This lead to an increase in the overall Pain Management Domain from a baseline of 63.6% to 79.1%.
Title: Engaging Nurses in System Design: Optimizing Discharge Education

Authors: Kim L. Armour, PhD, NP-BC, RDMS, NEA-BC; Brook Ayyad, RN, MSN, CBC; Sarah Cascino, DNP, RN; Amanda Cody BSN, RNC-MNN, CBC; Marie Esposito, BSN, RN; Danielle Hall, BSN, RN; Christy Hermann, BSN, RN, RNC; Beth Meinhold McLean, RN; Aida Mujagic, BSN, RN; Kamila Stoksik, BSN, RN

Objective of the Program:
The goal of this project was to improve patient satisfaction with discharge education in the postpartum setting. A lack of process and support structures in the environment left nurses feeling that they could not provide optimal discharge education for their patients, which manifested in lower patient satisfaction scores.

Planning/Research Methods:
Patient feedback regarding discharge education was gathered through HCAHPS comments, focus groups and phone interviews. Next, nurses completed activities to identify barriers to quality education and then brainstorm and prioritize solutions. All brainstormed barriers were gathered and then affinity grouped by theme. Nurses then voted on what three barriers were the most frequent and impactful. These barriers were then taken to project team members who brainstormed solutions to each barrier and then voted on their top recommendations. The top voted solutions were to partner with Social Work, build an internal site of education materials, offer a discharge education class, and provide edits to the whiteboard layout (called the Roadmap).

Implementation Methods:
Recommendations were shared with hospital leaders who were supportive of these efforts. The team partnered with Social Work in the area to better understand what resources could be offered at discharge and when to engage the Social Work team in a patient’s case. An internal site of population-specific education was built. The site has multiple pages for maternal care, infant care, breastfeeding, formula feeding, and NICU families. These pages have live links to educational materials, many of which can be translated into different languages to better meet the needs of patients and their families. A discharge class was developed which is presented every evening on all three postpartum floors. This class includes maternal care and infant care topics and also has a live baby bath demonstration. Class attendance as well as patient satisfaction with the class are monitored monthly and there has been very positive reviews from parents. Lastly, the Mother/Baby units edited “Roadmaps” which are posters that cover the white boards. Roadmaps provide information on what will be completed before mom and baby discharge. The Roadmaps are a helpful way to engage mom and their support systems in the plan of care. Additionally, the Roadmaps are a tool to guide report and confirm seamless handoffs for patients.

Results:
The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey has two questions that comprise the Discharge Domain. They are:

1. Did you get information in writing about what symptoms of health problems to look out for after you left the hospital?
2. Did hospital staff talk with you about whether you would have the help you needed when you left the hospital?

Baseline performance demonstrated a 96.3% top box attainment for providing information in writing and a 62.3% top box attainment for talking about help at home. This equated to a 79.5% top box for the Discharge Domain. After interventions went into place, monthly HCAHPS scores were trended. There was a statistically significant increase in performance in the HCAHPS discharge question on help at home. The HCAHPS question on receiving information in writing continued to perform well throughout the fiscal year. Results demonstrated a statistically significant improvement in patient satisfaction scores for the Discharge Domain with a monthly maximum top box score of 85.0%. This was a 5.5% improvement in top box attainment over the course of the fiscal year and represents the highest Discharge Domain scores for the postpartum units in 10 years.
Designing an Organization-Wide Change Management Approach to Front End Optimization

Author Information:

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Background:

A significant number of metrics that are reported out at the executive level of the organization are initially driven at the front end where patient scheduling and patient registration happens. These tasks are performed by Patient Service Representatives (PSR) to provide the customer service interface between the patient and the service they will receive from their clinical provider. At Cleveland Clinic, the employees that fulfill these roles are coined as the “Directors of First and Lasting Impressions” because communication for the patient typically starts with these representatives. This is also an area where there is great vulnerability for errors to happen in the registration process for various reasons across different clinical specialties. That can make or break the positive or negative lasting impressions of the experience patients receive above and beyond the clinical purposes they are there for. Furthermore, the downstream financial repercussions are significant to the organization as well which became a reality for Cleveland Clinic:

Objective:

- Create a stellar, efficient patient experience, while ensuring compliance, reduced financial loss and rework expense

Planning / Research Methods:

- Caregiver Coaching Focus
  - Enhance education model
  - Create accountability for caregivers and management teams
  - Engage caregivers and management teams in solving front end problems.

Implementation Methods:

- Phase 1:
  - Registration Coaching
    - Two hour registration coaching sessions for all PSRs across the organization
    - Topics targeted at most frequent denials and claim edits
- Phase 2:
  - Single Point Lesson curriculum
    - Train the trainer w/ department subject matter expert (SME)
    - Quick 10 min training bursts (2 lessons per month)
- Phase 3:
  - Standard front end measures to track denials, claim edits, and leading indicators
  - Visual Management Board to drive meaningful dialog and problem solving
  - Advanced Leader Standard work activities to identify & address top opportunities
  - Monthly report out process to escalate barriers to receive coaching from department leaders

Results:

- 50% Reduction in Claim Edit Volume
- 13% decrease in registration denials
- 40% increase in PSR engagement
Title: Improved Satisfaction and Performance with Emergency Department Renovation

Objective of program: Premier Health’s Upper Valley Medical Center (UVMC) Emergency Department (ED) in Troy, Ohio was recently renovated and opened in the summer of 2017. Through thoughtful engagement of ED administrators, clinicians, auxiliary service providers, and best-practice research the medical planning team was able to design a new emergency department which solved spatial and flow issues and improved both staff and patient satisfaction. Prior to renovation ED performance fell between the 25th and 65th percentile, when compared to industry benchmarks. Upon deeper review, a series of infrastructure issues existed which compromised the quality and stood in the way of the efficient delivery of care.

Analysis of data from before and after renovation shows marked improvement in a variety of service indicators including, increased patient and staff satisfaction, decreased patient length of stay, quickened arrival to diagnosis time, increased primary and secondary market share capture, and increased ambulance traffic.

Planning/research methods: While in design phase, the team performed a thorough review of literature regarding best-practice solutions to the many operational and flow issues in the current design. These reviews of the literature were shared with the executive team to inform design decisions and instigate discussions regarding workflow. Upon completion, the success of the executed design solution was measured both qualitatively (interviews and surveys) and quantitatively (electronic medical records data and health network performance measurements).

Implementation methods: As part of the renovation, several key components of the physical ED space and, consequently, the flow of work throughout it were reconfigured.

- Upon arrival at the renovated ED, a Registered Nurse (RN) and ED technician greet patients and perform an initial assessment. Patients are assigned acuity level and directly bedded. Full registration is implemented at the patient bedside.
- Central nurse stations were enlarged and more robustly equipped to meet the needs of a multi-disciplined team of both clinicians and auxiliary staff. Decentralized nursing stations were positioned throughout patient corridors to enable close monitoring of at-risk patients and serve as overflow work stations.
- Patient rooms were designed to be universal, supported by supply carts stocked with standardized quantities and goods. Ample space was built into each room to accommodate family members and visitors.
- The path to imaging and the capacity of the imaging suite were improved. Rather than a circuitous route across a public corridor, the renovated ED now has a straight path to the imaging suite. An additional CT scanner was installed for fast-tracking potential stroke patients directly by Emergency Medical Services (EMS).
- Natural light from both windows and skylights was incorporated into the floor plan to bolster workplace satisfaction. Ample support space for ED staff and EMS personnel was integrated into the design to provide respite and minimize burnout.
- A new helipad and ambulance entry were constructed to better assist patients arriving (and leaving) with the help of a care team. A new EMS lounge was included in the scope of the renovation to encourage stewardship and support the auxiliary support network.

Results: Analysis of data from before (2015) and after the renovation (2017):

- Increased patient and staff satisfaction has been demonstrated through interviews and survey
- Metrics harvested from UVMC electronic medical record data show*:
  - Mean Time between ED Arrival to ED departure for admitted patients:
    - 2015: 255.2 YTD average (25th percentile) 2017: 220.22 average upon completion (10th percentile)
  - Admit Decision time to ED Departure Time
    - 2015: 157.8 YTD average (65th percentile) 2017: 107.42 average upon completion (40th percentile)
  - Mean Time between ED Arrival to ED departure for discharged patients
    - 2015: 162.6 YTD average (30th percentile) 2017: 134.98 average upon completion (15th percentile)
  - Mean Time Door to Diagnostic Evaluation by a Qualified Personnel
    - 2015: 36.0 YTD average (50th percentile) 2017: 10.74 average upon completion (5th percentile)
  - Mean Time to Pain Management for Long Bone Fracture
    - 2015: 60.8 YTD average (35th percentile) 2017: 43.34 average upon completion (15th percentile)
- Increased primary and secondary market share capture as measured by internal performance measurement
- Increased ambulance traffic

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Engaging Academic Medical Centers in a Medicaid Global Maternity Bundled Payment Program

Authors: Amita Rastogi MD MHA, Stacey Eccleston and Andrew Wilson MPH MA

Objective of the Program:
Bundled payment arrangements have the potential to encourage value driven clinically recommended care. Our group at Altarum / HCI3 (Health Care Incentives Improvement Institute) collaborated with CHC (Community Health Choice), a non-profit Medicaid HMO to design and implement a comprehensive maternity care bundle program in Texas. The goal of the program was to create built in incentives for better quality and lower costs and to provide insights to other health care leaders about the effects of alternate payment models on physician behavior.

Planning / Design Methods:
Key components of the contracting parameters included the following: a) year 1 of the pilot would establish budgets with shared savings arrangements for the physician for upside only savings (50/50) and year 2 would involve sharing in both upside savings and downside loss based on a formula dependent on change in pre-established quality scores, b) payments would continue to be made fee-for-service and a year-end reconciliation would reveal if savings were achieved, c) the maternity bundle would include prenatal care, delivery & postnatal care as well as care of the newborn, d) budgets for the delivery portion would be based on a historical blended rate of C-Section and vaginal deliveries, e) if physician did not contribute to prenatal care, the budget would be zero for the prenatal portion, and f) the neonatal budgets were based on a blended historical rate of utilization of nursery levels 1, 2 and 3 in year 1; with a modification to include level 4 nursery costs as well in year 2 and a stop-loss provision to protect the physician from inordinate losses. A phone interview was conducted at the end of year 2 with each of the physician groups and with CHC to understand lessons learned from the pilot and the effect of the program on physician behavior and patient outcomes.

Implementation Methods:
CHC contracted with two of its largest physician systems in the Houston / Galveston market – UTMB (University of Texas Medical Branch) and UTH (University of Texas Health). The two physician-groups are in fact two separate systems with separate contracts with CHC for maternity bundles and each has their own quality scorecards. Quarterly meetings were held with each physician group to discuss interim results and to evaluate how the physician groups were performing with respect to their target budgets so mid-course corrections could be made before year-end reconciliation.

Results and Lessons Learned:
In year 1, one physician group achieved savings of $240K and received a check for 50% of that amount from CHC. The savings were primarily derived from a drop in C-Section rates from 36% to 33% and lower neonatal costs due to the subjective nature of nursery level placement. The other physician group incurred a loss primarily due to a few high cost babies with congenital birth defects that were admitted to level 3 nurseries. With the inclusion of level 4 nurseries into the program and instituting the stop loss provision in year 2 a fairer review of outcomes would be possible. Key lessons learned at the end of year 2 are as follows: a) physicians found real benefit in data sharing from health plans, b) they believe that hospitals should participate in risk sharing arrangements since their costs are substantially more than physician costs, c) physicians are competitive, therefore the Hawthorne effect often drives better outcomes and more judicious use of resources, d) physicians want more money allocated to prenatal care, education, nutrition, smoking cessation, lactation, high risk care to prevent need for C-Sections, and to decrease preterm births and utilization of high cost stays in a neonatal ICU, e) the quality measures are too much of an effort to collect and did not reflect true quality of care. The few improvements that were recognized during the pilot were better documentation, improvement in preterm birth scores and better postpartum care with improved depression screening rates and closer follow-up leading to lower complications and better outcomes for mothers. Cost savings for year 2 are being finalized. At the time of this paper, the implementation has completed three-quarters of its maternity episodes. The first provider who achieved savings in year 1, is currently over budget by 2 percent and has a 1.48 percentage point decrease in its quality score. The second provider is currently 4 percent under budget with a 5.25 percentage point increase in its quality score.

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Background: Over the past decade, the administrative workload for healthcare providers has risen significantly in response to market, regulatory, and medico-legal factors. Many occupational therapists (OTs) and physical therapists (PTs) in the rehabilitation setting have concluded that the workload adversely impacts their ability to deliver high-quality care; this awareness may contribute to an overall decline in satisfaction for that workforce.

Between January 2015 and December 2016, an effort was undertaken to reduce administrative burden on OTs and PTs providing care in an ambulatory setting within a large academic medical center by reviewing and revising the applicable pre-certification process for therapy services. An assessment of the impact this change had on the opinions and attitudes of those providers was then conducted. Therapists practicing at this institution provide ambulatory services to beneficiaries of more than 500 commercial health insurance payers and networks. Wide coverage variations exist among commercial payers for therapy services. Consequently, therapists are required to submit on-line pre-certification requests for every commercial insurance beneficiary in order to ensure reimbursement. Healthcare market forces in recent years have resulted in an increasing outpatient volume, and a relative increase in the proportion of patients with commercial insurance; the requirement to prepare and submit an ever greater number of pre-certification requests represents a significant administrative burden for therapists. Routine submission of pre-certification requests consumes an inordinate amount of time, and providers do not commonly consider this to be a task that adds a direct benefit to the patient.

Objective: To reduce the administrative burden on OTs and PTs in an ambulatory setting by eliminating the performance of a non-value-added task. This initiative will contribute to improved staff perceptions of engagement and burnout. An important counter-measure is the rate of claim denials for therapy services, which represent loss of revenue.

Planning and Research: An initial study of a sample of pre-certification requests (n = >200) for physical and occupational therapy treatments revealed that 96.3% were non-restrictive; the number of visits, date-range of visits, specific services provided, and dollar amounts charged were all within the insurance plan coverage parameters. It was further noted that the three most common commercial payers in the sample returned non-restrictive coverage decisions 100% of the time. Those three payers represent 56.4% of commercial beneficiaries. Time studies of the providers’ pre-certification request process were conducted for this project with a sample of experienced therapists (n = 4); the average time to complete the pre-certification request process was 146 seconds, with a range of 129 to 170 seconds. Extrapolating these results for 38 clinicians across the outpatient practice, it is estimated that the pre-certification process consumed approximately 155 therapist-hours in 2015, representing 5.1 hours annually per therapist and 0.03% of allocated clinical time. The initial study data was shared with therapy department leaders, as well as support staff members outside the department who actively process the pre-certification requests. A streamlined pre-certification process for therapy was proposed, and subsequently endorsed by all stakeholders.

Implementation Method: OTs and PTs practicing in the ambulatory setting were informed that, during the project time-frame, it would no longer be necessary to submit a pre-certification request for beneficiaries of the three most common insurance plans within the practice. No change in process would be implemented for other insurance plans.

Results: Consistent with historical growth trends, the number of commercial beneficiaries receiving therapy services within the institution increased in 2016, and again in 2017. The elimination of the pre-certification request requirement for the three largest commercial payers saved a moderate number of provider-hours in both post-intervention years:

- 2016 - 92.4 hours saved, representing 2.7 hours annually per therapist and 0.017% of allocated clinical time
- 2017 - 106.4 hours saved, representing 3.0 hours annually per therapist and 0.017% of allocated clinical time

Although a relatively small number of provider-hours were saved, therapists universally reported satisfaction with the process change. More specifically, staff satisfaction in the areas of burnout and engagement were electronically measured pre- and post-intervention by means of organizational staff satisfaction surveys conducted in 2015 (pre-intervention), and again in 2016 (post-intervention). Responses to relevant survey items improved during the implementation period.

- "I feel burned out from my work (agree = unfavorable)."
  - 2015 - 19% unfavorable
  - 2016 - 7% unfavorable
- "My job makes good use of my skills and abilities."
  - 2015 - 7% unfavorable
  - 2016 - 4% unfavorable

No adverse financial impact was detected. The most obvious counter-measure, the rate of claim denials, actually improved during the implementation period.

- Reimbursement Denials (as a percentage of gross revenue)
  - 2015 - 2.89%
  - 2016 - 1.16%

These results suggest that even minor reductions in administrative burden may correspond with measurable improvement in provider engagement and burnout, and with no adverse impact on financial performance.

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The Healthcare Management Program at Northwell Health: How To Develop an Elite Internship

Authors: Jon Sendach, Mary Comerford-Hewitt, Derek Anderson, Ryon Andersen, David Brody, Robbie Grabher, Lauren Pearson, Jessica Schuster, Matthew Donnelly, and Kate van der Sloot

Objective:
True entry level healthcare management jobs are scarce and often the most junior of positions require several years of experience. Furthermore, these entry level positions are in areas that are siloed to one specialty of healthcare management (quality, finance, patient experience, data coordination) with little opportunity for mentorship, guidance, career progression or growth. Compounding this issue is the need to fill lower level management positions, as openings in one area often lead to the “poaching” of good talent from another area in the organization. If these lower level managerial positions can’t be filled internally, the organization has to go to the external labor market where the risk is significantly higher the company will overpay for an unknown resource. The need for new talent is further emphasized by an aging workforce within Northwell Health, with 60% of executive leadership and 40% of senior leadership set to retire in the next 5 years. To address this need, our team developed an elite internship, the Healthcare Management Program (HMP) and an entry level leadership track opportunity, the Management Associate Program (MAP). These programs have positioned our organization to competitively acquire talent in an innovative way.

Planning/Research Methods:
With low commitment and high turnover, as well as a lack of entry level positions, we turned to the experts. We researched recruiting strategies of top banks for their elite internship programs, as well as spoke to leaders from Price Waterhouse Coopers and several University Career Services teams about the most effective way to recruit on campuses in order to garner a more active recruiting strategy. Our findings resulted in new approaches to recruiting young talent.

Implementation Methods:
Our preliminary attempt at pipeline planning took place in 2010. It began as an unpaid, 8 week, part time program for undergraduate college students interested in healthcare administration. Interns would have the opportunity to work consistently with the executive team, receive feedback from an identified manager, and have strong mentorship opportunity for the duration of the program. Despite these opportunities, the program was only able to attract 5 or 6 applications for two open positions. Additionally, there were no retention opportunities for students to come back as full time employees upon graduation. As a result, these interns looked to other companies for employment upon graduation.

In 2013 the program experienced huge changes aimed at improved recruiting and retention. Some of these changes included movement to electronic applications, which ultimately led to new avenues for communication with college advisors and career services. The application was posted at 30 top university campuses. The team also visit 4 campuses to provide informational education sessions to interested university applicants. In addition to on-campus recruiting, the team also signed up for “career consortiums” in which 500+ students from 15+ schools participated to look for available internships and jobs.

Alongside new recruiting methods, the internship also evolved in terms of the kinds of projects interns were tasked with. Rather than creating unnecessary work or asking for simplistic work, HMP interns were being asked to do real work that was being funneled down by our executive teams. This work was required for executive decision making, strategic planning, and improved operational efficiency within the hospital; all projects were related to true needs of the hospital. Projects have included process mapping, financial reporting, scorecard creation, hospital performance dashboards, venture capital planning, fundraising, throughput initiatives, etc. Rather than strictly holding interns in siloed areas, the different variety of projects allow interns to gain experience in all of the different areas of healthcare administration: finance, operations, quality, and patient experience.

Results:
Through these new recruiting tactics, alongside a unique internship experience strengthened by high level executive involvement, the HMP internship began to grow. 2014 saw 120 applicants. Following this year, HMP partnered with the corporate Human Resource Talent and Acquisition, which ultimately resulted in 516 applicants for the newly enhanced process. One year later, the pool grew again with over 680 applicants. With this increasingly large pool, the internship has continued to expand. It now exists across 12 hospitals and service lines for a total of 25 Summer Associates.

Additionally, Northwell Health’s Management Associate Program (MAP) which is a full time, two-year entry level program in Healthcare Finance and Operations, has grown out of the Healthcare Management Program. This ability to offer Summer Associates a full time position upon completion of the HMP is a unique way to retain talent and top performers. Ultimately, Northwell saves time, energy, and money by training future employees for 8 weeks in the HMP program, and then retaining the successful participants at the end of the program. The MAP sites will no longer need to recruit for their entry level positions, and will have properly trained talent “graduating” every year to fill management level roles, without having to poach employees from other parts of the organization or from external sources. In 2016, 6 out of 13 interns were offered full time positions and 5 accepted. This growth continued in 2017 where 12 out of 26 interns were offered full time employment, with all 12 accepting their offers.

Former interns now hold high leadership roles the hospital, such as administrative director, financial/operational managers, and program coordinators. This program is truly innovative, and the market currently hosts no legitimate competitors for healthcare management internships.
Utilizing Benchmarks and Metrics to Maximize Staff Productivity

Background:
The Department of Ophthalmology at Duke Health sees over 200,000 patient visits a year across its nine outpatient multi-specialty clinics across North Carolina and Virginia. Under previous leadership, the sites had functioned independently and developed their own approaches to patient care workflows, resulting in negative financial and patient, physician and staff satisfaction impacts. In 2014, new department leadership completed an assessment of CGCAHPS surveys, internal balance scorecard metrics, and physician and staff feedback across all nine clinics and initiated multiple process improvement efforts at several locations, creating a new standard for Ophthalmology workflows at Duke. In early 2016, after conversion of the Ophthalmology imaging practice from hospital to outpatient based, the leadership turned its focus to the largest and highest volume location, serving over 86k visits, on Durham’s Main Campus, which spreads across three buildings. During the analysis, the cross-functional team identified that Hudson 3 Clinic operated in a decentralized workflow, resulting in a lack of productivity, higher cost of care, and clinical quality consistency by clinical staff and physician frustration when compared to all other Duke Ophthalmology locations.

Objective:
Leadership’s goal was to bring all locations to the “highest common denominator” by applying best practice methodology from other Duke Ophthalmology locations and continue to optimize workflows. Through these efforts, the team hoped to develop an approach to increase clinical staff productivity and efficiency, reduce downtime, maximize patient throughput, and improve collaboration and teamwork within the clinic.

Planning and Implementation:
The implementation of shared best practices from the other location began in March of 2016 with the deployment of an in-house developed staff workload management tool and shift towards a “one team” patient work-up model for the technicians. The workload management tool or “points system” was communicated to the staff and immediately provided data to evaluate both individual and group performance, create a common benchmark for leadership to evaluate need for incremental positions and as a prediction tool to determine if staff needed to be reassigned to another location based on projected workload. A “point system” was implemented to hold clinical staff accountable and increase productivity and efficiency. The “point system benchmark” is set that each clinical staff should see at least 10 points per session (session defined by AM and/or PM clinic), relative to clinical volume. The visit type correlates to an assigned point value based on the time it takes to perform the patient work-up and the technical skill and/or physical effort required to perform the work-up. Another practice variation for the main campus location we addressed was the role of a technician facilitator, or “traffic cop”, to monitor the clinic hallways in case a physician needed assistance. We found that with the changes to the workflow, this role, which consumed 5FTEs, was not needed and, therefore, eliminated, allowing the technicians to once again be available to workup patients and reduce patient wait times across the clinic. Substantial training efforts were initiated to ensure all technicians at Main Campus could successfully workup all types of Cornea and Surgical Comprehensive patients, whereas, they had previously been assigned by specialty.

Results:
Since implementation in March of 2016, the clinical staff have shown significant improvement for points captured per day, in turn allowing less downtime and greater clinical operations efficiency.

- Clinical staff productivity increased up to 37% post implementation. The down-time for technicians overall significantly decreased and a higher number of patients were worked-up during the months following implementation.
- Increasing physician template by 35% per session resulted in a 44% increase in net A/R and a 54% increase in charges compared to the same month’s actuals in 2016.
- Before implementation, only 10% of technicians in clinic were meeting the 10-point per session benchmark metric; afterwards, almost 80% were consistently hitting the target.
- By operating in a centralized model, re-defining technician responsibilities, and implementing a benchmark method for clinical staff, we were able to achieve an increase in efficiency and increased productivity to allow providers to grow patient volume per session by an average of 20%.

Future State:
Performed an assessment to identify those physicians that have the capacity to increase patient volume per session. Based on assessment, there are 17 physicians not maximizing current patient volume per session at the main Eye Center in Durham. Plan to assess provider templates on an individual level and increase volumes based on continuing technician productivity and efficiency. Continue to educate and improve skill set for all clinical staff to ensure efficiency and quality of care to every patient.

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Title: Implementation of a Tele-Primary Care Program to expand Access to Rural Veterans in the Southeast

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Background: Rural hospitals in the Southeast are in crisis. Over 60 have closed since 2010 due to financial challenges and many others are at risk. Rural hospitals also have difficulty recruiting and retaining medical providers. This often leads to a lack of continuity of care, decreased access to care, and can decrease the quality of care available. Suburban and urban areas can have a surplus of providers, who may have been trained, raised or have an interest in providing care in rural areas. Telehealth is a modality that can be used to meet the provider supply and demand gap for rural areas to expand access to care.

Objective: To implement a Tele-Primary Care Program to expand Access to Primary Care services for Veterans in the rural Southeast region.

Planning Methods: A lack of administrative infrastructure to support implementation, scaling and sustainability of new clinical programs is a barrier to success. In response, we built a new service to ensure this support was available to include human resources, finance, information technology, clinical decision support, performance improvement, marketing, patient access, and workload capture. This implementation framework was developed based on research, literature review, and previous experience with implementing new clinical programs.

Implementation Methods: The Tele-Primary Care Program currently provides team-based, comprehensive primary care to Veterans in Carrollton and Dublin, GA through a hub and spoke model. The Hub team is located in Atlanta, GA with a Primary Care Provider, Clinical Pharmacy Specialist, and Clinical Psychologist. The Spoke site teams are located where the Veteran receives care with a Licensed Practical Nurse, a Registered Nurse, and an Administrative Support Professional. This hybrid model of care includes a weeklong, quarterly site visit by the Primary Care Provider to conduct face to face encounters and hands-on exams. This also meets regulatory requirements for opioid prescriptions.

Project and change management tools are used to train new staff at the spoke site on the differences in their job duties and how to manipulate the telehealth equipment. Once the telehealth modality was implemented, an ongoing review of clinical quality measures takes place to ensure equity with face to face care based on measures of access, quality, and patient satisfaction.

Results (e.g. cost savings, increased productivity, improved quality of care): Since the implementation of the program at two spoke sites in August 2017, 642 unique Veterans have been seen by a Primary Care Provider, Clinical Pharmacist, and Clinical Psychologist via telemedicine. One hundred percent of patients (new and established) were seen within 30 days. The newly established multidisciplinary team of clinical and administrative professionals rated their workgroup 4.7 of 5 in workplace satisfaction; 4.86 of 5 in workplace engagement; and 0.56 of 5 in burnout.

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Title – Nurse Phone Visit in lieu of Post-surgical Follow-up for Select Patient Population

Background: The ‘gold standard’ for surgical procedures is an in-person post-operative evaluation. However, many low risk patients have low post-operative concerns and for them such visits come with a cost. Telemedicine has been tested in other surgeries with proven immeasurable benefits to the patients and the health system alike. At Mayo Clinic in Rochester, a collaborative effort in the Trauma, Critical Care and General Surgery (TCGS) practice resulted in appropriate patients receiving a nurse phone visit in place of an in-person visit benefitting the patients and providers alike.

Objective: Examine if a nurse phone visit can safely substitute for in-person post-surgical follow-up without negatively impacting patient satisfaction or continuity of care.

Planning and Implementation methods:

Analysis: A SIPOC-R and Pareto analyses revealed that global period return visits and trauma returns formed >80% of total returns. Post-surgical follow-ups were >60% of global period return visits mostly scheduled on ARNP calendar. Only 60% of all scheduled were seen, others were ‘no-shows’ or ‘cancellations’, many patients found the visit unnecessary. Providers assessed that for patients with low post-operative concerns/complications and risks an in-person follow-up is not medically necessary.

Processes Engineered: The TCGS workgroup collaboratively designed two key processes and supporting tools to aid implementation. a) Triage criteria and communication process b) Nurse phone call process.

Metrics Devised: Lean Six Sigma methodologies were employed to devise process, outcome, and counter-balance metrics. Controls were developed to and decrease process variation and ensure compliance. Select post-operative cases were subjected to Plan, Do, Study, Act (PDSA) cycles which were minutely analyzed and modified every week throughout the 12 week pilot.

Results/Findings: After the 12 week pilot:
- 49% reduction in post-surgical visits
- 91.4% patients reported that their questions were answered through the phone visit
- 97% patients validated that the phone-visit offered an effective clinical care-evaluation
- 0.001% patients scheduled for phone-call follow-up had complications and required in-person follow-up care
- Providers confirmed that the phone-call format was effective, appropriate, and efficient

Conclusion/Practical Implication: Post-operative visits are a burden to patients who have to take time off from work, travel, and pay for parking or are accompanied by caregivers. Sometimes they endure long waits for a 15min visit with a provider only to hear that they are doing well. It also is a burden to the health system as many of these patients who are doing well, do not show up or cancel the appointment and add to wasted time slot on the providers’ calendar that could have been filled with a patient that needs to be seen. For the pilot, tools were created to effectively triage patients to the most appropriate level of care. This alternative mode of care delivery is less burdensome for patients and providers without negatively impacting patient outcomes.

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