

REVIEW

Consensus Statement for Clinical Pathway Development for Perioperative Pain Management and Care Transitions

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ABSTRACT

The perioperative surgical home (PSH) model has been created with the intention to reduce costs and to improve efficiency of care and patient experience in the perioperative period. The PSH is a comprehensive model of care that is team-based and patient-centric. The team in each facility should be multidisciplinary and include the input of perioperative services leadership, surgical services, and support personnel in order to provide seamless care for the patient from the preoperative period when decision to undergo surgery is initially made to discharge and, if needed after discharge from

the hospital, until full recovery is achieved. PSH is discussed in this consensus article with the emphasis on perioperative care coordination of patients with chronic pain conditions. Preoperative optimization can be successfully undertaken through patient evaluation, screening, and education. Many important positive implications in the PSH model, in particular for those patients with increased potential morbidity, mortality, and high-risk populations, including those with a history of substance abuse or anxiety, reflect a more modern approach to health care. Newer strategies, such as preemptive and multimodal analgesic techniques, have been demonstrated to reduce opioid consumption and to improve pain relief. Continuous catheters, ketamine, methadone, buprenorphine, and other modalities can be best delivered with the expertise of an anesthesiologist and a support team, such as an acute pain care coordinator. A physician-led PSH is a model of care that is patient-centered with the integration of care from multiple disciplines and is ideally suited for leadership from the anesthesia team. Optimum pain control will have a significant positive impact on the measures of the PSH, including lowering of complication rates, lowering of readmissions, improved patient satisfaction, reduced morbidity and mortality, and shortening of hospital stays. All stakeholders should work together and consider the PSH model to ensure the best quality of health care for patients undergoing

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surgery in the future. The pain management physician's role in the postoperative period should be focused on providing optimal analgesia associated with improved patient satisfaction and outcomes that result in reduced health care costs.

Keywords: Anesthesiologist; Care transition; Multimodal analgesia; Opioid; Pain management; Pathways; Perioperative surgical home

INTRODUCTION

There is widespread agreement that serious inefficiencies in the US health care system have led to increased costs and decreased quality of care for patients [1, 2]. This is especially true regarding surgical care, which accounts for approximately 52% of total health care spending [3]. Critics contend that varied and fragmented perioperative management, combined with misplaced incentives related to fee-for-service reimbursement, increases cost and reduces overall quality of surgical care [3]. In response to these criticisms, the American Society of Anesthesiologists (ASA) has proposed implementation of the perioperative surgical home (PSH), described as a patient-centered, surgical continuity of care model, which involves shared decision-making [1]. The PSH model seeks to promote high quality care and to improve patient satisfaction throughout the surgical experience, while reducing inefficiency and resource utilization. These endpoints are likely to be encouraged through changes in reimbursement trends, which are shifting toward rewarding physicians for quality of care rather than quantity [4]. Pain medicine will undoubtedly play a major role in such an evolving care model. Optimal pain management has been shown to reduce costs in the form of shorter post-anesthesia care unit (PACU) and hospital stays, more expeditious postoperative return to function, and improved overall patient satisfaction [5–7]. Incorporation of these factors into the PSH, as both individual and team goals, will maximize the value of good

perioperative care [8]. The purpose of this consensus review, therefore, is to discuss pain management strategies in the surgical population, and to outline ways to improve quality of care while reducing resource utilization based on PSH models. We also emphasize a need for developing clinical pathways to manage pain in the perioperative setting.

This article is based on previously conducted studies and does not involve any new studies of human or animal subjects performed by any of the authors.

PERIOPERATIVE SURGICAL HOME

The PSH model emphasizes smooth transitions between the preoperative, intraoperative, and postoperative phases of care. Pivotal to this goal is the expansion of the anesthesiologist's scope of practice as the "perioperativist". Anesthesiologists are in the best position to bridge the gaps between phases of care, because perioperative management is a critical component of their training. Anesthesiologists are trained to evaluate and to optimize patients in preoperative clinics, provide intraoperative care, and manage pain and postoperative complications in the recovery room and intensive care unit. Furthermore, opioid and non-opioid analgesics are being increasingly used in the management of chronic pain, and the incidence of patients on chronic opioid therapy undergoing surgical procedures is steadily increasing [9, 10]. The perioperative management of pain in these opioid-dependent patients is often challenging. This patient population must be identified preoperatively in order that the optimal multimodal approach to their pain management regimen can be planned prior to surgery and effectively controlled throughout their perioperative care [11, 12]. Some examples include continuous peripheral nerve catheter placement and management for postoperative pain; infiltration of local anesthetics prior to incision and final skin closure at the incision site, the use of ketamine and lidocaine infusions in select surgical patients for pain management, development of multimodal pain medication templates, provision of oversight for moderate

and deep sedation by non-anesthesiologists, and increased popularity of long-acting opioid medications, including buprenorphine and methadone, which require an appreciation for pharmacokinetics, side effects, and potential drug–drug interactions. A sample clinical pathway algorithm for a patient with chronic pain or opioid/substance use is shown in Fig. 1. The patient is first seen by the primary care provider with a condition that may require surgery, and the patient is referred to a surgical specialist. If the surgeon decides to operate, the patient then undergoes a preoperative assessment to make sure that he or she is medically stable for surgery. During the perioperative visit, if the patient is flagged as “high risk” based on history of chronic pain, opioid or other substance use, then a referral is made for the perioperative acute pain care coordinator to manage the patient’s journey before, during, and after surgery. This may involve coordination of pain

management in the inpatient unit, the pain clinic, home, or a rehabilitation facility. The acute pain care coordinator will play a significant role as soon as the referral is made by the surgeon, the preoperative clinic, or the primary care provider. The goal is to “plug the patient into the system” as early as possible, preferably before surgery. If a patient with chronic pain and/or history of opioid abuse has to undergo emergent surgery, the acute pain care coordinator can be consulted for intraoperative analgesic recommendations. The acute pain coordinator will also address their analgesic needs in the PACU, during admission, and in the clinic or rehab facility to preserve continuity of care.

PREOPERATIVE MANAGEMENT

Screening for Patients at Risk for Excessive Postoperative Pain

Preoperative evaluation allows for identification of patients with risk factors associated with postoperative pain management issues or those at risk for the development of chronic pain. These risk factors include history of chronic pain syndrome, chronic opioid therapy, catastrophizing, substantial anxiety regarding postoperative pain, female gender, younger age, preoperative pain at the surgical site, pain at multiple sites, education, lower socioeconomic status, and possibly genetic factors [13–15]. Additional factors to consider include history of depression, current or history of substance abuse, and whether the patient is at risk for developing neuropathic pain, including those who will endure injury to nerves intraoperatively (i.e., amputations, mastectomies, thoracotomies, etc.) [13, 16]. High-risk patients will be followed throughout their entire perioperative course, which will include daily rounding, and outpatient clinic visits after discharge. Certainly not all patients require preoperative visitation solely for the purpose of postoperative pain optimization. Thus, screening for these risk factors can be accomplished by way of electronic chart review, telephone, or telemedicine. Risk stratification of patients more

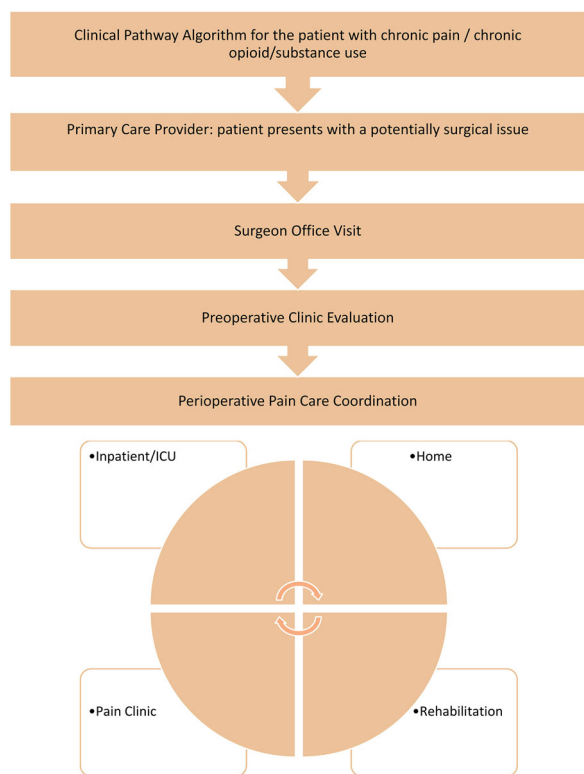


Fig. 1 Clinical pathway algorithm for the perioperative management of the patient with chronic pain and/or a history of opioid/substance use

likely to develop postoperative pain-related complications enables the practitioner to identify those patients who will benefit from more in-depth preoperative evaluation and counseling. This strategy also helps increase operational efficiencies by allocating resources where they are needed most.

Patient Evaluation

The preoperative pain evaluation should include a thorough history and physical exam to document the patient's baseline pain including site, intensity, type, and duration. The medication history should be carefully documented, including the daily doses of both long-acting and short-acting opioids. Such information enables calculation of equianalgesic dosing and quantifies baseline opioid requirement. Attention should also be given to non-opioid adjunctive analgesics, anxiolytics, antidepressants, and anticonvulsants [11]. Assessment of psychiatric history with focus on historical or current substance abuse, depression, and anxiety should be performed. Importantly, the presence of preoperative anxiety has been linked to intensity and prolonged duration of postoperative pain and may suggest the need for general anesthesia versus regional anesthesia [13, 17].

Patient Education

Patient education regarding pain and management options may help set expectations and reduce postoperative pain scores and health care expenditures [16, 18, 19]. Postoperative pain is a major concern and patients may benefit from reassurance that their pain will be adequately treated. This is also an opportunity to set expectations by describing the typical course of postoperative pain of the particular surgery being performed. Educating patients about pain management and analgesics may actually result in decreased opioid consumption in the first 48 h postoperatively [20]. If regional anesthesia is a viable option, patients can learn about how this technique works and why a perineural catheter may be useful. In fact,

preoperative video-based information to patients undergoing procedures under regional anesthesia has been shown to reduce perioperative anxiety [21]. Further, this provides an opportunity to obtain consent for regional procedures, reducing patient stress of making decisions the day of surgery as well as the likelihood of consent-related delays. Before the patient leaves the preoperative visit, an individualized postoperative pain management strategy should be in place and discussed with the patient with an opportunity to ask questions. The individualized discharge plan should include a countdown of potent opioid medications.

Preoperative Optimization

Patients should be instructed to continue their regular dose of long-acting opioid medications up until, and including the day of surgery. If feasible, an attempt to reduce preoperative dosing may be a potential goal. This should be discussed with the patient and coordinated with the prescribing physician. Another consideration is to initiate analgesic medications in anticipation of surgery, using preventive analgesia. For patients on chronic opioid therapy, this can be accomplished by a combination of acetaminophen and a nonsteroidal anti-inflammatory drug (NSAID) such as a COX-2 inhibitor, typically initiated 2 weeks to 1 h prior to surgery [22]. For those patients with a history of neuropathic pain or at risk for intraoperative nerve injury (i.e., amputations, thoracotomies, mastectomy, etc.), a gabapentinoid medication may be highly beneficial [12]. Such multimodal analgesic approaches have been shown to reduce perioperative opioid requirements, decrease opioid-related side effects, and improve pain scores [11, 23, 24]. Patients taking anxiolytics, antidepressants, gabapentinoids, and anticonvulsants should be instructed to continue these medications up until and including the day of surgery. Transcutaneous opioid formulations, such as the fentanyl patch, should be continued up until the day of surgery and restarted postoperatively. However, the rate of absorption of these formulations is

susceptible to changes in body temperature, making them less reliable intraoperatively where post-induction hypothermia and the use of a heating blanket are commonplace. Thus, consideration should be given to removing the patch on the day of surgery and administering an equivalent dose of morphine to maintain baseline opioid levels without the risk of intraoperative fluctuations [12, 17].

Patients on Methadone Therapy

Patients on methadone therapy should have a preoperative electrocardiogram to establish a baseline and monitor for prolonged QT interval [12]. It is also important to establish the indication for methadone therapy, as prescribing can be for either chronic pain or opioid-related substance abuse. In order to elucidate the reason for a patient's methadone prescription the physician may have to contact the methadone clinic. Methadone prescribed for chronic pain management is typically dosed on a q8hr or q12hr basis [11]. In contrast, it is generally dosed once daily in the treatment of opioid addiction. In either situation, patients on methadone therapy should receive their usual dose prior to and on the day of surgery. There are six enzymes that are involved in the metabolism of methadone, and there are numerous drugs and herbal products that can potentially alter its serum levels. Methadone that is being administered once daily will only have an analgesic effect for 6–8 h after administration [25]. Preoperative personnel should communicate with the patient's prescriber to verify dosing and facilitate postoperative follow-up arrangements.

Patients on Buprenorphine Therapy

Like methadone, buprenorphine can be used for the treatment of chronic pain or opioid dependence. Buprenorphine is a partial opioid agonist with high affinity for the mu receptor and a half-life of approximately 37 h [26]. As a result of these characteristics, if buprenorphine is not discontinued several days prior to surgery, pure opioid agonists will be less effective leading to potential difficulties in treating postoperative

pain [27]. Patients undergoing low-risk pain procedures can continue their buprenorphine throughout the perioperative period. Those that are undergoing surgeries deemed intermediate or high-risk pain procedures should have their buprenorphine discontinued 2–3 days prior to surgery. Bridge therapy may be instituted with a pure opioid agonist if needed, until the patient can resume buprenorphine therapy [28]. Additionally patients taking buprenorphine will likely require higher doses of opioids and multimodal analgesia should be instituted including regional anesthesia when appropriate [26].

Preoperative Anxiety and Psychological Optimization

The role of preoperative anxiety is being increasingly recognized as a contributing factor for postoperative pain [10, 29, 30]. It has been proposed that the strong, unpleasant emotions associated with preoperative anxiety contribute to maladaptive psychological coping mechanisms, such as the “fear-avoidance” model [31]. These counterproductive coping mechanisms, if unchecked, can result in catastrophization and kinesiphobia, both contributing to increased pain, decreased patient satisfaction, and slower recovery [32].

Simple interventions such as cognitive behavioral therapy and relaxation therapy may reduce preoperative anxiety and help patients manage postoperative pain [33, 34].

INTRAOPERATIVE MANAGEMENT

As the PSH model continues to evolve, one constant includes optimizing patient care in accordance with efficient use of health care dollars. Aging populations, increased presence of morbidities, and an abundance of elective surgery have led to an increase in ASA physical status 3 and 4 patients [35]. Epidemiology of chronic pain depicts an increased prevalence associated with aging and poorer health status [36]. Intraoperative risk factors for the development of chronic pain include open versus minimally invasive surgery, the surgical site, duration of procedure, and if surgery is performed in a previously injured area [37].

Avoiding nerve damage through careful dissection or modified approaches can also help to prevent the culmination of persistent pain states [38].

One can conclude that the aforementioned trends will lead to difficulty for the perioperative anesthesiologists and their task of providing adequate analgesia to patients intraoperatively. While the ASA Committee of Future Models of Anesthesia Practice (CFMAP) addresses benefits of the PSH such as improved clinical outcomes, clinical initiatives, and reduction of complications and cost, applying these broad principles to specific intraoperative care will prove difficult for all patients, especially those with significant chronic pain syndromes [39]. The role of pain management must stretch beyond the pre- and postoperative clinical phase and into the operating room. Through a careful preoperative evaluation, the anesthesiologist can provide intraoperative care catered towards a patient's specific pain requirements. This pain-centered information can then be incorporated into an anesthetic plan for specific procedures. This plan should include insight into the strategies which can limit overuse of intravenous opioids, incorporate multimodal analgesia to decrease side effects, and suggest when regional and neuraxial anesthesia may improve outcomes and decrease length of stay [40].

Traditional reliance on high dose opioids for perioperative analgesia has been a part of the perioperative pain management plan for decades. While these medications can provide efficient analgesia at a low cost, they are associated with several side effects, which can compromise their usefulness [41]. Of the many adverse effects, dose-dependent respiratory and central nervous system depression, along with postoperative ileus (POI), which is linked to nausea, vomiting, and delayed oral intake may be the most significant [42]. Prolonged return of bowel function is associated with increased morbidity, prolonged hospitalization, and increased hospital cost [43]. Understanding and incorporating a best practice model for opioid dosing would be optimal. While doses tend to depend on surgical site pain and patient's pain tolerance, understanding dose correlation with

side effects may reduce adverse outcomes. One way to accomplish this task is to understand the dose-dependent relationship between morphine equivalents of opioids and their side effects [44]. Alternatives to high dose opioids, including the use of NSAIDs, such as ketorolac, and regional anesthesia can be effective in reducing total IV opioid administration [45, 46].

Preemptive analgesic techniques prior to surgical incision along with multimodal analgesia regimens are likely key to reducing side effects and may prove pivotal as a way to move past the standard of opioid-centered perioperative pain control. Simultaneously targeting the different mechanisms of analgesia has been shown to reduce requirements of any single agent [47]. Anesthesiologists often incorporate this into their routine practice but a gold standard or patient-specific plan has yet to be concluded. Multiple studies have shown improvement in areas including fewer adverse events, shortened LOS, and reduced total hospital resource utilization for certain procedures [48]. As PSH gains favor, better data gathering and numerical audits will guide these multimodal techniques further, benefiting both the patient and health care system.

Regional and neuraxial anesthesia have become increasingly popular as intraoperative anesthetic techniques in recent years, but when compared to general anesthesia they are still not aggressively used. Recent studies have shown that neuraxial anesthesia, when compared with general anesthesia, improves perioperative outcomes and decreases total hospital length of stay [49]. Regional anesthesia has also been shown to decrease post anesthesia care unit length of stay and is associated with decreased postoperative nausea and pain [50, 51]. In the PSH, the role of pain management in the operating room includes choosing an optimal technique that will provide superior anesthesia for the patient's procedure, but also leads to improved postoperative outcomes. As more emphasis is placed on standards encouraged by Centers for Medicare and Medicaid Services (CMS), being able to choose an optimal anesthetic plan that incorporates these standards will be fundamental to the anesthesiologist. The role of regional and neuraxial

anesthesia will likely continue to increase and become more mainstream as further studies are completed which support endpoints of recovery, time to discharge, analgesia, and patient satisfaction.

POSTOPERATIVE MANAGEMENT

In an attempt to curb costs and improve patient outcomes, CMS is considering shifting from the current fee-for-service system towards a single reimbursement model, in which all health care providers involved will share payment. The PSH embraces this concept and attempts to optimize perioperative services with focus given to patient outcomes, patient experience, and reducing health care cost [52]. One area which may challenge the uniformity of the system is the handling of postoperative pain. Effective analgesia can lead to earlier rehabilitation and a decreased length of stay, though accomplishing adequate control of pain can prove difficult considering the variability of patients and procedures [53]. Postoperative analgesia can be challenging to manage and careful planning is required to obtain good pain control. Adequate analgesia is important as uncontrolled pain in the early postoperative period has been associated with the development of acute persistent pain [54]. In instances of severe postoperative pain, red flag conditions must be ruled out. Other postoperative factors that predispose to the development of chronic pain include anxiety, neuroticism, depression, and radiation to the surgical area [55]. The role of the anesthesia practitioner in the postoperative period should be focused on providing optimal analgesia associated with improved patient satisfaction and outcomes that result in reduced health care costs.

As surgical volume continues to rise, postoperative pain management will become a vital part of the perioperative experience. Central to this statement is the association of adequate postsurgical pain control and patient satisfaction. In one survey, approximately 80% of patients after surgery experienced acute pain and most quantified it as moderate, severe, or extreme [56]. Another study following pain and postoperative satisfaction found that poor pain

control and emetic side effects were the two most common reasons for patient dissatisfaction [57]. In this survey, poor pain control was strongly associated with limiting return to normal activity after discharge and interfering with sleep. With established cutoff points in pain scoring, more severe pain scores have been associated with interference in general activity and contributing to poor sleep hygiene [58]. A way to curb these effects may involve the prevention of breakthrough pain (BTP). A recent survey found that BTP was associated with poor function, health status, and mood when compared to patients with controlled persistent pain [59]. Another method improving patient satisfaction may be focused around administering prophylactic antiemetic medication to postsurgical patients. Administration of dexamethasone and ondansetron has been shown to reduce postoperative side effects such as incidence of postoperative nausea and vomiting (PONV) and the requirement of rescue antiemetics [60, 61]. As the PSH model continues to develop, pain management in the postoperative setting must focus on reducing patient dissatisfaction by providing adequate analgesia and limit side effects.

As an attempt to reduce health care cost, the CMS Hospital Readmission Reductions Program and Physician Quality Reporting System (PQRS) focus on a provider's ability to reduce postoperative length of stay (LOS), adverse events, and readmission rates. Pain control and its side effects have serious financial implications. A recent study examining patients after abdominal surgeries concluded that LOS, total hospitalization cost, and 30-day readmission rates all had a positive correlation to the quantity of morphine dose patients were requiring for adequate analgesia [62]. Thus, adequate analgesia in the postoperative period must include a plan to address post-discharge pain. Several studies have found that following discharge, patients continue to struggle with high pain scores and poor tolerance of side effects [56]. Another study examining postsurgical readmission after same-day surgery found that approximately one-third of patients returning to the hospital reported pain as the main reason for their readmission [63]. Uncontrolled acute pain has

also been found to be a predictive factor for the development of chronic pain and effective management may reduce the risk for pain progression [64]. To reduce the unwanted effects of poor postoperative analgesia, pain management must include the use of multimodal therapies, as well as appropriate use of site- and surgery-specific peripheral nerve blocks and neuraxial anesthesia. Several studies comparing postoperative traditional morphine-derived analgesia to multimodal regimens have shown reduced opioid consumption, shortened LOS, and reduced side effects with the latter [65–67]. Additionally, nerve blockade has also been shown to reduce opioid requirement, thus reducing side effects and improving patient satisfaction [68, 69]. Evidence-based procedure-specific pain management protocols are outlined by the PROSPECT (PROcedure-SPECific Postoperative Pain Management) group, which is a collaboration between anesthesiologists, surgeons, and surgical scientists.

While high quality evidence exists for use of some postoperative techniques, further study is required to provide specific applications of techniques that will improve outcomes [70]. Pain management in the postoperative setting continues to be a developing field and as more data become available, fine-tuning will not only improve patient outcomes but also reduce the financial strain that poor postsurgical analgesia exerts on the health care system.

PREEXISTING CHRONIC PAIN AND POSTOPERATIVE PAIN

Chronic pain presents a significant socioeconomic burden with increasing numbers of patients undergoing surgery. The management of these patients with superimposed acute pain as a result of surgical insult is a challenge and needs continued investigation within the physician-led, multidisciplinary model of the PHS. Gerbershagen et al. showed that chronic pain patients can have increased sensitivity to pain with evidence of correlation of increased preoperative chronic pain to increased postoperative pain [71]. In a study by Chapman et al., patients with chronic pain who were using

opioids preoperatively experienced greater postoperative pain as compared to patients not using opioids preoperatively [72]. Many patients on long-term opioids can also develop changes in pain sensitivity. For example, hyperalgesia has been demonstrated in patients on long-term methadone and in patients taking slow-release morphine [73, 74]. Optimum management of surgical patients with preexisting chronic pain and preexisting use of opioids for the treatment of chronic pain requires vigilance and meticulous monitoring to prevent withdrawal and respiratory depression in the postoperative period.

ACUTE PAIN CARE COORDINATOR

It seems logical that central to achieving efficiency, patient safety, and patient satisfaction with the PSH concept is the necessity of an acute pain care coordinator (APCC). Pain care coordination is essential for management of patients with pain in the PSH model. The APCC would coordinate with primary care providers (PCP), preoperative assessment clinics, PACU, ICU, home care, outpatients pain clinics, and rehabilitation facilities. A physician such as an anesthesiologist could assume the role of an acute pain care coordinator who is experienced, highly skilled, and very knowledgeable in pain care issues. The APCC does not necessarily have to personally provide pain care but will work to ensure that patients receive optimum management. The APCC of the hospital in the PSH would ensure that the pain patient navigates through a medical system with support, understanding, and guidance for complex pain issues that often involve various treatment methods and doctors of several services so that the patient receives the best pain care possible. The APCC would develop case management tools, clinical pathways, order templates, and interdisciplinary care plans facilitating smooth pain care progression. The APCC would be responsible for the administrative aspects of pain care and would act as a liaison between patients, doctors, nurses, and pain care services and facilities. The APCC would monitor delivery of pain care services and facilities within the hospital and beyond.

Another role of the APCC should be to communicate extensively and interface with other medical care coordinators and health care authorities, rectifying problems once they are identified in accordance with all the pain policies and procedures of the hospital. This individual would be an important member of the PSH administration representing pain care interests of the hospital or organization. Quality care can be measured by patient satisfaction, reduced LOS, and decreased readmission rates for uncontrolled pain. Finances are required to sustain a dedicated pain care coordinator and this has to be taken into consideration to provide optimum pain care within the PSH model. This funding has to be included in the budget of the hospital and or shared with individual departments. The savings provided by decreasing readmission rates, hospital LOS, and adverse events would potentially offset the cost of the salary for the APCC.

CONCLUSION

The physician-led PSH is a model of care that is patient-centered, with the integration of care from multiple disciplines. Optimum pain control will have a positive impact on the measures of the PSH including decreasing complication rates, preventing readmissions, and shortening hospital stays. However, acute pain control is a challenge by itself and is drastically complicated in the presence of chronic pain issues and history of substance abuse, pain medication withdrawals, and respiratory depression. In addition, less pain can lead to improved cost-effectiveness, improved quality of care, better patient outcomes, and early return to functionality. We propose the implementation of a pain care coordinator to work under the leadership of the physician-led PSH director and closely with additional surgical home leadership and supportive personnel to facilitate communications and be a part of the multidisciplinary team. This will ensure that there is a focus on patient-centered pain care, which can be complex and will improve delivery of optimum pain control. Serious attention to optimum perioperative pain management under the scrutiny of

a designated perioperative pain care coordinator closely integrated into the PSH model will only strengthen the goals of the PSH model.

We also recommend that the PSH model with a pain care coordinator under the leadership of a physician-led PSH director, and surgical home leadership should be feasible in all health systems—community hospitals, ambulatory care surgery centers, academic centers, and group practices. To ensure the feasibility of a pain care coordinator and financially sustain such an appointment in each hospital, innovative methods of payment models and active pursuit of cost-effective methods would be necessary.

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Compliance with Ethics Guidelines. This article is based on previously conducted studies and does not involve any new studies of human or animal subjects performed by any of the authors.

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