SIU SCHOOL of MEDICINE

Office of Graduate Medical Education

Quality Improvement Poster Competition

April 2020

Support for this event is provided through a grant from the

Memorial Medical Center FOUNDATION

2020 GME QI Poster Competition
April 2020

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9	Jenna Goeckner	Pediatrics	Investigating the use of rapid antigen detection tests and the treatment of group A streptococcus pharyngitis in local clinics
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Reducing Narcotic Prescriptions by Implementing an Education Focused Enhanced Recovery After Surgery (ERAS) Protocol for Outpatient Plastic Surgery of the Breast

Danielle Olla, MD, Greg Lee MD, PhD
Nicole Z. Sommer MD, FACS
SIU Institute for Plastic Surgery

Introduction

The opioid epidemic has devastated the United States. In 2016, 63,632 drug overdose deaths occurred in the United States. Opioids account for 66.4% of all drug overdose deaths.[1] Surgeons contribute to the opioid epidemic by writing unnecessary opioid prescriptions. Many patients receive their first exposure to opioids after a surgical procedure. In one study, new persistent opioid use occurred in 6% of patients undergoing minor or major surgeries.[2] There is a responsibility on physicians to protect their patients. Enhanced recovery after surgery (ERAS) protocols have been associated with reduced narcotic prescriptions at discharge.[3,4] Historically at our institution, 94% of plastic surgery patients undergoing outpatient breast surgery were discharged with a narcotic prescription. An ERAS protocol with a strong education component was designed for outpatient breast surgery as a quality improvement project with the goal to reduce narcotic prescriptions by 50%.

Methods

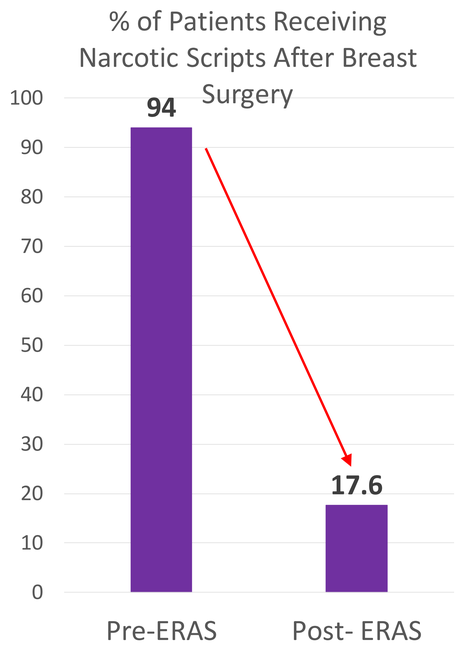
The multidisciplinary team included administrators, plastic surgeons, anesthesiologists, pharmacists and nurses. The ERAS protocol was developed after an extensive literature review. The protocol includes preoperative hydration, pectoral nerve blocks, scheduled Gabapentin 200mg TID, Tylenol 1000 QID, Celecoxib 200mg BID or Ibuprofen 800mg TID and optional Norflex 100mg BID for up to 7 days.

A robust educational component was developed for both patients and staff. 2 patient videos were created reviewing pain expectations and medication options with a brochure to supplement the videos.[5,6] Medication logs were developed and distributed to patients before surgery to keep them on track with the protocol. Residents, nurses and operative staff were educated about the goals and specifics of the protocol during scheduled lectures.

Starting in May 2019 all opioid naïve patients undergoing outpatient breast plastic surgery by a single attending physician were enrolled in the protocol and rates of narcotic prescriptions were recorded.

Results

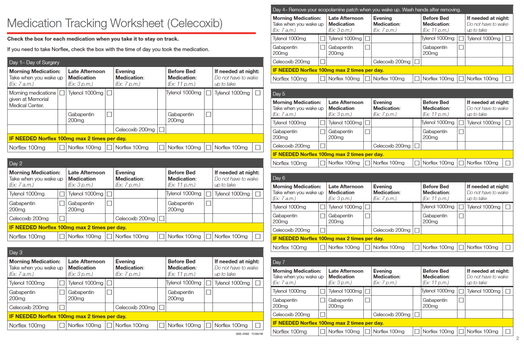
From May 2019-September 2019, 34 opioid naïve patients were enrolled in the ERAS protocol. Patients who were part of the protocol underwent a variety of cosmetic and reconstructive surgeries including breast augmentations, breast reductions, primary and secondary breast reconstruction and revisions. 17.6% (6/34) patients were prescribed a narcotic after surgery compared to 94% of patients prescribed narcotics in 2016. This was over a 75% reduction in narcotic scripts.



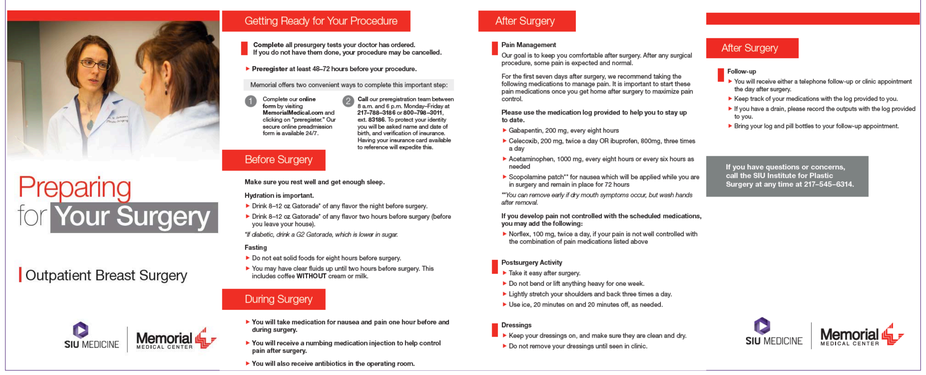
Developed Patient Educational Materials

Educational Videos

Medication Log



Patient Brochure



Discussion

This study demonstrates that an ERAS protocol with a heavy emphasis on education reduces the number of narcotics prescribed to plastic surgery patients undergoing outpatient breast surgery. We were able to exceed our goal of reducing narcotic scripts by 50%. Only 17.6% of patients enrolled in the ERAS protocol required narcotic scripts. Although not all patients were able to avoid opioid use this protocol prevented exposure to the majority of our patients. This decreases the exposure of opioids to patients but also reduces the amount of potential unused narcotic medication in the community that can be abused by others including friends and family. Currently in the literature there is no published ERAS protocol for outpatient plastic surgery breast procedures and we plan to share this protocol so it can be utilized by other surgeons and institutions. It is the duty of a physician do to no harm and protect their patients. With smart, intentional prescribing habits surgeons and physicians can make a difference combating the opioid epidemic. Inspired by these promising results we also plan to develop ERAS protocols for other common procedures in plastic surgery.

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6. Day of Surgery Patient Video. https://youtu.be/bG909BnpkBM

SIU MEDICINE

Assessment of Household Food Insecurity in the SIU School of Medicine Obstetric Population

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Introduction

Background:

Food insecurity is defined as "whenever the availability of nutritionally adequate and safe food, or the ability to acquire acceptable foods in socially acceptable ways, is limited or uncertain". In the year 2018, 37.2 million people (including 6 million children) lived in food-insecure households. Our ability to access and consume nutritious foods affects our health and pregnant women are especially vulnerable to the deleterious consequences of consuming inadequate food. Indeed, the current literature indicates that food insecurity is positively associated with severe pre-gravid obesity and higher gestational weight gain, as well as anemia, pregnancy induced hypertension and gestational diabetes mellitus. Although many of the factors contributing to one's access to adequate food are non-modifiable, health improvement can be achieved by identifying and addressing the factors that are truly modifiable.

Objectives:

- Assess the degree of food insecurity affecting SIU School of Medicine obstetrical patients.
- Perform a needs evaluation to better provide resources and recommendations for our prenatal patients.

Based on these findings, the SIU Department of Ob/Gyn may investigate whether an association exists between food security status and obstetrical outcomes.

Methods

This study was approved by the Springfield Committee for Research Involving Human Subjects as a Non-Research Determination under protocol #20-594.

We are following a Plan-Do-Study-Act (PDSA) model and are currently in the "Plan" (needs assessment) phase. The first step was the introduction of a survey to assess if there is a need to address food insecurity in our patient population. To objectively measure food insecurity, we utilized a survey which included: 1) questions tailored to assess our patient demographics and their awareness and utilization of the existing food resources and 2) a questionnaire slightly modified from the United States Department of Agriculture's (USDA) 10-item questionnaire for quantifying adult food security. Initially developed in 1997, this questionnaire provides the most authoritative and validated system for measuring food insecurity to date. Using this standardized survey allows for comparison between our patient population and national research studies on hunger and food security. Based on final score of the questionnaire, patients were stratified into the following categories: high food security, marginal food security, low food security and very low food security. The voluntary survey was distributed to all SIU obstetrical patients at their initial prenatal visit in resident clinics. The completed surveys were scanned into the electronic medical records and data were collected using Research Electronic Data Capture (REDCap) for statistical analysis.

Statistical analysis:

Descriptive Statistics were computed for all study variables. Continuous variables are described with measures of central tendency (mean, median) and dispersion (range, standard deviation). Categorical variables are summarized as frequencies and percentages. Comparisons of food security status between races was performed using Chi-Square test. Correlation between age and food security status was determined using Spearman correlation coefficient.

Results

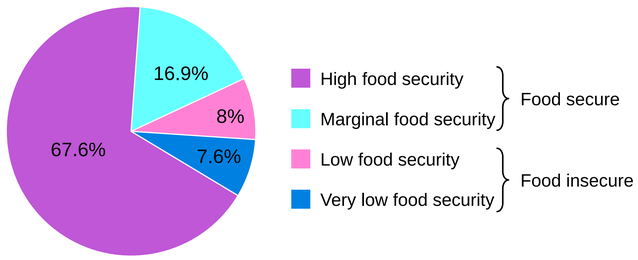
Patient population characteristics

Variable Collected		Results
Number of subjects		225
Age (mean ± SE)		25.90 ± 0.37 years
House hold size (median; range)		3 individuals (1-11)
Race	Caucasian	56%
	Minorities*	44%
Questionnaire score (mean ± SE)		1.14 ± 0.15**

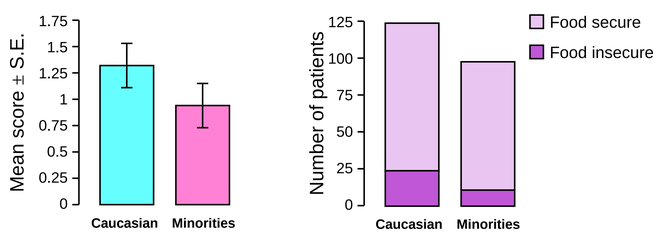
*Minorities includes: Black, Hispanic/Latino, Asian, American Indian or Alaska Native, Native Hawaiian or other Pacific Islander and other.

**Patients scoring 1-2 are classified as having marginal food security.

Food security status distribution



Food security stratified by race



No statistically significant differences in questionnaire scores or food security status were observed between Caucasian patients and those belonging to racial minorities.

Utilization of available resources

Question	Answer	N
Are you receiving any of the following benefits? (select all that apply)***	No, None	22
	WIC	72
	SNAP/EBT (food stamps)	154
	Food Banks	4
	Other	11

***Results were collected from 225 completed questionnaires, some patients indicated using > 1 benefit.

-Note: only 22 patients (9.8%) are not receiving benefits (i.e., the remaining 90.2% are actively utilizing 1 or more resources).

-When asked "Are you aware that the above resources are available?" 217 patients (96.4%) indicated "Yes".

Summary

- 15.5% of our patients live in food insecure households, indicating that our patient population is more vulnerable than the national average (11.1% households, reported in 2018).
- No significant differences were found in questionnaire scores or food security status between races.
- There was no significant correlation between age and food security status.
- Most of our patients (96.4%) are aware of the existing resources to obtain adequate food.
- 90.2% of our patients are actively utilizing one or more of these resources
- Based on the high percentage of patients actively utilizing available resources, we did not anticipate this prevalence of food insecurity in our patient population.

Conclusions

- The higher prevalence of food insecurity in our patient population compared to the national average confirms the need for an intervention to address the problem.
- As most of our patients are aware of the existence and actively utilizing available resources to obtain adequate food, future efforts will need to focus on identifying other modifiable factors that may contribute to food insecurity in order to design future interventions.

Future directions

- At the completion of this phase, we expect to understand the prevalence and causes of food insecurity amongst our patients and how these needs may be associated with obstetrical outcomes.

Potential changes in practice

- Improve counseling and informational pamphlets regarding available resources.
- Clinically monitoring at-risk patients to mitigate pregnancy complications associated with food insecurities.

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Increasing Efficiency through Delegation of Duties in a Developmental Disabilities Clinic

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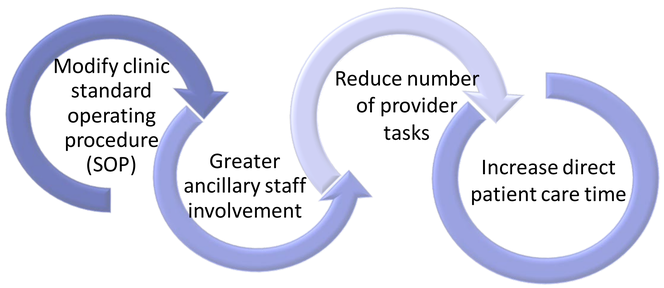
BACKGROUND

- The SIU Psychiatry Special Needs Clinic (SNC) provides individualized care to people with comorbid psychiatric illnesses and intellectual disability.
- Psychiatry residents rotating in the SNC have raised concerns about areas of inefficiency in clinic operations.
- Sustaining the SNC by optimizing workflow is an important goal for the SIU Department of Psychiatry, as most other non-state-run developmental disabilities clinics have closed.
- The responsibilities of nursing staff and medical assistants (MAs) can be tailored to the needs of the practice:[1,2]
    - Helping optimize patient flow
    - Allow providers to see more patients and have more face-to-face doctoring time
    - Efficient administrative task flow with help of support staff

STUDY RATIONALE



HYPOTHESIS

The proposed intervention will:

1. Shorten appointment times by delivering more efficient care
2. Improve resident physician satisfaction for this clinic
3. Increase the number of patient appointment slots
4. Increase outreach to an underserved population

STUDY OBJECTIVES

1. Reduce provider time spent on nonclinical tasks
2. Improve satisfaction by increasing face-to-face time
3. Shorten appointment times by increasing efficiency

STUDY DESIGN

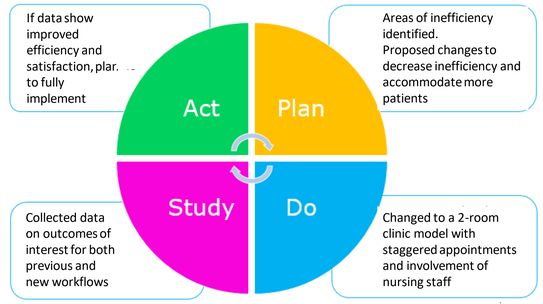
- Identify areas of SNC inefficiency (e.g., total visit length, time spent discharging patients) by collecting appointment time data from a sample of clinics
- Develop an intervention to address these areas of inefficiency by modifying clinic workflow (Fig. 1)
- Implement the proposed change to clinic operations
- Obtain data on appointment times with the new workflow
- Gather provider satisfaction data by administering surveys
- Employ descriptive analyses to evaluate for differences in outcomes with the new workflow

Previous Workflow (one patient room)	New Workflow (two patient rooms)
• Patient arrives 10 mins before appointment time and is checked in by Front Desk. • Patient waits till appointment time for physician to come and escort inside.	• Patient arrives 10 mins before appointment time and is checked in by Front Desk. • Patient is escorted by clinic support staff (e.g., MA, LPN) to vital signs immediately after check in.
• Patient is escorted by provider to vital signs (5 minutes).	• Vital signs performed prior to appointment time.
• Patient is escorted by provider to interview room (5 minutes)	• Patient roomed in interview room by clinic support staff. • Caregiver or patient provided medication list to reconcile.
• Interview with provider (15 minutes).	• Interview with provider (20 minutes). • Required labs checked on a preprinted form listing labs frequently obtained. • Appointment card with next appointment request entered. • Prescriptions sent electronically.
• Patient is escorted to reception area by provider (2 minutes).	• Patient is escorted to reception area by clinic support staff (2 minutes).
• Provider enters labs, collects lab requisitions printed at remote location, and gives forms to patient and caregiver (3 minutes)	• Labs entered and requisitions printed by clinic support staff (3 minutes).

Figure 1. Proposed workflow modification for the SIU Psychiatry Special Needs Clinic

Plan-Do-Study-Act Cycle Overview

Goal	Outcome	Challenges
Change from one- to two-room model	Achieved	Lack of availability of clinic workspace
Staggered appointments	Achieved	Premature increase in appointment slots without improvement in efficiency as noted in next row
Utilization of ancillary staff	Achieved MA rooming patient and discharging patient	MAs not authorized to place orders per SIU rules despite having written orders from staff
Checklist to track appointment progress	Created and successful in Tracking	Required extra physician provider for tracking



NEXT STEPS

- Obtain authorization for MAs to do order entry
- Increase number of resident physicians working in the SNC, thus making increased number of appointments sustainable
- Determine the desired model of supervision and standardize the attending physician's role to provide adequate learning environment for trainee physicians
- Provide orientation to incoming resident providers

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SIU MEDICINE

Lean Six Sigma Approach to Improve Process Variation and Decrease Time-to-Surgery for Hip Fractures

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Ronald Romanelli, MD[3] Matthew Gardner, MD[4] Zak Gurnsey, MD[2] James Waymack, MD[1]

[1]SIU School of Medicine [2]Memorial Medical Center [3]Orthopaedic Center of Illinois [4]Springfield Clinic Orthopedic Group | Springfield, Illinois, USA

PROBLEM STATEMENT

- Recent literature[1,2] supports reducing time-to-surgery for hip fractures to <24 hours after injury to decrease 30-day mortality and post-operative rates of pulmonary embolism, pneumonia and myocardial infarction.
- These complications and other associated sequelae (*e.g.*, DVT) can result in longer length of stay, increased rates of readmission, and additional cost to the healthcare system.
- In 2018, an SIU-affiliated Level I Trauma Center provided hip fracture surgery in <24 hours for 61.7% of patients.
- Our aim was to improve process variation, increase the percent of patient being treated in < 24 hours, and **decrease time-to-surgery** for hip fracture patients at our Level I Trauma Center.

LEAN SIX SIGMA APPROACH: *DMAIC*

DEFINE

- IN SCOPE (i.e., inclusion criteria)
  - All hip fracture patients treated within Memorial Health System
  - Patients with a hip fracture deemed appropriate for surgical intervention (THA, hemiarthroplasty, cephalomedullary nailing, cannulated screws)
- OUT OF SCOPE (i.e., exclusion criteria)
  - Hip fracture patients treated non-surgically
  - Trauma patients with polytrauma

MEASURE

- See *Simplified Process Map*.

ANALYZE

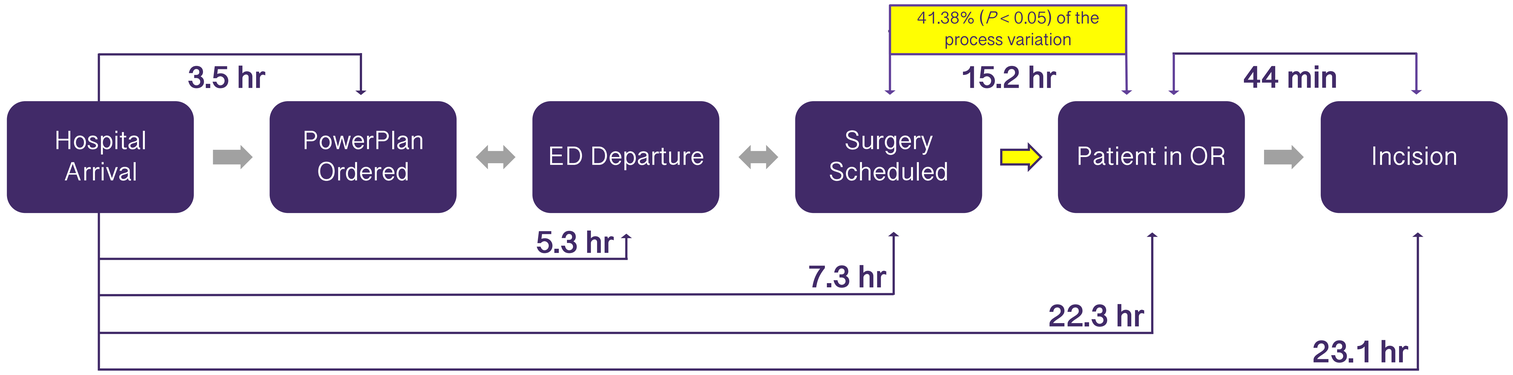
- Average time from "Hospital Arrival" to "Surgical Incision" for a hip fracture patient in our healthcare system was 23.13 hours in 2018;
- Significant variation in time-to-surgery: 6 data points above the upper control limit of 60.9 hours;
- Average time between when "Surgery Scheduled" and when "Patient in OR" was found to be 15.16 hours and accounted for **41.38% (*P* < 0.05) of the process variation**;
- **Admission directly to the hospital floor** (versus through the Emergency Department) did not result in a delay to surgery.
- The day of the week a patient was admitted to the hospital and the type of anesthesia (general, regional, MAC) had no influence on time-to-surgery.

IMPROVE

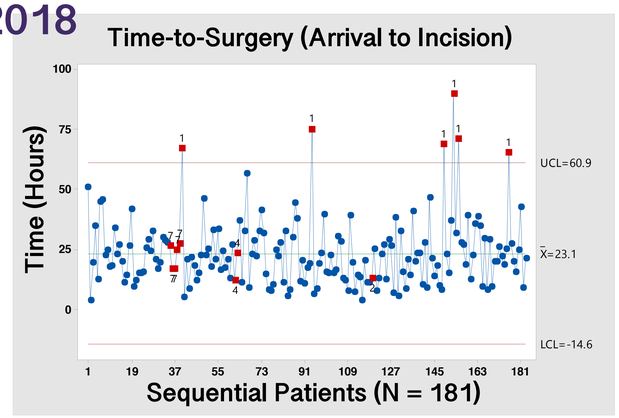
- See *Interventions* section.

CONTROL

- In the months following implementation of all interventions (August 2019), the time-to-surgery has decreased; we are continuing to monitor this data.



SIMPLIFIED PROCESS MAP



Anderson-Darling Normality Test	
A-Squared	4.58
P-Value	<0.005
Mean	23.128
StDev	13.891
Variance	192.958
Skewness	1.69907
Kurtosis	4.34799
N	183
Minimum	3.567
1st Quartile	13.200
Median	20.617
3rd Quartile	28.467
Maximum	89.233
95% Confidence Interval for Mean	
21.102	25.154
95% Confidence Interval for Median	
19.144	22.752

INTERVENTIONS

1. Hip Fracture **Order Sets** *specific for* ED and ORTHO
   - ED
     - Consult Ortho Hospitalist
     - Vitals, Nursing Care (PAS boots, Foley, etc.)
     - Diet (NPO)
     - Activity (Bedrest)
     - Radiology (AP of dedicated hip, femur, pelvis)
     - Labs/Tests (pre-op; EKG, CXR, etc.)
   - ORTHO
     - *TARGET TIME FOR SURGERY*
     - Pain medications / Antibiotics
     - Type and Screen
     - Surgical Consent
2. Earlier **consultation** and better **communication**
3. Provide **Target Time for surgery** to consulting services
4. Monthly **updates** to Orthopaedic Surgery community

CONCLUSIONS

- The four months following implementation of all interventions showed step-wise monthly **decreases in time-to-surgery** for hip fracture patients with an associated **rise in percentage of patients being treating in < 24 hours.**
- These findings, demonstrate that simple interventions can significantly improve the outcomes of a complex process.
- There is a **critical role** for physicians and residents to play in quality improvement initiatives.
- Understanding the complexity of a seemingly straightforward process (i.*e.*, scheduling hip fracture surgery) is valuable for all members of the care team.
- A major learning point from this work was the importance of **interdisciplinary communication.**

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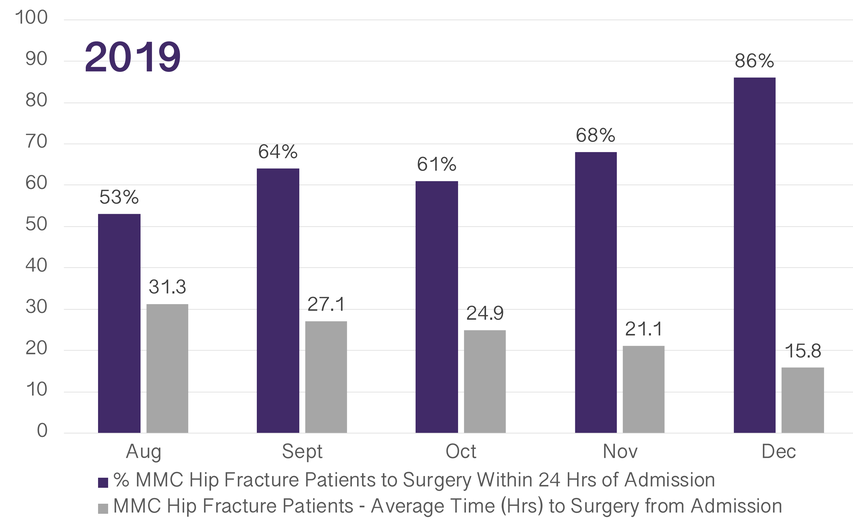

Reducing 30 day Hospital Readmissions through Development of a Post-Acute Care Clinic (PACC)

Ayaaz Habibullah, MD; Ben Bukey, DO; Jacqueline Vardaros, PharmD

SIU Center for Family and Community Medicine Quincy

Introduction

Hospital readmissions can affect many facets of healthcare. It has been estimated that Medicare spends over $17 billion each year due to readmissions.[1] Patients age 75 and above account for the largest group of readmissions.[2] Readmissions can be due to lack of close follow up, minimal understanding of one's disease process or miscommunication with regards to medications at discharge.

- Non adherence to medication has been noted to account for over 10% of readmissions.[2]
- The majority of readmissions for heart failure, acute myocardial infarction and pneumonia happen within 15 days of discharge.[3]
- Transition of care from inpatient to outpatient is often the culprit of readmissions.

Purpose

Primary care clinics that place an emphasis on better coordination between inpatient care providers and outpatient have demonstrated a reduction in readmission rates. Hospital readmissions create large financial penalties that over 1500 hospitals are subject to on a yearly basis. In addition to financial burdens, hospital readmissions are serious health issues that requires our immediate attention.

- SIU Center for Family Medicine Quincy 30-day hospital readmission rate is higher than other groups that provide hospital care at Blessing
- We developed a PACC to lower our 30-day readmission rate

Methods & Results

Plan for Pilot Project

1. All 6, third year family medicine residents and one faculty attending staffed the PACC once a week for 7 weeks
2. Adult, non-long term care patients in Quincy or surrounding area were invited to attend the PACC in the week after hospital discharge
3. Care coordinator called the patient to schedule the visit and was present at the PACC each week
4. Each patient was offered a 30-minute appointment time slot within 24 hours of their hospital discharge.
5. After the patient attended the PACC, the patient was returned, with handoff as necessary to his/her primary care physician (PCP)
6. If the patient did not keep their appointment or cancelled, the resident attempted a telephone appointment
7. The patient was intentionally not scheduled for the PACC visit with their PCP or any providers involved in the patient's hospital stay
8. We compared historical average to 30-day readmit rates during and for the 30 days after the PACC

Data Summary

	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Discharges	68	60	49	75	68	88	58	82	59	69	76	69
Readmissions	16	17	10	13	13	17	14	22	11	9	26	8
%	24%	28%	20%	17%	19%	19%	24%	27%	19%	13%	34%	12%

Table 1.
Raw hospital data of patient discharges and readmissions within 30 days.

- PACC was held between August 26th through October 13th, 2019
- During that time, there were 33 patient visits in the PACC and 5 readmissions (15%) from that group
- 106 SIU patients were discharged from the hospital during that same time period and of those, 18 patients were readmitted (17%)
- 21% average readmission rate for the past year
- There was a trend toward lower 30-day readmissions from patients that were seen in the PACC

Challenges Faced

- Continuity lost due to lack of follow up
- Insufficient time for thorough PACC visits
- Medication confusion pertaining to discharge instructions
- Discharge summary confusion between providers
- Communication with PCP
- Patient buy in to improve attendance of the PACC

Discussion

- Having a clinic such as the PACC focused solely on providing care to acutely ill patients requiring a specific plan for follow up upon discharge from the hospital can help decrease the amount of potential complications that can occur due to loss of follow up.
- With the help of a care coordination team focused on identifying challenges that patients face upon discharge Is the foundation to preventing readmissions
- This pilot project was started with the intent that a longitudinal project would develop for continuous improvement of preventing hospital readmissions

Future Directions

- Inpatient senior resident seeing all or most acutely ill discharges
- Patients bringing in ALL medications to PACC appointment
- Updating discharge MED-list prior to PACC appointment
- Handing off to PCP after first office visit
- Having patient talk back plan both prior to discharge and at end of office visit

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Tobacco Cessation Counseling

Pejman Jamkhou MD, Mark Scott MD, Johnny Tenegra MD
SIU Decatur Family & Community Medicine Residency Program

Introduction

The USPSTF recommends that clinicians ask all adults about tobacco use and advise them to stop using tobacco.[1] Tobacco use is the number one cause of preventable disease. From my survey of the residents at our clinic, it seems smoking cessation counseling is being done more than it is documented. My aim is to increase tobacco cessation counseling provided by residents to current tobacco users aged 18 years and over by 10 percent by 01/01/2020.

Methods

I discussed the importance of smoking cessation counseling with all residents in a Federally Qualified Health Center (FQHC) program starting on January 1st 2019. After consultation with the clinic's Continuous Quality Improvement (CQI) committee and residents in the program on smoking cessation counseling it was found that counseling was being done more than it was properly documented into our Electronic Medical Record. The importance of proper documentation of appropriate counseling of smoking cessation and current smoking status was discussed by one to one meetings with each resident once every four months. We collected data for pre and post intervention, the intervention was throughout the year of 2019 starting 01/01/2019 and ending on 12/31/2019. This data was compared to calendar year 2018 starting 1/1/2018 to 12/31/2018 where no intervention was used. Our dependent variable was smoking cessation counseling, and this was calculated using by the Uniform Data System which takes social history of smoking and a checkbox marked in medical resident's EMR that smoking cessation was completed in the office visit.

UDS Monitoring Tobacco Cessation SIU FCM FQHC Decatur 2018, Pre-Intervention Data

Compliant	Non-Compliant	Non-Compliant Counseling	Grand Total
901	1	429	1331
68%	0%	32%	100%

UDS Monitoring Tobacco Cessation SIU FCM FQHC Decatur 2019, Post-Intervention Data

Compliant	Non-Compliant	Non-Compliant Counseling	Grand Total
1235	205	10	1450
85%	14%	0.7%	100%

Results

The goal of this project was to determine whether educational interventions could improve the smoking cessation counseling rates by residents in order to improve patient outcome. Our results did show that the intervention of providing educational one on one meetings to residents individually in four month intervals improved the compliance to the smoking cessation counseling. Raw data from UDS pre-intervention 01/01/2018 to 12/31/2018 showed that the smoking counseling rate was 68%. There was a increase in the 2019 intervention year with a smoking counseling rate of 85%. The data came from individual patients who are greater than 18 years old.

Discussion

In our study the intervention method used for one-on-one educational sessions did show an improvement in smoking cessation counseling and documentation by the residents. It may be beneficial to look into other methods to improve the compliance to smoking cessation counseling. One of which would be to add a mandatory setting or reminder within the electronic medical record that will encourage physicians to address both the current patient's smoking status and if smoking cessation counseling is provided. The limitations of this study was that we had no control group in the intervention year. The method of intervention was also a limitation in the study as education of medical residents was not objectively outlined and uniform.

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Improvement in Completion of Vaccination Schedules in a Federally Qualified Health Center through Provider Education

Amruta Dutia MD, Mark Scott MD, Johnny Tenegra, MD
SIU Decatur Family & Community Medicine Residency Program

Introduction

At a regional level, most 2 year olds have received some but not all vaccinations that are recommended.[1,2] This could be partly due to perceived side effects from vaccinations, religious beliefs, lack of information, or immunizations not being addressed at opportune moments by the provider.[3] The rate of patients not receiving all vaccination series recommended for their age group along with unvaccinated kids are on a rise. SIU Decatur immunization rates (rates of complete vaccination series for their age groups) were around 31% at the end of 2018 and our aim was to increase it to 40%. There are increasing rates of kids experiencing infectious diseases secondary to lack of immunizations, such as measles, which needs to be improved upon.[3] CDC guidelines and federal data show a decline in vaccination rates and increasing morbidity and mortality rates.[2] My aim is to improve the rate of completed childhood immunizations in our Federally Qualified Health Center (FQHC) population less than 2 years old by January 2020.

Methods

Participants in the clinic included residents, nurses, PAs, NPs, and attendings. Participants were informed that at each acute visit to review vaccination records and to administer remaining vaccinations if appropriate. They were also provided with CDC pamphlets regarding flu vaccines to aid in improving flu vaccination rates. On acute and chronic visits the Illinois Comprehensive Automated Immunization Registry Exchange (ICARE) would be printed by support staff and kept for the physician to review. ICARE is the database of vaccinations obtained by patients anywhere within Illinois. Any lacking vaccinations were then offered to the parents and administered if agreeable. Additionally, in each exam room, brochures from Centers for Disease Control (CDC) about influenza vaccines were provided and reviewed. This education should help reduce concerns from the perceived side effects. Pre-intervention data was collected from April 2018 to September 2018. Time period of post-intervention data collection was between April 2019 to September 2019. Data was collected and reported through UDS (Unified Data System). UDS is a standardized reporting system that provides consistent information about health centers in FQHC.

Table 1. 2018 Immunization Pre Intervention Data SIU Decatur

Vaccines Administered Count	No	Yes	Grand Total
SIU FCM FQHC DECATUR	58	26	84
Grand Total	**58**	**26**	**84**

Vaccines Administered Percent	No	Yes	Grand Total
SIU FCM FQHC DECATUR	69.05%	30.95%	100.00%
Grand Total	**69.05%**	**30.95%**	**100.00%**

Table 2. 2019 Immunization Post Intervention Data SIU Decatur

Vaccines Administered Count	Yes	No	Grand Total
SIU FCM FQHC DECATUR	15	53	68
Grand Total	**15**	**53**	**68**

Vaccines Administered Percent	Yes	No	Grand Total
SIU FCM FQHC DECATUR	22%	78%	100%
Grand Total	**22.06%**	**77.94%**	**100.00%**

Results

The collected UDS Measure results showed that the count of vaccinations completed in 2018 SIU FCM Federally Qualified Health Center (FQHC) Decatur was at 30.95% (N=84, 58 incomplete and 26 complete, Table 1). The collected UDS Measure results in 2019 showed the count of vaccinations was 22.06% (N=68, 53 incomplete and 15 complete, Table 2). Overall comparison from the year 2018 to 2019 showed a decline in immunization rate.

Discussion

The results show that rates of vaccination declined as we increased our team efforts at educating parents. The impact is that the rate of vaccination will continue to decline despite modest effort from providers. A limitation of the study includes small sample size with 2018 size being smaller than 2019. As healthcare providers, we must work harder to educate and provide information to families to further improve vaccination rates. Future studies would have investigated specific reasons for incomplete vaccinations, such as reasons for declining vaccinations, being lost to follow up or no showing to appointments. Other strategies that could be employed to help improve immunization rates could be expanded to other venues like schools, daycares or pharmacies.

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Investigating therapeutic options for pediatric patients with low HDL levels

SIU MEDICINE

Jenna Goeckner, Allison Frey, Allison Spenner, Sibyl Cox, Hani Ghawi

Background

High levels of high density lipoprotein (HDL) have an atheroprotective function and therefore contribute to the prevention of cardiovascular disease. However, there are no published guidelines for the treatment of low HDL in pediatric patients. Providing physicians with guidelines to raise HDL levels in this population could aid in the long-term prevention of cardiovascular disease in those patients.

Objective

By surveying local providers and performing detailed chart review, we determined if and when physicians, APNs, and PAs screen for low HDL, as well as how they are treating dyslipidemias. We then developed a literature based treatment guideline for children with low HDL in the Southern Illinois University Pediatric Clinic. The guideline, formulated with the input of a dietician, includes screening recommendations as well as dietary and exercise plans.

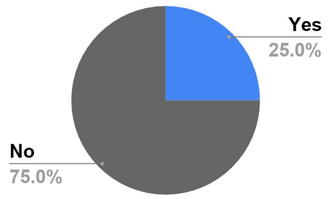
Methods

We reviewed the medical records of SIU Pediatric patients who had an ICD-10 code E78.6 or CPT codes 82465; 83718 between January 1, 2017 and October 1, 2018. Any clinical interventions taken to address isolated low HDL levels were recorded. Additionally, a survey was sent to regional pediatricians, APNs, and PAs to inquire if and when lipid panels were obtained, as well as what interventions were taken in regard to isolate low HDL, including diet or exercise recommendations, referrals, and prescription medication.

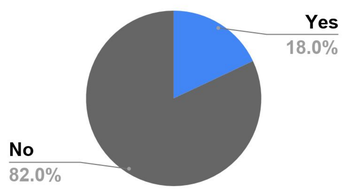
Results

Of the healthcare providers surveyed, only 25% and 18% followed the current guidelines by ordering a lipid panel between the ages of 9 and 11 and 17 and 21, respectively. Chart review of 44 patients with isolated low HDL revealed diet recommendations were given to only 27% and exercise recommendations to 29%. A repeat lipid panel was not obtained for 88% of these patients

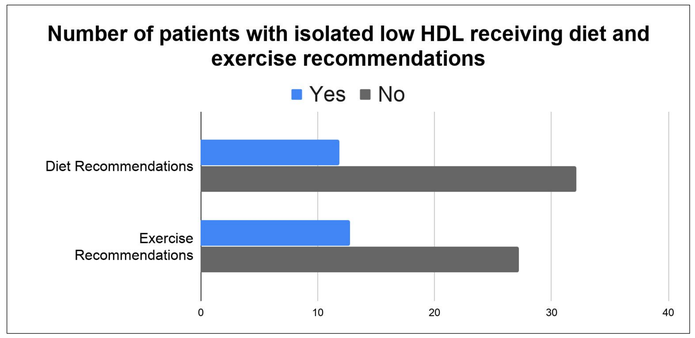
Proportion of clinicians who routinely screen for dyslipidemias between ages 9 & 11



Between ages 9 & 11



Between ages 17 & 21



Discussion

Despite the AAP recommendation to screen all children between the ages of 9 and 11 as well as 17 and 19 for dyslipidemias, it appears this practice is not routinely followed among regional providers. Literature-based recommendations were then developed with the input of dieticians and pediatric cardiologist and has been provided to local physicians, APNs and PAs. A follow-up survey has been sent to these health care providers to assess for changes in practice.

Educational Guideline

Raising HDL (High Density Lipoprotein) Cholesterol

Several factors can increase your child's risk of developing heart disease as an adult. Two ways to decrease this risk are **weight loss** and **exercise.** These two things will help prevent the buildup of cholesterol, which can start in children as young as age 2!

The American Academy of Pediatrics recommends screening all children between the ages of 9 & 11 and 17 & 21 for lipid abnormalities.

PHYSICAL ACTIVITY

Try out this exercise plan with your kids! Make exercise fun and enjoyable for your child!

Sunday: Enjoy a walk around the block for 60 minutes!
Monday: Run around the park playing tag for 60 minutes!
Tuesday: Dance to a step aerobics video for 60 minutes!
Wednesday: Climb up and down stairs to your favorite song for 30 minutes!
Thursday: Shoot and retrieve a basketball for 60 minutes!
Friday: Play jump rope with a friend for 30 minutes!
Saturday: Pick your favorite activity and do it again! Other options include swimming and riding your bike!

LOSE WEIGHT IF NEEDED

Even a small weight loss of 10 pounds can help improve your HDL level. First try to reduce portion sizes and then increase your intake of fruits and vegetables.

MONOUNSATURATED FATS

These healthy fats can improve your HDL levels!

Nuts Olives Avocados

OMEGA 3 FAT

Another healthy fat to raise your HDL levels! Eat fish a couple times per week and put some ground flaxseed in cereal or yogurt!

Salmon Walnuts Flaxseed

DON'T SMOKE!

Use of tobacco such as cigarettes and chewing tobacco will lower your HDL (while also causing many other health problems!)

By making good choices now you can help your child lower their risk of heart disease in the future!

BAD vs. GOOD CHOLESTEROL

LDL (BAD) cholesterol collects in the arteries and can cause blockages.

HDL (GOOD) cholesterol protects us from heart disease by removing the LDL or bad cholesterol from the blood.

A **low HDL level** increases risk of heart disease in your children! The higher the HDL the better!

To **INCREASE** your HDL you should:

Don't forget: your lipid levels should be rechecked in 6 months to make sure you are on the right track!

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Investigating the appropriateness of laboratory diagnosis and treatment of group A streptococcal pharyngitis in two local clinics.

Jenna Goeckner, Brian Reinholz, Chad Thompson, Nick Nosbisch, Adam Riggs, Subhash Chaudhary

SIU MEDICINE

Background

Rapid strep tests (RSTs) and confirmatory cultures are frequently obtained in children in both inpatient and outpatient settings. However, it is thought strep testing is overused and although the test specificity is 95%, up to 20% of children are known to be carriers of Group A strep (GAS). Additionally, children less than 3 years old make up a population in which GAS pharyngitis is known to be uncommon. RSTs may be over utilized in children because they are known to have atypical symptoms which may prompt some clinicians to perform the test for a variety of different symptom constellations that may or may not be consistent with GAS pharyngitis in young children. It is not recommended to test for GAS pharyngitis when there are 2 or more symptoms suggestive of a viral etiology.

Objective

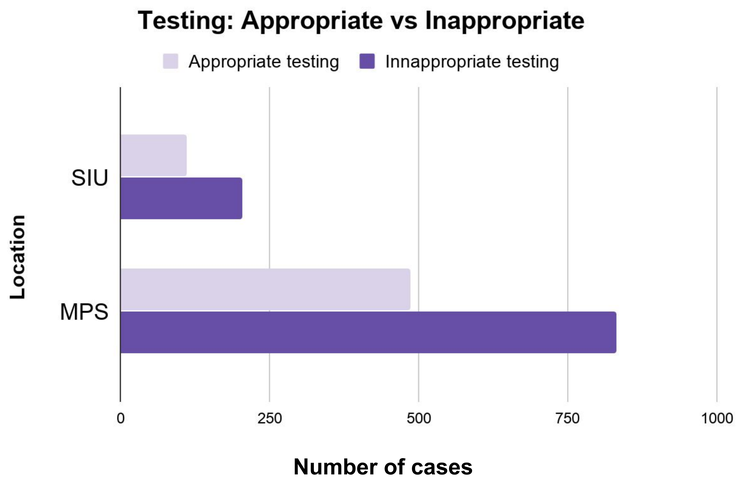
Our specific aim is to characterize how and when Southern Illinois University Pediatrics (SIU) and Memorial Physician Services (MPS) utilize strep testing to diagnose GAS pharyngitis and how it is treated when positive. We hope to identify improvements that can be made regarding following the guidelines for the use and interpretation of this test along with treatment with antibiotics when necessary.

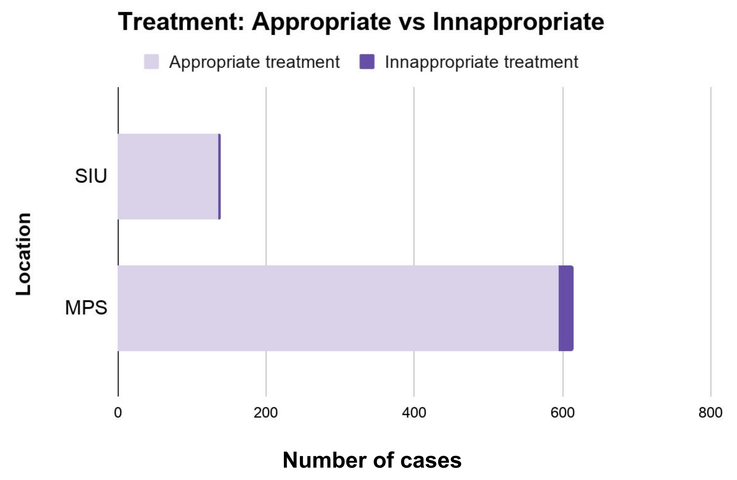
Methods

We reviewed the charts of all children seen in the SIU Pediatrics clinics between the dates of 11/30/16 to 1/12/2018 as well as children seen at Memorial Physician Services between the dates of 1/3/2017 and 12/28/2017 who received a RST and recorded several history and physical exam findings, confirmatory testing (when RST negative) and antibiotic management when needed. Strep testing was deemed inappropriate if: performed on a child less than 3 years old with no documented household contact with strep throat, the patient did not have throat pain, the patient had 2 or more symptoms suggestive of viral etiology or the patient did not have signs and symptoms consistent with GAS pharyngitis. Regarding antibiotic management, treatment was considered appropriate if the patient was treated with penicillin or amoxicillin. If the patient had a documented allergy to penicillins, cephalosporins (such as cephalexin and cefdinir), azithromycin and clindamycin were considered acceptable.

Results

346 patient charts were reviewed from SIU Pediatric clinics and 1413 charts were reviewed from MPS clinics. Nurse visits were excluded from certain parts of data analysis as there was limited history and physical exam information. For SIU, 204/315 (65%) of RSTs qualified as inappropriate according to our guidelines. For MPS, 832/1318 (63%) were inappropriate. Of the 139 patients who were treated with antibiotics for SIU, 135 (95%) were with appropriate antibiotic choices and 4 were not. Of the 622 patient who were treated with antibiotics for MPS, 595 (96%) were treated with appropriate antibiotics while 28 were not.





Educational Guidelines

A GAS pharyngitis clinic checklist is being formulated to reinforce the following concepts:

1. Strep testing should be used for patients between the ages of 5 and 15 years old for whom there is a strong level of suspicion for GAS pharyngitis based on history and physical exam findings.
2. Strep testing should be avoided in children less than 3 years old unless there is a household contact with GAS pharyngitis.
3. A positive test does not equal GAS pharyngitis, particularly in asymptomatic patients or patient with 2 or more viral symptoms; up to 20% of children can be carriers for Group A strep.
4. Recommended treatment:
   a. Amoxicillin, penicillin V or benzathine penicillin are the treatment of choice
   b. Cephalosporins (cephalexin, cefdinir), azithromycin and clindamycin are acceptable if the patient has a true allergy to penicillins.
5. It is generally unnecessary to attempt the eradication of the GAS carrier state with some exceptions (a patient or family member with Rheumatic Fever or outbreaks in places such as daycares).

Discussion

We found the data between the two clinics to be similar when comparing the utilization of strep testing and antibiotic treatment of patients testing positive for GAS pharyngitis. While both clinics treated GAS pharyngitis appropriately almost all of the time, we discovered there is room for improvement regarding when strep testing should be used. Education regarding appropriate use of strep testing will help prevent unnecessary testing and exposure to antibiotics and their adverse effects.

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Transitioning from Inpatient to Outpatient Management

SIU MEDICINE

SIU Vascular Surgery

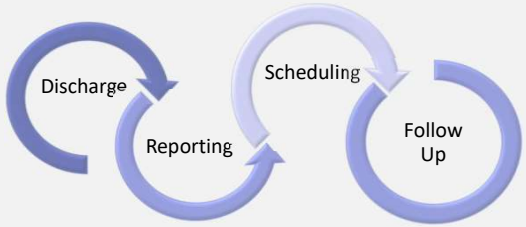
Shawn Poole MD MBA, Douglas B Hood MD, Safoora Choudry MD, Tian Zhang MD

Introduction

The patient population that vascular surgeons encounter require meticulous longitudinal care to optimize medical outcomes. [1]

SIU Vascular Surgery embarked on this quality improvement project to evaluate the current scheduling protocol for outpatient visits following hospitalization, as this represents a potentially difficult transition of care. [2]

Methods



Data collection period:
- 12/01/2019 – 01/31/2020, all patients cared for by SIU Vascular Surgery were reviewed following hospital discharge
- All patients were followed until 03/31/2020 for evaluation of successful appointment scheduling and attendance of the follow up appointment

Primary Endpoints:
- Confirmation of appointment scheduling
- Appointment attendance

Current Protocol:
- Each Chief Resident submits bi-weekly email reports regarding required patient follow up to the SIU Vascular Surgery Charge Nurse
- These patients are then documented, contacted, and an appointment is scheduled

Patients were followed until 03/31/2020 for review of successful outpatient follow up.

Results

69 patients were followed during the collection period:
- 69/69 (100%) of vascular surgery patients were communicated from the Chief Residents to the Charge Nurse during the collection period
- 51/69 (73%) required outpatient follow up at intervals ranging from 2 days to 6 months
- 15/69 (21%) did not require scheduled follow up
- 100% of patients requiring follow up were scheduled for a follow up visit
- 3 patients were excluded due to readmission precluding appointment attendance

Of the 51 patients requiring follow up:
- 23/51 (45%) had achieved follow up by 01/31/2020
- 31/51 (61%) had achieved follow up by 02/29/2020
- As of 03/31/3030, 45/51 (88%) of the patients requiring follow up had been seen in clinic
- 6 remaining patients require long term follow up, as distant as 5 months, following the collection period

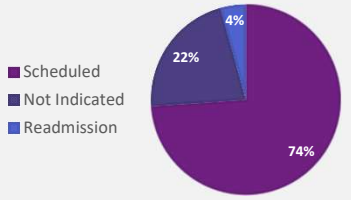


Figure 1.
Breakdown of patients evaluated during collection period based on necessity of outpatient follow up

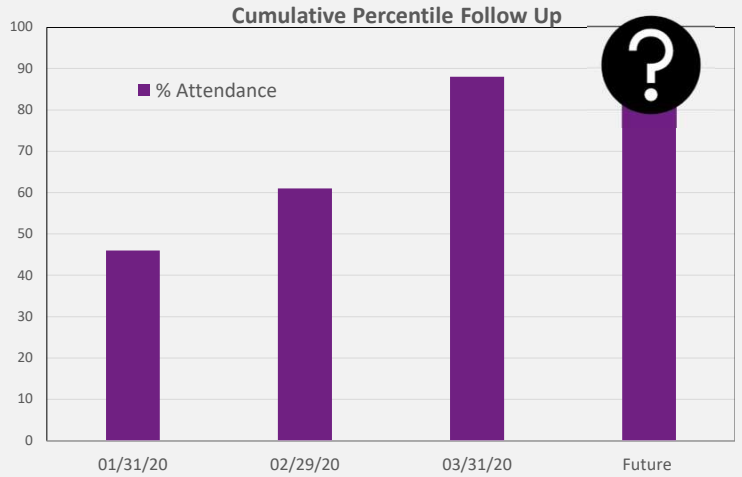


Figure 2.
Trending cumulative patient attendance to clinic following data collection. The 4th column represents the possible completion statistic pending future long term follow up appointments

Discussion

While our initial results for coordination of appointment scheduling and patient follow up are reassuring, there remain areas of potential improvement.

The data exhibits appointment scheduling at 100% and attendance of nearing 100%, although the long-term patient follow up data remains unknown.

Possible improvements to the current process include standardized patient follow up documents and creation of a formal database.

The conclusion can be made that the current SIU Vascular Surgery outpatient follow up protocol is successful, however, there remain multiple areas for improvement and standardization.

Improvement Opportunities

Future opportunities for analysis of outpatient follow up:
- Outpatient/same day procedure
- Consultation service compared to primary patients
- Incidental/asymptomatic

Additional possibilities for future innovation may be found in relation to interfacing capabilities of the current EMR systems in relation to follow up.

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Improving Controlled Substance Agreements in a Federally Qualified Health Center

Saranya Tharmakulasingam MD, Mark Scott MD, Johnny Tenegra MD
SIU Decatur Family & Community Medicine Residency Program

Introduction

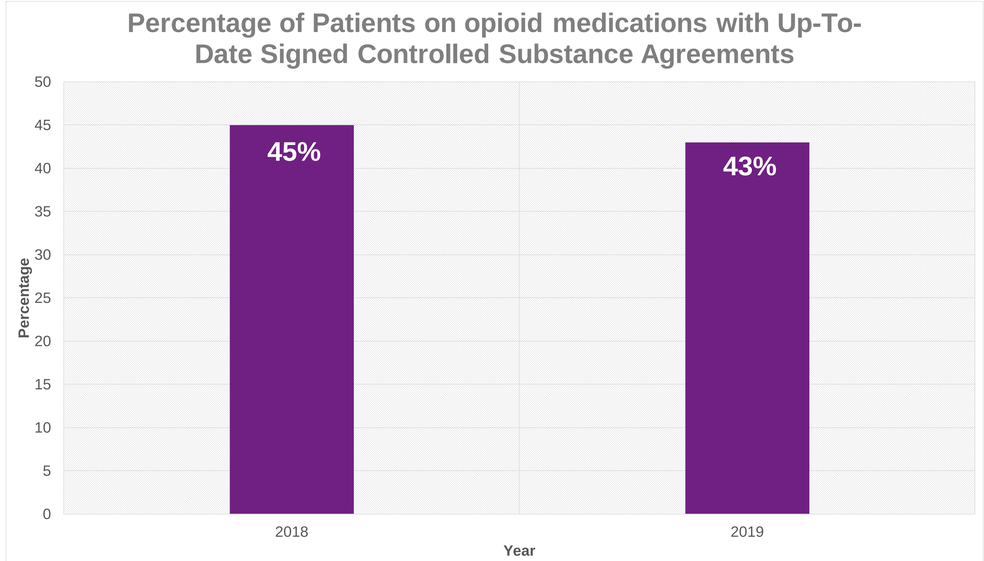
Patients who take controlled substances for chronic pain are often stereotyped as “drug seekers” by the clinic staff who provide their medication refills. This misunderstanding causes frustration among patients, which then results in a poor relationship between a patient and physician. Subsequently, controlled substance agreement have been implemented in clinical settings, which has proven to show patient satisfaction and improvement in office rework.[1] Since our clinic is a training center for family medicine residents, it is faced with a significant turnover of providers, hence the ability to keep track of controlled substance agreements has been challenging. We purposed our study to improve percentage of controlled substance agreements signed to 80% or greater for patients that are on opioids for longer than 3 months in a row. With the help of our care coordination team, the study mainly focused on educating nurses and providers. With the guidance of the SIU controlled substance agreement policy, the study focuses on locating controlled substance agreements in the chart, finding opportunities to check for controlled substance agreement in patient’s chart and contacting the patients that are need of the controlled substance agreements. The limitations on our study is that with the known significant turnover of resident providers every year, monitoring outcomes of the intervention is challenging.

Methods

Nurses and providers were educated at our FQHC clinic (resident and faculty physicians, physician assistants and nurse practitioners) that with every controlled substance refill, they were to check for the presence of controlled substance agreements, with each refill request either from the office or by telephone. Nurses and Providers were educated during nursing staff meetings and resident education conference hours with providing presentations on the SIU controlled substance agreement policy. Patients without a controlled substance agreement were informed to come into clinic to sign the agreement. Our care coordinators have been helping keep track of up to date controlled substance agreements in patient’s charts who have been refilling Opioids for longer than 3 months in a row. The clinic’s care coordination team will also inform providers on overdue or missing controlled substance agreement in patient charts. I collected my pre-intervention data for 10 months, February to November for the year of 2018 and collected post-intervention data over 10 months from April 2019 December 2019. In order to collect pre-intervention data, I worked closely with our care coordination nurse to derive the data for the number of patients that are on opioid medication and the number of patients that has controlled substance agreement existing. Based on the derived data, I was able to calculate the percentage of patients that have existing controlled substance agreement signed for the year of 2018 and used this calculation for the post-intervention data for 2019.

Results

For the year of 2018, it was noted 183 patients were on opioid medications. Out of 183 patients, 83 patients was noted to have controlled substance agreements signed. For the year of 2019, it was noted 190 patients were on opioid medications. Out of 190 patients, 74 patients were noted to have controlled substance agreements signed. Prior to our intervention 45% (year of 2018) of the patients that are on an opioid medication have controlled substance agreements signed. It was noted that for the year of 2019, 43% of the patients on opioid medications over 3 months (N= 82) have signed controlled substance agreements. There was a 2% decline noted for the post- intervention year.



Discussion

Given that some of the residents were rather new to our practice, this can be an absolute and unavoidable reason for such unexpected data measurement outcome. The current data collected will certainly aid the clinic with making sure our patients have an agreement to set clear expectations with our clinic’s standards for controlled substance agreements. This will lead to better care for our patients who are on controlled substances, as this would reduce overall number of healthcare visits and may decrease the rate of dose or frequency increase of the medication for patients. It will aid in assessment of compliance with random pill count or random urine drug screen. Overall, the compliancy of the controlled substance agreement signed between the patient and physician will improve and will aid in controlling the opioid epidemic.

References

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COVID-19 local preparedness; Beyond the guidelines

Najwa Pervin MD[1], Gayla Haverner RN[2], Vidya Sundareshan MD[3]

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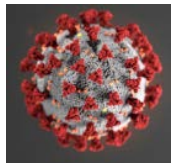


INTRODUCTION

Novel coronavirus, SARS-CoV2 manifesting as COVID 19 originated in China in November 2019. Initially considered an outbreak and then an epidemic localized in Wuhan, China, this virus has rapidly evolved into a pandemic. Local preparedness ahead of time can help protect communities from local outbreaks.

PROBLEM STATEMENT

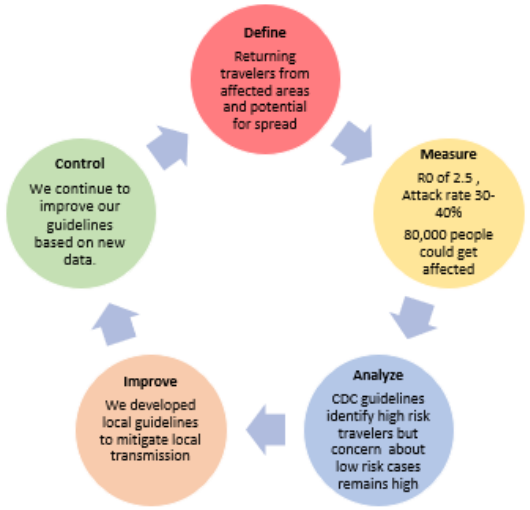
We received reports of individuals returning to Springfield, IL from China with cold like symptoms. In the face of an evolving outbreak with a novel virus there wasn't any set guideline to monitor and track such patients.

PROJECT OBJECTIVE

To ensure timely identification of individuals suspected to have COVID-19, contain its spread, and decrease the level of panic and anxiety from this emerging threat by educating personnel about preparedness and screening criteria.

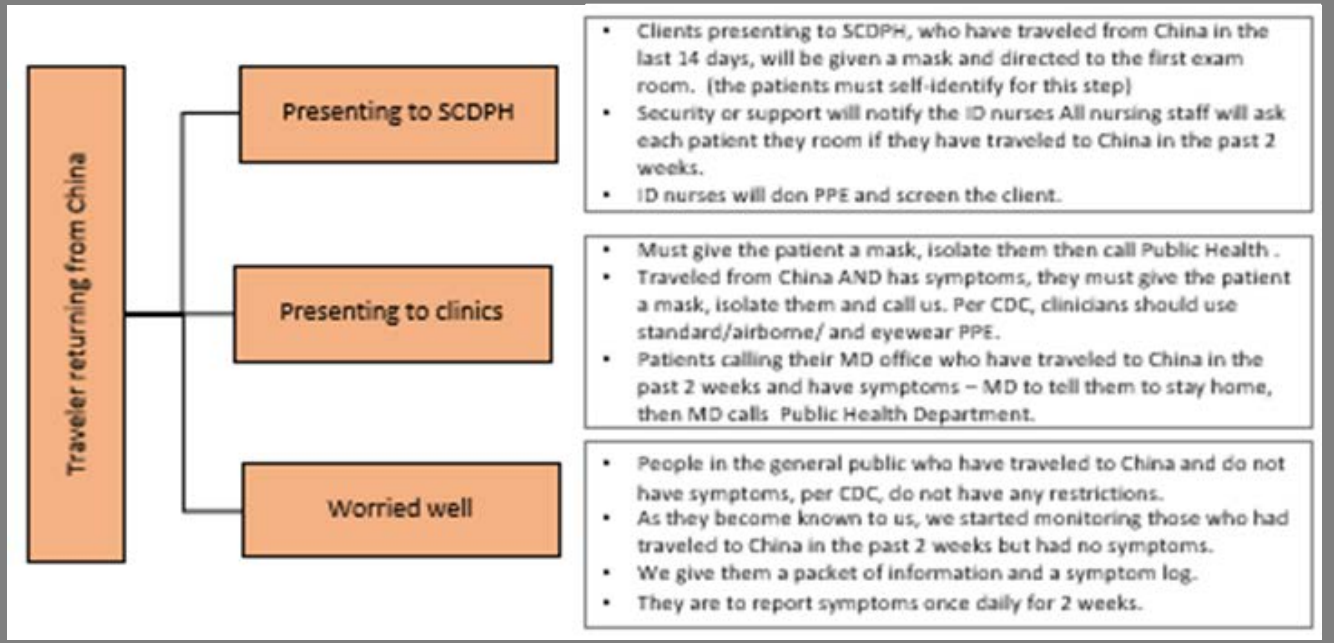
METHODOLOGY

We utilized the lean six sigma model for our project



- Figure 1 : DMAIC model

- We analyzed the CDC guidelines and the spread of cases.
- Possible ways Sangamon County can face an infected traveler
- We held meetings with nurses from Public Health Department
- We developed our own local protocol.



INTERVENTIONS

- We were notified of three individuals who had travelled back from China. One from Wuhan province, and two from mainland China.
- Using our local protocol we asked them to refrain from public contact.
- They were given 'safety kits'
- Daily safety checks were performed
- 'Certificates of release', were designed and provided which allowed them to return to work and school.

RESULTS

- Social distancing and self quarantining were incorporated into our local protocol much before national implementation
- Close proximity to Chicago and St.Louis. Frequent travelers, and yet we were able to preserve and protect.
- First case of COVID-19 in Sangamon county `was not reported until March 14, 2020.