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Pain Management Education Quality Improvement Project

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Pain Management Education Quality Improvement Paper

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Section I: Abstract

Problem: Thirty percent of patients who have ambulatory surgery describe their pain as moderate to severe on postoperative phone calls in this Northern California Hospital. Patients have expressed dissatisfaction on the topic of subsequent pain on the Outpatient and Ambulatory Surgery-Consumer Assessment of Healthcare Providers and Systems surveys. Patients receive pain management education after recovery via oral and written format, but the content is not standardized. The aim of this project is to decrease the pain experienced by patients from 30% to less than 25% with a secondary goal to increase patient satisfaction with pain education from 10th % to over 20% on OAS-CAHPS.

Context: The recovery room has over fifty patient care bays. An average of 25 outpatient surgeries are performed a day. The vast majority of surgeries performed are same day discharge with an average recovery time of ninety minutes. Staff members deliver discharge instructions written by the surgeon which includes pain management. There is variability in content and delivery of pain management education. Unit stakeholders support an educational quality improvement project to address the patient's needs for better pain control and satisfaction with their instructions.

Interventions: The American College of Surgeons *Safe and Effective Pain Control After Surgery* brochure was used to manage the content and delivery of educational material patients received to assess their pain and treat it at home. The brochure meets the Joint Commission requirements of 2018 related to pain education upon discharge (Joint Commission,2017). Inclusion criteria for the intervention group were adult English-speaking patients having scheduled elective surgery with exclusion of eye, ear/nose/throat surgery, add-on cases, and dementia. Staff engagement and buy-

in was established with huddles sharing OAS-CAHPS scores and patient postoperative call verbatims. The brochure was presented in the preoperative period for patient to read, and it was reviewed in greater detail in the recovery phase before discharge. A pain score education flyer was added to help patients describe their pain to the nurse on the postoperative call.

Measures: Process measures included, increasing the amount of postoperative calls performed, auditing of nursing staff educating with the brochure, and auditing of documentation in electronic medical record. The unit informaticist pulled data from the electronic medical record to support audit accuracy. The two outcome measures included pain statements from the 24- hour postoperative phone calls and the OAS-CAHPS score on the question of subsequent pain delivered by the patient care experience coordinator.

Results: The outcome measure results as of June 11,2020 show that although the quantity of patients that complained of moderate to severe pain went down from 30% to 27%. The change was not statistically significant. At the time of this analysis, the OAS-CAHPS score regarding subsequent pain education showed improvement from 10% to 49% for March. Preliminary results for April sit at 46% and May at 99%.

Conclusion: There were extenuating circumstances that were in effect at the roll-out of this project. Covid-19 became a global pandemic. The volume of cases went down significantly from the average 25 cases a day to less than 10 a day. Workflows and priorities changed within the unit with a focus on infection control and safety. Based on the results of this project, the pain management educational brochure will be part of every patient's discharge instruction packet pending funding approval. Studies have found that the more education the patient receives about their pain management at home the better they do. They have less complications, report less postoperative pain, and have a better surgical care experience (Sawhney,Wilson,&McGillion,2017).

Section II: Introduction

There were approximately 48.3 million procedures performed in 2010 in ambulatory surgery centers and hospitals across the United States, according to the National Health Statistics Report (Hall, Schwartzman, Zhang, & Liu, 2017). Studies on pain after surgery found an estimated 60% to 70% of patients experience unrelieved moderate to severe pain in the first 24 hours after surgery (Sawhney, Watt-Watson, & McGillion, 2017). Since patients are discharged on the same day of surgery, the burden is on the patient to be able to manage their pain at home in order to be mobile and thereby prevent poor surgical outcomes. The Joint Commission on Accreditation of Healthcare Organizations (JACHO, 2017) supports the need for improved pain education on patient discharge with a mandate passed in January of 2018, which states that hospitals must provide patient and family education regarding pain management, side effects of pain medication, safe use of pain medication, and activities that may improve or worsen pain at home and how to treat these issues. The hospital staff's challenge is to provide adequate pain management education to their patients during their short hospital stay.

Adequate pain management after surgery is important, since it allows for increased patient mobility and improves patient satisfaction with their surgical experience (O'Donnell, 2015). Mobility decreases the development of complications, such as deep vein thrombosis and atelectasis. Adequate pain control decreases readmissions and length of stay (O'Donnell, 2015), which directly aligns with the institution's priorities of providing high quality care at an affordable cost. The Guidelines on the Management of Postoperative Pain (Chou et al., 2016) conclude the best time to teach postoperative pain control strategies is in the preoperative period and then revisited throughout the patient's stay.

Problem Description

The purpose of this hospital-based, post-anesthesia care unit in Northern California is to provide a quality, compassionate surgical experience to the members served. The recovery room nurse cares for the patient from the critical phase of recovery, which includes airway maintenance and frequent vital sign monitoring, to the subacute phase of symptom control, such as the prevention of postoperative pain, nausea, and vomiting. Once recovered and symptoms are managed, the recovery room nurse educates the patient using discharge instructions given by the physician in written format related to pain management, incisional care, activity, and diet, as well as follow-up appointments. Discharge instructions do not routinely cover how to assess for pain, the levels of pain, non-pharmacologic pain treatment options, or how to take the different types of pain medications at home. The lack of standardization of pain education presents a quality improvement opportunity to address the postoperative patient's need for better instruction regarding pain management at home. Controlling pain will increase patient comfort and prevent postoperative complications at home.

There are three primary ways patients give feedback regarding their surgical experience in this facility. The first is the routine postoperative follow-up calls from an assigned nurse on the unit. The calls are scripted in the electronic medical record. Standardized questions include asking about pain, bleeding, and the status of their surgical site. The second is through the quarterly OAS-CAHPS (Outpatient and Ambulatory Surgery – Consumer Assessment of Healthcare Providers and Systems) surveys, where patients rate their experience based on particular questions about their care. The third is inpatient postoperative visits from management on daily rounds. Input from patients is evaluated and shared with staff in huddles to identify opportunities to improve the quality of care provided in the unit.

Data were collected from close to 400 postoperative phone calls in the months of December 2019 and January of 2020 using the electronic medical record. Analysis of these baseline data presented the following trends: 30% to 36% of outpatient adult surgical patients reported a pain score of four or higher on a scale of 0 to 10, with 10 being the worst pain possible. The aim of this pain education quality improvement project is to bring the number of patients who experience moderate to severe pain from 30% to below 25% by July 2020.

Some patients stated they did not fully understand their discharge instructions, and others felt their discharge process felt rushed. Based on these data, it appears patients perceive they are not receiving the tools they need to manage their pain at home. Additionally, OAS-CAHPS scores for information regarding subsequent pain as of January 2020 are at the 10th percentile, showing a downward trend from 14% the year before. Comparing these numbers with a regional benchmark of 90% illustrates a clear need for better discharge teaching regarding pain management.

Available Knowledge

PICOT Question

The PICOT question for this project is, in the adult same day surgical patient (P) will the provision of a standardized pain medication education brochure (I), compared to standard of care (C), lead to better self-reports of moderate to severe pain experience at home from 30% to less than 25% (O) by July of 2020 (T).

Literature Review

CINAHL and Fusion databases were used for a search of *pain management* and *pain education after surgery*, which led to approximately 164,000 findings filtered for language (English) and timeframe (less than five years). Subject was further filtered for adult population

and peer-reviewed studies, with 19,000 findings. Filtering down to the specific setting of same day surgery in the United States led to the final 154 studies. The most significant are synthesized here. For further information refer to Appendix A Evaluation Table.

Sawhney et al. (2017) performed a randomized control study on patients scheduled for ambulatory inguinal hernia repair. Eighty-two patients were randomized into the intervention group or the usual care group. Usual care consisted of a preoperative visit with a registered nurse who provided information about what to expect in the surgical process from admission to discharge. Written and verbal information and a follow-up call 24 hours after surgery were standard practice. The intervention group received the usual care plus education in the form of a brochure. A nurse practitioner with pain specialty training went over the booklet with the patient. They also received two phone calls, one before surgery and one after surgery. Results at Day 2 found the intervention group reported lower pain scores on movement and rest compared to the control group. Sawhney et al. suggested, high intensity education in the intervention group led to better pain management and improved function after surgery.

Cavallaro et al. (2018) performed a quasi-experimental cohort study on colectomies in an institution that follows the Enhanced Recovery After Surgery (ERAS) protocol, which involves minimizing opiates for pain control, early ambulation, and early feeding. The researchers reviewed retrospectively all colectomy patients who received a preoperative scripted phone call by the nurse practitioner versus all the patients who had not received the educational call. One-hundred ninety patients received the call providing standardized scripted education. Patients who received this call stayed in the hospital a shorter amount of time and had less complications than the standard ERAS patients, which may translate into significant cost savings to the hospital.

In a 12-month, evidence-based project of 99 patients, O'Donnell (2015) reported that those who received standardized, one-on-one pain management education were able to report medication side effects and used non-pharmacological methods to reduce their pain. The control group received non-standardized education from several providers during their stay. The intervention group received standardized education that included medication side effects, how to take their prescriptions, non-pharmacological options, and when to report unmanaged pain. The comparison group had general postoperative education from multiple healthcare providers. The results suggested that preoperative, consistent education improves patient's knowledge regarding pain management and can improve outcomes by preventing complications.

In a cross-sectional prospective study, 9,082 patients having major surgery received 15,394 pain assessments between 2008 and 2013 (VanBoekel et al., 2017). The patients received all pain assessments within the first three days after surgery. One out of 10 patients reported their pain experience as *unacceptable*, yet gave their pain a low score on the numeric pain scale, where a low score equals mild pain. One out of five patients reported a high score in the numeric scale, meaning severe pain, but stated their pain as *acceptable* to them, and they were able to perform activities of daily living. All patients received pain management education as a standard of care preoperatively by an anesthesiologist orally and in written form as a leaflet. What this study showed is that pain is multifactorial. It cannot be assessed by a number alone, such as the numeric pain scale. The patient's ability to function and whether they feel their pain is acceptable needs to be factored in to evaluate treatment options.

Lemay, Lewis, Singh, and Franklin (2017) reviewed the receipt of preoperative patient education regarding pain in a national prospective cohort evaluating postoperative pain, as well as function, in 1,609 total joint arthroplasty surgical patients between 2013 and 2014. Two weeks

after their surgery, the patients were asked about their pain management education, with 33% of patients stating they did not receive information before surgery and 11% stating they did not find the information they received helpful. Patients who received education had less pain, used less opiates, and had better physical functioning than those who did not receive education.

In summary, current research suggests that high intensity education in the intervention group led to better pain management and improved function after surgery, shorter hospital length of stay, and less complications. Improvement in patient's knowledge regarding pain management can improve outcomes by preventing complications, increasing the patient's ability to function, and allowing them to use non-pharmacologic treatment options to control pain. Those who received education had less pain, used less opiates, and had better physical functioning than those who did not receive education.

Rationale

The theory chosen for this quality improvement project is the middle-range Kolcaba's (2003) theory of comfort. The focus of this theory is on three aspects of comfort: relief, ease, and transcendence (Kolcaba, 2003). Kolcaba's theory lends itself for use in the perioperative setting in the following ways. Pain medication administration provides relief comfort to the patient. Controlling pain to a level that is considered adequate by the patient ensures ease comfort. Finally, transcendence comfort occurs when the patient has the ability to manage the pain and carry out activities that lead to recovery. In this theory, there exists a partnership between the nurse and the patient to define a goal of comfort. The nurse assists in assessment and planning of interventions to meet the patient's comfort goal. Educating the patient regarding pain management empowers the patient to assess, treat, and manage their pain to a level that is acceptable to them, where they can overcome pain as a barrier to maintaining function after

surgery. The use of this theory will guide this project by emphasizing the focus of care is on the patient's goals for their pain management in order to achieve relief, ease, and transcendence from their surgical pain.

Specific Aims

The primary aim of this project is to decrease the number of patients self-reporting, through follow-up calls, moderate to severe pain, defined as a level 4 to a level 10 on the numeric pain scale, from 30% to less than 25%, by standardizing pain management education with the use of the American College of Surgeons Safe Pain Management Brochure (see Appendix B). A secondary aim, through the standardization of discharge instructions, will be to note an improvement in the OAS-CAHPS score question specific to receiving pain instructions, which currently sits at the 10th percentile. The goal is to reach over 20th percentile, which is a move toward the benchmark of 90th percentile in comparison with the Northern California region.

Section III: Methods

Context

The recovery room is divided into three distinct areas, with 24 preoperative bays, six discharge zone bays, and 26 postoperative bays. Staff are competent to provide the three levels of care required in each area. The unit is run by anesthesia physicians, who check in and assesses all the patients coming in for surgery. Anesthesia providers write preoperative and postoperative order sets, which include pain interventions while in recovery. The surgeon provider writes discharge pain orders, as well as home pain management instructions. Discharge occurs from two areas in the unit, the postoperative bay the patient recovered in or the discharge zone after criteria is met. All discharges occur based on a recovery score and by an order set from anesthesia.

The majority of surgeries performed are same day discharge elective surgeries, which include general surgery, eye surgery, orthopedics, plastics, vascular, and gynecology. The current metrics monitored are first case start time and operating room efficiency, surgical site infection scores, and adherence to ERAS protocol to decrease hospital length of stay and improve patient outcomes by minimizing the use of opiates to treat postsurgical pain.

Staff in the recovery room are experienced clinicians, with the average experience in this specialty of 10 years or more. The unit works well together, with informal leaders functioning as *champions* of change. They bring information to the rest of the group during staff huddles and monthly meetings. Leaders in the department are engaged in the team's success and support the staff in leading quality and process improvement projects. Physician counterparts, such as surgeons and anesthesiologists, are members of interdisciplinary safety and quality committees and participate in the combined efforts to provide education, guidance, and support to staff

members in the department. All these characteristics lend themselves as strengths of the unit towards improvement and change.

There are several weaknesses within the recovery room arena. The most challenging is the short amount of time allotted to the provision of excellent care, with an average length of stay of 90 minutes. Patient recovery, readiness to learn, and discharge can all occur within 45 to 90 minutes post procedure. The opportunity lies on using this amount of time to expertly teach the patient what they need to know to care for themselves at home. A threat to the success of this quality improvement project would be the *not enough time* perception of staff and *how can I learn all of this* from patients. The intervention must be succinct enough to provide the nurse with a tool to relay important material in a short amount of time and not overburden the patient with copious instructions on the day of surgery.

Improving the quality of pain education on discharge can be a good return on investment. It has a potential for cost savings due to possible prevention of return visits to the emergency department or doctor's office due to inadequate pain control at home. Investing just a few more minutes during the discharge teaching to ensure patients understand how to assess and treat their pain at home can also improve patient satisfaction scores, which are a means to evaluate the care a hospital provides.

Interventions

The American College of Surgeons Safe and Effective Pain Control After Surgery brochure was used as a means to standardize the information patients receive about assessing pain, relating pain to activity, pharmacological and non-pharmacological pain modalities, and how to safely manage pain at home (see Appendix B). Permission was received from the director of anesthesia and chief of surgery to apply this intervention as a quality improvement project.

The brochure was presented and approved by the Patient Family Advisory Council. It was important to get the voice of the patient regarding viability of the project.

The existing discharge committee members supported this project. Team members include the unit director, unit anesthesia physician in charge, unit manager, assistant nurse manager, three champion staff nurses, the unit quality specialist, unit informatics specialist, and the care experience director.

The current patient pain scores, OAS-CAHPS scores related to pain, and the brochure were presented during staff huddles and monthly staff meetings. Team meetings occurred weekly while the project rolled out, bi-weekly thereafter to assess PDSA (plan-do-study-act) cycles, and monthly after process is hardwired into standard of care for feedback and concerns.

Project leader and champions provided a script to use to open the pain conversation in the preop phase, before any sedatives are given to the patient, in order to promote information retention. The patient charts were prefilled with the brochure and a pain score education flyer the night before the scheduled surgery. Excluded cases included pediatrics, non-English speaking, inpatients, eye surgery, gastrointestinal scope procedures, gynecological Botox and other injection therapy, add-on cases, and patients with cognitive impairment. After the patient reviewed the brochure before surgery, preop staff placed the brochure back in the chart and informed the patient the brochure will be reviewed again after surgery in more detail. The recovery nurse went over the brochure with the patient once the patient met criteria for discharge and was ready to learn. The patient was reminded this brochure is theirs as a reference to manage their pain at home, and they will receive a follow-up phone call 24 hours after surgery to see how they are managing at home. The postop nurse inserted the brochure and pain score flyer into the discharge folder and gave it to the patient. Documentation in the electronic medical record

included the use of the brochure for discharge teaching with the smart phrase created by the discharge committee for ease of use.

Study of Intervention Measurement Strategy

The impact of the intervention was monitored via staff and patient feedback regarding the brochure's ease of use, clarity, and perception of benefit. The outcome measure or percent of patients who report their pain as moderate to severe was assessed taking into account any and all other pain management initiatives in use within the recovery room arena by surgeons and anesthetists as part of the multimodal analgesia regimen required from the ERAS protocol. PDSA cycles for changes to test included:

PDSA 1: Presenting data in staff huddles regarding patients' experience of pain at home, presenting standardization of pain education per JACHO mandates and a smart phrase to document intervention. Staff recommended a visual reminder of intervention on chart.

PDSA-2: Changing the location where pain education occurs, which is currently in the recovery room after surgery, and instead adding the initiating conversation in the preoperative phase where no sedation has been given. This is a new workflow for preop staff. Support was provided to the staff in this new process. A *cheat sheet* regarding the workflow served as a visual reminder and was placed in front of each patient's chart (see Appendix c). Staff recommend setting expectations as to what's most important to go over on the brochure for patients who did not want the whole brochure read to them.

PDSA-3: Two pages from the six-page brochure were considered *the most important* by staff and the patient liaison committee to go over thoroughly by the staff. Champions were instrumental in daily workflow audits and provision of in-the-moment support on how to use the brochure, as well as proper education documentation of its use. A numeric

pain scale leaflet was added to the education and sent home with the patient to improve pain scale reporting accuracy.

Measures

The process measures to be followed for the success of the project included staff performing postoperative follow-up phone calls for > 80% of total surgeries, as compared to the current 60%. These calls are sometimes not done due to the assigned nurse being pulled into care to manage high patient volume. The manager set time aside for the assigned nurse to complete calls or reassigned to another available nurse. Performing these calls is valuable, since this is when the patient answers questions regarding their pain score and pain management at home. The nurse performing the calls can reiterate information regarding pain treatment, if necessary. Daily audits of phone call completeness were performed (see Appendix D). A formal monthly report by the unit informatics specialist was provided for accuracy of audits.

Two other process measures are the percent of included patients who received the brochure and the percent of nurses who documented the use of the brochure in Health Connect. Both of these were measured on daily in-the-moment audits of the nurse performing the teaching, followed by an electronic medical record audit of teaching documentation with the smart phrase created for ease of use. The process measures were selected to show the nurse went over the pain brochure verbally with the patient while in recovery. The nurse provided the patient with the brochure as a written pain medication teaching tool. This is all documented in the electronic medical record to allow for data retrieval regarding the intervention. The success of the project depended on the buy-in from the staff to place importance on educating their patients about pain utilizing a standardized format and documentation of pain education in the record.

Balancing measures included observing for increased length of stay as a consequence of longer time required to go over brochure during discharge. The goal was that staff will require less time with more practice using the brochure. Frequent staff feedback opportunities were provided to maintain staff engagement in the project and to prevent potential dissatisfaction due to repetitive nature of teaching with a standardized tool. Patient feedback was collected in order to assess for perception of usefulness and adding to their care experience.

Ethical Considerations

Noting the ethical considerations related to working with human subjects, the project was submitted to the Institutional Research Determination official. Based on the project details, it was not required to go through the Institutional Review Board, since it was deemed to be not research. There are no conflicts of interest to present. School permission was obtained for project as non-research (see Appendix E and Appendix F). Patient confidentially was maintained by removing all patient identifiers from the data collection tables.

This educational project aligns with two of the seven ethical principles by the American Nurses Association (2015). Providing pain management educations allows for patient autonomy, as it gives patients a choice on the use of pharmacologic and/or non-pharmacologic options to control their pain based on their pain experience. Beneficence is met by the provision of standardized pain management education for the patient's wellness and comfort, while avoiding complications at home.

Section IV: Results

Of the 97 patients who were included in this intervention group, 12 were called post-operatively with no answer. This number reduced the intervention group to 85. Of these patients, 56 received the brochure, as evidenced by direct visual audits and documented use in the electronic medical record.

The total follow-up phone calls went from 60% to 98% during the months of this intervention, March 23 – May 5, 2020. The brochure use as a standardized patient pain education intervention was 74%, which is below the goal of 90%. Documentation of the intervention in the electronic medical record was 71%, below the 90% goal. The significance of not meeting the goals on these process measures will be further addressed.

The outcome measure of decreasing the percentage of patients reporting moderate to severe pain after surgery from 30% to less than 25% was unattained at 27% by June 10, 2020. Although there was a drop in the number of patients reporting this level of pain, the change was not found to be statistically significant. The two-tailed *P* value was 0.7223. A 95% confidence interval was calculated to be -0.70 to 1.01.

The second outcome measure of OAS-CAHPS score on the question of discharge instructions regarding subsequent pain sat at 10^{th} percentile (n=60) with a benchmark of 90^{th} percentile in January 2020. The goal to reach over 20^{th} percentile was attained with numbers reaching 49^{th} percentile(n=37) in March, 46^{th} percentile(n=18) in April, and 99^{th} percentile(n=1) in May 2020. (See Appendix N for current data).

Section V: Discussion

Summary

The aim of this project was to decrease the percentage of patients who complained of moderate to severe pain at home from 30% to less than 25% by July 2020. The secondary outcome was that patients would be more satisfied with their receipt of aftercare pain instructions by monitoring the OAS-CAHPS question related to pain. The goal was to increase from the reported 10% to over 20%. At the time of this report, the quarterly data presents an increase from 10% to 49% by March 2020 with preliminary monthly results for April at 46% and May at 99%. Please note that the volume of patients surveyed dropped significantly with January having a number of 60, March 37, April 18, and May of one patient surveyed.

There were several challenges within the timeframe of this quality improvement project. The first was Covid-19. Covid-19 changed the workflow in extreme ways. All elective procedures, such as orthopedics and hernias, were canceled. The operating arena was open to urgent and emergent cases only, changing the patient population. Surgical volume dropped from an average of 25 cases a day to less than 10 cases per day. Due to this drastic decrease in volume, preop and recovery were combined into one work space. Patients were prepared for surgery and came back to recover in the same room as where they were prepped, which is outside the unit norm. The staff who normally preop now also recovered the patient in a different work space than they were accustomed to working, requiring a period of adjustment.

Second, there were competing priorities during this period. The team became very active in presenting an educational tool for staff and patients regarding effective hand hygiene. Several interventions were created and implemented, such as showing a two-minute video to nurses and

patients on hand hygiene, inserting a handout on washing hands in the patient discharge folder, and putting a competency together for staff to be signed off on proper hand hygiene.

Third, the recovery room was being prepped to become an intensive care unit (ICU) overflow in the event a surge of Covid-19 patients overwhelmed the ICU. This was very stressful to the staff, since many have not practiced in that specialty for years. An intense educational program using hands-on training on frequently used equipment in the ICU, ventilator lectures, medication resources, and ICU care modules were provided for staff during this time.

The results of this quality improvement program are not surprising due to the multiple stressors occurring within its timeframe. There were no interdisciplinary team meetings due to the cancelation of all group meetings by the facility. Individual face-to-face sessions occurred with the stakeholders, frequent emails, and one-on-one meetings with champions to share important information regarding the project's progress. This is a lesson learned on the importance of having the voice of all the stakeholders to successfully implement a change within a microsystem. Although the buy-in from staff and stakeholders was present throughout this project, the momentum was stinted by the impact of Covid-19 on the unit norms and staff morale.

Conclusions

The unit has been adjusting to the *new normal*, and elective surgeries are now resuming. Several of the unit nurses are requesting the pain brochure, stating the patients appreciated the education. Staff commented that the brochure reminded them of key topics to discuss with their patients, such as non-pharmacologic interventions. Others stated they liked the brochure so much that they found themselves incorporating what they learned from the brochure into their daily

interactions with patients, even after this project timeline was complete. Having positive comments from staff and patients is encouraging for the sustainability of this intervention.

The next steps for the discharge committee is to reignite the drive to educate patients on pain management at home, since this is the number one subject discussed on the follow-up postoperative phone calls. The two options currently being explored to provide a standardized pain education management brochure are to create the unit's own pain education brochure or to apply for a grant to fund the purchase of the American College of Surgeons brochure for daily use for all surgical patients.

The full impact of the educational quality improvement project remains to be seen as the next data points become available from the OAS-CAHPS scores. Pain management is complex and multifactorial. Future recommendations to assess the benefit preoperative pain education has on postoperative pain experience include face-to-face interdisciplinary team meetings, a standardized written tool to provide information about pain that is easy to use, maintenance of momentum during the intervention by minimizing competing priorities within the microsystem, dedicated staff members to champion the project, and clear buy-in from staff and stakeholders.

Results from this quality improvement educational project seem to indicate that both patients and staff found pain management education to be useful and beneficial. The project was limited due to extenuating circumstances of a global pandemic. Future quality improvement projects on the topic of pain management at home is important. It is a topic little explored yet it is pertinent to anyone having an invasive procedure within or outside the operating room. There have been many changes in the management and prescribing of opiates within the healthcare system which nurses in the recovery room are very familiar with. It is imperative that nurses advocate for and empower their patients by educating them on important non-opiate and non-

pharmacologic treatments to manage their pain at home in order to prevent complications, improve comfort, and increase the patient's satisfaction with their surgical experience.

Section VI: References

American Nurses Association. (2015). *Code of ethics for nurses.* Retrieved from https://www.nursingworld.org/coe-view-only

Cavallaro, P. M., Milch, H., Savitt, L., Hodin, R. A., Rattner, D. W., Berger, D. L., … Bordeianou, L. G. (2018). Addition of a scripted pre-operative patient education module to an existing ERAS pathway further reduces length of stay. *American Journal of Surgery*, *216*(4), 652-657. https://doi.org/10.1016/j.amjsurg.2018.07.016

Chou, R., Gordon, D. B., DeLeon-Casasola, O. A., Rosenberg, J. M., Bickler, S., Brennan, T., … Wu, C. L. (2016). Management of postoperative pain: A clinical practice guideline from the American Pain Society, the American Society of Regional Anesthesia and Pain Medicine, and the American Society of Anesthesiologists' Committee on Regional Anesthesia, executive committee, and administrative council. *Journal of Pain, 17*, 131-157. https://doi.org/10.1016/j.jpain.2015.12.008

Hall, M. J., Schwartzman, A., Zhang, J., & Liu, X. (2017, February 28). Ambulatory surgery data from hospitals and ambulatory surgery centers: United States, 2010. *National Health Statistics Report, 102.* https://www.cdc.gov/nchs/data/nhsr/nhsr102.pdf

Joint Commission on Accreditation of Healthcare Organizations. (2017). Joint commission enhances pain assessment and management requirements for accredited hospitals. *Perspectives, 37*(7), 2-4. https://www.jointcommission.org

Kolcaba, K. (2003). *Comfort theory and practice. A vision for holistic health care and research*. Springer Publishing.

Lemay, C. A., Lewis, C. G., Singh, J. A., & Franklin, P. D. (2017). Receipt of pain management information preoperatively is associated with improved functional gain after elective total joint arthroplasty. *Journal of Arthroplasty*, *32*(6), 1763-1768. https://doi.org/10.1016/j.arth.2017.01.028

O'Donnell, K. F. (2015). Preoperative pain management education: A quality improvement project. *Journal of Perianesthesia Nursing*, *30*(3), 221-227. https://doi.org/10.1016/j.jopan.2015.01.013

Sawhney, M., Watt-Watson, J., & McGillion, M. (2017). A pain education intervention for patients undergoing ambulatory inguinal hernia repair: A randomized control trial. *Canadian Journal of Nursing Research*, *49*(3), 108-117. https://doi.org/10.1177/0844562117714704

Van Boekel, R. L., Vissers, K. C., Van der Sande, R., Bronkhorst, E., Lerou, J. G., & Steegers, M. A. (2017). Moving beyond pain scores: Multidimensional pain assessment is essential for adequate pain management after surgery. *Plos One, 12*(5). https://doi.org/10.1371/journal.pone.0177345

Section VII: Appendices

Appendix A. Evaluation Table

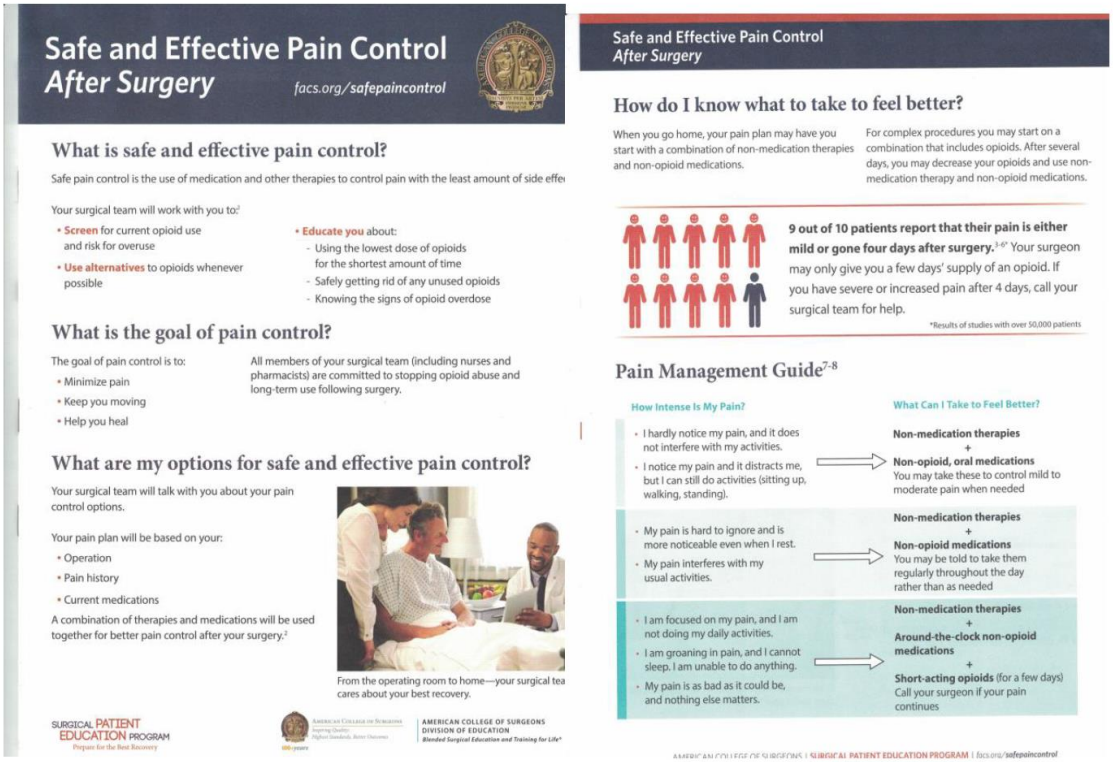
PICOT Question

In the adult same day surgery patient (P) will the provision of a standardized pain medication educational brochure (I) lead to better self-reports of moderate to severe pain experience at home from 30% to less than 25% (O) by July of 2020 (T).

Study	Design	Sample	Outcome/Feasibility	Evidence JHEBP Rating
Van Boekel et al. (2017).	Cross-sectional prospective study	9,082 patients and 15,394 assessments of pain	Pain management needs to be guided by other factors not just the NRS score. The multidimensional pain experience needs to be explored. 1 in 10 patients state pain is unacceptable, yet they report a low number on NRS, while 1 in 5 patients report a high NRS and state that level is acceptable to them. Feasibility. Findings elucidate the fact that pain is a complex problem. Pain is subjective. Perception of pain is related to patient expectations and tolerance.	L III A
O'Donnell (2018)	Quasi-experimental	99 intervention patients received pain education and comparison group received general education from multiple healthcare workers	Intervention patients reported more medication side effects and were encouraged to use non-pharmacological methods to decrease pain than the comparison patients. Intervention education may increase patient's knowledge in pain management and be able to prevent negative outcomes. Feasibility. This study shows that a better educated patient will seek care earlier for medication side effects and will be exposed to using treatments other than medications, such as ice and elevation over the control group. This has been shown to decrease complications at home.	L II A
Sawhney et al. (2017)	Prospective blinded RCT	82 preoperative patients	Those who received education reported lower pain intensity at movement and rest ($p<0.001$). Education before surgery was shown to have a strong relationship to pain scores. Feasibility. The sample size was small for an RCT. Although this was in hernia patient population, it can be generalized to other types of surgeries	L I B

			who have high pain risk, such as orthopedics.	
Cavallaro et al. (2018)	Quasi-experimental cohort study	505 190 in ERAS + education 315 ERAS only	Compared to those who received usual care, patients who got a scripted educational phone call had a shorter length of stay (p = 0.005). Feasibility. This study had a good sample size. Reports seem to validate that education in the preoperative period will lead to better patient outcomes as measured by LOS. May be able to generalize results to orthopedic population, since they follow ERAS as well.	L II A
Lemay et al. (2017)	National prospective cohort study	1,609 total joint patients postoperative surveys asking patients if they received pain management education before surgery	44% of patients stated they had NOT received education or found information provided unhelpful. Lack of education was associated with poorer 6-month postop function. Feasibility. This study highlights the need for improvement in patient pain management education in order to set up patients for success at home. This study directly related to patient population in PICOT.	L III A

Appendix B. Patient Education Tool Brochure



Safe and Effective Pain Control *After Surgery*

facs.org/safepaincontrol

What is safe and effective pain control?

Safe pain control is the use of medication and other therapies to control pain with the least amount of side effe

Your surgical team will work with you to:[2]

- **Screen** for current opioid use and risk for overuse
- **Use alternatives** to opioids whenever possible
- **Educate you** about:
  - Using the lowest dose of opioids for the shortest amount of time
  - Safely getting rid of any unused opioids
  - Knowing the signs of opioid overdose

What is the goal of pain control?

The goal of pain control is to:

- Minimize pain
- Keep you moving
- Help you heal

All members of your surgical team (including nurses and pharmacists) are committed to stopping opioid abuse and long-term use following surgery.

What are my options for safe and effective pain control?

Your surgical team will talk with you about your pain control options.

Your pain plan will be based on your:

- Operation
- Pain history
- Current medications

A combination of therapies and medications will be used together for better pain control after your surgery.[2]

From the operating room to home—your surgical tea cares about your best recovery.

SURGICAL PATIENT EDUCATION PROGRAM
Prepare for the Best Recovery

AMERICAN COLLEGE OF SURGEONS
DIVISION OF EDUCATION
Blended Surgical Education and Training for Life®

Safe and Effective Pain Control *After Surgery*

How do I know what to take to feel better?

When you go home, your pain plan may have you start with a combination of non-medication therapies and non-opioid medications.

For complex procedures you may start on a combination that includes opioids. After several days, you may decrease your opioids and use non-medication therapy and non-opioid medications.

9 out of 10 patients report that their pain is either mild or gone four days after surgery.[3-6]* Your surgeon may only give you a few days' supply of an opioid. If you have severe or increased pain after 4 days, call your surgical team for help.

*Results of studies with over 50,000 patients

Pain Management Guide[7-8]

How Intense Is My Pain?	What Can I Take to Feel Better?
• I hardly notice my pain, and it does not interfere with my activities. • I notice my pain and it distracts me, but I can still do activities (sitting up, walking, standing).	**Non-medication therapies** + **Non-opioid, oral medications** You may take these to control mild to moderate pain when needed
• My pain is hard to ignore and is more noticeable even when I rest. • My pain interferes with my usual activities.	**Non-medication therapies** + **Non-opioid medications** You may be told to take them regularly throughout the day rather than as needed
• I am focused on my pain, and I am not doing my daily activities. • I am groaning in pain, and I cannot sleep. I am unable to do anything. • My pain is as bad as it could be, and nothing else matters.	**Non-medication therapies** + **Around-the-clock non-opioid medications** + **Short-acting opioids** (for a few days) Call your surgeon if your pain continues

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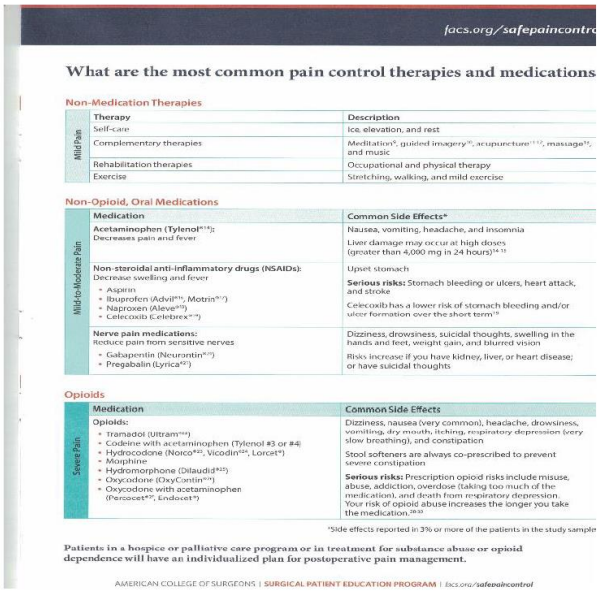

facs.org/safepaincontro

What are the most common pain control therapies and medications

Non-Medication Therapies

	Therapy	Description
Mild Pain	Self-care	Ice, elevation, and rest
	Complementary therapies	Meditation[9], guided imagery[10], acupuncture[11,12], massage[13], and music
	Rehabilitation therapies	Occupational and physical therapy
	Exercise	Stretching, walking, and mild exercise

Non-Opioid, Oral Medications

	Medication	Common Side Effects*
Mild-to-Moderate Pain	**Acetaminophen (Tylenol®[14]):** Decreases pain and fever	Nausea, vomiting, headache, and insomnia Liver damage may occur at high doses (greater than 4,000 mg in 24 hours)[14,15]
	Non-steroidal anti-inflammatory drugs (NSAIDs): Decrease swelling and fever • Aspirin • Ibuprofen (Advil®[16], Motrin®[17]) • Naproxen (Aleve®[18]) • Celecoxib (Celebrex®[19])	Upset stomach **Serious risks:** Stomach bleeding or ulcers, heart attack, and stroke Celecoxib has a lower risk of stomach bleeding and/or ulcer formation over the short term[19]
	Nerve pain medications: Reduce pain from sensitive nerves • Gabapentin (Neurontin®[20]) • Pregabalin (Lyrica®[21])	Dizziness, drowsiness, suicidal thoughts, swelling in the hands and feet, weight gain, and blurred vision Risks increase if you have kidney, liver, or heart disease; or have suicidal thoughts

Opioids

	Medication	Common Side Effects
Severe Pain	**Opioids:** • Tramadol (Ultram®[22]) • Codeine with acetaminophen (Tylenol #3 or #4) • Hydrocodone (Norco®[23], Vicodin®[24], Lorcet®) • Morphine • Hydromorphone (Dilaudid®[25]) • Oxycodone (OxyContin®[26]) • Oxycodone with acetaminophen (Percocet®[27], Endocet®)	Dizziness, nausea (very common), headache, drowsiness, vomiting, dry mouth, itching, respiratory depression (very slow breathing), and constipation Stool softeners are always co-prescribed to prevent severe constipation **Serious risks:** Prescription opioid risks include misuse, abuse, addiction, overdose (taking too much of the medication), and death from respiratory depression. Your risk of opioid abuse increases the longer you take the medication.[28-30]

*Side effects reported in 3% or more of the patients in the study sample

Patients in a hospice or palliative care program or in treatment for substance abuse or opioid dependence will have an individualized plan for postoperative pain management.

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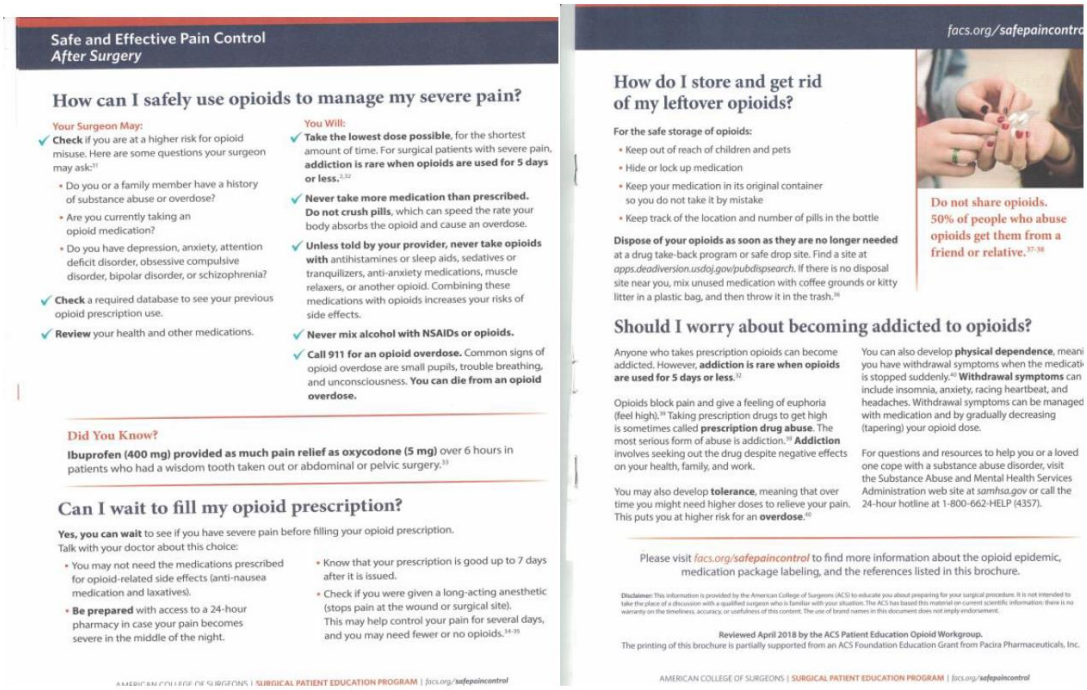

Safe and Effective Pain Control
After Surgery

How can I safely use opioids to manage my severe pain?

Your Surgeon May:

- ✓ **Check** if you are at a higher risk for opioid misuse. Here are some questions your surgeon may ask:[27]
  - Do you or a family member have a history of substance abuse or overdose?
  - Are you currently taking an opioid medication?
  - Do you have depression, anxiety, attention deficit disorder, obsessive compulsive disorder, bipolar disorder, or schizophrenia?
- ✓ **Check** a required database to see your previous opioid prescription use.
- ✓ **Review** your health and other medications.

You Will:

- ✓ **Take the lowest dose possible**, for the shortest amount of time. For surgical patients with severe pain, **addiction is rare when opioids are used for 5 days or less.**[2,32]
- ✓ **Never take more medication than prescribed. Do not crush pills**, which can speed the rate your body absorbs the opioid and cause an overdose.
- ✓ **Unless told by your provider, never take opioids with** antihistamines or sleep aids, sedatives or tranquilizers, anti-anxiety medications, muscle relaxers, or another opioid. Combining these medications with opioids increases your risks of side effects.
- ✓ **Never mix alcohol with NSAIDs or opioids.**
- ✓ **Call 911 for an opioid overdose.** Common signs of opioid overdose are small pupils, trouble breathing, and unconsciousness. **You can die from an opioid overdose.**

Did You Know?

Ibuprofen (400 mg) provided as much pain relief as oxycodone (5 mg) over 6 hours in patients who had a wisdom tooth taken out or abdominal or pelvic surgery.[33]

Can I wait to fill my opioid prescription?

Yes, you can wait to see if you have severe pain before filling your opioid prescription. Talk with your doctor about this choice:

- You may not need the medications prescribed for opioid-related side effects (anti-nausea medication and laxatives).
- **Be prepared** with access to a 24-hour pharmacy in case your pain becomes severe in the middle of the night.
- Know that your prescription is good up to 7 days after it is issued.
- Check if you were given a long-acting anesthetic (stops pain at the wound or surgical site). This may help control your pain for several days, and you may need fewer or no opioids.[34-35]

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How do I store and get rid of my leftover opioids?

For the safe storage of opioids:

- Keep out of reach of children and pets
- Hide or lock up medication
- Keep your medication in its original container so you do not take it by mistake
- Keep track of the location and number of pills in the bottle

Dispose of your opioids as soon as they are no longer needed at a drug take-back program or safe drop site. Find a site at *apps.deadiversion.usdoj.gov/pubdispsearch*. If there is no disposal site near you, mix unused medication with coffee grounds or kitty litter in a plastic bag, and then throw it in the trash.[36]

Do not share opioids. 50% of people who abuse opioids get them from a friend or relative.[37-38]

Should I worry about becoming addicted to opioids?

Anyone who takes prescription opioids can become addicted. However, **addiction is rare when opioids are used for 5 days or less.**[32]

Opioids block pain and give a feeling of euphoria (feel high).[39] Taking prescription drugs to get high is sometimes called **prescription drug abuse**. The most serious form of abuse is addiction.[39] **Addiction** involves seeking out the drug despite negative effects on your health, family, and work.

You may also develop **tolerance**, meaning that over time you might need higher doses to relieve your pain. This puts you at higher risk for an **overdose.**[40]

You can also develop **physical dependence**, meani you have withdrawal symptoms when the medicati is stopped suddenly.[40] **Withdrawal symptoms** can include insomnia, anxiety, racing heartbeat, and headaches. Withdrawal symptoms can be managed with medication and by gradually decreasing (tapering) your opioid dose.

For questions and resources to help you or a loved one cope with a substance abuse disorder, visit the Substance Abuse and Mental Health Services Administration web site at *samhsa.gov* or call the 24-hour hotline at 1-800-662-HELP (4357).

Please visit *facs.org/**safepaincontrol*** to find more information about the opioid epidemic, medication package labeling, and the references listed in this brochure.

Reviewed April 2018 by the ACS Patient Education Opioid Workgroup.
The printing of this brochure is partially supported from an ACS Foundation Education Grant from Pacira Pharmaceuticals, Inc.

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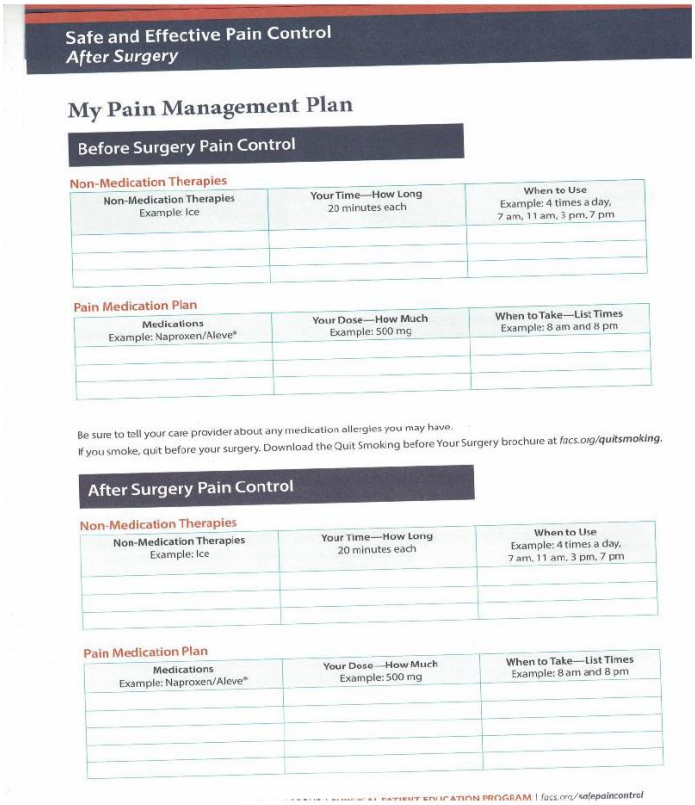

Safe and Effective Pain Control
After Surgery

My Pain Management Plan

Before Surgery Pain Control

Non-Medication Therapies

Non-Medication Therapies Example: Ice	Your Time—How Long 20 minutes each	When to Use Example: 4 times a day, 7 am, 11 am, 3 pm, 7 pm

Pain Medication Plan

Medications Example: Naproxen/Aleve®	Your Dose—How Much Example: 500 mg	When to Take—List Times Example: 8 am and 8 pm

Be sure to tell your care provider about any medication allergies you may have.
If you smoke, quit before your surgery. Download the Quit Smoking before Your Surgery brochure at *facs.org/**quitsmoking***.

After Surgery Pain Control

Non-Medication Therapies

Non-Medication Therapies Example: Ice	Your Time—How Long 20 minutes each	When to Use Example: 4 times a day, 7 am, 11 am, 3 pm, 7 pm

Pain Medication Plan

Medications Example: Naproxen/Aleve®	Your Dose—How Much Example: 500 mg	When to Take—List Times Example: 8 am and 8 pm

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Appendix C. Reference Sheet for Staff

PAIN MANAGEMENT PATIENT EDUCATION QI PROJECT

I have changed the population for this QI project to all outpatient procedures with exclusion to: Eye surgery, GI scopes, Pediatrics, Non-English- speaking patients, Dementia patients, In patients.

l. The pain education brochure is in your chart. Please present the brochure in the pre op at the time of pain assessment.
2. Emphasize that this is a reference for them to be able to manage their pain at home. Discharge nurse will go over it in more detail, but we wanted patient to see it before they had any sedation.
3. The most important pages to go over are pages 2, 3.
4. Place brochure back in chart for discharge nurse to go over.
5. Please document the use of the brochure in discharge note “pain controlled.”
6. THANK YOU for your assistance for the success of this project.
7. Please reach out to me with any feedback or ideas.

Appendix D. Data Collection Table

Date	Surgery	Post op call Y/N	Pain Y/N	Pain level 0-10	Acceptable ?	Treatment	Brochure/ documented

Appendix E. Research Determination Official

January 26, 2020

Subject: RDO KPNC 19 - 171
Title: Education of Postoperative Patients on Managing their Pain at Home

Dear Ms. Torres:

As a Research Determination Official (RDO) for the Kaiser Permanente Northern California region, I have reviewed the documents submitted for the above referenced project. The project does not meet the regulatory definition of research involving human subjects as noted here:

[X] Not Research

The activity does not meet the regulatory definition of research at 45 CFR 46.102(d):

Research means a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge.

[ ] Not Human Subject

The activity does not meet the regulatory definition of human subjects at 45 CFR 46.102(f):

Human subject means a living individual about whom an investigator conducting research obtains (1) data through intervention or interaction with the individual, or (2) identifiable private information.

Therefore, the project is not required to be reviewed by a KP Institutional Review Board (IRB). This determination is based on the information provided. If the scope or nature of the project changes in a manner that could impact this review, please resubmit for a new determination. Also, you are responsible for keeping a copy of this determination letter in your project files as it may be necessary to demonstrate that your project was properly reviewed.

Provide this approval letter to the Physician in Charge (PIC), your Area Manager, and Chief of Service, to determine whether additional approvals are needed.

Sincerely,

David C. Matesanz

Director
Research Compliance and IRB Administration
Financial Conflict of Interest Officer
Kaiser Permanente
NCAL Regional Compliance, Ethics, & Integrity Office
1800 Harrison st., 10th Floor, Oakland, CA 94612

Appendix F. Statement of Determination

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CNL Project: Statement of Non-Research Determination Form

Student Name: Adriana Torres

Title of Project: Patient Pain Management Education After Surgery a Quality Improvement Project

Brief Description of Project:

A) Aim Statement: To decrease patients' self-report of moderate to severe pain in the outpatient adult patient population from 30% to less than 20% by July of 2020 with the use of a standardized pain management teaching brochure and a pain scale educational leaflet.

B) Description of Intervention: Patients will receive a pain management educational brochure and a pain scale educational leaflet in the pre-operative area of the recovery room to review before surgery. The discharge nurse will review them more thoroughly in the post-operative care area and document their use in the electronic medical record. Three educational sessions required to introduce the project to all nursing staff and to familiarize them with the brochure, its purpose, and how to present it to the patient. Three designated champions to spread the information to staff who could not attend sessions and assist them with process in real time. Point to stress during these educational sessions is the importance of performing post-operative phone calls since this is one of the measurement tools of this project. Current performance of post-operative calls is 60%. By assigning a specific nurse to perform the calls, the hope is to achieve 100% compliance.

C) How will this intervention change practice? The type of pain medication education patients receive as standard of care is dependent upon the doctor's written discharge notes and the nurses' level of experience. Providing this pain management

5-17

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education tool will standardize the education the patient receives without relying on the above variables. The pain scale leaflet will allow them to assess their level of pain using this numeric tool. The hope is that staff will realize the importance of post-operative phone calls to answer patients' concerns and assist them with pain management at home.

D) Outcome measurements: Patient self-report of pain in post-operative phone calls from 30% to less than 20%.Follow the OAS-CAHPS scores on question re: information on subsequent pain from 14th percentile to the regional standard of 90% by July 2020.

To qualify as an Evidence-based Change in Practice Project, rather than a Research Project, the criteria outlined in federal guidelines will be used: (http://answers.hhs.gov/ohrp/categories/1569)

☒ This project meets the guidelines for an Evidence-based Change in Practice Project as outlined in the Project Checklist (attached). Student may proceed with implementation.

☐ This project involves research with human subjects and must be submitted for IRB approval before project activity can commence.

Comments:

EVIDENCE-BASED CHANGE OF PRACTICE PROJECT CHECKLIST *

Instructions: Answer YES or NO to each of the following statements:

Project Title:	**YES**	**NO**
The aim of the project is to improve the process or delivery of care with established/ accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.	**YES**	
The specific aim is to improve performance on a specific service or program and **is a part of usual care**. ALL participants will receive standard of care.	**YES**	
The project is **NOT** designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups, cross-sectional, case control). The project does **NOT** follow a protocol that overrides clinical decision-making.	**YES**	

5-17

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The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does **NOT** develop paradigms or untested methods or new untested standards.	**YES**	
The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does **NOT** seek to test an intervention that is beyond current science and experience.	**YES**	
The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP.	**YES**	
The project has **NO** funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.	**YES**	
The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., **not** a personal research project that is dependent upon the voluntary participation of colleagues, students and/ or patients.	**YES**	
If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: *"This project was undertaken as an Evidence-based change of practice project at X hospital or agency and as such was not formally supervised by the Institutional Review Board."*	**YES**	

ANSWER KEY: If the answer to **ALL** of these items is yes, the project can be considered an Evidence-based activity that does NOT meet the definition of research. **IRB review is not required. Keep a copy of this checklist in your files.** If the answer to ANY of these questions is **NO**, you must submit for IRB approval.

*Adapted with permission of Elizabeth L. Hohmann, MD, Director and Chair, Partners Human Research Committee, Partners Health System, Boston, MA.

STUDENT NAME (Please print):
Adriana Torres

Signature of Student: Adriana Torres **DATE** 4/5/2020

SUPERVISING FACULTY MEMBER NAME (Please print):

Signature of Supervising Faculty Member
DATE

5-17

Appendix G. Project Charter

Project Charter: Decreasing number of patients reporting the experience of moderate to severe pain at home after ambulatory surgery

Global Aim: To decrease the amount of pain post- operative patients experience at home after surgery.

Specific Aim: To decrease the percentage of adult ambulatory surgery patients reporting moderate to severe pain during postoperative follow up phone calls from 30% to 25% by July 2020 in Vallejo Recovery Room.

Background: Studies reviewing pain after surgery revealed that 60-70% of patients experience unrelieved moderate to severe pain in the first 24 hours after surgery (Sawhney, Watt-Watson, & McGillion, 2017). Adequate home pain management after surgery allows for increased patient mobility and overall satisfaction with their surgical experience (O'Donnell, 2015). It decreases the risk of developing deep vein thrombosis, atelectasis, readmissions, and decreases length of stay in the hospital (O'Donnell, 2015). Chou et al. (2016) on the Guidelines of the Management of Postoperative Pain states that the best time to teach postoperative pain control strategies begins in the preoperative period. The health care provider can assess the patient and formulate a plan based on their individual needs. The addition of a scripted pre-operative patient education module was found to shorten length of stay and decrease complications (Cavallaro et al., 2018). Improving post-operative pain management education provides a great quality improvement opportunity.

Sponsors:

Perioperative Nursing Director	
Perioperative MD Director	
PreOp/PACU Manager	

Goals: To decrease the percentage of adult ambulatory surgery patients reporting moderate to severe pain during postoperative follow up phone calls from 30% to 25% by July 2020 in Vallejo Recovery Room.

1. Improve nurses' knowledge about educating patients on pain management at home
2. Improve the patient care experience on discharge by providing tools they need to control pain at home
3. Improve knowledge and empower patients to feel confident to manage pain at home
4. Decrease reporting by patients of unmanageable pain at home

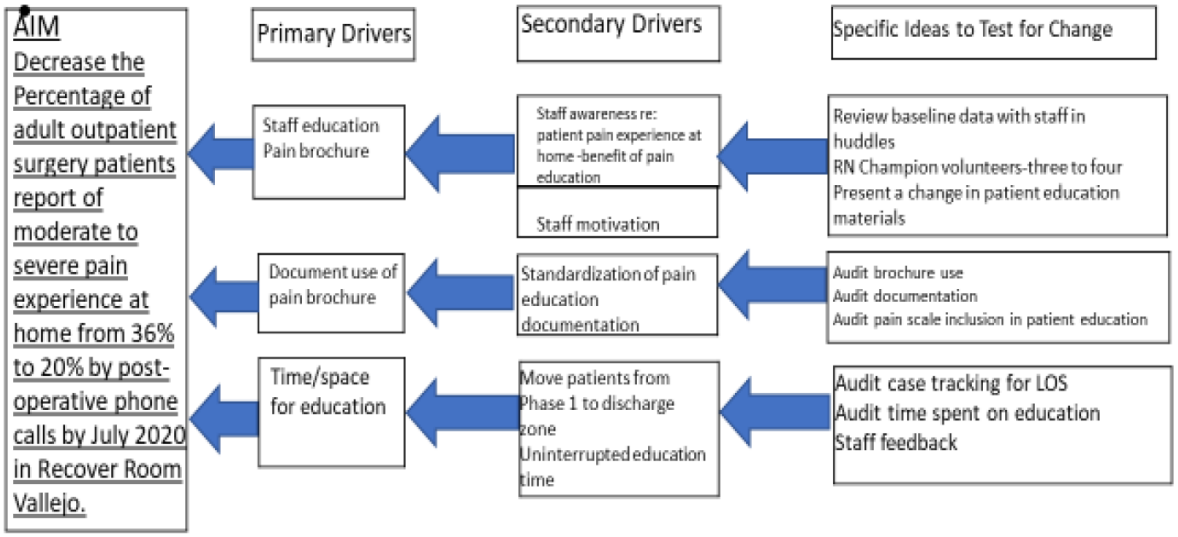
Measures:

Measure **Outcome**	**Data Source**	**Target %**
Decrease number of ambulatory surgery patients reporting moderate to severe pain at home	KPHC- postoperative phone calls documentation	25 from 30
Improvement of pain education percentile scores	OSA-CAHPS reports	20 from 10
Process		
Percent of nurses using standardized tool to educate on pain	KPHC- education documentation and visual audit	90
Percent of nurses documenting use of tool for education	KPHC – education tool use . phrase	90
Increase quantity of postoperative calls made to patients	KPHC- postoperative phone calls documentation	80 from 60
Balancing		
Increase length of stay affecting operating room flow	Day to Day Audit of workflow	**0**
Staff dissatisfaction due to repetitiveness	Weekly staff feedback audit	**0**

Team:

Md co Lead	
RN co Lead	
Staff RN champions	
Other champions: Care Experience Director	Quality Improvement Manager, Informatics

Driver Diagram



Measurement Strategy:

Background (Global aim): To decrease the amount of pain adult postoperative patients experience at home

Population Criteria: Adult English-speaking patients admitted for ambulatory surgery. Excluding Eye Surgery, Pediatrics, GI Procedures, patients who are cognitively impaired

Data Collection Method: Daily postoperative follow up phone calls will provide immediate feedback regarding pain management and pain score at home. Postoperative phone calls are standardized questions which assess for presence of pain, pain level, and what the patient is taking or doing to manage their pain. A weekly report can be obtained from KPHC and shared with staff in huddles. The use of a standardized pain education tool for the management of postoperative pain at home will be introduced to perioperative staff for use. The use of this tool for discharge pain management teaching will be audited daily. The percentage of nurses using and documenting the use of this tool will be measured. OAS-CAHPS scores will be assessed on a quarterly basis to note patient perceived improvement of pain management education at discharge.

Data Definitions:

Data Element	Definition
Improve number of ambulatory patients reporting moderate to severe pain at home	Using pain scale of 0-10. Where 1-3 is minimal.4-6 is moderate, and 7-10 is severe pain
Use and proper documentation of standardized pain management brochure	Documentation of pain education audit in KPHC and proper documentation with .phrase
Increase daily number of postoperative calls completed	Postoperative calls to all ambulatory surgery patients who had surgery 24 hrs prior or 72hrs prior if surgery was on a Friday

Measure Description:

Measure	Measure Definition	Data Collection Source	Goal
Percent of ambulatory surgery patients reporting moderate to severe pain at home	N = number of ambulatory surgery patients reporting moderate to severe pain on post op call D = total number of ambulatory surgery patients who had surgery and were called the next day	Postoperative phone calls daily and KPHC weekly pain report	25%
Percent of use and proper documentation of standardized pain management brochure	N = number of patients who received teaching brochure and had proper documentation D = Total number of patients who had ambulatory surgery	KPHC education documentation daily audit	90%
Percent of daily number of postoperative calls completed	N = number of ambulatory surgery patients who received a follow up phone call 24 hrs or 72 hrs after surgery if on a Friday D = Total number of ambulatory surgeries day	KPHC postoperative call documentation daily audit and weekly report	80%

Recommendations: Changes to Test:

- Change location of where discharge teaching takes place from busy PACU Phase I to utilization of discharge zone where family can visit with less interruptions
- Staff education and training on the use of a standardized teaching tool to educate patients on how to manage their pain at home
- Standardized documentation of pain management education on KPHC by use of a .phrase
- Strict adherence to unit standard of care on calling patients 24-72 hrs after surgery to see how well they are managing at home
- Daily audits regarding postoperative calls and patient self-reporting on pain levels at home will be reviewed with staff in weekly huddles

Project Timeline

Dates	1/26/20	2/16/20	3/15/20	3/22/20	4/12/20	4/26/20	5/5/20		
Define Project									
Aim									
Microsystem Assessment									
Project Charter									
Driver Diagram									
Measurement Strategy									
Changes to Test									
Finalize Charter									
Final Presentation									

CNL Competencies:

1. Collaborate with healthcare professionals, including physicians, advanced practice nurses, nurse managers, and others, to plan, implement, and evaluate an improvement opportunity.
2. Use performance measures to assess and improve the delivery of evidence-based practices to promote outcomes that demonstrate delivery of higher-value care.
3. Perform a microsystem assessment to provide the context for problem identification and action.
4. Use evidence to design and direct system improvements that address trends in safety and quality.
5. Implement quality improvement strategies based on current evidence, analytics, and risk anticipation.

Lessons Learned:

- Need interdisciplinary team to successfully implement changes within a microsystem
- Buy-in required from everyone to maintain momentum of change
- Importance of measurement strategies to note if intervention is an improvement
- If you ask the why of every process, you may find an unexpected solution to a problem

References

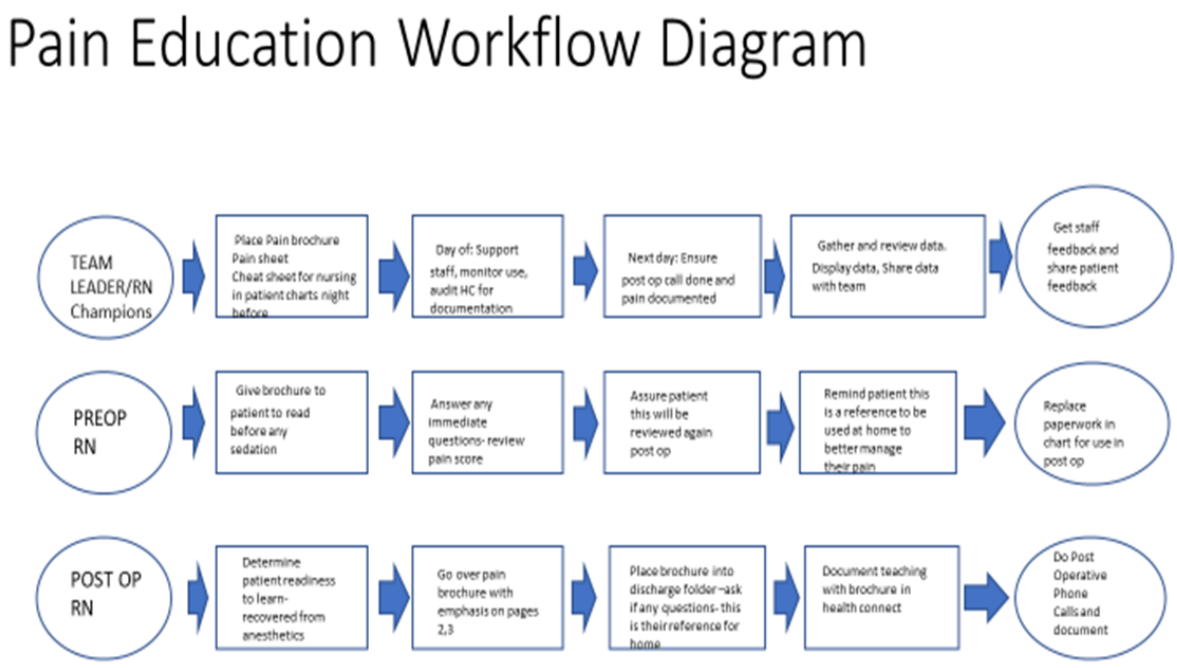
Cavallaro, P. M., Milch, H., Savitt, L., Hodin, R. A., Rattner, D. W., Berger, D. L., … Bordeianou, L. G. (2018). Addition of a scripted pre-operative patient education module to an existing ERAS pathway further reduces length of stay. *American Journal of Surgery*, *216*(4), 652-657. https://doi.org/10.1016/j.amjsurg.2018.07.016

Chou, R., Gordon, D. B., DeLeon-Casasola, O. A., Rosenberg, J. M., Bickler, S., Brennan, T., … Wu, C. L. (2016). Management of postoperative pain: A clinical practice guideline from the American Pain Society, the American Society of Regional Anesthesia and Pain Medicine, and the American Society of Anesthesiologists' Committee on Regional Anesthesia, executive committee, and administrative council. *Journal of Pain*, *17*, 131-157. https://doi.org/10.1016/j.jpain.2015.12.008

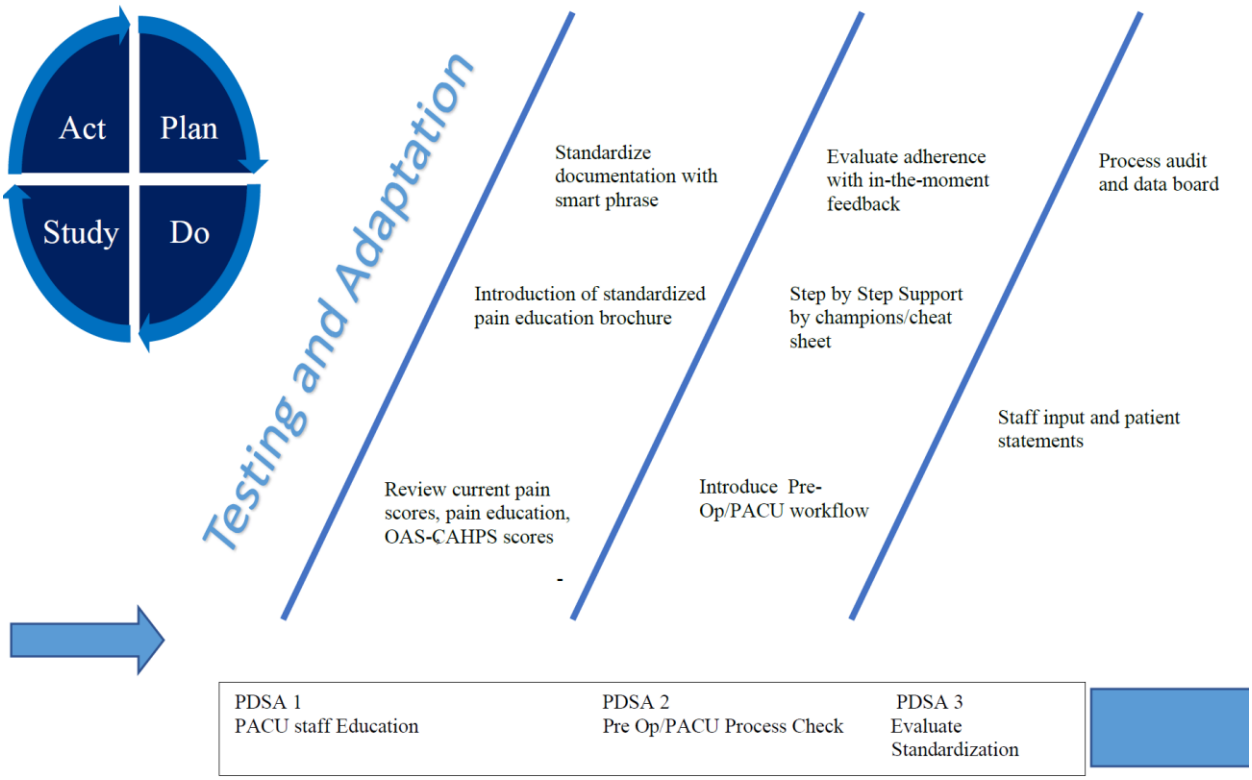
O'Donnell, K. F. (2015). Preoperative pain management education: A quality improvement project. *Journal of Perianesthesia Nursing*, *30*(3), 221-227. https://doi.org/10.1016/j.jopan.2015.01.013

Sawhney, M., Watt-Watson, J., & McGillion, M. (2017). A pain education intervention for patients undergoing ambulatory inguinal hernia repair: A randomized control trial. *Canadian Journal of Nursing Research*, *49*(3), 108-117. https://doi.org/10.1177/0844562117714704

Appendix H. Workflow Diagram



Appendix I. PDSA Cycles



Appendix J. Pain Scale Education Flyer

Care Instructions

KAISER PERMANENTE®

Learning About the 0-to-10 Pain Scale

What is the 0-to-10 pain scale?

Everyone feels pain differently. A pain scale is one way for a person to measure his or her pain so that the doctor can plan how best to manage it. The pain scale helps the doctor keep track of how well your treatment plan is working to reduce your pain and help you do daily tasks.

Most pain scales use numbers from 0 to 10. A score of 0 means no pain, and 10 means the worst pain you have ever known.

Your medical team will help you manage your pain in a variety of ways. Pain management may include changing your position, using ice or heat, or taking medicine.

The pain scale

- 0 = No pain.
- 1 = Pain is very mild, barely noticeable. Most of the time you don't think about it.
- 2 = Minor pain. It's annoying. You may have sharp pain now and then.
- 3 = Noticeable pain. It may distract you, but you can get used to it.

- 4 = Moderate pain. If you are involved in an activity, you're able to ignore the pain for a while. But it is still distracting.
- 5 = Moderately strong pain. You can't ignore it for more than a few minutes. But with effort you can still work or do some social activities.
- 6 = Moderately stronger pain. You avoid some of your normal daily activities. You have trouble concentrating.
- 7 = Strong pain. It keeps you from doing normal activities.
- 8 = Very strong pain. It's hard to do anything at all.
- 9 = Pain that is very hard to bear. You can't carry on a conversation.
- 10 = Worst pain possible.

Follow-up care is a key part of your treatment and safety. Be sure to make and go to all appointments, and call your doctor if you are having problems. It's also a good idea to know your test results and keep a list of the medicines you take.

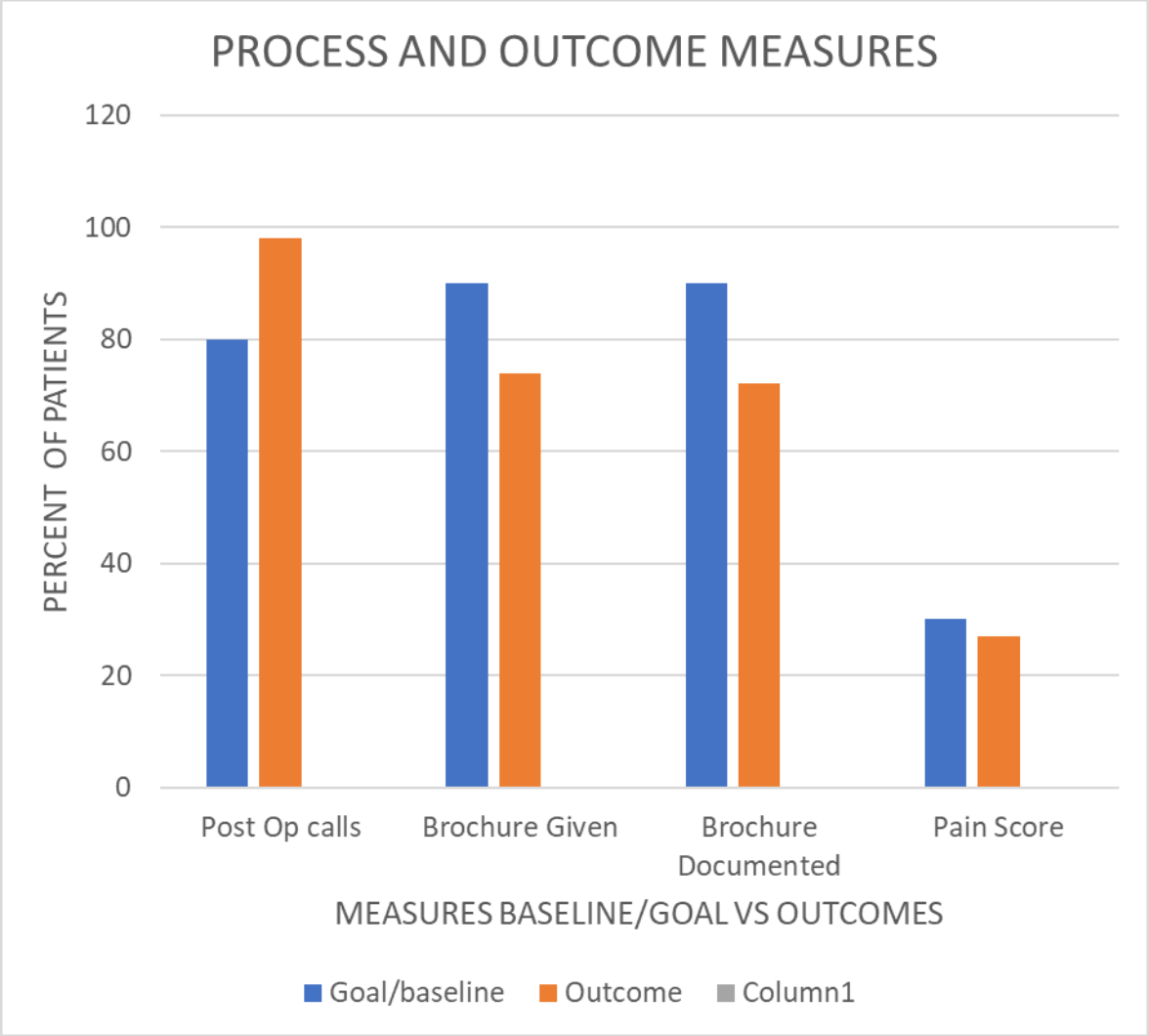
Where can you learn more?

Go to http://kp.org/health.

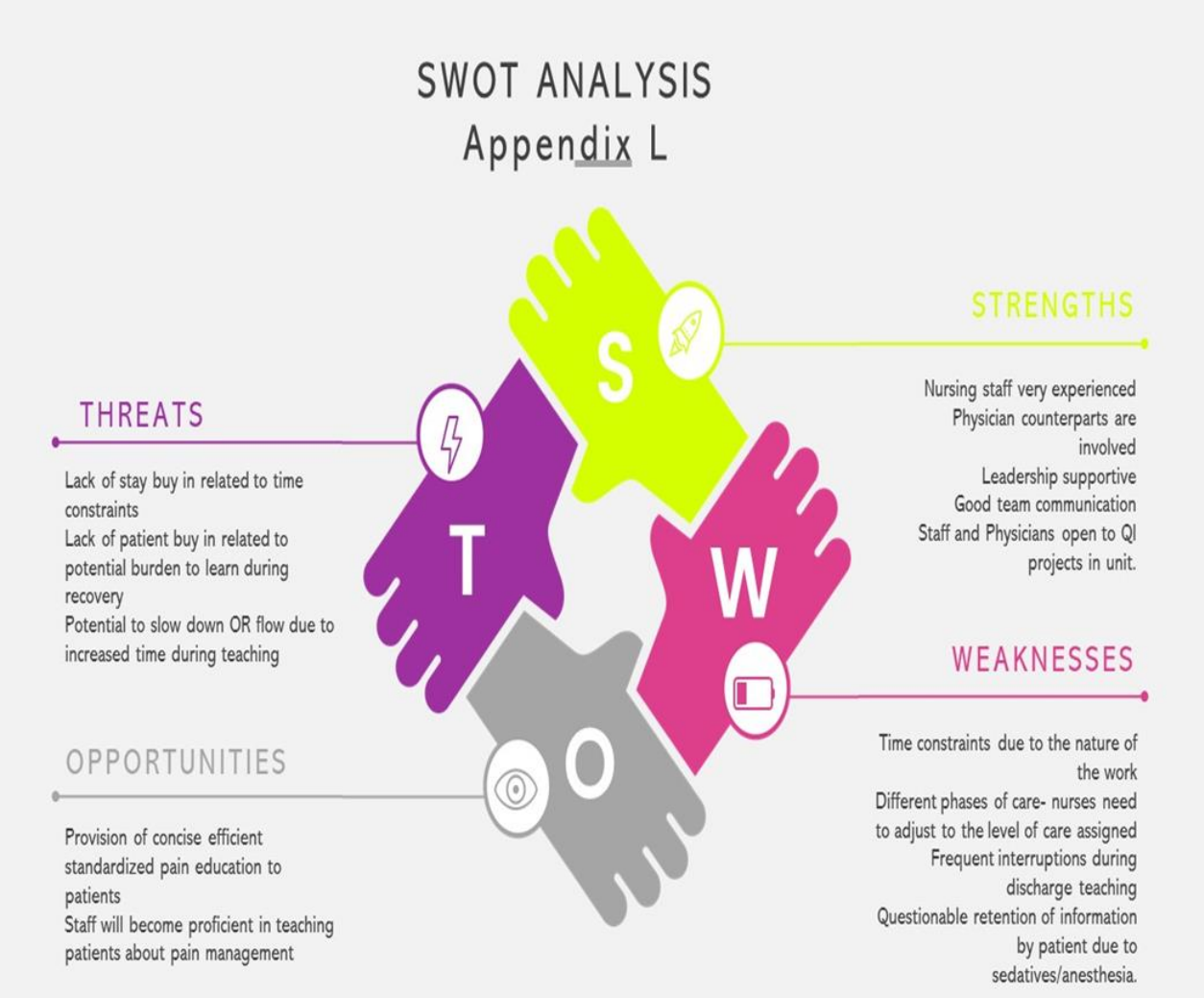
Enter **T864** in the search box to learn more about "**Learning About the 0-to-10 Pain Scale.**"

Current as of: March 28, 2019

Appendix K. Audit Postop Calls, Pain Scores, Education Documentation



Appendix L. SWOT Analysis



Appendix M. Return on Investment

Project Costs/100 cases	Potential Savings/case	Net per 100 cases
Purchase of Brochure **$40**	Preventable admission $ 5078/day	+507,800
Follow up calls $84/10 minutes – performed as standard of care. No additional costs **$0**	Advice Nurse call $84/10 min	+8400
Use of existing phones, staff, and supplies such as discharge folder and pain scale education - Supplies exist as part of standard of care in the unit **$0** additional cost	Call to MD $84/10 min	+8400
	Preventable ER visit $532/visit	+53200
Total/100 cases = **$40** for cost of brochure	Total/ case= $5,778	Potential savings of **$577,760** avoiding admission, ER visits and provider calls due to uncontrolled pain per 100 cases

Reference

https://oshpd.ca.gov/data-and-reports/cost-transparency/hospital-chargemasters/ Retrieved May 31, 2020

Appendix N. OAS-CAHPS Scores: Subsequent Pain