2018-2019 Resident and Fellow Quality Improvement Incentive Program

Participating Programs:

- Adolescent and Young Adult Medicine Fellowship
- Allergy/Immunology and Infectious Diseases Fellowships
- Anesthesiology Residency
- Cardiology Fellowship
- Dermatology Residency
- Emergency Medicine Residency
- General Surgery Residency
- Gynecologic Oncology Fellowship
- Hematology/Oncology Fellowship
- Hospice and Palliative Medicine Fellowship
- Internal Medicine Residency
- Neonatology Fellowship
- Nephrology Fellowship
- Neurological Surgery
- Neurology Residency
- Obstetrics & Gynecology
- Ophthalmology Residency
- Orthopedic Surgery Residency
- Otolaryngology Residency
- Pediatric Anesthesia Fellowship
- Pediatric Critical Care Fellowship
- Pediatric Gastroenterology Fellowship & Pediatrics Residency
- Plastic Surgery Residency
- Psychiatry Residency
- Radiation Oncology Residency
- Radiology Residency
- Reproductive Endocrinology & Infertility Fellowship
- Rheumatology Fellowship
- Urology Residency

2018-2019 UCSF Resident and Clinical Fellow Quality Improvement Incentive Program FINAL RESULTS

Program	Goal	
Adolescent and Young Adult Medicine Fellowship	Increase HPV vaccine administration to eligible primary care patients from 20% to 30% by June 2019	
Allergy/Immunology and Infectious Diseases Fellowships	Among patients with a documented beta-lactam allergy at the time of admission, 70% will receive one of the following: Inpatient allergy consult placed in Apex, Outpatient allergy referral placed in Apex, beta-lactam allergy removed from allergy list, or beta-lactam administered during the hospitalization	
Anesthesiology Residency	Improve anesthesia department compliance with delirium order panel to 50% during the 2018-19 academic year	
Cardiology Fellowship	Improve RN satisfaction with the CCU team delivery of care as measured by quarterly surveys to reach a target goal of <40% dissatisfaction from 60% dissatisisfied or very dissatisfied.In addition, improve communication satisfaction among the nursing staff will improve such that >50% of the nursing staff are somewhat satisfied or very satisfied with the communication bewteen cardiology and the 10-ICC RN staff as measured by quarterly nursing staff surveys	
Child Neurology Fellowship	Develop and implement a "Wellness Bundle" to meet 3 of 4 intervention targets: 1. 75% of residents will share at least 3 expressions of gratitude each quarter towards the interdisciplinary team (nursing, therapists, SW, CM, co-residents, attendings), for 3 of 4 quarters. 2. 75% of residents will participate in at least one of the neurology resident well-being conferences 3. 75% residents will schedule and attend appointments with at least 2 providers for their own self-care. 4. 80% of residents will complete the annual well-being survey .	
Dermatology Residency	Improve upon achievements made during July-Dec 2017 by reducing the cost of unnecessary testing for patients on isotretinoin by 70% in the 2018-2019 academic year	
Emergency Medicine Residency	Increase the amount of MD referrals placed and accepted by HarborLights from July 2018-June 2019 by 50% to 10.2/month.	
General Surgery Residency	Establish non-opioid analgesia as the first line approach for common general surgery operations (laparoscopic cholecystectomy, appendectomy, and ventral hernia repairs; laparoscopic and open inguinal hernia repair; anorectal procedures) with >60% of patients prescribed acetaminophen and ibuprofen on discharge.	
Gynecologic Oncology Fellowship	Improve the use of alvimopan for our patients with anticipated bowel surgeries at the time of their gynecologic oncology surgery by approximately 20% above our estimated current use of alvimopan, which is ~30%, to achieve at least 50% of eligible patients receiving this intervention	
Hematology/Oncology Fellowship	ACGME fellows rotating in UCSF solid oncology outpatient clinics will assess and document stage for at least 85% of eligible patients cumulatively over the academic year	
Hospice and Palliative Medicine Fellowship	Among initial inpatient palliative care consultations at Parnassus, increase spiritual screening documentation by 10 percentage points to 79%	
Infectious Diseases and Allergy/Immunology Fellowships	Among patients with a documented beta-lactam allergy at the time of admission, 70% will receive one of the following: Inpatient allergy consult placed in Apex, Outpatient allergy referral placed in Apex, beta-lactam allergy removed from allergy list, or beta-lactam administered during the hospitalization	
Internal Medicine Residency	From September 2018-June 2019, the percentage of patient days during which medical teams discuss activity goals with patients will double from 15% to 30%, as measured by audits of the UCSF Activity Goal Visual Aid, which is attached separately.	
Neonatology Fellowship	Reduce the number of babies who are discharged without congenital cardiac screening by 80% by July 2019	
Nephrology Fellowship	Increase percentage of labs drawn on first-shift dialysis non-ICU patients from current state to 80%	
Neurological Surgery	Achieve 75% delirium order set compliance on patients who screen positive on AWOL or NuDESC	
Neurology Residency	Develop and implement a "Wellness Bundle" to meet 3 of 4 intervention targets: 1. 75% of residents will share at least 3 expressions of gratitude each quarter towards the interdisciplinary team (nursing, therapists, SW, CM, co-residents, attendings), for 3 of 4 quarters. 2. 75% of residents will participate in at least one of the neurology resident well-being conferences 3. 75% residents will schedule and attend appointments with at least 2 providers for their own self-care. 4. 80% of residents will complete the annual well-being survey	

2018-2019 UCSF Resident and Clinical Fellow Quality Improvement Incentive Program FINAL RESULTS

Program	Goal	
Obstetrics & Gynecology Residency	Provision of recommendations for safe storage of opiate medication, and a list of locations that accept and safely dispose of unused opiate medications, at the time of discharge from the Benign Gynecology or Gynecologic Oncology services. The goal was to increased over time with 20% of eligible cases in Q1; 40% of eligible cases in Q2; 60% of eligible cases in Q3; 60% of eligible cases in Q4	
Ophthalmology Residency	Provide a smoking cessation referral to at least 20% of current smokers seen in Ophthalmology clinic	
Orthopedic Surgery Residency	Improve care of patient with hip fracture by taking at least 75% of hip fragility fracture patients with ASA grade 2 or less to surgery within 24-hours	
Otolaryngology Residency	For >90% of patients undergoing surgery, discharge instructions will include an informational sheet on appropriate use of narcotic medication, strategies for transitioning to non-opioid medications, information on safe disposal of excess medications, and a brief survey of the actual number of tablets used in the post-operative period. We will use data on opioid tablet usage over the first half of the year to enact standardized prescription of non-opioid and opioid medication for >80% of patients undergoing thyroidectomy, parathyroidectomy, parotidectomy, glossectomy, and wide local excision who do not undergo a neck dissection	
Pediatric Anesthesia Fellowship	Assess for Emergence Delirium in at least 50% of pediatric patients as measured by at least 1 Pediatric Anesthesia Emergence Delirium (PAED) scale score recorded in PACU	
Pediatric Critical Care Fellowship	Increase the number of patients in the PICU with active PT orders by 50%, and subsequently increase the number of patients with PT orders who have been seen in the previous 72 hours to 75% by June 2019	
Pediatric Gastroenterology Fellowship	Improve UCSF pediatric usage of ESPGHAN guidelines on AGE to 26% of cases by January 2019, and 51% of cases by June 2019	
Pediatrics Residency	Improve UCSF pediatric usage of ESPGHAN guidelines on AGE to 26% of cases by January 2019, and 51% of cases by June 2019	
Plastic Surgery Residency	Implement a multi-modal preoperative non-opioid pain management strategy with at least 70% of patients, by prescribing at least one of the following: Tylenol/Celebrex/Gabapentin	
Psychiatry Residency	Increase the number of patients in full compliance with metabolic monitoring to 50% or greater by June 30, 2019	
Radiation Oncology Residency	In the patients undergoing GammaKnife SRS between July 1, 2018 and June 30, 2019 on resident-covered services, radiation oncology residents will increase the rate of documentation of the procedure using a standard note template in Apex from 0% to 75% over the year	
Radiology Residency	≥90% of final reports for non-contrast non-gated chest CTs of performed in patients ≥18 years old without history of CABG or coronary stents to include a description of the presence or absence of coronary artery calcifications	
Reproductive Endocrinology & Infertility Fellowship	Achieve a 20% reduction in nurse-led counseling time (achieved through fellow-led interventions) over the course of the academic year	
Rheumatology Fellowship	Increase the percentage of RA patients >50 years in the Rheumatology Clinic who have undergone osteoporosis screening with DEXA from 60% to 85% by July 2019	
Urology Residency	Reduce prescribed parenteral antibiotic use in perioperative setting in urologic surgery patients by 25% (relative decrease from baseline of 54% of cases with overuse)	

HPV Vaccination Rates in Adolescent & Young Adult Clinic

Fellows: Brittany Badal, Chelsea Garnett, Matthew Meyers, & Jason Nagata

Team Members: Veronika Mesheriakova, Maritza Sanchez, Pei Mo Wen

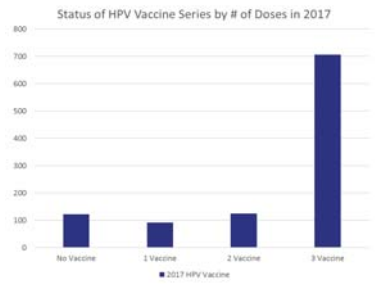
Division of Adolescent & Young Adult Medicine

Background

Context:
CDC recommends provide all patients starting at age 9-11 years with the HPV vaccine series to decrease risk of HPV infection leading to HPV-related genital warts, cervical cancer, penile cancer, and head and neck cancers.

Problem Statement: Inconsistent HPV Vaccination rates in our primary care patients ranging ages 12-26 years. Primary care patients do not complete their series.

Gap: In December 2017 approximately 10/51 (20%) of PCP patient due for HPV vaccine during visit actually received a HPV vaccine.



Project Goals

Gap:
Prior to initiating this project, 20% of PCP patients due for HPV vaccine during a visit received the HPV vaccine.

Effect on Patient Care as it relates to True North:
CDC recommends to provide all patients starting at age 9-11 years with the HPV vaccine series to decrease risk of HPV infection leading to HPV-related genital warts, cervical cancer, penile cancer, and head and neck cancers.

Target:
Increase HPV vaccine administration to eligible primary care patients from 20% (as of December 2017) to 30% each month by June 2019.

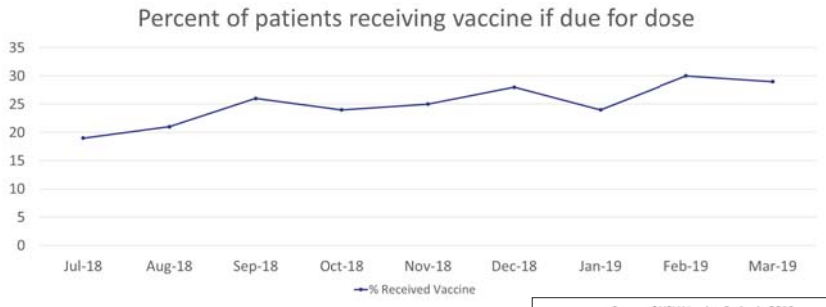
Project Plan and Intervention(s)

Barriers:
- Trainees (medical students, residents, fellows, and nurse practitioners) rotating monthly
- Incomplete historical vaccine records available for review within ApEX and CA Immunization Registry
- Lack of clarity on how to administer HPV Vaccination Recommendations due to change in recommendations:
  - Prior to 2017 HPV Schedule Dose Recommendations: dosed at 0, 1-2 months, and 6 months for 3 dose series regardless of age.
  - Recommendations as of 2017: Recommendations are dependent upon age at first vaccine.
    - If first vaccine prior to 15th birthday may receive only 2 doses at 0 and 6 months.
    - If first vaccine after 15th birthday 3-dose vaccination schedule recommended.

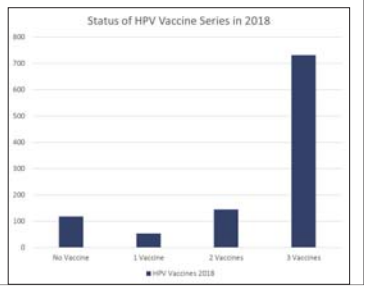
Initiatives:
Monthly Evaluation of PCP HPV Vaccination Rates:
- Create new ApEX Reports generating monthly information on PCP patient's seen during the month, HPV vaccine doses documented, age at vaccination, and time between doses (in days)
- Nurses and MAs review vaccination records and place pended vaccine orders in visit encounter
- Create Vaccine Record specific Release of Information documents to better obtain prior vaccine records at previous PCPs

Project Evaluation & Impact

Monthly HPV Vaccination Tracking Initiative



- Target goal of 30% reached in February 2019
- Percentage of patients eligible for a vaccine whop received a vaccine increased over time
- From 2017 to 2018, noted increase in overall number of PCP patients completing 2 or 3 doses with 88.6% ever receiving at least a single dose



Next Steps, Dissemination & Lessons Learned

Next Steps:
- Ongoing monthly report utilization to track HPV doses provided to primary care patients.
- Determining ability track in ApEX if patients require a 2 dose vs 3 dose series at each encounter

Dissemination:
- Utilization of ApEx report created for this initiative in other primary care clinic settings in which HPV vaccines are provided

Lessons Learned:
- Challenges remain surrounding misinformation of the HPV vaccine, ability to easily track in ApEX the age in which HPV vaccine was initiated, and difficulty in obtaining complete vaccine records
- Despite these barriers, our team structure allowed us to have an open dialogue leading to increased vaccine series completion and improvement in patient health outcomes.

UCSF Resident and Clinical Fellow Quality Improvement Incentive Program
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Implementation of a Fellow-Driven Beta-Lactam Allergy De-Labeling Initiative at UCSF

Jennifer S. Mulliken, Karen Anstey*, Rachel Bystritsky, Iris Otani, & Sarah B. Doernberg

Infectious Diseases & Allergy/Immunology Fellowship Programs

Background

- Approximately 10% of patients in the US report a penicillin (PCN) allergy, but more than 90% can safely receive beta-lactam (BL) antibiotics.
- Having a reported BL allergy (BLA) is associated with increased length of stay, cost of care, and mortality.
- The administration of non-BL antibiotics for conditions that are preferentially treated with BLs promotes the development of antibiotic resistance and leads to adverse events.

PROBLEM STATEMENT:

- Most patients with BLA are not PCN allergic, which leads to inappropriate use of non-BL antibiotics and an increased risk of associated adverse events. Our current system for evaluating and removing BLA is ineffective.

Patient with BLA admitted to the hospital with infection → BL antibiotic is indicated, but patient receives non-BL antibiotic → Increased risk of drug-resistant organisms, *C. diff* infection, longer length of stay, and higher medical costs

Project Goals

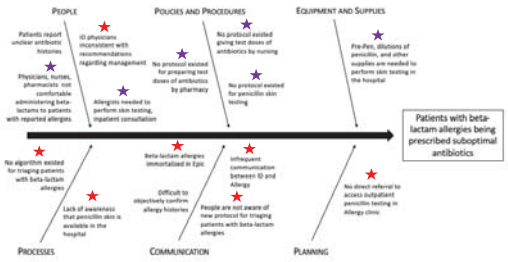
Among patients with BLA seen by the Infectious Diseases (ID) consult service between July 1, 2018 and June 30th 2019, we sought to achieve **70% compliance** with regards to BLA de-labeling.

Composite Numerator (any one of the following)
1. Patient received BL during hospitalization
2. Inpatient Allergy consult placed in Apex
3. Outpatient Allergy referral placed in Apex
4. BLA present on day of initial ID consultation, absent on day of hospital discharge

Denominator: All patients seen by the ID consult service with a BLA listed in the medical record

Project Plan and Intervention(s)

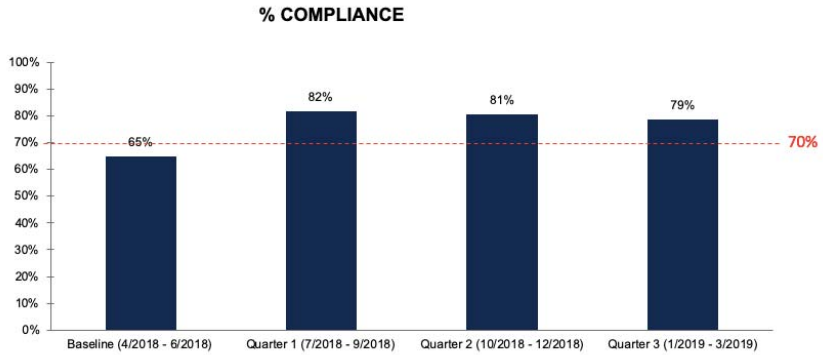
Factors Contributing to Administration of Non-BL Antibiotics in Patients with Reported BLA



Planned Areas for Intervention:

- ★ Development of an Adult Inpatient BLA Guideline and Test Dose Order Set at UCSF
- ★ Development of a protocol-driven approach to BLA evaluation by ID consult service

Project Evaluation & Impact



Average Compliance Quarter 1 - Quarter 3 = 81% (p=0.003)

Next Steps, Dissemination & Lessons Learned

Next Steps:
The Adult Inpatient BLA Guideline and Test Dose Order set was launched on May 8, 2019. In the context of ongoing protocol-driven evaluation of BLA by the ID consult service, we anticipate this formal guideline will accelerate our progress with regards to inpatient BLA de-labeling.

Dissemination:
Based on the success of this project, investigators from Pediatric ID and Pediatric Allergy/Immunology plan to implement a similar BLA de-labeling protocol this upcoming year at UCSF Mission Bay.

Lessons Learned:
Collaboration between Divisions leads to more impactful and sustainable outcomes. The implementation of a BLA de-labeling initiative is an effective way to empower trainees to incorporate BLA de-labeling into their practice.

UCSF Resident and Clinical Fellow Quality Improvement Incentive Program
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Perioperative Delirium Reduction in High-Risk Surgical Patients

Residents: S. Ali, M. Curtis, N. Forman, A. Chen, D. Binler, J. Fu, A. Sharp

Faculty: L. Liu, M. Braehler, A. Donovan, E. Whitlock, D. Robinowitz

Department of Anesthesia and Perioperative Care

Background

- Post-operative delirium (POD)
  - Occurs in up to 50% of surgical patients
  - Is preventable in many cases
- Important because POD is associated with:
  - Short term patient morbidity: falls, prolonged hospitalizations, increased rate of discharge to institutions
  - Long term patient morbidity: functional decline, cognitive decline, and mortality
  - Increased economic burden
- Evidence based guidelines exist to prevent, manage, and treat delirium
- Between 2016-2019, several interventions intended to decrease POD in high-risk surgical patients have been introduced in the perioperative setting. One of these is a delirium risk PACU order-set, which removes delirium-inducing medications and adds a non-pharmacologic nursing intervention to the standard PACU order-set.
- After order-set implementation in 2017, use of the order-set in appropriate patients was low, with baseline compliance around 15-20%.

PROBLEM STATEMENT:

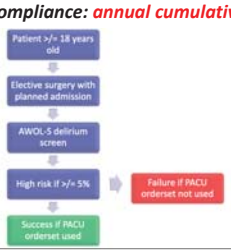
The delirium risk PACU order-set, which is designed to reduce exposure to potentially deliriogenic conditions, is not efficiently utilized. This could potentially contribute to increased patient morbidity and mortality, as well as higher patient care costs.

Project Goals

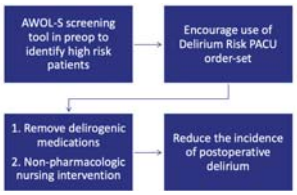
Goals:

- **Direct goal**: Increase use of the delirium risk PACU orderset in patients at high risk of POD
- **Indirect goal:** Improve perioperative patient care practices for patients at high risk of delirium through education and awareness to ultimately decrease the incidence of POD.

- *Baseline compliance for Delirium Prevention PACU order-set**: 3-23%***
- ***Goal Compliance:** annual cumulative **50%***



Project Plan and Intervention(s)



Primary Outcome

- Frequency of delirium risk PACU order-set use in high risk patients

Inclusion Criteria

- Age >/= 18 years old
- Elective surgery with planned hospital admission

Interventions to improve compliance

- Departmental education at conferences
- Reminders: pages, e-mails
- EMR enhancements

Project Evaluation & Impact

Figure 1. Compliance trends over time. Baseline compliance was <25% for the Delirium Risk PACU order-set for patients at high risk for delirium. In November 2018, an intraoperative reminder to complete the delirium risk PACU order-set in high-risk patients was implemented as a part of a new best practice advisory checklist in the intraoperative record. This measure significantly improved our compliance and project sustainability.

Figure 2. Anesthesia Caution Banner. At the launch of the project we created an alert banner, which displayed this orange banner at the top of Epic screen, alerting providers that a patient is high risk for delirium. Utilizing an alert banner as a reminder for anesthesia providers improved compliance, but the rate remained below our goal.

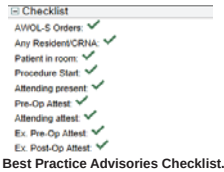


Figure 3. Best Practice Advisories Checklist. Depiction of the AWOL-S orders as a check-list item on the Best Practice Advisories checklist. This was implemented in November 2018 and remains active as a reminder to providers throughout the intraoperative period.

Next Steps, Dissemination & Lessons Learned

Next Steps:

- Continue nursing, anesthesia, and surgery education on best practice delirium reduction practices
- Measure reduction in use of Beers list medications
- Quantifying changes to incidence of postoperative delirium
- Continue to measure and report compliance with the Delirium Risk PACU orderset
- Improve predictive ability of AWOL-S or other delirium risk screening tools

Dissemination:

- Collaboration with other institutions and national patient safety organizations to implement similar perioperative initiatives is in progress
- Increased adherence to guidelines can be achieved by implementing EMR-based reminders and checklists

Lessons Learned:

- Despite strong efforts to improve compliance via pages, e-mails, and departmental education, implementing a checklist reminder in the EMR ultimately improved compliance the most

UCSF Resident and Clinical Fellow Quality Improvement Incentive Program

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RN-MD Communication in the Cardiac Intensive Care Unit

David Anderson, MD

Kristian Soni MD, Mya Hamilton RN, Alex Papolos MD

UCSF Division of Cardiology

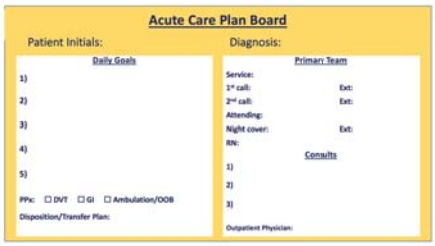
Background

- The 10 intensive cardiac care (ICC) is used by several teams including cardiology, cardiothoracic surgery and advanced heart failure.
- The rounding structure for general cardiology lacks consistent MD-RN integration.
- As a result communication between the cardiology teams and RNs is deficient.
- 2018 survey data of RN staff:
  - 60% somewhat or very dissatisfied with current delivery of care in CCU.
  - 46% felt dissatisfied or very dissatisfied with communication.
- Represented gap in the UCSF "our people" or work environment True North pillar.
- Communication not only essential to work environment, but when lacking is felt to contribute to both to poor patient outcomes & poor patient experience.

Project Goals

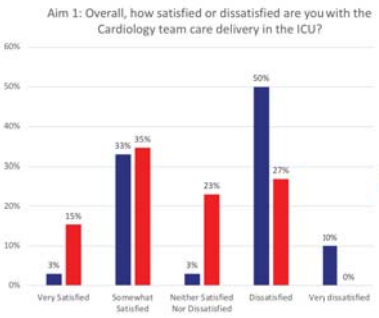
- ***Aim 1***: RN satisfaction with the CCU team delivery of care as measured by surveys quarterly will reach a target goal of < 40% dissatisfaction from 60% dissatisfied or very dissatisfied. This goal will be achieved and sustained through 2019.
- ***Aim 2*****:** Communication satisfaction among the nursing staff will improve such that > 50% of the nursing staff are somewhat satisfied or very satisfied with the communication between cardiology and the RN staff as measured by nursing staff surveys.

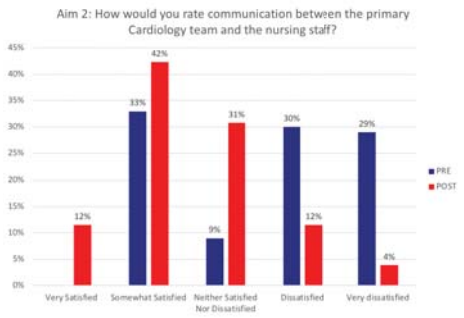
Project Plan and Interventions



- Addition of a templated dry erase board to rounds:
  - Filled out by member of cardiology team with the RNs present and actively contributing.
  - Works to creates a "force function" that makes rounding in 10 ICC more integrative.
- Primary person responsible for board changed throughout year from the core fellows to housestaff.
- Rounds conclude with summarization of the plan as outline on board.
- Nursing satisfaction and board utilization will be tracked evaluate impact with data presented in 3rd quarter.

Project Evaluation & Impact





- ***Aim 1***: Goal of less than 40% dissatisfied was realized in quarter 3. This was a dramatic improvement from 60% dissatisfaction with care delivery.
- ***Aim 2***: Goal of greater than > 50% nursing staff felt satisfied with CCU team communication, an improvement from nearly 60% dissatisfied.

Future Directions

Next Steps:

- Implementation and adoption has been variable.
- Adoption of this rounding system into the 2019-20 academic year where there will be a dedicated CCU fellow, attending and team.

Dissemination:

- We will be including this rounding structure in a more formally closed cardiac intensive care system where there will only be a single CCU attending and team.
- This type of rounding structure can easily be adopted by other divisions utilizing the shared ICC.

Lessons Learned:

- Implementation of a structure change can be difficult with many players, moving pieces and a changing cardiology fellowship structure.
- Volume of patients in the 10 ICC led to slower uptake and a change in fellowship structure took fellows from ICU rounding role.

UCSF Resident and Clinical Fellow Quality Improvement Incentive Program

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Reduction of lab monitoring costs for patients on isotretinoin

Aaron Steen, MD
Eunice Song, MD
Dermatology Residency

Background

PROBLEM:

- Isotretinoin is widely used for the treatment of severe acne
- There are no standardized guidelines regarding laboratory monitoring for patients on isotretinoin therapy for acne
- Lab monitoring for isotretinoin is expensive (>$300 million/year) and not evidence based [1].
- As a result, physician practices for ordering monitoring labs varies greatly [2]

APPLICABILITY TO TRUE NORTH PILLARS:

- Providing evidence based recommendations for laboratory monitoring will both improve quality of patient care by reducing unnecessary blood draws and improve financial strength by reducing spending on lab tests.

[1] Leyden JJ, Del Rosso JQ, Baum EW. The use of isotretinoin in the treatment of acne vulgaris: clinical considerations and future directions. J Clin Aesthet Dermatol. 2014;7(2 Suppl):S3–S21
[2] Shinkai K, Mcmichael A, Linos E. Isotretinoin Laboratory Test Monitoring--A Call to Decrease Testing in an Era of High-Value, Cost-Conscious Care. JAMA Dermatol. 2016;152(1):17-9.

Project Goals

- Our goal is to provide an evidence based approach to isotretinoin laboratory monitoring
- We hoped to reduce the cost of unnecessary testing by 80%

Project Plan and Intervention(s)

ROOT CAUSES AND BARRIER TO APPROPRIATE LABORATORY TESTING

- Recommendations from pharmaceutical package inserts, expert consensus guidelines
- Fear of litigation, defensive medicine
- Uncertainty and lack of evidence
- Lack of education on the topic
- Habits and customs of institutional teaching
- Patient concerns for side effects
- Media exposure for concerns of medication side effects

INTERVENTION

- Review the literature to determine which tests are indicated for isotretinoin monitoring
- Present the data to UCSF Dermatology providers and suggest evidence based guidelines for isotretinoin lab monitoring

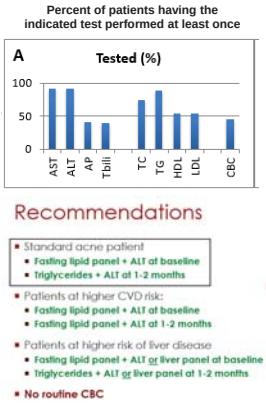
HYPOTHESIS

- Showing evidence to providers that monthly CBC, LFTs, Lipids is unnecessary in most healthy young patients are not necessary will change practice habits

Project Evaluation & Impact

REVIEW OF LITERATURE

- Elevations in triglycerides are generally mild and tend not to alter therapy. TG rise early (first 2-3months) [3,4].
- Elevations is LDL are mild and associated with comorbidities (history of cardiovascular disease, family history of familial hypercholesterolemia). Cholesterol levels also peak early [3].
- Transaminitis is uncommon (1.5% have AST or ALT >100IU/L) [3,4].
- Cytopenias are extremely rare (0.01% have WBC<2000) [5].



[3] Kızılyel O, Metin MS, Elmas ÖF, Çayır Y, Aktaş A. Effects of oral isotretinoin on lipids and liver enzymes in acne patients. Cutis. 2014;94(5):234-8.
[4] Reuben A, Koch DG, Lee WM. Drug-induced acute liver failure: results of a U.S. multicenter, prospective study. Hepatology. 2010;52(6):2065-76.
[5] Ozdemir MA, Kose M, Karakukcu M, Ferahbas A, Patiroglu T, Koklu E. Isotretinoin-induced agranulocytosis. Pediatr Dermatol. 2007;24(4):425-6.

Next Steps, Dissemination & Lessons Learned

Next Steps:

- Codify testing algorithm as a best practice in UCSF Dermatology to maintain the reduction in unnecessary testing costs

Dissemination:

- Share the best practice with other departments (ie Pediatrics) that also prescribe isotretinoin

Lessons Learned:

- Regular progress updates are an effective way to prevent recidivism during ongoing projects

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in partnership with the 2019 UCSF Health Improvement Symposium

Harbor Light for Homeless Emergency Department Patients

Cortlyn Brown, Winnie Chan, Jessica Chow, Tomas Diaz, Shelby Inouye, Jessica Paz

Emergency Medicine

Background

San Francisco has one of the largest homeless populations in the United States..

Homelessness has been associated with:

Caring for homeless patients at UCSF can be associated with increased expense that often does not improve care.

From December 2016 to June 2017, the UCSF ED saw 155 to 196 patients per month with chief complaints related to psychiatric or substance-related emergencies. **These patients have prolonged lengths of stay (averaging 15.3 to 21.8 hours per visit). These extended stays place significant strain on the entire department, contributing to longer ED wait times, ED boarding, and hospital overcrowding.**

In order to address this issue from a patient-centered approach, UCSF has partnered Harbor Light (HL).

HL is a Wellness Recovery Program with up to 30 days of 12-step based recovery treatment with the possibility of transitioning into a long term 6 month to 2 year treatment.

About HL:
- 34 bed social-model detox with male and female beds
- Staff: 3 substance abuse counselors, 1 program manager. No physician or RN staff
- Services: meals, showers, group treatment, linkage to longer term treatment programs
- Harbor Light also has a residential substance abuse program (6 months – 2 years)

Project Goals

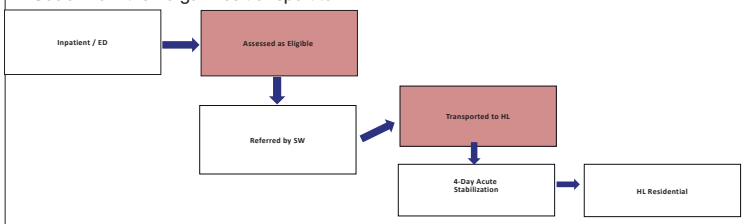
Increase the amount of accepted referrals placed to HL from July 2018-June 2019 by 50% the average monthly referrals placed July 2017-March 2018.

50% increase would be 10.2 a month, for a total of 122 in a year

- Patients who are no shows would not count against the overall count
- Patients would need to be formally accepted at HL in order to count

Project Plan and Intervention(s)

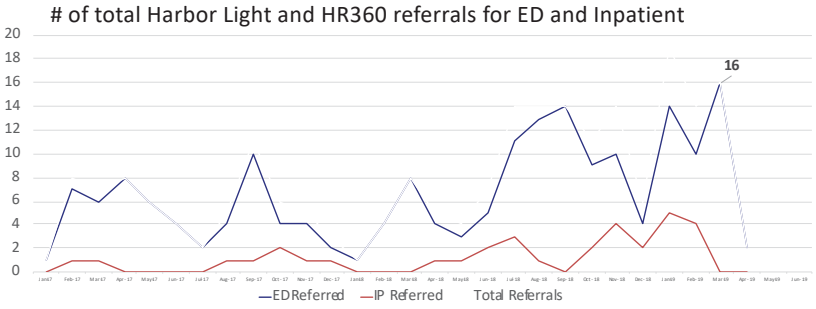
- EM providers identify patients that may benefit from HL and then contact social work
- Social work will then determined eligibility based on the following criteria. Rule outs:
  - Registered sex offenders
  - Arsonists
  - Active psychosis
  - Any impairment in ability to manage activities of daily living
  - Alcohol withdrawal with concern for seizures
  - Opiate replacement therapy
  - Concern for violent or threatening behavior
- Social work then organizes transport to HL



- In November, 2019 HealthRight 360 (HR360) was added as an alternative housing option that accepts patients on buprenorphine

Project Evaluation & Impact (First Quarter)

- **20% of HL and HR360 residents were discharged to stable long term housing (either families determined to be stable or long term facilities)**
- **124 patients referred to HL and HR360 (2 over goal)!**



Next Steps, Dissemination & Lessons Learned

Problems: No show rates, relatively low

Next Steps:
- Surveys and Narrative Medicine Project
- Longitudinal Patient-Centered Outcomes Resident Project
- Ongoing research study on cost effectiveness of HL program

Dissemination:
Any emergency department provider

Lessons Learned:
Important to continuously motivate and increase awareness of program (e.g. email reminders, shout outs, visual aids, etc.)
Responding quickly to roadblocks necessary to maintain momentum

UCSF Resident and Clinical Fellow Quality Improvement Incentive Program
in partnership with the 2019 UCSF Health Improvement Symposium

Residents as Key Effectors of Change in Improving Opioid Prescribing Behavior

Elizabeth Lancaster

Tasce Bongiovanni, Joseph Lin, Rhiannon Croci, Kenzo Hirose, Elizabeth Wick

General Surgery

Background

Post-operative opioid prescriptions contribute to the nation-wide opioid epidemic with significant variability in prescribing habits and less than 40% of prescribed pills being used by patients[1].

Residents play a large role in this, writing the majority of discharge prescriptions at our institution. Education on post-operative analgesia was often ad-hoc, peer-to-peer.

Non-opioid pain medications are powerful tools for improving post operative pain and reducing opioid use.

On discharge following common general surgery operations:

- ***25% of patients received acetaminophen Rx***
- ***5% of patients received ibuprofen Rx***
- ***On average, patients received twice the # of opioid pills recommended by prior studies***

PROBLEM STATEMENT:

For common general surgery operations at UCSF, providers are routinely over-prescribing opioid pain medications and underutilizing non-opioid adjuncts.

1. Hill et al, J Am Coll Surg, 2018.

Project Goals

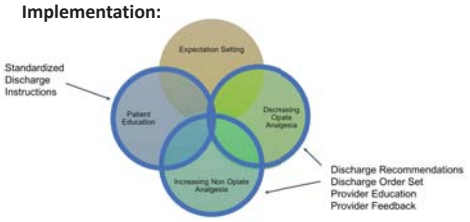
Establish non opioid analgesia as the first line approach for common general surgery operations with >60% of patients prescribed acetaminophen and ibuprofen on discharge.

Included Cases:

- Laparoscopic cholecystectomy
- Laparoscopic appendectomy
- Inguinal hernia repair
- Anorectal procedures
- Cervical endocrine operations

Project Plan and Intervention(s)

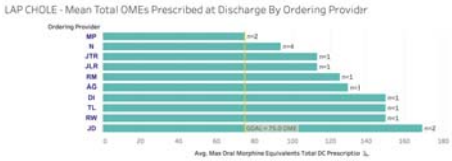
Implementation:



Needs Assessment:

- Resident-led transdisciplinary team
- Examined current prescribing practices
- Impressions of optimal post-operative analgesia practices
- Perceived Barriers
  - Educational, Knowledge, Systems

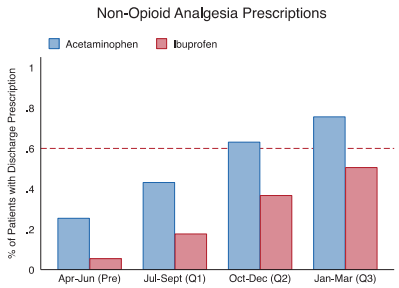
Evaluation and Feedback:

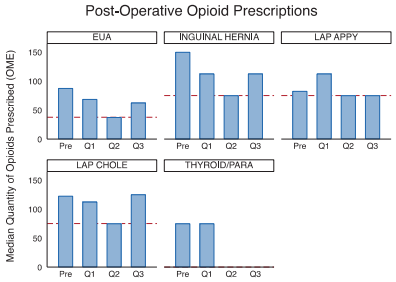


Project Evaluation & Impact

Non-Opioid Discharge Prescriptions:

- Acetaminophen prescription rates increased from 25% pre-intervention to 74% in quarter 3
- Ibuprofen prescription rates increased from 5% pre-intervention to 51% in quarter 3





Opioid Discharge Prescriptions:

- Reached goal opioid prescription quantities in quarter 2 for all included operations
- Increase in opioid prescription quantities in quarter 3 for EUA, inguinal hernia, and laparoscopic cholecystectomy

Next Steps, Dissemination & Lessons Learned

Next Steps:

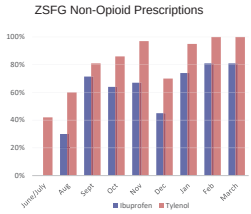
- Examine methods for sustainability (reliable feedback mechanisms, regular educational refreshers, education planning for incoming residents)
- Expand to additional surgery services (colorectal surgery, vascular surgery)

Dissemination:

- Tailored program at ZSFG
- Presented at Surgical Education Week

Lessons Learned:

- Sustainability requires persistent monitoring and re-evaluation
- Support from leadership is critical



UCSF Resident and Clinical Fellow Quality Improvement Incentive Program

in partnership with the 2019 UCSF Health Improvement Symposium

Enhancing Gastrointestinal Recovery Among Women Undergoing Surgery for Ovarian Cancer: A Quality Improvement Analysis of Alvimopan Administration in Gynecologic Oncology

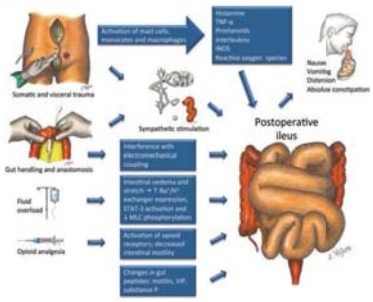
Fellows: Rosa Guerra MD, Jana Freeman MD, Megan Swanson MD

Faculty: Jocelyn Chapman MD, Stefanie Ueda MD, Edwin Alvarez MD, Lee-may Chen MD

Gynecologic Oncology Department

Background

Bowel surgery, manipulation, anesthesia, endogenous release of morphine, and fluid overload contribute to postoperative ileus. Slow return to bowel function has a significant impact on patient comfort, satisfaction, and length of hospital stay.



(https://www.sciencedirect.com/science/article/pii/S0261561415000382)

The rate of postoperative ileus among gynecology oncology patients undergoing primary debulking is approximately 30%. *(Bakkum-Gamez, Gynec Oncol, 2012)*

Alvimopan (Entereg) is a peripherally activing mu-opioid receptor antagonist (PAMORA) that is FDA approved for accelerating time to upper and lower gastrointestinal recovery following surgeries including partial bowel resection with primary anastomosis. For proper indicated use, it must be given preoperatively and is continued postoperatively for up to 7 days.

Project Goals

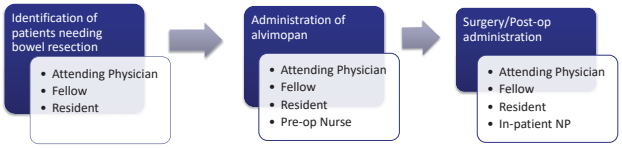
The issue: Approximately 30-40% of our patients undergo bowel surgery at the time of their cancer surgery, however these cases are not always anticipated preoperatively. As such, we are missing a portion of patients who undergo bowel resection at the time of surgery who might benefit from alvimopan.

The target: We wanted to improve the use of alvimopan for ovarian cancer patients with anticipated bowel surgery. Our goal was for at least 50% of eligible patients to receive alvimopan from July 2018-July 2019 with an ultimate goal of all ovarian cancer patients undergoing bowel surgery to receive alvimopan preoperatively.

Measurable outcome: Whether or not alvimopan was ordered and received preoperatively among ovarian cancer women undergoing a debulking surgery (primary, interval, or secondary) with anticipated bowel resection was the primary measureable outcome. Length of stay was the secondary measurable outcome.

Project Plan and Intervention(s)

WHAT: Our project goal was to ensure ovarian cancer patients undergoing bowel resection during their debulking surgery receive alvimopan preoperatively.
WHERE: The target population was patients from UCSF Mission Bay hospital gynecologic oncology service.
WHEN: Weekly, a gynecologic oncology fellow would review the surgery schedule, individual cases, and send out alvimopan reminders of eligible patients to clinical team members. Quarterly, the fellow would review all gynecologic oncology surgeries to determine the number of ovarian cancer patients undergoing debulking surgery who had a bowel resection and received alvimopan.
HOW: Our intervention included a) targeted education of fellows, residents, NPs and preoperative nurses b) development of a work flow preoperatively for anticipated bowel surgeries (utilization of ERAS pathway; dot phrase for H&P; team reminders) c) identification of patients who received alvimopan but did not undergo bowel surgery.

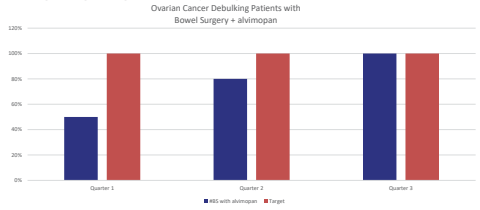


Project Evaluation & Impact

24% of total ovarian cancer debulking surgeries had bowel resections for Quarters 1-3. Every quarter there was an improvement in the percentage of the ovarian cancer debulking surgeries with bowel resections who received alvimopan. **Median length of stay** for patients in this cohort who underwent bowel surgery and received alvimopan vs those that did not receive alvimopan was **3 days vs 4 days** respectively.

Quarter	#Ovarian Cases	#Ovarian Cases w/BS	#Ovarian Cases w/BS + alvimopan	#Ovarian Cases w/o BS + alvimopan
1	22	4	2	2
2	17	5	4	3
3	19	5	5	5

Quarter 1 (July 2018 – September 2018): **50%** of ovarian cancer debulking patients with bowel surgery received alvimopan preoperatively. 2 patients who did not have bowel surgery received alvimopan.
Quarter 2 (October 2018 – December 2018): **80%** of ovarian cancer debulking patients with bowel surgery received alvimopan preoperatively. 3 patients who did not have bowel surgery received alvimopan.
Quarter 3 (January 2019 – March 2019): **100%** of ovarian cancer debulking patients with bowel surgery received alvimopan preoperatively. 5 patients who did not have bowel surgery received alvimopan.



Next Steps, Dissemination & Lessons Learned

Next Steps:
We will continue with data collection for Quarter 4 (April 2019-June 2019). Additionally, we would like to analyze time to return of bowel function, complications, and cost analysis of alvimopan use in all gynecologic oncology surgical patients with bowel resection.

Dissemination:
Patients from other departments, such as General Surgery and Colorectal Surgery, could also benefit from alvimopan administration when bowel surgery is anticipated. The incorporation of PAMORAs in ERAS pathways can help accelerate gastrointestinal recovery and decrease hospital length of stay.

Lessons Learned:
Preoperative administration of alvimopan can help reduce length of hospital stay and potentially reduce hospital cost. Targeted education of team members is an avenue to help improve drug administration and workflow.

UCSF Resident and Clinical Fellow Quality Improvement Incentive Program
in partnership with the 2019 UCSF Health Improvement Symposium

Documentation of Cancer Staging for New Oncology Patients

UCSF Fellowship in Hematology/Oncology

Rahul Banerjee, MD
Ana Velazquez-Manana, MD, MS
Swetha Kambhampati, MD
Anna Parks, MD
Sam Brondfield, MD
Claire Mulvey, MD
Faculty mentor: Pelin Cinar, MD, MS

Background

Staging in Cancer Patients

- Essential component of workup to guide prognosis conversations and treatment determination
- Important component of registries & research databases to accurately advance scientific knowledge
- Timely staging documentation (≤ 1 month of initial visit) now part of ASCO QOPI* for quality in care

* ASCO = American Society for Clinical Oncology; QOPI = Quality Oncology Practice Initiative.

Cancer Staging at UCSF

- Important component of our **Learning Health System** pillar to advance & apply this important information
- Baseline staging documentation for new oncology patients with solid malignancies seen by fellows in clinic:
  - **11%** of patients (*n* = 452) from Jul-17 to Jun-18 based on EMR staging module
  - **47%** of patients (*n* = 58) in Jul-18 based on manual chart reviews including unstructured text field analyses
- Conclusion: Low rate partially attributable to usage of unstructured text, but still room for improvement

Problem Statement

In the 2017-18 year, UCSF oncology fellows documented cancer staging for patients with solid malignancies **< 50% of the time.**

Project Goals

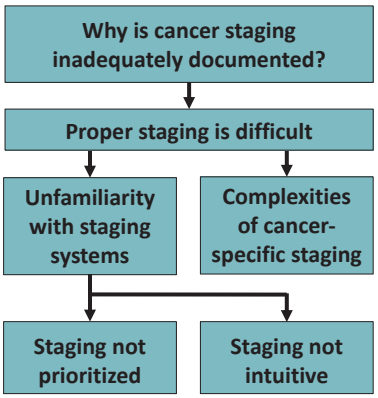
- **Goal statement:**
  Oncology fellows rotating in UCSF solid oncology outpatient clinics will assess and document staging for 70% of eligible patients† cumulatively over the 2018-19 academic year.
  - Cumulative rate chosen given increase in fellow knowledge over academic year
  - Cumulative goal: **70%** (improvement of 50% over Jul-19 baseline rate of 47%)

† Exclusion criteria: Non-malignant condition or unstageable malignancy (e.g., unknown primary). Data cutoff: March 31, 2019 (one-month staging data available through Feb-19).

- **Process measure**: # of project-specific reminder emails to fellows per month

Project Plan and Interventions

Root Cause Analysis



Interventions to address Root Causes

Establishment of staging documentation as a priority for oncology clinic workflow:

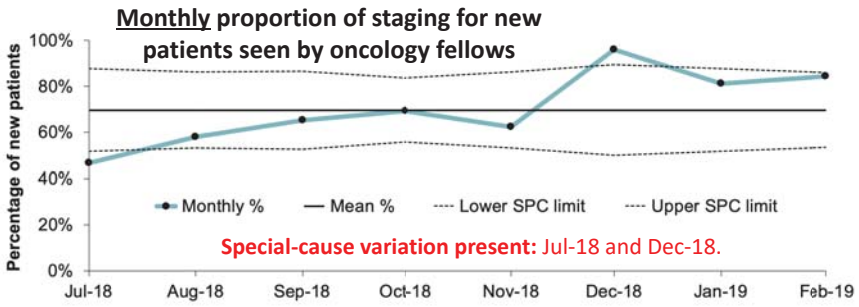
- Monthly division-wide emails and additional periodic emails to low-performing fellows
- Inclusion of disease-group-specific statistics for specific True North Board (TNB) discussions
- Promotional flyers placed within clinic workrooms

Enhancement of intuitiveness of staging module within EMR:

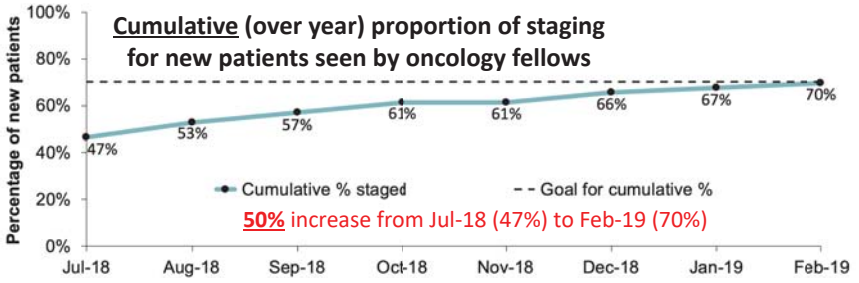
- Incorporation into EMR visit navigator for new patients
- Promoting EMR staging module as part of pre-visit charting

Promotional flyer placed in clinic workrooms

Project Evaluation & Impact



SPC = Statistical Process Chart



0	3	3	1	1	2	1	3

Number of emails (total) to fellows sent per month

Next Steps and Lessons Learned

Conclusions:

- Our nudge-based interventions to improve cancer staging documentation were successful to effect a 50% increase in our outcome measure
- Next steps include: (1) ensuring sustainability among fellows during 2019-20, (2) expanding to Malignant Hematology, and (3) disseminating best practices to lower-performing disease groups

Lessons Learned:

- Charts without staging documentation were often due to incomplete data at time of initial visit, suggesting low follow-up among fellows to complete staging module afterward
- Marked increase in staging documentation among low-performing fellows after personalized outreach, highlighting the potential for personalization of communication for future QI initiatives

Acknowledgments: TNB leaders; APeX development team; Ann Griffin, PhD (UCSF Cancer Registry)

UCSF Resident and Clinical Fellow Quality Improvement Incentive Program in partnership with the 2019 UCSF Health Improvement Symposium

Improving Spiritual Screening for Inpatient Palliative Care Consults

2018-2019 Hospice & Palliative Medicine Fellows

Fellows: Josh Biddle, MD, Daniel Eison, MD, Olivia Gamboa, MD, Ashwin Kotwal, MD, Ramy Salah, MD Grant Smith, MD

Advisors: Naomi Saks, MA, MDIV, BCC & Giovanni Elia, MD

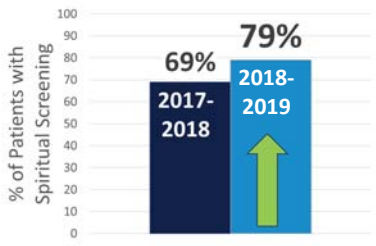
Background

- **50% of patients** in palliative care units **experience spiritual distress**.
- Spiritual distress is **associated with pain and depression**.
- When medical teams explore spiritual concerns, patients make different decisions about goals of care, compared to peers whose medical teams do not discussion spirituality.

PROBLEM STATEMENT:

- **Spiritual screening** was documented **in only 67% and 69%** of patients seen by the Parnassus inpatient palliative care consult team in 2016 and 2017.
- National guidelines include spiritual screening as an essential component of assessment for all patients seen by a palliative care team.

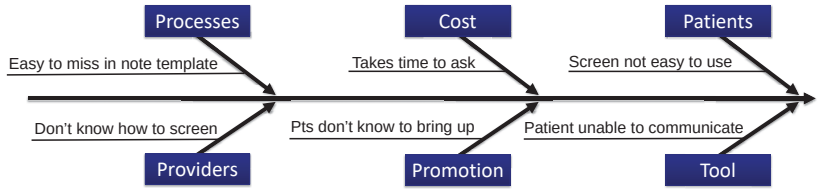
Project Goals



- Among inpatient palliative care consults at Parnassus, we sought to **increase spiritual screening documentation by 10 percentage points** from 69% to 79% averaged over the months of 09/2018-05/2019.

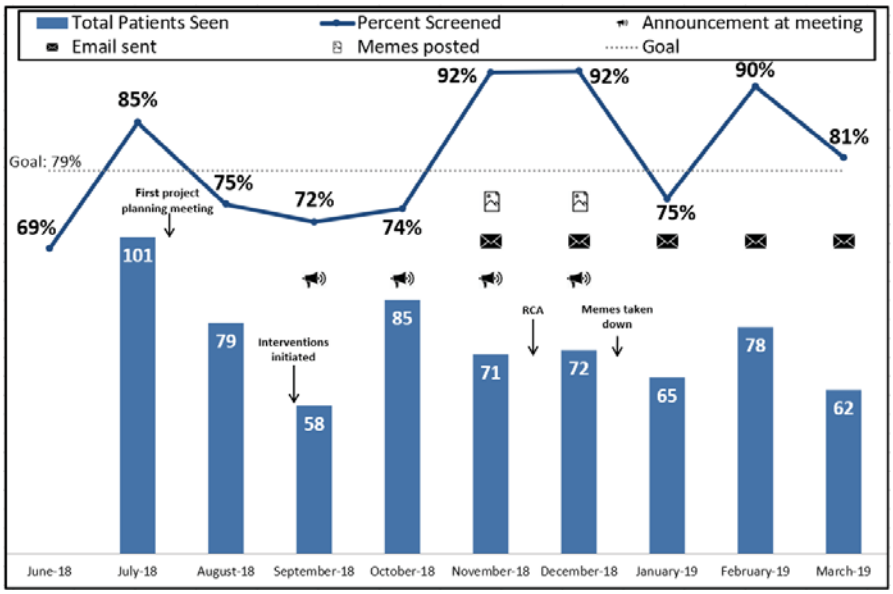
Project Plan and Interventions

1. **Fishbone analysis** to identify barriers to completing and documenting spiritual screening.



2. **Root cause analysis** mid-project, when our initial date was below our benchmark.
3. Implemented **e-mail reminder** and posted **meme reminders** in work room.

Project Evaluation & Impact



Next Steps, Dissemination & Lessons Learned

Next Steps:

- Continue to monitor our progress with spiritual screening through June 30, 2019.
- Brainstorm with program leadership about ways to continue the project with next year's fellows.

Dissemination:

- Preparing and abstract and poster presentation for American Academy of Hospice and Palliative Medicine (AAHPM) Annual Assembly for March 2020.
- Considering manuscript preparation and submission to *Journal of Palliative Medicine.*

Lessons Learned:

- Within palliative care quality improvement initiatives, it is critical to have buy-in and participation of the entire interdisciplinary team.

UCSF Resident and Clinical Fellow Quality Improvement Incentive Program
in partnership with the 2019 UCSF Health Improvement Symposium

UCSF Hospital Medicine
Department of Medicine

One Step at a Time: Improving Mobility Through Enhanced Patient-Provider Communication and Goal-Setting

Katie Raffel MD, Catherine Burke MD, Jenica W. Cimino BA, Lane Epps, Anita Hargrave MD, Timothy Judson MD, Natalie Kucirek, Isaac Lopez MD, Thuy Trang Nguyen MD, Fangdi Sun MD, Anjali Thakkar MD, Jacqueline To MD, Enrique Vargas, Catherine Y. Lau MD, Ari Hoffman MD

Background

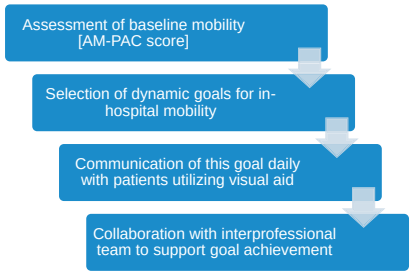
- Immobility during hospitalization is associated with functional decline, increased length of stay and loss of independence
- Lack of provider prioritization of mobility is perceived as a barrier by patients and physical therapy staff (*RCA shown*)

Objectives

Improve patient mobility through resident-led quality improvement initiative to increase patient-provider communication and goal-setting

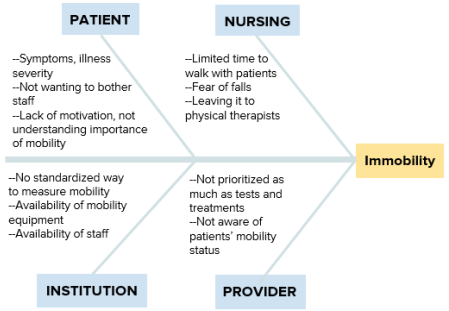
Methods

- Pilot program at a single urban academic medical center among Internal Medicine patients beginning October 2018
- Patient-provider communication intervention



- Process measures: weekly audits of visual aid completion and rounds communication

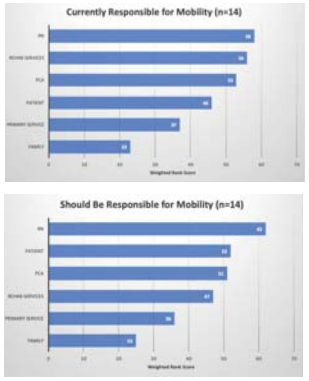
Root cause analysis of immobility in hospitalized patients

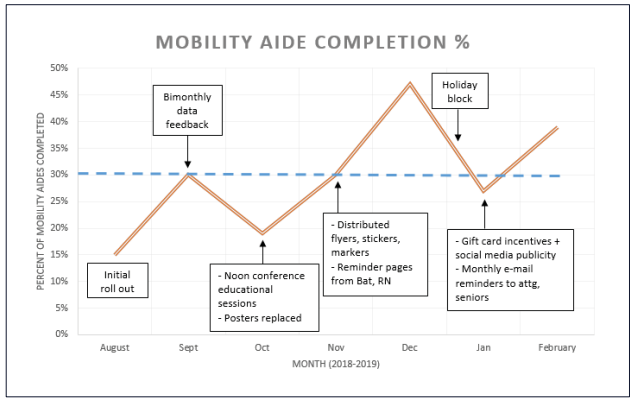


Patient mobility aide

Results

Who is/should be responsible for mobilization?: Physician assessment





Patient-provider communication of activity goals was rare (15%) at beginning of intervention. Data has revealed overall increase in patient-provider communication.

Conclusions

It may be feasible to increase goal-setting and communication about mobility between patients and providers utilizing a visual aid and interdisciplinary support

Lessons Learned

- There is a significant knowledge and skill gap regarding mobility assessment and goal-setting among physicians
- Patient-provider mobility communication is a small but vital cultural change within larger systemic efforts to improve mobility

Implications/further research

- Communication of mobility goals by providers can be enhanced through QI focused initiatives
- Further research in needed to elucidate the association between increased patient-provider communication around mobility goals and patient outcomes

Acknowledgements

- Ryan Greysen MD and the University of Pennsylvania for allowing us to adapt their mobility visual aid
- UCSF Unit-Based Leadership Team, Physical Therapy Team as well as all of the health care providers and patients who participated in this QI initiative

Improving Missed Congenital Cardiac Heart Disease Screening in the Intensive Care Nursery

Elizabeth Crouch, Kimberly Grelli, and Katelin Kramer

ICN Fellows

Neonatal-Perinatal Fellowship Program

Background

Congenital Cardiac Heart Disease (CCHD) screening is recommended for all babies by the American Academy of Pediatrics.[1] It is estimated that in the United States at least 0.9 infant deaths per 100,000 live births occurred due to missed CCHD (36 deaths annually).[2]

The UCSF Intensive Care Nursery (ICN) was flagged by the California Perinatal Quality Collaborative Consortium (CPQCC) for missed CCHD screening in 2017.

PROBLEM STATEMENT:

In 2017-2018, 35 babies (~3.5% of ICN admissions) were discharged home from the ICN last year without an echo or CCHD screening, which should be performed on all babies prior to discharge home.

Project Goals

TARGET:

Through a fellow-led education and QI project in the ICN, we aimed to reduce the number of babies who are discharged without an echo or congenital cardiac heart disease screening by 80% by July 2019.

CITATIONS:

1. Mahle WT, et al. (2012) Endorsement of Health and Human Services Recommendation for Pulse Oximetry Screening for Critical Congenital Heart Disease. Pediatrics.
2. Peterson C, et al. (2013) Cost-Effectiveness of Routine Screening for Critical Congenital Heart Disease in US Newborns. Pediatrics.

Project Plan and Interventions

What barriers are preventing us from meeting our target?

- Lack of awareness of both residents and nursing for the need of CCHD screening prior to discharge
- Separate orders for CCHD screening and hearing screen, which are both required prior to discharge
- Lack of CCHD screen as part of discharge checklist for both nursing and physicians

What are the barriers in order of importance?

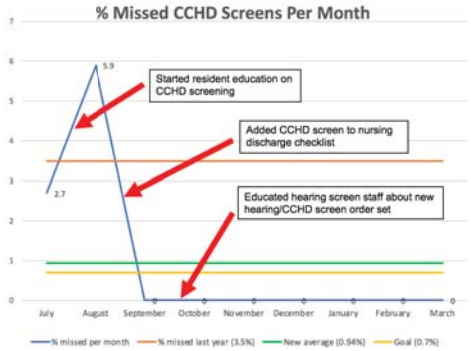
1. Education of resident providers regarding the importance and expectation of CCHD screening prior to discharge home
2. Lack of discharge order set to bundle hearing screening with CCHD screen
3. Education of nurses via implementation of the CCHD screening on discharge checklist

What will you measure or track to know if your tactic(action) is occurring as intended?

- Apex generated discharge list with and without CCHD screening
- Redwood fellows to report when resident education of CCHD screening is completed
- Order set bundle and nursing discharge checklist implemented

Project Evaluation & Impact

Month	Missed	Total Discharged	%
2017-2018	35	1000	~3.5
July	1	37	2.7
August	2	34	5.9
September	0	35	0
October	0	31	0
November	0	39	0
December	0	33	0
January	0	38	0
February	0	45	0
March	0	27	0
TOTAL	3	319	0.94%



210 days since last missed CCHD screen

Next Steps, Dissemination & Lessons Learned

Next Steps:

- Evaluation of project interventions with new residency class in July 2019
- Refining Apex generated report to improve efficiency with assessing potential CCHD screen misses

Dissemination:

- Similar targeting of order bundling and nursing discharge checklists through a multidisciplinary approach could address multiple issues throughout UCSF Health

Lessons Learned:

- Collaboration with Apex/IT can be instrumental to improved efficiency and work flow
- Difficult to ensure all residents receive similar education on a rotation given fluctuating schedules

UCSF Resident and Clinical Fellow Quality Improvement Incentive Program
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Reducing Venipuncture for Hospitalized Patients on Hemodialysis

Chi Chu, MD

Sri Lekha Tummalapalli, MD, MBA

Delphine Tuot, MDCM, MAS

Lowell Lo, MD

Nephrology Fellowship Program

Background

- Unnecessary lab testing is associated with iatrogenic anemia, increased costs, and worse patient experience
- Hospitalized hemodialysis patients have unique considerations for lab testing:
  - Patients with end-stage renal disease (ESRD) should avoid venipuncture to preserve vascular access options for dialysis
  - Hemodialysis patients may have laboratory tests performed by drawing blood from the dialysis circuit on dialysis days, avoiding venipuncture altogether

PROBLEM STATEMENT:
Hospitalized hemodialysis patients undergo frequent unnecessary venipuncture.

Project Goals

Our goal was to increase the percentage of labs drawn on dialysis among first-shift non-ICU hemodialysis patients from 30% to 70% by end of June 2019.

Rationale:
- First-shift dialysis patients were chosen in order for results of lab testing to return prior to morning rounds
- ICU patients were excluded as they often have alternate access for phlebotomy, and are high acuity, so lab testing should not be delayed
- Reducing unnecessary venipuncture on dialysis may improve patient experience and sleep, decrease pain and bruising, and better preserve vascular access

Project Plan and Intervention

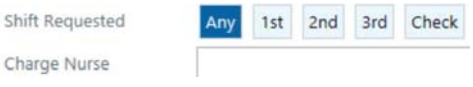
Stakeholder interviews:
- Stakeholder interviews with hemodialysis unit leadership and nursing, floor unit nursing leadership, phlebotomy, and primary service teams were conducted to understand workflows of laboratory ordering and testing

Interventions:
- Communication between hemodialysis unit to bedside nurse to hold phlebotomy on patients scheduled for next day 1st shift hemodialysis
- EHR integration - APeX Field for dialysis shift to facilitate communication

Barriers:
- Unpredictability of hemodialysis schedule (emergencies, add-ons)
- No staff in hemodialysis unit after hours until 6AM, whereas phlebotomy starts work at 4am (need for asynchronous communication)
- Newly implemented APeX field to indicate dialysis shift is a physician order, but physicians do not primarily make the dialysis schedule

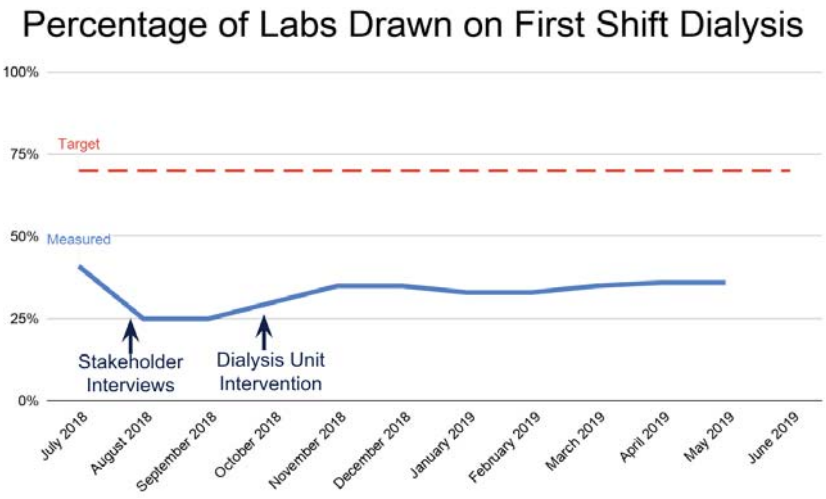
Project Evaluation & Impact

APeX Order:



APeX Lists:

Service	Preferred Shift
Hospital Medicine	—



Next Steps, Dissemination & Lessons Learned

Next Steps:
- Continue to work with floor and hemodialysis unit leadership to establish protocol for communication of dialysis shift schedule, including more effective and consistent use of APeX field
- Develop regular monitoring plan to facilitate data collection and monitoring

Dissemination:
- Project was presented at hemodialysis unit, fellow, and departmental meetings

Lessons Learned:
- Effective and ineffective strategies for asynchronous communication and preferred timing of blood tests may be applied to other UCSF settings

UCSF Resident and Clinical Fellow Quality Improvement Incentive Program
in partnership with the 2019 UCSF Health Improvement Symposium

Preventing Delirium in Neurosurgical Patients

Department of Neurological Surgery Residency Program

Background

Delirium is increasingly being recognized as a major post-surgical complication that has significant impact on recovery and postoperative morbidity for patients. Neurosurgical patients may be at increased risk of post-operative delirium given that these patients often have prolonged ICU care, require frequent neurological checks with interruption of sleep, possess neurological or metabolic derangements associated with neurosurgical disease, and have neurological deficits that may impair communication or mental status.

If a patient screens positive for the CAM-ICU, AWOL, or NuDESC score, the nurse documents the positive score and should notify the resident on call, although we are not tracking the frequency with which nurses are paging the resident on call. Currently, neurosurgery is underperforming relative to other hospital services will ordering the delirium order set.

PROBLEM STATEMENT:

Neurosurgical patients, who may be at a higher risk for delirium than other patients in the hospital, are not receiving the delirium order set when they

Project Goals

In an attempt to lower delirium rates in patients on the neurosurgery service, we set the following goal:

Targeting 75% delirium order set compliance for patients who screen positive for delirium.

We set this target because we felt that setting a higher target for neurosurgical patients, who may screen falsely positive or who may require more frequent neurochecks than the delirium order set offers, was not feasible.

References

Morshed, R. A., Young, J. S., Safaee, M., Sankaran, S., Berger, M. S., McDermott, M. W., & Hervey-Jumper, S. L. (2019). Delirium risk factors and associated outcomes in a neurosurgical cohort: a case-control study. *World Neurosurgery*.

Project Plan and Intervention(s)

To begin, we collected and published our current delirium rates:
Fifty-two (22.1%) patients experienced delirium during their hospital stay.

Table 4. Outcomes Associated with Delirium

	Delirium Positive	Delirium Negative	*P* Value
Length of admission (days, 95% CI)	10.3 (14.3–18.2)	4.36 (3.3–5.4)	<0.0001
Disposition home (number, %)	17 (32.7%)	164 (89.6%)	<0.0001
30-day unexpected readmission (number, %)	7 (13.5%)	13 (7.1%)	0.16
Death by end of follow-up	8 (15.4%)	22 (12.0%)	0.52

CI, confidence interval.

Table 3. Multivariate Generalized Logistic Regression for Predictors of Delirium

Characteristic	OR (95% CI)	*P* Value
Presence of neurologic deficit	5.31 (1.87–15.11)	0.002
Length of ICU stay	1.23 (1.07–1.43)	0.004
Age	1.05 (1.01–1.09)	0.006
Abnormal sodium		0.21
Tumor diagnosis		0.39
Length of surgery		0.40
Postoperative benzodiazepine use		0.45
Postoperative steroid use		0.46
New postoperative infection		0.46
Transfer from OSH or ED admission		0.55
Diabetes		0.61
Hydrocephalus diagnosis		0.78
Infection diagnosis		0.99

Unit OR reported for length of ICU stay and age.
OR, odds ratio; CI, confidence interval; ICU, intensive care unit; OSH, outside hospital; ED, emergency department.

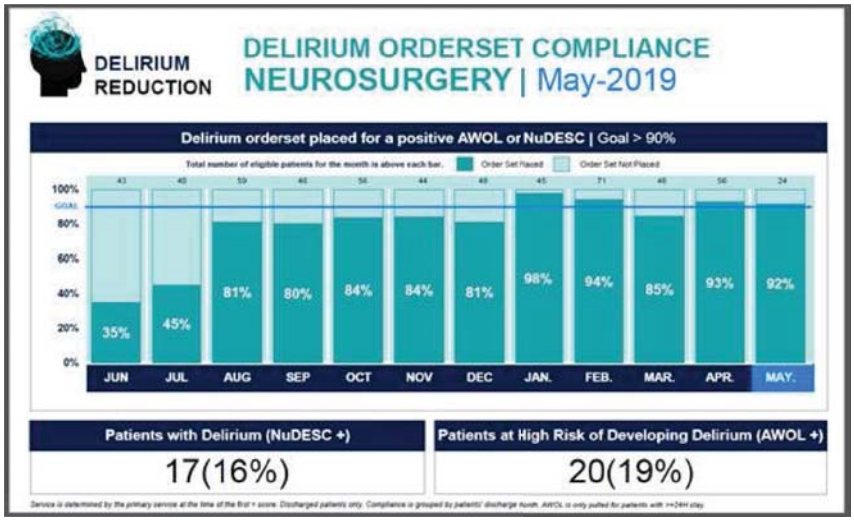
In order to enact our project, we:

1) We implemented a column into our work list to indicate if a patient has screened positive for delirium by the nurses.

2) Started addressing delirium risk and screening at multidisciplinary rounds between the case managers, primary and charge nurses, nurse practitioners, and resident providers

3) Encouraged nurses to alert the team when they are concerned about a patient becoming delirious
We hypothesized that enacting the order set would not prevent delirium

Project Evaluation & Impact



Next Steps, Dissemination & Lessons Learned

Next Steps:
The primary next step is to determine what effect the delirium order set had on delirium rates, delirium days, and complications of delirium for neurosurgical patients. We hypothesize that this order set may not prevent delirium but reduce the amount of time patients are delirious and accelerate their safe discharge.

Additionally, we want to work with the nursing staff to identify areas in the order set that are difficult to implement or hard to measure that may be diminishing the effectiveness of the intervention.

Dissemination/Continuation:
Prior to disseminating or continuing our initiative into subsequent years, it is critical to determine to impact this order set has for neurosurgical patients specifically.

Lessons Learned:
Enacting any change to clinical practice requires a team effort, including the nurses, nurse practioners, therapists, and physicians.

Apex IT has remarkable potential for tracking metrics and identifying areas where ordering providers can improve patient care if it is utilized appropriately.

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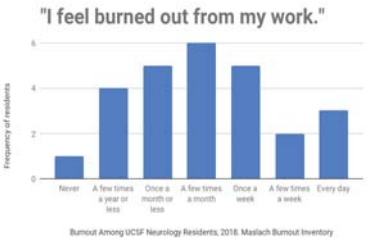
"Wellness Bundle" for Resilience in Residency

Jill Goslinga
Meredith Bock
Jeremy Tanner

UCSF Neurology Residency

Burnout in Neurology



Emotional exhaustion, depersonalization, and decreased personal accomplishment comprises the syndrome of burnout. Physician burnout has been reported as reaching "epidemic levels", with a prevalence at or above 50% of physicians[1]. Burnout has been linked to negative patient care outcomes and increased health care costs[2]. Neurologists and neurology residents have among the highest burnout rates of all specialties, with up to 75% of neurology residents affected nationwide[3,4].

Residents who enjoy meaning in work and maintain a healthy work-life balance may be more resilient to burnout.

PROBLEM STATEMENT:

Residents too rarely express gratitude and too often feel underappreciated, which decreases resiliency against burnout.

Project Goals

Improving resident well-being is aligned with the UCSF True North pillar of "Our People." We strove to promote wellness and gratitude in the neurology residency through a multifaceted approach to foster resiliency.

1. The majority of residents (>75%) will express gratitude to interdisciplinary team members throughout the year
2. The residency program will encourage resident self-care by protecting time for doctor's appointments and other wellness visits (≥2 visits/year)
3. The residency program will integrate resident-driven wellness-focused curriculum into their teaching curriculum
4. Resident wellness and burnout will be measured using validated tools to establish a baseline and to assess impact.

References:
1. West CP, Dyrbye LN, Erwin PJ, Shanafelt TD. Interventions to prevent and reduce physician burnout: A systematic review and meta-analysis. The Lancet. 2016;388(10057):2272-2281.
2. Hegg A, Meier LL, Manser T. Emotional exhaustion and workload predict clinician-rated and objective patient safety. Frontiers in psychology. 2015;5:1573.
3. Lorsch NH, Shanafelt TD, Keran CM, et al. Burnout, career satisfaction, and well-being among US neurology residents and fellows in 2016. Neurology. 2017;89(5):492-501.
4. Busis NA, Shanafelt TD, Keran CM, et al. Burnout, career satisfaction, and well-being among US neurologists in 2016. Neurology. 2017;88(8):797-808.

Intervention: "Wellness Bundle"

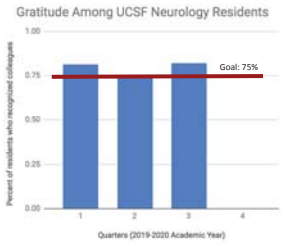
Wellness Chiefs: New position created for two final-year residents to help to design a wellness curriculum and work with program leadership to foster resident well-being

Wellness Wednesdays: Residents were given permission to attend to self-care needs in lieu of attending Wednesday afternoon weekly didactics (up to 3 sessions per year)

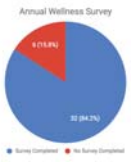
"Wellness Bundle": Our goal was to meet at least 3 of 4 targets (below):

1. 75% will share at least 3 expressions of gratitude each quarter, for at least 3 of 4 quarters
2. 75% will participate in at least one of the neurology resident well-being conferences
3. 75% will attend appointments with at least 2 providers for their own self-care
4. 80% will complete the annual well-being survey

Project Evaluation & Impact



Achieved goal for 3/3 quarters for which data are available



Achieved goal of >75% completion baseline data

Including "Maslach Burnout Inventory"

Achieved goal of >75% resident access to self-care

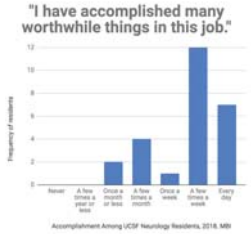
Goal not yet reached (final conference in June)

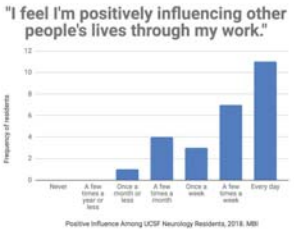
"It was AWESOME to feel like I had a stop gap for self care and a chance to plan ahead for appointments!" - Resident

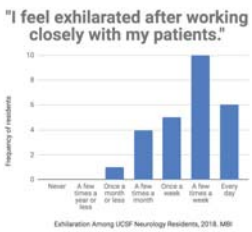
Resident to Clinic Coordinator:
"I wanted to thank you formally for all you do to keep the ZSFG neuro clinics up and running. Your incredible dedication motivates me to provide better care to my patients. **I am so thankful that we have you to help us be the best versions of ourselves.** You manage to make an incredibly difficult job look easy."

Resident to Resident:
"I know nights at Moffitt aren't easy, so I don't take it for granted that you would try to take the pager from me and take late consults off my hands. **I've noticed that this kind of stuff is infectious** - when someone is focused on self-preservation, then it makes others only want to focus on their own self-preservation. But **when someone is generous in sharing the burden, it makes others want to be generous with their time and effort too**. So thank you for being the latter and spreading a culture of teamwork - It went such a long way!"

Resident to Bedside Nurse:
"I wanted to make sure that you are recognized for your compassionate and thoughtful nursing care. Our patient and her family needed both Neurologic and emotional/spiritual care. **Your Neurologic expertise** is evident immediately. **Your tender comments** during our family meeting enriched the conversation. **We are fortunate to have you in the UCSF family."**







Next Steps, Dissemination & Lessons Learned

Next Steps:
We will continue to encourage gratitude sharing through the final quarter and beyond via the UCSF recognize system. Two Wellness Chiefs have been selected who will continue to design a Wellness curriculum and sessions for 2019-2020, and will hope to address documentation burden as an additional factor affecting wellness. We will continue to measure wellness and burnout annually.

Dissemination:
We shared our survey instrument and wellness bundle design with the Neurosurgery residency program. We look forward to collaborating with other departments interested in wellness initiatives.

Lessons Learned:
There are system-based and workload limitations to promoting wellness. However, promoting expressions of appreciation can be a simple and efficient way to help promote resiliency. We tried to minimize the burden of added obligations, but recognize that asking residents to send emails, fill out surveys, and attend conferences adds to their workload and risks increasing burnout.

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Patient Education Initiative for Disposal of Opioid Prescriptions

Diana C Robles

On behalf of the Department of

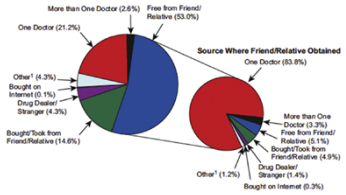
Obstetrics, Gynecology, and Reproductive Sciences

Background

The magnitude of the opioid epidemic in the United States requires multidisciplinary efforts across the health professions. The AMA Opioid Task Force recommendations included a call for providers to discuss safe storage and disposal of expired, unwanted, or unused opioid medications with their patients.[1] Therefore, the problem we are targeting in this project will be the development and distribution of standardized storage and disposal instructions of opiate medication for postoperative patients in the Department of Obstetrics and Gynecology.

It is estimated that over 70% of individuals who abuse opioid medications obtain them from friends or family in the community.[2] In turn, the majority of these medications were obtained from a single doctor (Figure 2).[2,3] While overprescribing remains a common pattern associated with high numbers of leftover tablets, studies have also shown low rates of patient education efforts focusing on safe storage and disposal.[6,7]

FIGURE 2
Source of pain relievers for nonmedical use



Source in which pain relievers were obtained for most recent nonmedical use among past year uses aged 12 years or older, 2012–2013. The superscript number 1 indicated the Other category and includes the sources, wrote fake prescription, stole from doctor's office/clinic/hospital/pharmacy, and some other way. The percentages do not add to 100% because of rounding. Reproduced, with permission, from the Substance Abuse and Mental Health Services Administration, Results from the 2013 National Survey on Drug Use and Health: Summary of National Findings[5]

Lamvu. Perioperative pain management. Am J Obstet Gynecol 2018.

PROBLEM STATEMENT:

There are no standardized instructions provided to patients who receive opiate prescriptions with regards to safe storage or disposal of unused medications.

Project Goals

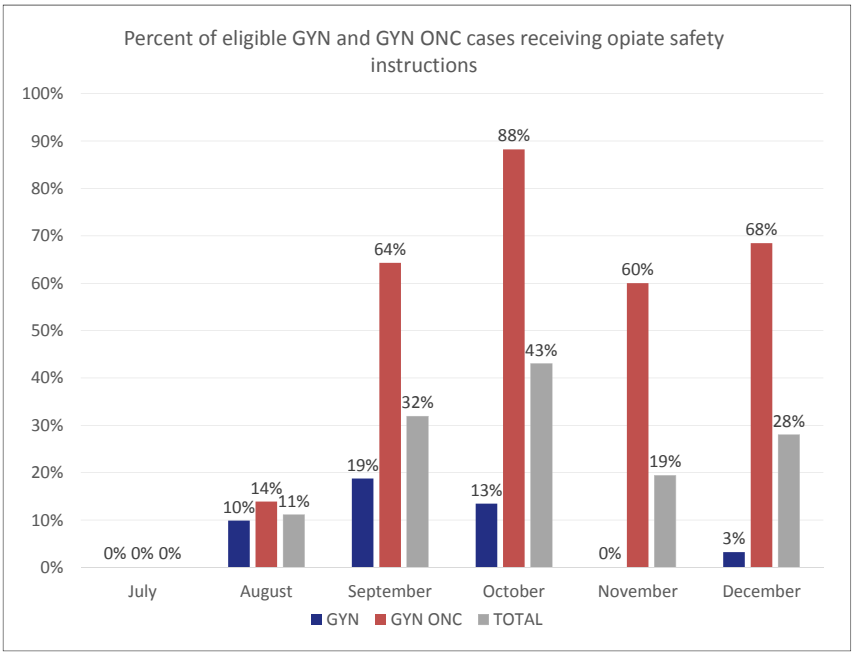
In a survey of 6 nurses with experience conducting either OB postpartum or GYN/ONC postoperative discharges, 2/6 reported routinely advising patients to safely store opiates away from children, and only 2/6 reported advising patients of methods to safely dispose of unused prescriptions or unused medications. In a review of over 15 templated discharge instructions routinely used after postpartum hospitalization, same-day GYN/ONC surgery, or after inpatient GYN/ONC hospitalization, a word search for "disposal" and "storage" returned 1 result.

We aimed to provide standardized recommendations for safe storage of opiate medication, and a list of locations that accept and safely dispose of unused opiate medications, at the time of discharge from the Benign Gynecology or Gynecologic Oncology services. We wanted to achieve a 20% distribution rate in Q1 and steadily rise to 40% of eligible cases in Q2, and 60% in Q3 and Q4.

Project Plan and Intervention(s)

Cause/Barrier Addressed	Countermeasure/Idea to Test	Description and Expected Results (Use "if… then…")
Standardized information has not existed/has not been available across the divisions of Gynecology and Gynecologic Oncology	Development of a universal Smartphrase in ApEX in collaboration with physicians, nurses, and pharmacists with standardized instructions for safe storage and disposal of opiate medications	If an interdisciplinary group of providers work together to create standardized instructions, then patients will receive consistent information on how to store and safely dispose of their medications, decreasing the risk that their medications are inappropriately used.
Providers do not know to provide instructions on safe storage or disposal of opiates	Dissemination of project aims and standard Smartphrase to Attendings, Fellows, Residents, Nurse Practitioners, and Registered Nurses who prepare and provide discharge instructions for patients cared for on the Gynecology and Gynecologic Oncology services.	If providers who write and deliver discharge instructions are educated on how to safely store and dispose of opiate medications, then they will be better equipped to provide this information to patients at the time of discharge

Project Evaluation & Impact



Next Steps, Dissemination & Lessons Learned

Next Steps:
-- Increasing consistent use of instructions on safe storage and disposal of medication by linking instructions to case and surgeon specific discharge instructions.
-- Including instructions in the outpatient setting at the preoperative or postoperative appointments

Dissemination:
A similar initiative has already been adopted across the UCSF Health System providing patient safety information about use of opiates in all After Visit Summaries. Information on safe storage and disposal could be standardized and added to this existing patient information document.

Lessons Learned:
-- Data collection is a critical step in evaluating and thereby further disseminating quality improvement efforts.

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Smoking Cessation in Ophthalmology Clinics

UCSF Health

Department of Ophthalmology

Background

Smoking is a significant modifiable risk factor for many ocular diseases such as age related macular degeneration, cataracts, uveitis, and thyroid eye disease. However, the awareness of the impact smoking can have on vision is low. In a survey performed in the UK, only 9.5% of patients believed smoking was a cause of blindness, whereas 70.6-92.2% believed it was a cause of stroke, heart disease, or lung cancer. The survey also suggested that the fear of blindness was as compelling a motivation to quit as the fear of lung cancer, heart disease, and stroke.

Ophthalmologists and optometrists are in a unique position to educate and help patients connect to smoking cessation resources since we are often the first department with which patients come in contact within the health system.

PROBLEM STATEMENT:

Patients who come to the ophthalmology department and report that they are current smokers are often not given further resources.

Project Goals

Currently, technicians ask whether or not patients are smokers during their intake for their ophthalmology appointment. According to a recent survey of eye care providers within an academic ophthalmology department, only 85% of providers reported "seldom" or "never" discussing potential methods and resources for smoking cessation. In our clinics between 7/2018 and 10/2018, out of 299 ophthalmology encounters where patients reported "yes" to current smoker, 0% of these patients had a smoking cessation counseling documented or resources referred by the ophthalmology department.

The problem exists because many eye care providers are not aware of the smoking cessation referrals and education materials that are available at UCSF. Also eye-care providers may not be looking at the response of the current smoking status for patients since the intake is performed by the technicians.

The target goal is to have ophthalmology providers use a Tobacco Cessation smartest and documenting and providing counseling and referrals to resources in at least 20% of the patients that report being a "current smoker."

Project Plan and Interventions

A multidisciplinary and team approach was taken by holding meetings to educate all members of the ophthalmology department including the faculty, residents, technicians, and optometrists. Technicians were asked to flag patient charts if they reported being "current smokers." Meetings educated staff on how to see the smoking status of their patients on Epic and on how to use the smoking cessation smart set on Epic.

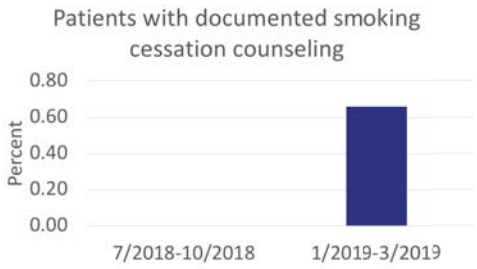
We discussed and developed the project at the department Quality Improvement meeting.

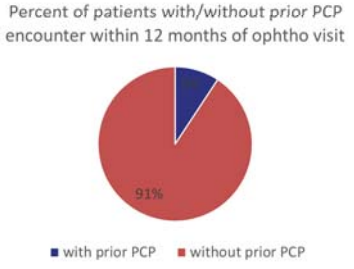
A department wide initiative was implemented to use the smart set for patients who report being a "current smoker" to help ensure patients are being referred to smoking cessation resources if they are interested.

We developed an Apex report to track the number of patient encounters where patients report being a "current smoker" and whether the smoking cessation smart set was used. The report also looks at whether or not these patients had a PCP encounter within the past 12 months prior to the ophthalmology encounter and whether elements of the smoking cessation smart set was used at their PCP visit.

Project Evaluation & Impact

1/2019-3/2019	Patients reporting "current smoker"	Referred to smoking cessation counseling
Ophthalmology encounter	602	4
PCP encounter 12 months within ophtho encounter	56	51





Next Steps, Dissemination & Lessons Learned

Next Steps:

Have physical and visible reminders around the clinic to help staff remember to look at smoking status of patients and implement the action plan.
Update staff on progress with Apex report statistics and remind staff of project.
Coordinate with the UCSF Fontana Tobacco Treatment Center.

Dissemination:

Implement similar smoking cessation initiatives in other outpatient clinics.

Lessons Learned:

Challenges associated with creating an effective and accurate Apex report.
Incorporating changes into clinic workflow.
Reminding staff of quality improvement project.

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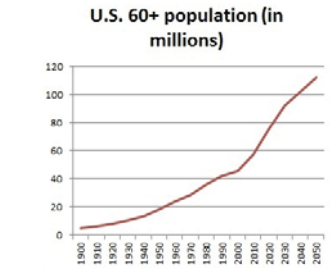
Reducing Time to Surgery for Hip Fragility Fracture Patients

Trevor Grace; Will Rubenstein; Matt Callahan; Bobby Tay; Derek Ward

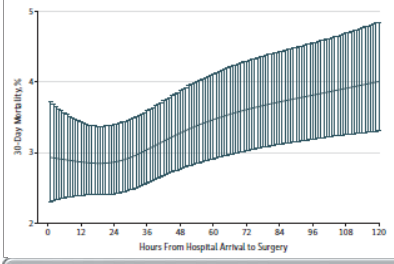
Orthopedic Surgery

Background

- The US population is rapidly aging



- An increased incidence of hip fragility fractures is expected with the growing elderly population
- Effective and timely management of these injuries is necessary to optimize patient independence, function, and outcome
- Studies have shown that surgical management of hip fractures within 24 hours of presentation has a direct impact on mortality



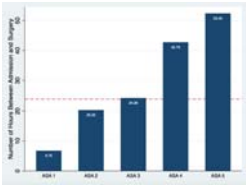
Project Goals

- Between July 1, 2014 and March 31, 2018, 49.0% of all hip fragility fracture patients admitted to UCSF underwent surgery greater than 24-hours after admission
- The median time between admission and surgery (the "Time to OR" or TOR) increased progressively with increasing American Society of Anaesthesiologists (ASA) grades, likely reflecting a greater amount of time needed for clearance of complex patients

- ***Problem Statement***: For hip fracture patients with ASA grade 2 or less, 35.3% underwent surgery greater than 24-hours after admission at UCSF in the same time period
- ***Project Goal:*** To take over 75% of hip fragility fracture patients with ASA grade 2 or less to surgery within 24-hours (TOR <24-hours)

Project Plan and Intervention(s)

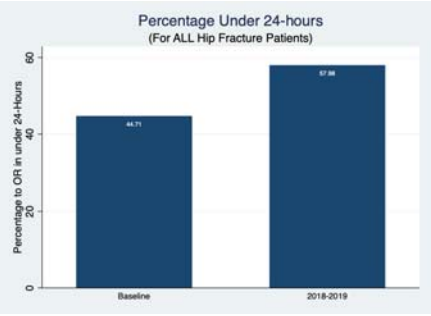
- The 2018-2019 Resident Incentive Goal for the Orthopedic Surgery Department was chosen to parallel resident incentives with an institutional initiative called the UCSF Hip Fracture Protocol
- This initiative is an interdisciplinary effort between the orthopedic surgery, anesthesia, hospital medicine, cardiology, emergency, and geriatric medicine departments to comprehensively improve the care of hip fragility fracture patients admitted to UCSF
- The protocol is meant to address many root causes of inefficient and delayed management of these patients, which includes:
  - Limited operating room availability
  - Limited staff surgeon availability
  - Excessive preoperative clearance protocols

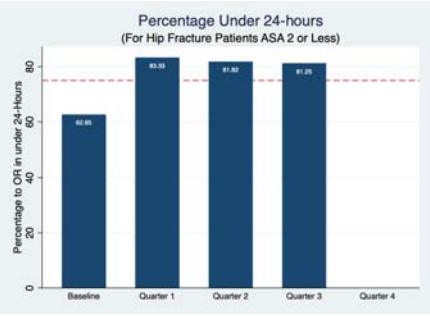


- The Hip Fracture Protocol involved aggressive interdisciplinary cooperation to address these issues, with a particular emphasis on reducing the time to surgery for these hip fragility fracture patients (see figure above right), as this has been associated with improved survival rates and outcomes after these injuries; please see https://hipfracture.ucsf.edu for more information
- By setting the orthopedic incentive goal as taking over 75% of hip fragility fracture patients with ASA grade 2 or less to surgery within 24-hours, orthopedic residents were incentivized to be front-line advocates for this broader institutional initiative and to be lead coordinators amongst services

Project Evaluation & Impact

- Interventions in the UCSF Hip Fracture Protocol pertinent to our resident incentive goal included improvements in Emergency Department care (e.g. fascia iliaca blocks for improved pain control), Pre-operative optimization guidelines (e.g. strict criteria for needing a preoperative echocardiogram), Pre-operative anticoagulation management/reversal, Anesthesia protocols, and Surgical protocols (e.g. having designated operating room for hip fracture surgeries)
- So far for the 2018-2019 academic year, the orthopedic surgery department has improved the percentage of ALL hip fragility fracture patients taken to surgery within 24 hours to 58.0% from 44.7% at baseline (see figure below left)
- So far for the 2018-2019 academic year, the orthopedic surgery department has improved the percentage of ASA grade 2 or less hip fragility fracture patients taken to surgery within 24 hours to 83.3% (Q1), 81.8% (Q2), and 81.25% (Q3) from 62.7% at baseline (see figure below right); this is *above our goal* of 75%





Next Steps, Dissemination & Lessons Learned

Next Steps:
We plan to continue this initiative as part of the broader UCSF Hip Fracture Protocol. Continued focus of the project includes the following:
•Increased emphasis on OR availability on holidays and weekends where many of the delays occur
•Increased improvements in postoperative care of patients including increased referral to skeletal health

Dissemination:
A similar project is in place at the Zuckerberg San Francisco General campus – best practices will continue to be shared across sites, keeping in mind that there are certain challenges specific to the ZSFG as a county hospital that may not be directly translatable and applicable

Lessons Learned:
•Project buy in and focus from the orthopedic attendings and residents was perhaps the single most important factor in our demonstrated improvement
•The multi-disciplinary nature of this initiative and the involvement of residents through the incentive program helped to facilitate its success

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Opioid Reduction in Head and Neck Cancer Patients

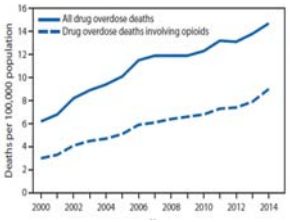
Names

Philip L. Perez

Otolaryngology – Head and Neck Surgery Residency

Background

Since 1999, the number of opioid prescriptions written in the U.S. has quadrupled, and deaths attributed to opioid overuse have become the most common cause of death (Rudd et al, 2016). 80% of prescribed-opioid abusers are not the person for whom the prescription was written (Manchikanti et al 2012).



Age-adjusted rate of drug overdose deaths and drug overdose deaths involving opioids in the U.S. 2000-2014

PROBLEM STATEMENT:

Opioid prescription patterns within the OHNS Department following common head and neck surgeries vary significantly, without standard recommendations or protocols. Furthermore, patient education on proper use and disposal of opioids on discharge was lacking.

Project Goals

For >90% of patients undergoing surgery within the Head and Neck Oncology Division of OHNS, discharge instructions will include information on appropriate use of narcotic medication and strategies for transitioning to non-opioid medications.

Data from patient usage of opioids – measured by need for additional prescriptions – will be used to standardize and reduce opioid prescription patterns for >80% of patients undergoing thyroidectomy, parathyroidectomy, parotidectomy, glossectomy, and wide local excision who do not undergo a neck dissection.

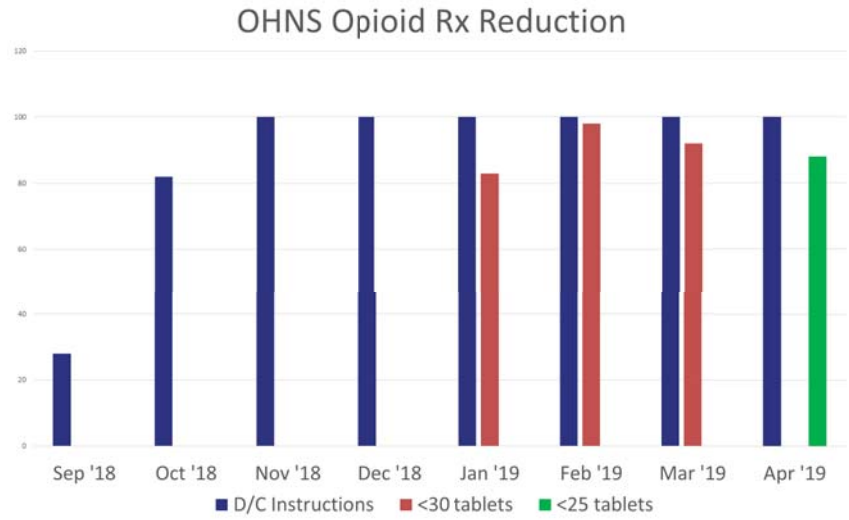
Project Plan and Interventions

Providing greater information to patients on appropriate use of opioid medications and transitioning to non-opioid medications fit into a larger project of standardization of a discharge instruction template for Head and Neck Cancer patients. By establishing this template and the expectation that all discharges start with this outline, we were able to incorporate this additional educational information and ensure its dissemination. As this protocol has won buy in from all residents and advanced practice providers within our department who engage in the discharge process, we are now at nearly 100% penetrance.

Establishing standardized prescription patterns was more challenging. No protocol or order set within Apex was set up for our discharge process. Based on a survey of residents, most prescription patterns were based on suggestions from senior residents learned during junior resident years. Setting up individual order sets for standard head and neck discharges enabled us to create a default, low-resistance option based on actual patient medication usage.

We also identified a concern among residents about under-prescribing opioid medications, and the difficulties patients could face in the outpatient setting obtaining additional medication without a physical paper prescription. This sentiment changed significantly this year with the advent of electronic prescribing of opioids by faculty within the OHNS Department.

Project Evaluation & Impact



Next Steps, Dissemination & Lessons Learned

Next Steps:
We are standardizing discharge instructions across other subspecialties within our department to include this educational information. We are decreasing our standard prescription of opioids even further for this subset of head and neck cancer patients based on current usage.

Dissemination:
We have found setting up individual order sets within Apex to be a very helpful mechanism for providers to standardize prescriptions – this could be broadly applicable across surgical and medical specialties

Lessons Learned:
This project has been a lesson in the need to constantly evaluate practices that have become ingrained based on historical convention rather than data. Objective information can support openness to enacting change in these practices, which can decrease risk for our patients.

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Implementation of Pediatric Anesthesia Emergence Delirium (PAED) Scale Score Documentation in the Post-Anesthesia Care Unit (PACU)

Pediatric Anesthesiology Fellowship

Department of Anesthesia & Perioperative Care

Valerie Au, MD & Josemine Carey, MD

Fellows

Jina Sinskey, MD

Faculty Mentor

Background

Emergence delirium (ED) in pediatric patients is a common problem

- The incidence of ED ranges from 10-80% in the literature
- A survey of Canadian anesthesiologists found that 42% of pediatric anesthesiologists consider ED to be a significant problem

Pediatric ED can have several negative consequences

- Patients are at an increased risk of self-injury
- Accidental removal of surgical dressings, IV catheters, drains, etc. may occur
- Emotional distress to the patient and patient's family can lead to decreased satisfaction
- 52% of patients require pharmacological intervention which may further delay post-anesthesia care unit (PACU) discharge
- Patients with ED tend to require closer monitoring which increases utilization of healthcare resources
- One study reported that children with ED were at 1.43 times greater risk of having maladaptive behavioral change postoperatively

PACU nurses have many responsibilities and may not have the bandwidth to chart ED in pediatric patients

It can be difficult to differentiate pain from ED, especially in non-verbal pediatric patients

- An observational study of nurses showed that 27% of ED cases were attributed to pain and 25% to anxiety

We did not have a tool to assess and document ED at Benioff Children's Hospital

PACU nurses use Face, Legs, Activity, Cry, Consolability (FLACC) scores to assess pain, which is a separate entity from emergence delirium

The Pediatric Anesthesia Emergence Delirium (PAED) scale is a validated way to evaluate for pediatric ED in pediatric patients

The Pediatric Anesthesia Emergence Delirium scale, from Sikich and Lerman (2004).

1. The child makes eye contact with the caregiver.
2. The child's actions are purposeful.
3. The child is aware of his/her surroundings.
4. The child is restless.
5. The child is inconsolable.

Items 1, 2, and 3 are reversed scored as follows: 4 = not at all, 3 = just a little, 2 = quite a bit, 1 = very much, 0 = extremely. Items 4 and 5 are scored as follows: 0 = not at all, 1 = just a little, 2 = quite a bit, 3 = very much, 4 = extremely. The scores of each item were summed to obtain a total Pediatric Anesthesia Emergence Delirium (PAED) scale score. The degree of emergence delirium increased directly with the total score.

Project Goals

UCSF-wide goal: To decrease emergence delirium in postoperative patients

Departmental goal for 2018-2019:
To assess for Emergence Delirium in at least 50% of pediatric patients as measured by at least 1 Pediatric Anesthesia Emergence Delirium (PAED) scale score recorded in the PACU

Project Plan and Interventions

PROJECT TIMELINE AND STEPS:

August 2018: Working with departmental APEX team, incorporated PAED assessment into electronic medical record

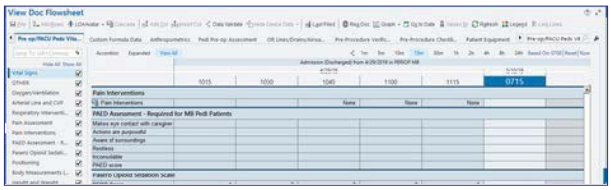
→ **Late August 2018:** Met with PACU nursing staff for education regarding PAED and documentation rollout

→ **September 2018:** PAED documentation began

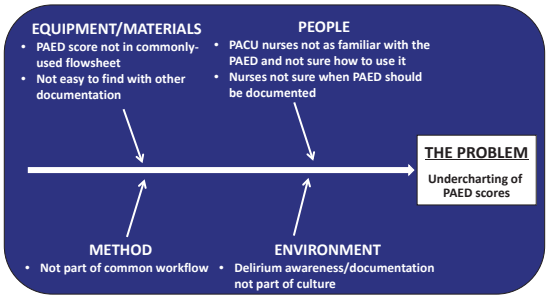
→ **Ongoing:** Education and awareness efforts (e.g., reminder card below) to meet goal of recording PAED score for at least 50% pedi PACU patients

→ **2019-2020:** Use data to assess incidence of PAED and design intervention to decrease (future project)

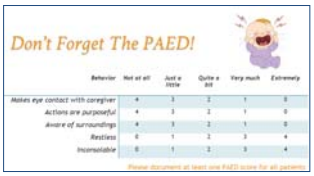
Screenshot of Preop/PACU Peds Vitals Flowsheet Incorporating PAED Assessment



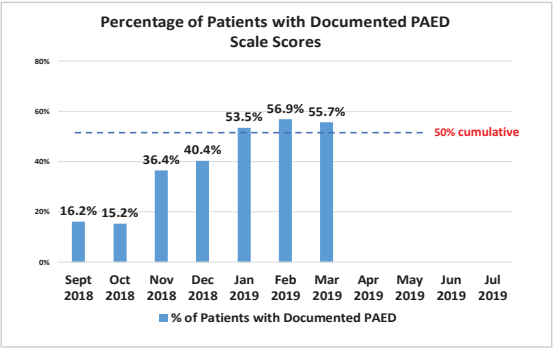
BARRIERS AND CHALLENGES:



Reminder card placed in PACU bedspots.



Project Evaluation & Impact



- Since rolling out the PAED Score assessment tool in the Pre-op/PACU Peds Vitals flowsheet in September 2018, there has been an overall increase in the number of patients for whom PAED is assessed and documented
- Initially, there were challenges in accessing the tool but incorporating it into a more commonly-used flowsheet helped increase its utilization
- Data from the April-June 2019 quarter will be collected in July 2019

Next Steps, Dissemination & Lessons Learned

Next Steps:

- To continue to increase number of patients for whom PAED scale score is assessed and documented
- To analyze data from the electronic medical record to assess the prevalence of PAED
- Using this data on PAED prevalence, to design and enact concerted interventions to decrease PAED

Dissemination:

- The PAED scale score could be implemented and used in other areas where pediatric patients recover post-anesthesia (e.g., the intensive care unit, radiology recovery unit, the adult PACU, the Orthopedic Institute PACU)

Lessons Learned:

- Ease of access is important: initially, the percentage of patients for whom PAED was assessed was low because the tool was not in a commonly-used flowsheet; incorporating it into the "standard" PACU flowsheet helped increase utilization

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ICU-MOVE!
Early Mobility Practices in the PICU

Lindsay Braun, Neelima Marupudi, Deborah Franzon

Pediatric Critical Care

Background

The changing spectrum of pediatric disease and technological advances has translated to improved survival for children with critical illness. Unfortunately, this decrease in mortality is often offset by an increase in morbidity for these young patients. Evidence suggests there is significant and persistent physical, cognitive, and psychiatric morbidities among adult and pediatric survivors of critical illness, leading to functional impairments and reduced quality of life. Recent data supports supporting early mobilization in adult intensive care units; however the culture in pediatric intensive care units is frequently that of immobility due to safety concerns leading to heavy sedation and restraints.

PROBLEM STATEMENT:

Early evidence has shown that heavy sedation and decreased mobility can lead to impaired circadian rhythm cycles, increased level and duration of delirium and other psychiatric problems, and neuropathy and muscle weakness. ICU acquired weakness exists in children and the pediatric ICU population is at high risk for prolonged deficits as they are often admitted with pre-existing rehabilitation needs.

Project Goals

Point prevalence check: 50% of patients in PICU had order for therapies and 50% of those had been seen in past 72 hours. Therapies often get skipped due to patient illness but not always resumed when patient more stable and would benefit from therapies. Our goal is to ultimately create a culture within our PICU that values and prioritizes early rehabilitation and mobility practices for as many of our patients as possible. Through this project, we aim to raise awareness and educate the healthcare team. For this year, we will monitor progress by measuring the number of patients in the PICU with active physical and occupational therapy orders. We aim to increase the number of patients with active PT orders by 50%. We also aim to increase ambulation and early mobility documented in the nursing assessments.

Project Plan and Intervention(s)

Intervention 1: Education of nursing staff, respiratory therapists, PICU attendings, fellows, and rotating residents and medical students about the project and goals by attending leadership meetings, conferences, huddles, and on rounds.

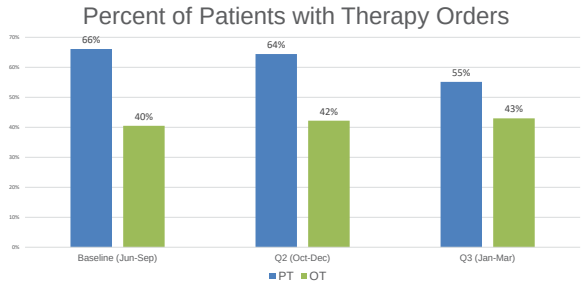
Intervention 2: Development of a PICU bundle which will encourage the caregiving team to screen each patient daily to determine readiness for early mobility (PT/OT/SLP/Child Life, lightening of sedation, mobility exercises with nurses/family/friends).

Intervention 3: Daily reminder to daytime ICU fellow via nursing rounding tool to discuss mobility bundle.

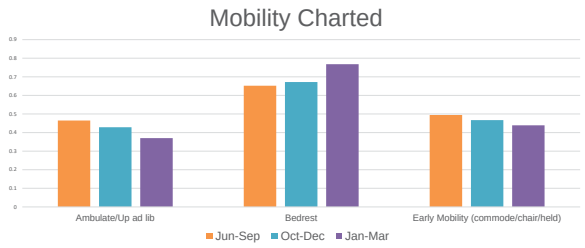
Intervention 4: Daily reminder to nighttime ICU fellow to discuss PT/OT orders on midnight rounds.

Intervention 5: Prior to activity, patients' clinical status should be optimized, i.e. changing diaper/ensuring they have urinated, secure all lines and tubes, have all necessary equipment/support staff. Explain the process to patient before and during the activities.

Project Evaluation & Impact



Percentage of PICU patients with orders placed for Physical Therapy and Occupational Therapy while they were admitted in the PICU.



Nursing documentation of patients' mobility, number charted per patient day. Baseline data from June-September, with follow up data from the first two quarters, October-December and January-March.

Next Steps, Dissemination & Lessons Learned

Next Steps:
Continued efforts to increase awareness and understanding of the importance of early rehabilitation practices in the pediatric intensive care unit. Working closely with nursing leadership, respiratory therapists, physical and occupational therapists, residents, families, and patients to create a receptive environment through education and collaboration.

Dissemination:
Mobilization and rehabilitation is an integral component of recovery for any patient in a hospitalization setting. Aspects of our bundle and our collaborative interdisciplinary efforts can be applied in any inpatient unit at UCSF.

Lessons Learned:
Changes to the traditionally limited rehabilitation and activity culture for critically ill children takes time and education. Our ICU-Move rollout was welcomed with enthusiasm and interest; though the reality is that much of the physical legwork (literally!) was on nurses, therapists, and families. This taught us how important collaboration and education would be to make quality improvements. We will carry on with us in the next phases of the project.

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Improving Rates of Zofran Usage for Acute Gastroenteritis In UCSF Outpatient Pediatrics

Names

Thomas Wallach MD, Sofia Verstraet MD, Jennifer Burgis MD, Chathruckan Rajendra MD, Vivek Shenoy MD, Sindhura Thatipelli MD, Anne Lyon MD, Zachary Marcus MD, Perseus Patel MD

Pediatric Gastroenterology and Pediatric Residency Programs

Background

1) Acute Gastroenteritis (AGE) remains the second leading cause of pediatric mortality around the world.
    1) estimated 179 million cases annually , 220,000 pediatric admissions annually, cost = ~$1 billion
2) There is a lack of awareness of current recommendations. (ESPGHAN, 2014). Recommendations include:
    2) Encourage oral rehydration with ORS
    3) Medical management with Zofran
    4) Do not use loperamide
    5) Encourage rapid return to full diet
    6) Do not obtain workup for etiology unless severely ill or diarrhea >14 days.
3) Adult literature shows proper management can decrease hospitalizations and days of illness (30-55%)
4) Pediatric literature shows substantial decline in need for IV rehydration
5) Zofran has been in usage for over 25 years (almost 30), with **ZERO** cases of mortality. Two total cases of pediatric morbidity, both overdose, and both recovered within 12 hours
6) Retrospective analysis of Zofran usage at Mt. Zion showed exceedingly rare use of Zofran (<2%) from 2016-2017.

PROBLEM STATEMENT:

US pediatric providers are poorly informed of treatment options for acute gastroenteritis, and thus are not treating according to guidelines, likely worsening the burden of disease on our patient population

Project Goals

1) Improve education and awareness of the utility and safety of Zofran usage in AGE

Target:

1) Improve Zofran usage by 25% per quarter, to goal of ~100% of eligible patients receiving the option of antiemetic therapy

Project Plan and Intervention(s)

Core Problems:

1) Awareness:
    a) perception that AGE is a minor ailment (typically true) with nothing that can be done (false)
    b) lack of awareness of successful treatment strategies
2) Prevalence of Concerns:
    a) widespread belief that Zofran has significant side effect profile
    b) lack of familiarity with probiotics and the associated data

Hypothesis: Poor compliance with AGE recommendations is an artifact of lack of awareness, and can be remedied through educational methods

Interventions:

1) Targeted educational session for attending pediatricians at Mt. Zion w/ supporting reference information
2) Education sessions for resident population at large via UCSF-MB noon conference
3) Utilizing resident led teaching at Mt. Zion to reinforce and support efficacy and safety of Zofran treatment

Project Evaluation & Impact

Next Steps, Dissemination & Lessons Learned

Next Steps:

1) Focus additional education on research demonstrating Zofran's inability to mask more serious pathology such as a surgical abdomen or intestinal obstruction
2) Develop improved workflow for guiding patients in oral rehydration

Dissemination:

This project can easily be expanded to all UCSF outpatient facilities, and prior research and our results suggest that this is a desirable goal

Lessons Learned:

Key to understand the current workflow and provider thoughts for management of a disease in an outpatient context before trying to alter practice. Initial education efforts focused on the wrong topics to reassure providers of intervention safety, and initial efforts to alter discharge paperwork met poor success given incompatibility with previous workflow.

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2018 – 2019 Opiate Reduction PSOAR: Plastic Surgery Optimization of Analgesia Requirements

Audrey Nguyen, Eric Wang, Alvin Wong, Daniel Balkin, Laura Wong, Michael Holland, and Mary McGrath

Division of Plastic and Reconstructive Surgery

Background

• Opioid abuse and overdose has become a national epidemic.
• Surgeons routinely prescribe opioids for postoperative pain control, which can be substantial.
• Preopeative administration of analgesics can reduce postoperative and intra-operative opioid requirements.
• These measures can reduce length of stay, post-operative opioid use, and unplanned re-admissions.
• In the field of plastic surgery, this is beginning to be studied in cases such as autologous breast reconstruction with preliminary data suggesting improvement in post-operative opioid use and reduced length of stay.

Prior to our project, there was no routine, standardized preoperative analgesic plan implemented by the plastic surgery team at UCSF despite the data that suggests this reduces hospital length of stay, post-operative opioid use, and unplanned re-admissions and ED visits.

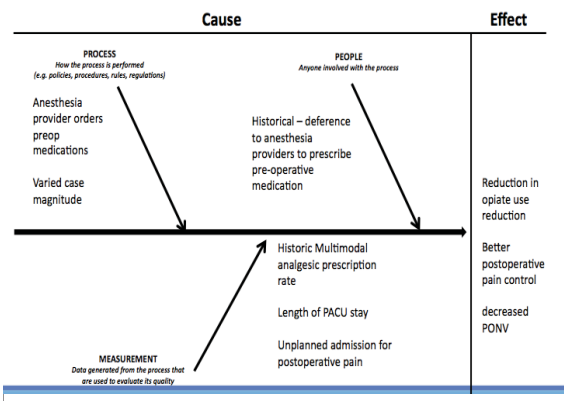
Plastic Surgery patients were not routinely getting pre-operative non-opiate analgesic medications despite evidence that this may reduced post-op opiate consumption.

Project Goals

During the academic year 2018-2019, we target that 75% of our patients will receive at least one non-opioid analgesic, either Acetaminophen, Gabapentin or Celecoxib, any time in the pre-operative holding area.

Prior to this academic year, plastic surgeons at UCSF have not routinely focused on possible preoperative interventions to attempt to reduce postoperative narcotic requirements. The treatment of post-operative pain was only addressed in the post-operative period. Any pre-operative pain medications have been at the discretion of the anesthesiologist and vary widely from provider to provider.

Project Plan and Interventions



PSOAR Protocol

1. Identify adult Elective Plastic Surgery Cases at Parnassus, Mission Bay and Mount Zion
2. Label case as "PSOAR Protocol" eligible or ineligible based on medical history
3. Plastic Surgery residents order PSOAR medications to be given in pre-operative area
   a. Acetaminophen 1000 mg
   b. Gabapentin 600 mg
   c. Celecoxib 200 mg

Project Evaluation & Impact

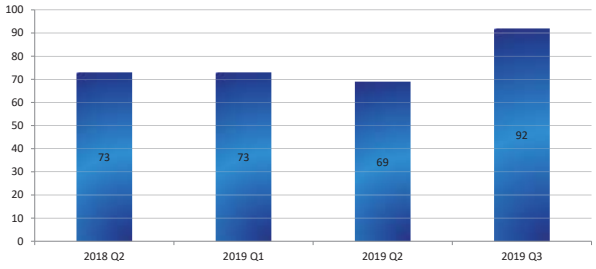
% PSOAR Protocol Label

	ML	MZ	MB
July W1	100%	70%	--
Aug W3	71%	90%	--
Sept W4	38%	80%	--
Oct W2	38%	100%	--

% PSOAR Medications Ordered

	ML	MZ	MB
Oct	73% (11/15)	80% (8/10)	--
Nov	50% (7/14)	100% (10/10)	100% (2/2)
Dec	56% (13/23)	100% (11/11)	100% (1/1)

% Compliance



Next Steps, Dissemination & Lessons Learned

Next Steps:
Determining whether the PSOAR protocol results in postoperative and outpatient opioid reduction

Dissemination:
PSOAR can be applied to all surgical subspecialities and distribution of the protocol to other services can forward the opioid reduction movement and put the resonsibility in the hands of the surgeons.

Lessons Learned:
Because there are several steps in determining PSOAR eligibility and ordering the multimodal medication treatment, a dedicated team member should be assigned the sole task of assigning and prescribing patients to the PSOAR protocol at each site. Additionally, APEX has helpful tools and order sets. Once we were able to create a PSOAR order set for the three medications, it became much easier and quicker to order the medications.

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Metabolic Monitoring for Patients on Atypical Antipsychotics

UCSF Health

Department of Psychiatry

Team: Christopher Rienas MD, Jennifer Guo MD PhD, Tyler Morrison MD MAS, Olesya Pokorna MD, Latoya Frolov MD MPH, Michelle Barton MD MPH, Andrew Halls MD, Alison Hwong MD PhD, Anthony Wilson RN, Michael Wang

Coach: Weston Fisher MD

Background

Metabolic monitoring of patients on antipsychotics is governed by clear evidence-based guidelines. However, these guidelines are often not followed consistently, with significant negative impact on patient health outcomes. Second-generation antipsychotics are associated with an elevated risk of developing obesity, diabetes mellitus, and dyslipidemia (1,2), which are well-established risk factors for cardiovascular disease. Patients with psychosis are also less likely to be treated for cardiovascular risk factors once they occur (3) and face barriers to accessing primary care (4) to receive this treatment. Consistent monitoring can increase early recognition of metabolic abnormalities and prudent referrals to primary care, and prompt interventions to reduce metabolic syndrome and morbidity in patients using atypical antipsychotics (4).

PROBLEM STATEMENT:

Patients on atypical antipsychotics often do not receive evidence-based metabolic monitoring for cardiovascular risk factors.

Project Goals

BASELINE CONDITION:

According to data pulled from April 2017 to April 2018, only 9.3% of patients at Langley Porter clinics were in "full compliance" with metabolic monitoring as defined by having a body mass index (BMI) and labs (lipid panel, plus fasting glucose or HbA1c) on record in the last year.

GOAL:

Increase the number of patients in full compliance with metabolic monitoring to 50% or greater by June 30, 2019.

REFERENCES:

1. Alvarez-jiménez M, et al. Antipsychotic-induced weight gain in chronic and first-episode psychotic disorders: a systematic critical reappraisal. CNS Drugs. 2008;22(7):547-62. 2. Newcomer JW. Second-generation (atypical) antipsychotics and metabolic effects: a comprehensive literature review. CNS Drugs. 2005;19 Suppl 1:1-93. 3. Nasrallah HA, et al. Low rates of treatment for hypertension, dyslipidemia and diabetes in schizophrenia: data from the CATIE schizophrenia trial sample at baseline. Schizophr Res. 2006;86(1-3):15-22. 4. Cohn TA, et al. Metabolic monitoring for patients treated with antipsychotic medications. Can J Psychiatry. 2006;51(8):492-501.

Project Plan and Interventions

Providers:
- Distribution of guidelines to MDs and reminders to obtain metabolic monitoring for atypical antipsychotics regardless of indication
- Targeted emails with individualized statistics for % pts in compliance with metabolic monitoring
- Medical Assistants (MAs) to obtain vitals with BMI on all patients, as well as performing medication reconciliations and pending labs if out of date

Patients:
- Distribution of pamphlets regarding metabolic risk of atypical antipsychotics, though this was not implemented because it was thought to be difficult to obtain a consensus among providers with regards to messaging to patients. Instead, MAs were cueing patients to talk to their doctor about metabolic monitoring before appointments
- Allow non-fasting lipid panel and Hemoglobin A1c for patients with previous normal results, rather than all fasting labs

EMR:
- Implement reminder system with dot phrase incorporating date and results of last labs and BMI
- Label "high risk" patients in provider schedules

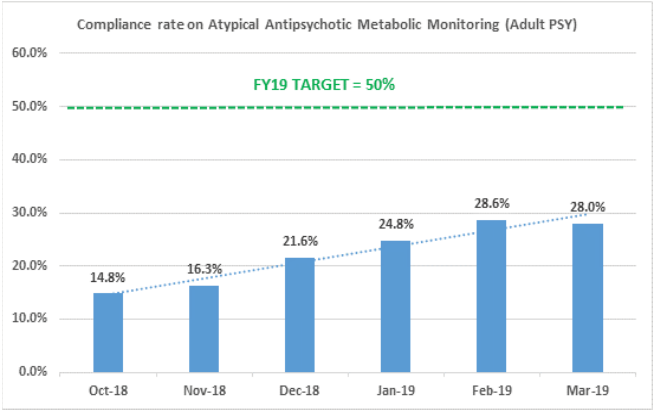
Facilities/systems:
- Determination of LPPI-wide lab monitoring guidelines
- Purchase additional scales
- Dedicate space to obtain vitals/BMI
- Hiring of MAs

Project Evaluation & Impact

KEY MILESTONES:

- October 2018: MAs hired and started to collect vitals on patients for BMI monitoring.
- November 2018: MAs started to do medication reviews with patients, pend orders for lipids and HbA1c, and prompt patients to discuss with MD.
- February 2019: Individual providers notified of their panel compliance rates via email.
- Mid-April 2019: Rolled out new dot phrase to be used in the provider notes to help with tracking and flagging labs and reminding when next values are due.

As of April 2019, compliance rates increased to 28.0%.



Next Steps, Dissemination & Lessons Learned

Next Steps:
- Revising report to improve accuracy: make sure patients on the list are actually active on the medication, think of ways to capture labs outside of UCSF. Both are adding to a falsely low compliance rate.

Dissemination:
- Strategic hiring of MAs and leveraging EMR to assist with adherence to lab monitoring guidelines could be deployed in other settings at UCSF Health.

Lessons Learned:
- Using other supports (like MAs) is very helpful to providers, who already have a lot to cover in a short appointment time
- Getting an accurate report is challenging but it shouldn't hinder pursuit of progress
- Analysis based on a 12 month lookback lends itself to slower changes over time, as in this project. Implementation of interventions need to happen early on and we need to think creatively about how to intervene with patients who are not physically in the office.

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Improved Gamma Knife End of Treatment (EOT) documentation

Melody Xu, MD, MS
Shane Lloyd, MD, PhD
Susan Wu, MD
Steve E. Braunstein, MD, PhD

Department of Radiation Oncology

Background

- Prior to this project, there was no radiation oncology-specific note in Apex following Gamma knife (GK)
- Only documentation was a physics check pdf under "scanned clinical documents"
- Patients receiving GK, particular for brain metastases or recurrent high grade gliomas, are often admitted to services such as neurology, neurosurgery, and medicine
  - Improved documentation of lesions treated would help clarify side effects attributable to treatment vs. tumor progression
  - In patients receiving multiple courses of Gamma knife—which lesions were treated at which time
- Documentation is also required by the American College of Radiology

PROBLEM STATEMENT:

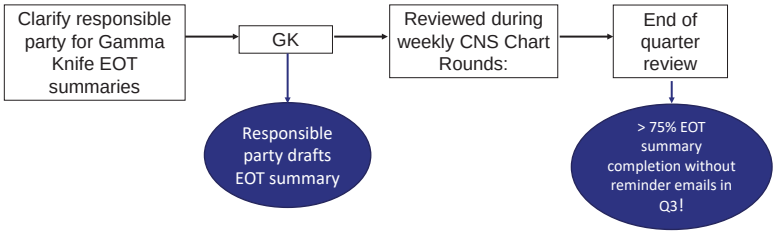
- Ideally all services have access to GK treatment information
- Reality: There is no documentation by a radiation oncology physician following procedures
- Consequences: Difficulty identifying and managing potential side effects of radiation, particularly in the inpatient setting
- Proposal: Develop a workflow to facilitate timely documentation of GK procedures

Project Goals

Residents with increase the rate of documentation of Gamma Knife radiosurgery procedures from 0% from July 1 2017-June 30, 2018 to at least 75% between July 1, 2018 to June 30, 2019 using a standardized note template in Apex.

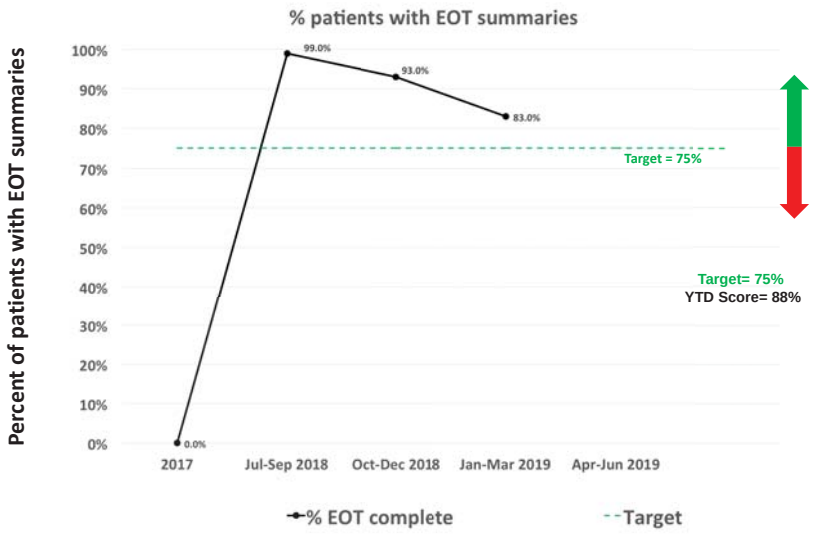
Project Plan and Intervention

Gamma Knife EOT Summary QI Process



1. Educate residents and attendings on CNS services regarding the importance of Gamma Knife EOT summaries in improving communication between services and quality of care
2. Create a standard Apex dotphrase
3. Create a workflow for monitoring Gamma Knife treatment summaries
4. Initially reviewed at weekly chart rounds, with reminder emails sent to residents and attending
5. Sustained through service sign-out and quarterly chart review
6. Starting Q3: evaluate without reminder emails

Project Evaluation & Impact



Next Steps, Dissemination & Lessons Learned

- Continue to educate residents and attendings regarding the importance of Gamma Knife EOT documentation
- Periodically assess Gamma Knife EOT summary completion rate
- Lessons learned:
  - Getting buy-in from involved parties prior to implementation is critical
  - Make documentation simple and quick
  - Gentle reminders during the transition phase can be helpful

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Reporting Coronary Artery Calcification on Non-Contrast Chest CT Scans

Radiology Residency QI Project

Kesav Raghavan MD, Robert Hicks MD, K. Pallav Kolli MD, Krishan Soni MD MBA, Brett Elicker MD, Travis Henry MD, Kimberly Kallianos MD, David Naeger MD, and Karen Ordovas, MD MAS
Radiology and Biomedical Imaging and Cardiology

Background

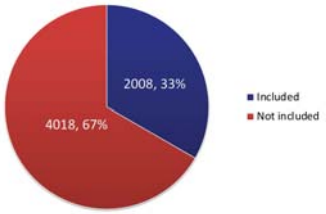
Cardiovascular disease is the most frequent cause of death globally, with coronary heart disease accounting for 7.4 million deaths in 2012. Coronary artery calcium (CAC) identified on computed tomography (CT) is considered diagnostic of calcific coronary artery disease (CAD). CAC can be assessed on routine (non-ECG gated) non-contrast chest CT, and trials have shown good agreement between visual assessment and Agatston score on ECG-gated chest CT. Recent multi-society guidelines have recommended the adoption of CAC description in non-gated chest CT examinations, and CAC is a modifying risk factor in the most recent ACC/AHA preventative care guidelines.

Aligning with the True North pillar of Quality and Safety, patients receiving non-contrast chest CTs for any indication would benefit from CAC screening on non-contrast chest CT scans. Describing the presence, extent, and/or absence of coronary artery calcium may alter management as providers can use the information to help guide patient care and consider initiation or modification of preventative measures or therapies.

PROBLEM STATEMENT:

Radiologists currently underreport CAC on non-cardiac chest CTs, and at UCSF there is no standard requirement to describe the presence or absence of CAC on routine non-contrast chest CTs.

CAC reporting for 2018



Project Plan and Intervention(s)

CAC template development

Develop a template pick list (Powerscribe 360 autotext) to enable standardized reporting of coronary artery calcification in the findings section of CT scan reports:

1. No visible coronary artery calcium
2. Mild coronary artery calcification
3. Moderate coronary artery calcification
4. Severe coronary artery calcification
5. Prior coronary intervention

Include a guidance statement and references (developed in conjunction with cardiology faculty) to help patients and clinicians better understand and use the findings for clinical benefit

Sample Report with CAC Template Changes

CORONARY ARTERIES:
Severe coronary artery calcification is present and has been shown to correlate with coronary artery disease. In the absence of known coronary disease, standard clinical evaluation of cardiovascular disease risk may be considered (see references cited below).

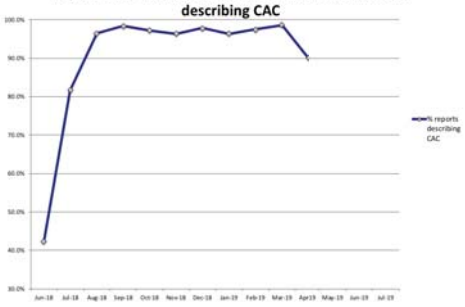
BONES/SOFT TISSUES:
Healed right lateral fourth rib fracture and sternal body fracture.

VISIBLE ABDOMEN:
Multiple hepatic cysts in both lobes of the liver are unchanged.

REFERENCES:
-D. C. Goff, Jr. et al., 2013 ACC/AHA guideline on the assessment of cardiovascular risk. Circulation 129, S49-73 (2014).
-S. S. Martin et al., Clinician-patient risk discussion for atherosclerotic cardiovascular disease prevention. JACC 65, 136-68 (2015).

Project Evaluation & Impact

Target Measure: Proportion of non-cortrast Chest CTs describing CAC



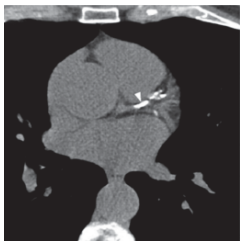
Seven-question survey sent to top 50 non-contrast chest CT ordering providers at UCSF:
-44% response rate (24/50): primarily internal medicine subspecialists (Oncology, Pulmonology)

Primary concerns:
-Distraction from other clinical issues
-Time constraint to address CAD risk factors
-Comfort-level dealing with CAD preventative care

What is your view on the new reporting system with guidance statement and references regarding CAC?

Project Goals

From 7/1/18-6/30/19, include description of presence, extent or absence of CAC on ≥ 90% of final reports for non-gated, non-contrast chest CTs performed in patients ≥18 years old without history of prior coronary intervention.



Next Steps, Dissemination & Lessons Learned

Next Steps:
Revised guidance statement and references to maximize clinical utility and streamline management considerations for patients and providers:

"Coronary artery calcification may correlate with coronary artery disease. In the absence of known coronary disease, further risk stratification can be considered in consultation with a primary care provider"

1. Arnett DK et al. 2019 ACC/AHA guideline on the primary prevention of cardiovascular disease. *Circulation* 2019; epub ahead of print.
2. CardioSmart: American College of Cardiology. Coronary Artery Disease. https://www.cardiosmart.org/Heart-Conditions/Coronary-Artery-Disease

Dissemination:
-Implement CAC reporting across other affiliated centers including ZSFG and VA
-Similar strategies can be implemented for reporting of other incidental imaging findings which may affect patient management

Lessons Learned:
It is important to consider the perspectives of various stakeholders and involve them in the QI process to maximize success

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TRIGGER INJECTION ONLINE VIDEOS IMPROVE WORKFLOW EFFICIENCY & NURSING SATISFACTION

Viji Sundaram MD, Katrina Cruz, MSN, Maria Farinha, BSN, Amanda Adeleye MD, Eleni Greenwood MD, Kaitlyn Wald MD, Amy Kaing, MD, Diana Zhou, MD, Martha Noel, MD, Marcelle Cedars, MD, Heather Huddleston MD

Reproductive Endocrinology & Infertility
Department of Obstetrics, Gynecology and Reproductive Sciences

Background

One of the main responsibilities of the In-Cycle team of nurses is performing trigger injection counseling during in vitro fertilization. Trigger counseling occurs in 2 parts: (1) In-person prior to rounding, when generic instructional documents are reviewed with the patient broadly without details of dates or dosages (~30-45mins/patient). (2) By phone following rounds, when more specific instructions are then confirmed including dates/times/dosages (~10-15mins/patient).

Assuming 3-10 triggers in one day, the In-Cycle RNs cumulatively spend between 2-10 hours/day counseling patients on very similar material. Baseline data reported a mean of 29 minutes spent overall by the In-Cycle team per patient counseling on trigger medications.

PROBLEM STATEMENT:
If the trigger preparation process was streamlined with improved efficiency, this would enable the In-Cycle nurses to conduct a more focused counseling session and utilize the gained time to take on other necessary nursing responsibilities.

Project Goals

The goal of this Quality Improvement project was to develop standardized ovulation trigger injection videos for the patient to view independently online, as an adjunct to counseling provided by the nurse, in order to:

(1) Reduce average nursing time spent counseling a patient for ovulation trigger by 20% over the course of 12 months
(2) Increase average In-Cycle nursing and patient satisfaction scores to >80% over a 3-month period
(3) Decrease overall calls made to the after-hours physician regarding trigger instructions.

Project Plan and Intervention(s)

Hypothesis: The creation and implementation of tailored online ovulation trigger injection instruction videos would achieve the stated goals of the project.

Intervention: Ten total videos were created to instruct patients on how to mix and inject specified doses of Human Chorionic Gonadotropin (hCG): 1500 units (u), 2500u, 3300u, 5000u, and 10,000u from a 10,000u vial of hCG; 1500u, 3300u, 5000u, and 10,000u from a 5000u vial of hCG; and lupron.

Nurses logged total time spent counseling patients on trigger instructions over a 2-week period in June 2018, prior to video implementation. Videos were emailed to all patients on the day of planned trigger starting mid-November 2018. Nurses logged time spent counseling per patient on a quarterly basis throughout the year: 1 month following video implementation over a 2-week period and again 3 months later.

Nursing satisfaction surveys were sent following video initiation and compared to pre-video scores. Patient surveys were sent retrospectively to gauge adequacy of information received, satisfaction, confidence, and need to page on-call physician prior to and following video implementation. Means were compared using a paired t-test for each of the measured outcomes on the patient surveys.

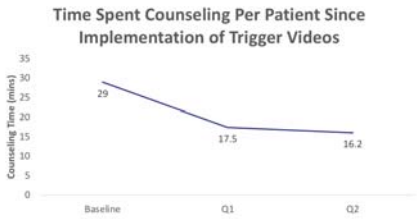
Project Evaluation & Impact

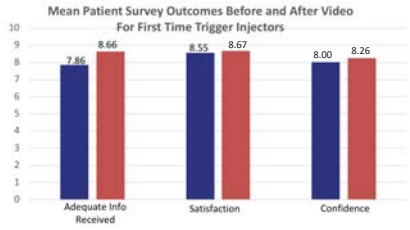
Time spent counseling patients by staff was on average 29 minutes prior to video implementation. This decreased by 40% to 17.5 minutes by Quarter 1 and 44% to 16.2 minutes by Quarter 2.

All five In-Cycle nurses completed the satisfaction survey with improved average scores from 20% pre-video to 84% post-video.

148 patients were sent a survey 1 month before and after video implementation with a response rate of 38.5% pre-video and 25% post-video. Following video implementation, 86.5% of respondents reported watching the videos. Overall trends revealed that patients completing a trigger injection for the first time reported improved scores on information received, satisfaction, and confidence, though none of these values approached significance. Patients undergoing repeat trigger injection reported significantly lower satisfaction scores following video implementation (9.44/10 to 8.38/10, p=0.028).

There was a reduction in overall calls made to the on-call physician with 10.5% calling prior to the video and 8.1% post-video.





Next Steps, Dissemination & Lessons Learned

Next Steps:
We hope to continue to disseminate the trigger videos to all patients, new and returning. Some of our In-Cycle nursing staff has already been relocated to other nursing duties due to the improved efficiency. It will be interesting to further elucidate why patients undergoing repeat trigger injections are less satisfied following video implementation.

Dissemination:
Our results indicate that creation and implementation of procedural videos improves overall nursing time spent counseling patients with fewer calls to the on-call physicians. This improved efficiency is associated with improved nursing satisfaction and stable patient satisfaction and confidence. Practices seeking efficiency gains should consider utilization of video-based instruction.

Lessons Learned:
We created a team of multiple stakeholders including In-Cycle nurses, nursing managers, nurse practitioners, and physicians to assist in the implementation of the plan, such that everyone was invested in the ultimate goal.

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Osteoporosis Screening in Rheumatoid Arthritis

UCSF Health

Sarah French MD, Andrew Gross MD

UCSF Rheumatology Department of Medicine

Background

Fragility fractures cause significant morbidity and mortality, with hip fracture carrying an estimated 1-year mortality of 37%[1].

Osteoporosis identification and treatment is essential for prevention of fragility fractures, thus screening with bone mineral density (BMD) testing has emerged as an important quality measure. ***Rheumatoid arthritis (RA) significantly increases risk for osteoporosis, with up to 2.4 fold increased risk for fragility fracture[2].*** The National Osteoporosis Foundation recommends screening all RA patients 50 years and older with a BMD test. We set out to measure our rate of screening with dual-energy X-ray absorptiometry (DEXA) and improve upon this important measure for quality of care.

We identified that ***only 70% of RA patients 50 and older seen in our clinic had received a DEXA.***

[1]Ebeling. *NEJM* 2008. [2]van Staa, et al. *Arthritis Rheum* 2006.

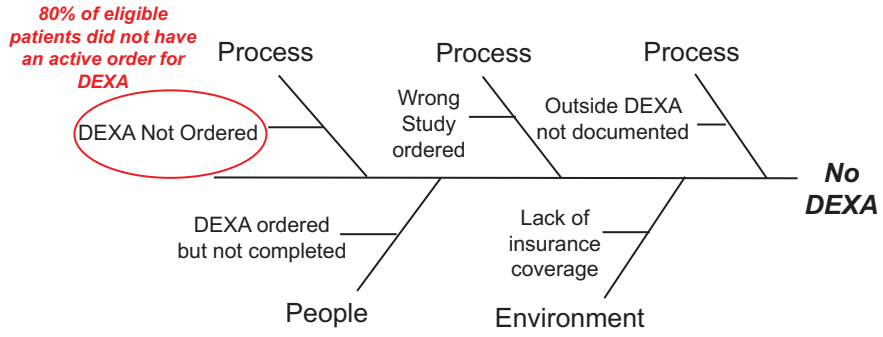
Problem Statement

Despite the knowledge that rheumatoid arthritis patients are at increased risk for osteoporosis, the Rheumatology Clinic currently lacks a systematic means of identifying osteoporosis in this population.

Project Goals

- We actively manage nearly 500 RA patients who are 50 years and older in the UCSF Rheumatology clinic.
- Our baseline DEXA screening rate was 70%.
- **Our aim is to increase the rate of DEXA screening to 85% over the next 12 months.**

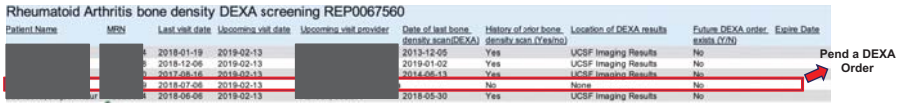
Project Plan and Intervention(s)



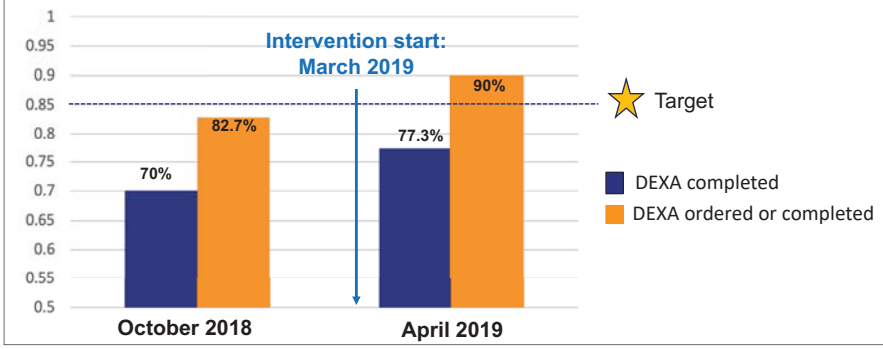
- Our problem solving analysis uncovered a gap in the process of identifying screening candidates and ordering DEXAs.
- Prior experience from a QI project at the SFVA suggested that provider reminders and education had little impact on rates of appropriate osteoporosis screening (Pre 63% vs Post 68%, p=0.738).
- **Our hypothesis: engagement of non-physicians in the workflow by allowing MAs to pend DEXA orders will lead to improved ordering and ultimately improved rate of DEXAs performed.**

Project Evaluation & Impact

Step 1): Generation of an automated report to identify RA patients 50 and older who have not had a prior DEXA and who have an upcoming clinic visit, with assistance of Enterprise Report Writing team.
*>5 revisions of prospective report (September 2018-December 2018)



Step 2): Run report daily and MA pends DEXA for eligible patients.
Step 3): Measure progress using retrospective report built with Enterprise Report Writing team.
* >5 revisions of retrospective report (December 2018-April 2019)



Next Steps, Dissemination & Lessons Learned

Next Steps:
We saw a measurable improvement in the number of DEXA orders over a short follow-up (1 month post-intervention). We plan to continue our intervention to see if this translates to increased completion of DEXA scans and achievement of our target screening rate of 85%. We also plan to examine additional barriers to DEXA completion when active DEXA orders are in place.

Dissemination:
The Epic reports generated for this QI project could easily be modified to identify candidates for osteoporosis screening in Primary Care (i.e. women 65 and older) and to track rates of DEXA orders/scans completed.

Lessons Learned:
Enterprise Report Writing can be a powerful tool for QI projects pertaining to process measures, though in our experience it takes significant time and chart review to create a validated report.

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Creation of a CPT-ICD crosswalk to identify urological surgical procedures in order to assess appropriate duration of surgical prophylaxis

Lusha Wang, MPH, CIC[1], Adam Gadzinski, MD, MS[2], Kelly Walker, MD[2], Meera Chappidi, MD, MPH[2], Elizabeth C. Wick, MD[3], Sarah Doernberg, MD, MAS[4]

[1]Hospital Epidemiology & Infection Control Data Management Unit

[2]Department of Urology

[3]Division of General Surgery Department of Surgery

[4]Division of Infectious Disease Department of Medicine

Background

- Antibiotics play a vital role in medicine and when used properly, can save lives from once untreatable infections.
- Antibiotic misuse has contributed to the emergence of multiple drug resistant organisms, negative patient outcomes and increased health costs.
- Antibiotic use as surgical prophylaxis is intended to reduce the risk of post-procedural infections but can lead to inappropriate administrations.
- National guidelines suggest stopping antimicrobials before closure of surgical incision for clean and clean-contaminated cases (Berrios-Torres SI et al. *JAMA Surg*. 2017 Aug 1;152(8):784-791).
- The proportion of patients receiving antibiotics beyond 24 hours post Urological procedures was unknown.
- Identification of these surgical patients without manual chart review has not been explored.

Project Goals

To identify Urology patients undergoing common clean or clean-contaminated procedures in order to assess and provide feedback regarding whether antibiotics were stopped prior to incision closure.

Project Plan and Intervention(s)

How to correctly identify urological procedures?

- Use surgical categorization process from an established national program:
  - National Healthcare Safety Network (NHSN) uses ICD10 codes but has not defined a comprehensive urological surgery category
  - American College National Surgical Qualify Improvement Program (NSQIP) uses CPT codes but CPT codes not readily available through Infection Control's (IC) database
- Obtain list of NSQIP Urology patients from Oct 2016 - Sept 2017 and CPT codes
  - NSQIP captured 100% of cases during this time period

Which ICD10 codes should be used for which urological procedure?

- IC's database only captures ICD10 codes for surgical site infection surveillance
  - In order to utilize IC's database for ongoing monitoring and custom surgical categorization, CPT codes were mapped to ICD10 codes
- Compare CPT codes to ICD10 codes
- Review ICD10 code descriptions
- Review ICD10 codes and sequences assigned by hospital billing
- Group ICD10 codes into surgical categories of interest:
  - cystectomy, nephrectomy and radical prostatectomy

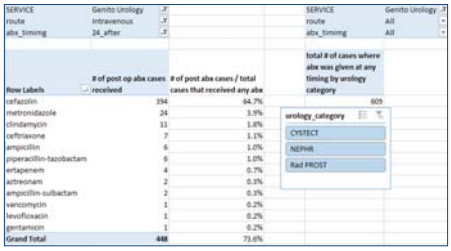
How to apply new categorization onto surgical population for ongoing monitoring?

- Develop report using Infection Control's database
- SQL logic
  - Limits population to only those with ICD10 codes of interest
  - Assigns category based on ICD10 codes and their sequence
- Final report is filterable by: primary surgeon, primary surgeon's service and month of surgery date

Project Evaluation & Impact

We were able to establish a consistent way to identify Urology's surgical patients by using an ICD10 codes set developed from CPT procedure codes. This mapping was used to build the report consisting of Urology's targeted surgical patient population and their post-operative antibiotic usage. This report compliments the Department of Urology's quality improvements efforts by providing a method for monitoring outcome.

The percentage of cases receiving post-operative IV antibiotic is 8.1% for CY2018, compared to 73.6% for May 2016-April 2017.



SERVICE	Genito Urology
route	Intravenous
abx_timing	24_after

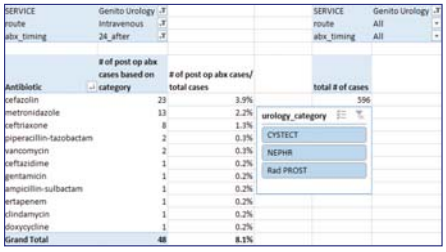
Row Labels	# of post op abx cases received	# of post abx cases / total cases that received any abx
cefazolin	394	64.7%
metronidazole	24	3.9%
clindamycin	11	1.8%
ceftriaxone	7	1.1%
ampicillin	6	1.0%
piperacillin-tazobactam	6	1.0%
ertapenem	4	0.7%
aztreonam	2	0.3%
ampicillin-sulbactam	2	0.3%
vancomycin	1	0.2%
levofloxacin	1	0.2%
gentamicin	1	0.2%
Grand Total	448	73.6%

SERVICE	Genito Urology
route	All
abx_timing	All

total # of cases where abx was given at any timing by urology category: 609

urology_category: CYSTECT, NEPHR, Rad PROST

Table 1. Urology procedures identified using crosswalk between May'16 – April'17; 73.6% of these cases gave post-op IV antibiotics.



SERVICE	Genito Urology
route	Intravenous
abx_timing	24_after

Antibiotic	# of post op abx cases based on category	# of post op abx cases/ total cases
cefazolin	23	3.9%
metronidazole	13	2.2%
ceftriaxone	8	1.3%
piperacillin-tazobactam	2	0.3%
vancomycin	2	0.3%
ceftazidime	1	0.2%
gentamicin	1	0.2%
ampicillin-sulbactam	1	0.2%
ertapenem	1	0.2%
clindamycin	1	0.2%
doxycycline	1	0.2%
Grand Total	48	8.1%

SERVICE	Genito Urology
route	All
abx_timing	All

total # of cases: 596

urology_category: CYSTECT, NEPHR, Rad PROST

Table 2. Urology procedures identified using crosswalk for CY2018; 8.1% of these cases gave post-op IV antibiotics.

Next Steps, Dissemination & Lessons Learned

Next Steps:

- Additional data points can be added relating to other improvement work i.e. surgical site infection, *C. difficile* infection, length of stay and antibiotic choice.

Dissemination:

- Quarterly reports are sent to Department of Urology as they continue their improvement work.
- This process can be adapted by other surgical categories if they are not well represented in NSQIP and/or NHSN.

Lessons Learned:

- Meaningful quality improvement initiative require collaboration across various disciplines.
- Successful improvement efforts and ongoing monitoring must be supported by accurate data.

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