

IMPROVING PAIN MANAGEMENT FOR HOSPITALIZED MEDICAL PATIENTS

A SOCIETY OF HOSPITAL MEDICINE
IMPLEMENTATION GUIDE

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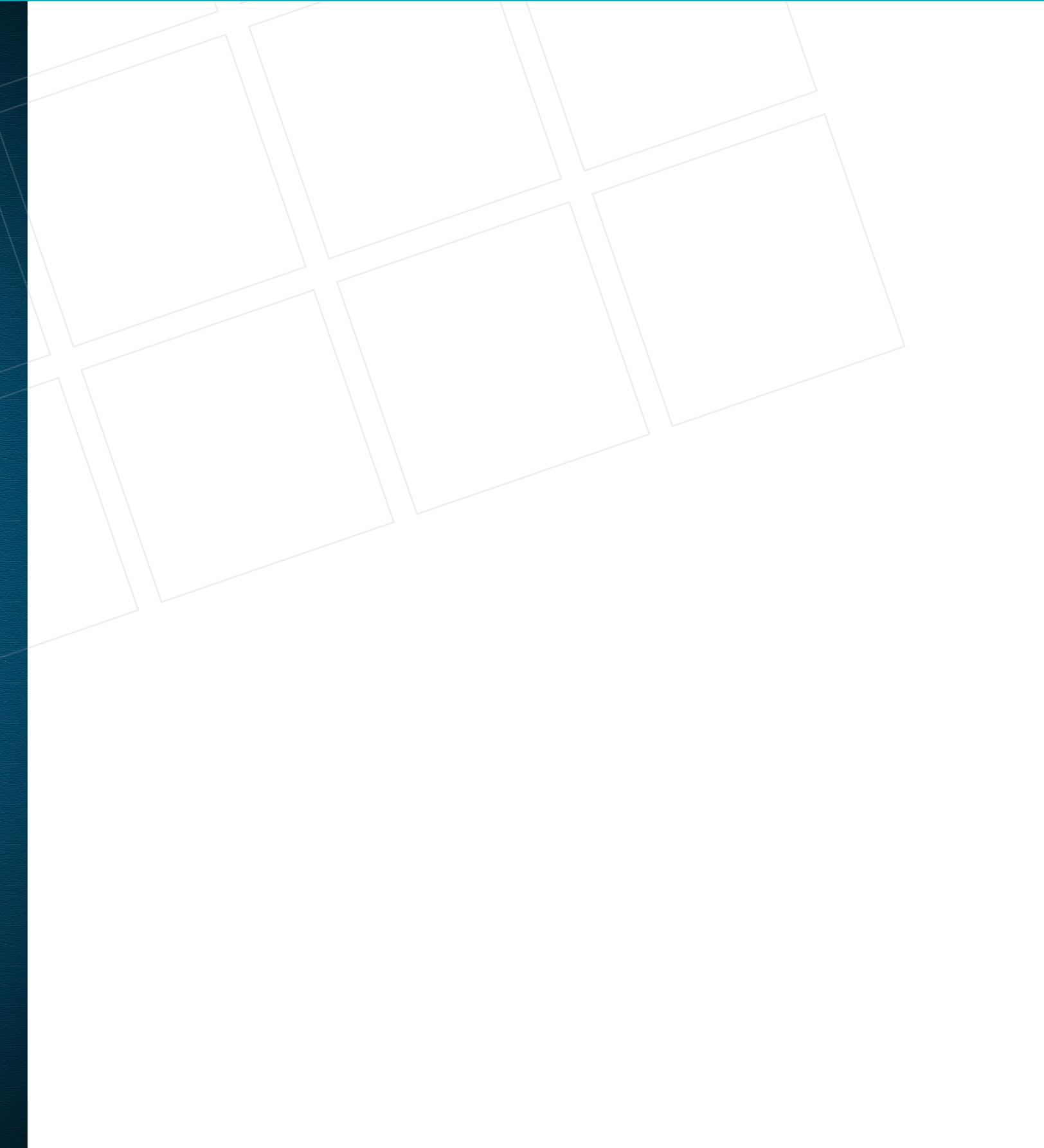
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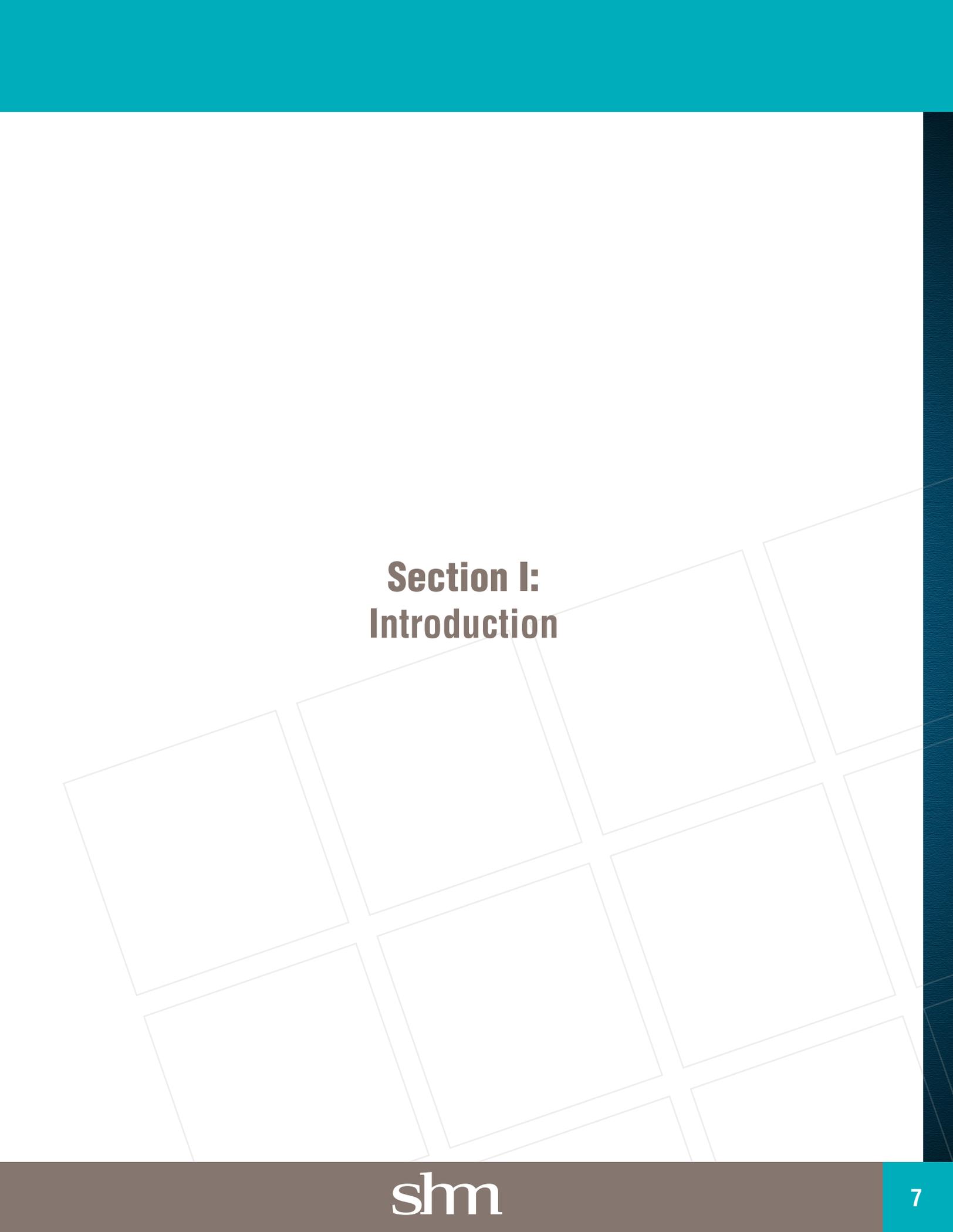
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Section I: Introduction

Introduction

Pain is a major public health problem affecting more American adults than heart disease, cancer and diabetes combined. More than 116 million adults in the U.S. suffer from chronic pain, and federal expenditures for pain care total \$99 billion a year. Management of pain costs up to \$635 billion each year in medical treatment and lost productivity.¹ The negative physiological, psychological and social consequences of pain are well documented. A number of advances have occurred in recent decades to improve the quality of pain management. Pain education is required in training and continuing education of healthcare professionals. Specialties have been created in pain management and palliative care. Institutions have created comprehensive programs to provide expert pain management throughout the care continuum. The Joint Commission for the Accreditation of Healthcare Organizations (JCAHO) accreditation program includes national standards on assessment and management of pain in all settings where patients are cared for.

Despite these advances, a number of gaps remain in the quality and safety of pain management provided to patients. Hospitalized patients continue to experience moderate to severe pain. Over-reliance on opioid-based therapies has led to significant adverse events and a nationwide epidemic of opioid misuse and diversion.³⁻⁶

As frontline physicians in hospitals and leaders of quality improvement programs, hospitalists find themselves in the cross-hairs of these national problems of inadequate pain treatment and opioid misuse. Though pain management is a core competency for hospitalist physicians,⁷ many hospitalists find themselves under-trained to safely and adequately treat pain. Furthermore many hospitals and medical centers lack robust and coordinated pain care systems that optimize both opioids stewardship and patient outcomes.

The goal of this Guide is to provide practical advice to hospitalist physicians and other leaders who are developing programs to improve pain management in their services and facilities. The focus is on medical patients, though many of the principles described here are relevant to patients recovering from surgical care who are increasingly co-managed by hospitalists. The following content on best practices in pain management is drawn from a multidisciplinary national expert panel. The quality improvement practices are drawn from our own experience as well as previous work in other fields including previous Society of Hospital Medicine Implementation Guides. We applaud your work to improve pain management for your patients and hope this Guide will be of use in your efforts.

Section II:
**How to Implement and Sustain a Pain
Management Quality Improvement
Program for Hospitalized Medical Patients**

Step 1: Form an Interdisciplinary Team with a Common Goal

1.1 Assembling the Core Project Team

The first step in initiating a program to improve pain management at a hospital or within a service line or unit is to form an interdisciplinary team to lead the project. Interdisciplinary pain care results in better health processes and outcomes for both acute and chronic pain. This coordinated approach is associated with improved pain management during the hospital stay as well as fewer readmissions for pain management.⁸ An interprofessional project implementation team is essential because pain cannot be managed alone by any one discipline or individual and collaboration helps ensure that each patient is cared for in an interdisciplinary manner. The core team should include, at a minimum, members with expertise in pain management and quality improvement with nursing, pharmacy and physician representatives. This core team could also include others who are very involved in pain management at your institution, e.g., therapists, psychologists, pain or palliative care physicians and representatives from units and services where the project is to be implemented.

1.2 Defining Intervention Scope and Aims

Once a team has been assembled, the initial vision of the project can be fleshed out. Stakeholders and team members will likely have a number of different needs and perspectives on how to improve pain management. The desire to improve the patient experience and clinical care should be the common uniting perspective. Additionally, stakeholders may be motivated by readmissions, long lengths of stay and concern about opioid safety. All of these concerns should be voiced and used to form the common vision of the team regarding the outcomes to be improved. Articulating the scope and aims of the intervention is important early on, even though these objectives may be modified following further discussions with stakeholders and needs assessments. For example, will the project focus on a specific unit, service or patient population? Will the intervention focus only in the hospital or transitioning to the home and outpatient setting as well? Is the focus on decreasing adverse events associated with opioids or on improving patient function or satisfaction? Or is the focus on ensuring that opioids are prescribed appropriately at discharge so as not to contribute to misuse or diversion?

All such aims should be listed and specified. This scope and aims will inform the next steps of obtaining buy-in and performing a needs assessment. We recommend setting aims that focus on different aspects of pain management, e.g., effectiveness, safety, patient satisfaction and transitions between the inpatient and outpatient setting. Choosing a balanced set of aims will ensure that unintended consequences are tracked. For example, during roll-out of a new opioids order set, it would be important to track the effectiveness of pain management as well as the frequency of adverse events such as sedation or respiratory depression. Additionally aims should address the structural components of the healthcare system, such as availability of specialty pain management resources, or the set-up of the electronic medical record (EMR), as well as process measures such as the frequency with which pain is assessed and treated with certain medications.

Step 2: Obtain Institutional Support

As with any quality improvement project, obtaining institutional support for any pain management improvement project is necessary for success. Obtaining support from institutional leaders is critical because there are many competing strategic priorities in healthcare organizations, and pain management requires organizational resources and interdisciplinary leadership. Establishing one or more executive sponsors who understand the need for effective pain management is an important first step. This person(s) should also understand the key roles of organizational program development and outcomes measurement specific to pain management. This person may be a senior nurse, a pharmacist or a medical executive who can help align the aims of the pain quality initiative with the strategic mission and business goals of the organization.

Recruiting sponsors who can ensure that the necessary resources are available and can help reconcile cross-functional issues within the organization should be considered. Financial support may be needed to adequately implement the project. For example, some providers who may be pivotal in improving pain management, such as pharmacists or clinical nurse specialists, may not be able to create a bill for the service they provide. The business case for these providers may need to be made based on a return on investment that can be expected as a result of decreased length of stay and readmissions and increased revenue from value-based purchasing. When approaching hospital leadership regarding the establishment of a multidisciplinary team, emphasizing that each individual provider has different expertise and that their experience will ultimately result in appropriate, safe and effective pain care, a reduction of the waste of resources and therefore cost-saving, is important.

Below are key perspectives and arguments that can be used to garner institutional support. Discussions with hospital and program leadership can help identify how the pain improvement program can best align with the current organizational strategic priorities.

- **Pain is prevalent among medical patients.** Institutional leaders may commonly think of pain management in the hospital as mostly acute pain and surgical pain. Yet pain is prevalent among medical patients and frequently treated with higher doses of opioid medications.³
- **Inadequate treatment of pain results in longer hospital length of stay and frequent readmissions.** Effective pain management is a key aspect of efforts to reduce length of hospital stay and improve outcomes for medical and surgical patients.^{9,10} Patients with inadequate pain control after discharge are at higher risk for hospital readmission.¹¹⁻¹³ They are less willing to be mobile and are therefore at higher risk for complications such as pressure ulcers and deep venous thrombosis. The Centers for Medicare and Medicaid Services (CMS) withholds payment from healthcare organizations for the costs associated with treating preventable complications.
- **Inadequate treatment of pain is a key factor in a patient's experience of care, and decreases potential revenues through the Hospital Value-Based Purchasing program.** This program has linked a portion of a hospitals' payment from CMS to performance on a set of quality measures, including patients' satisfaction regarding pain management on the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey.

- **Inappropriate use of opioid analgesics leads to significant adverse events and contributes to the nationwide epidemic of opioid misuse and diversion.**³⁻⁶ Opioid-related adverse events including patients' deaths consistently represent one of the largest numbers of sentinel events in the JCAHO database.¹⁴ Lack of appropriate monitoring methods and protocols can contribute to opioid adverse events and create liability for the hospital.
- **For accreditation, the Joint Commission requires hospitals to demonstrate excellence in the screening and management of pain.** JCAHO standards require accredited healthcare facilities to 1) recognize the right of patients to appropriate assessment and management of pain; 2) assess pain in all patients; 3) record the assessment in a way that facilitates regular reassessment and follow-up; 4) educate patients, families and providers; 5) establish policies that support appropriate prescribing or ordering of pain medications; 6) include the patients' need for symptom control in discharge planning; and 7) collect data to monitor the appropriateness and effectiveness of pain management.

Step 3: Assess the Current State of Pain Management in Your Facility

Before an intervention is finalized and launched, a formal assessment of the current state of pain management at your facility should be conducted. This assessment should inform the intervention to be deployed to make sure it addresses the key areas of need and utilizes the resources available to you. Additionally, the assessment presents an opportunity to collect baseline data on key measures that will be used to evaluate whether the intervention has been successful.

3.1 Describe the Population You Aim to Serve

Once the scope and aims of your project have been defined, the next step is to delve deeper into the needs of the patients you are serving in your intervention. Reports can be created through the electronic medical record (EMR) to identify patients with high pain ratings or by diagnosis, e.g., sickle cell disease, cancer, etc. Administrative data can be reviewed to describe hospital length of stay or readmissions in this population, as well as where patients receive outpatient care. EMR reports can also identify patients using opioids or other medications and those with adverse events.

Case and chart review in combination with EMR reports can be helpful in getting a sense of the types of pain and other medical problems with which your population struggles. For example, is pain predominantly acute or chronic? Is the pain characterized as to cancer-related or non-cancer-related pain? How often are patients on chronic opioid therapy? Do patients frequently have concomitant psychiatric or substance abuse problems? Getting a sense of the patients you serve will help to tailor your intervention.

Getting the perspectives of patients and families on their pain management is also very helpful. Comments about pain management in HCAHPS surveys can be reviewed to identify key themes. Additionally patients can be surveyed or interviewed to obtain their perspectives on what their biggest needs are, what is working well in their pain management and what needs to be improved.

3.2 Identify Resources and Garner Buy-in from Stakeholders

Though significant data exists about the importance of comprehensive and coordinated pain care, many institutions have multiple resources available for pain care that are not coordinated. Conducting an environmental scan of all available resources that might serve your population can help identify resources that can be brought to your patients and coordinated into their care as opposed to “reinventing the wheel” as part of your intervention. As you identify providers and others who are involved in pain care at your institution, the project team should meet with all those who 1) need to put in effort to implement the project, 2) will be impacted by it, 3) could be brought in to achieve its aims or 4) might have objections and put up barriers. In these stakeholder discussions, the core team can get the feedback of these stakeholders on the project as well as their buy-in. Stakeholder meetings can also lead to identification of other resources and stakeholders who should be consulted. Collaborating with information technology services will be a key point to explore what types of reports can be generated to track the implementation of your intervention.

The following is a list of disciplines and specialties who are often involved in pain care and whose input could be sought:

- Hospital physicians, including attending hospitalist physicians and residents if applicable
- Nurses, including bedside nurses, nurse managers, nurse practitioners and clinical nurse specialists
- Case managers, social workers and representatives from home care programs
- Pharmacists
- Physical and occupational therapists
- Primary care and other outpatient physicians (e.g., oncologists)
- Pain management specialists – inpatient and outpatient
- Palliative care specialists – inpatient and outpatient
- Spiritual care professionals
- Integrative medicine practitioners, e.g., massage, acupuncture, guided relaxation
- Health and rehabilitation psychologists
- Patient services — for generation of patient survey reports (e.g., HCAHPS) and liaising with volunteer services
- Patient and family representatives, e.g., patient and family advisor council

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These stakeholders may have very different concerns than the institutional leadership about pain care. Stakeholder meetings can thus clarify how to make the intervention work for all stakeholders, including leadership, providers and patients.

This is also a key time to catalog and describe structures and processes related to pain management at your hospital and on your unit. Aspects to be assessed at this step include:

- What hospital policies guide the assessment and treatment of pain?
- What pain scales are used in your hospital and unit? How frequently is pain assessed? Do protocols guide the reassessment of pain after an intervention?
- Do protocols specify how/when to monitor for opioid dose effectiveness (decrease in pain) and side effects using sedation scales?
- Are there specific protocols for patient-controlled analgesia (PCA)?
- Do audits, e.g., JCAHO or other hospital audits, assess how well your protocols for pain management and monitoring are being followed?
- What order sets include medications or other interventions for pain management? For example, do the admission order sets include as-needed pain medications? Are there other specific order sets, such as for acute pain or PCA? Are these order sets utilized properly?
- Are there methods for flagging and monitoring or adjusting doses for patients who may be at risk for adverse events related to opioids, e.g., patients with obstructive sleep apnea or renal disease?
- Are there hospital guidelines that regulate the use of, or who can prescribe, high-risk medications such as methadone or fentanyl patches?
- Are pharmacy, pain management and/or palliative care automatically consulted for certain patients, e.g., patients with sickle cell disease or post-operative patients?
- Are there reports or audits to track the use of high-risk medications such as methadone or fentanyl patches?
- Are there reports or audits to track opioid adverse events such as respiratory depression, or is naloxone use tracked?

Step 4: Institutional Best Practices for Hospital Pain Management

The following sections provide an overview of best practices in pain management at the institutional level. This overview is not intended to be a comprehensive guide to pain management of the individual, since many textbooks and guidelines are already available for this purpose.

4.1 General Best Practices in Pain Management

Table 1 lists the hallmarks of a high-quality pain management program.¹⁵ These key elements must be supported by the patient care structure and processes, so that “doing the right thing” is easier than “doing the wrong thing.” For example, in addition to training staff that the highest daily pain score is what impacts patients the most, printouts of the pain scores should be available that allow staff to easily track the peak pain score. Similarly the peak pain score should be discussed at daily interdisciplinary rounds. Along the same lines, printouts of the pain scores should allow a view of the overall, general trend of the patient’s pain.

Table 1: Hallmarks of a High-Quality Pain Management Program

<ul style="list-style-type: none">• Ensuring appropriate assessment, including<ul style="list-style-type: none">> Regular evaluation of pain: on admission, throughout the hospital stay and at discharge> Completion of a comprehensive initial assessment, including Prescription Drug Monitoring Program> Timely reassessments of patient responses to treatment<ul style="list-style-type: none">- emphasis on maximal daily pain- emphasis on overall, general trend or direction of the pain
<ul style="list-style-type: none">• Interdisciplinary, collaborative care planning that includes patient and family input<ul style="list-style-type: none">> Emphasis on function and achievable, realistic goals> Part of discharge planning> Part of daily interdisciplinary discussions
<ul style="list-style-type: none">• Appropriate treatment that is efficacious, cost conscious, culturally and developmentally appropriate and safe<ul style="list-style-type: none">> Optimizing non-pharmacological therapies> Maximizing non-opioid therapies
<ul style="list-style-type: none">• Access to specialty care as needed

Targets for improvement activities can be established by performing an environmental scan and institutional needs assessment to help identify examples of best practice and areas of opportunity where work is needed. Table 2 lists specific best practices that should be implemented to achieve the hallmarks. The key among these is collaboration among multiple disciplines to achieve patient-centered, effective and safe pain care.

Table 2: Key Best Practices in Pain Management

• Help staff to recognize the mechanism of the most common types of pain, e.g., nociceptive, inflammatory and neuropathic.
• Perform a multidimensional pain assessment and establish a pain diagnosis or diagnoses.
• Collaborate effectively as a member of the interdisciplinary team and engage the patient in an appropriate, balanced, goal-oriented, multimodal treatment plan.
• Involve longitudinal providers (primary care, outpatient specialists) early on in the pain management plan.
• Provide evidence-based and mechanism-targeted pain management guidelines.
• Provide appropriate specialty care.
• Dispense opioids in the safest manner and establish a system to monitor for side effects.
• Assess the impact of pain on function and risk for addiction.
• Discuss with the patient the treatment plan including monitoring, and realistic goals and limitations of pain therapy for the specific pain problem.
• Use a balanced, multimodal approach combining drugs with different mechanisms of action and non-drug techniques.
• Provide oral analgesia when possible.
• Limit administration of intravenous opioids to acute needs (e.g., painful procedures) and when patients are unable to take oral medications.

Patient engagement is essential to improving health outcomes and patient satisfaction with care. Patient engagement means fostering a productive collaboration in which patients and clinicians work together to help the patient progress toward mutually agreed-upon health goals. A growing body of evidence shows that patients who are engaged, active participants in their own care have better health outcomes and measurable cost savings.¹⁶ Engagement requires providing patients and families with education and counseling including information about how and when to report pain, individualized options for pain management (in many cases including a multimodal pharmacologic and non-pharmacologic approach) and realistic goals for pain control.

Goals for pain management should be specific, measurable and patient-centered. Casting “no pain” as a treatment goal is both unrealistic and undesirable. Goals for pain management should be written in the plan of care and may include the patient expressions of adequate pain relief, level of tolerability to side effects from the analgesic regimen, maintenance or improvement in functional status, or satisfaction with pain management.

A focus by the health system primarily on numeric pain ratings can be problematic. A patient’s pain rating may be conceptualized as an attempt to construct the meaning of the pain experience, influenced by a range of internal and external factors, rather than a task of matching the pain intensity to a distance on a scale.¹⁷ Data from clinical trials suggest that a 33 percent to 50 percent decrease in pain intensity is meaningful from a patient’s perspective and represents a reasonable standard to determine the efficacy of an intervention. Depending on the severity of a person’s pain, this percentage change may be reflected as only a one- to two-point change on a 0-10 scale.

4.2 Availability of Subspecialty Services: Pain Management and Palliative Care

For some complex pain conditions the help of a service dedicated to inpatient pain management is required. The involvement of a pain specialist is advisable if the patient has a known history of chronic opioid use and tolerance opioid misuse and abuse and/or comorbidities, which can make pain management challenging.

Specialty care should be available or encouraged when:

- Pain is inadequately controlled
 - > Opioid refractory pain
- A diagnosis of the pain syndrome is unknown
- Side effects of medications need better control
- Patient or family are dissatisfied with the pain management
- Multiple comorbidities
 - > Psychiatric disorders
 - > Multiple organ dysfunction
- Questions or concerns exist about the management of opioid medications
- A history of misuse or abuse of opioids or other substances is raised
- The patient has frequent readmissions for pain or a need for outpatient pain care
- The patient has a terminal illness

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These criteria can be used as triggers for consultation. For example, the hospital system can structure an automatic message to the attending hospitalist recommending a consultation if a patient's pain is inadequately controlled after 24 hours of admission.

Interventional pain procedures can provide better pain control, allow a reduced use of systemic opioids and other pain medications, decrease systemic side effects and improve function. Therefore, patients who have inadequate pain control with maximal systemic medications or who suffer significant side effects from these medications should be considered for an interventional pain procedure. Table 4 below summarizes common procedures and their indications.

If the required subspecialty services are not available in the hospital, the hospitalist still has an obligation to help the patient access these services. For example, interventional pain services may not be available in all hospitals. One option is to transfer the patient to a medical center that can provide the higher level of care. Another option is to discharge the patient, so that he or she can have the procedure done as an outpatient.

Table 4: Commonly Performed Interventional Pain Procedures

Procedure	Indication
Peripheral Nerve Blocks (Upper and Lower Extremities)	Localized extremity pain
Epidural/paravertebral Catheters	Sympathetic pain or visceral pain
Gasserian Ganglion Blocks, Spheno-Palatine Blocks	Trigeminal neuralgia, atypical facial pain
Occipital Nerve Blocks	Acute or acute on chronic headaches
Sympathetic Nerve Blocks	Visceral abdominal and pelvic pain
Epidural Steroid Injections or Facet Joint Injections	Acute or acute on chronic spinal pain
Sacro-Iliac Joint Injections	Sacroiliitis
Major Joints Injections	Arthritis
Trigger Point Injections	Myofascial pain
Implantable Devices (Spinal Cord Stimulator, Intrathecal Catheter Pumps)	Refractory or intractable pain

Systems should be created to identify patients who have implantable devices — such as a spinal cord stimulator, intrathecal catheter and pump — at admission to the hospital. These patients should be managed in close conjunction with the specialty pain service. Alerts should be created to ensure that patients with intrathecal pumps do not receive MRIs, which can lead to pump malfunction and overdose.

4.3 Helping Staff with Difficult Conversations about Pain Management

The clinical staff should be educated and trained about discussing the patient’s pain goals. Introducing the topic of goals for pain control can be awkward to articulate. Simply asking a patient, “What is your goal for pain on a 0-10 scale?” is not particularly helpful, as most patients would say zero. Goal setting is collaborative. Staff can be trained to use statements that may be helpful to open up the discussion, including:

- “What would you like to be able to do while living with your pain?”
- “What level of pain is tolerable for you?”
- “In the balance between pain relief and side effects, what is more important to you?”
- “What does your pain mean to you?”

Communication skills are an integral part of quality pain management and can increase patient satisfaction, improve the patient-provider relationship and increase treatment adherence.¹⁸⁻²⁰ Hospital staff need routine training regarding the key principles of communicating about pain management, including 1) expressing a commitment to care for pain, 2) explaining the decision to use multiple therapies besides opioids and to use the minimal medication necessary and 3) expressing empathy while clearly setting limits in a non-judgmental fashion. Table 5 shows a list of strategies used in training.

Table 5: Strategies Used in Training

Strategy	Suggested Phrasing
Validate patient’s pain and frustration/fear/other emotions related to pain	“I know that you are in pain and you are worried. We will do our best for your pain.”
Review the data objectively	“I see that you are able to function better and sleep better than before.”
Respond to requests for inappropriate intravenous opioids that are not indicated with clear limits	“Our standard for all patients is not to give IV medication for people who are able to take pills.”
Avoid arguing	“There is no reason for us to argue about this.” or “I am not going to argue with you.”
Be transparent with your concern	“I’m concerned about the impact of your pain medication.”
Do not abandon the patient; commit to treating pain with non-opioid measures	“I believe that you have pain, and I want to continue to work with you to treat the pain with other approaches.”
Use risk/benefit language	“The risks of these medications are higher than the benefits for you.”
Respond to threats to leave against medical advice	“You have the right to leave the hospital, but I still cannot give you inappropriate medications.”

4.4 Systems-Level Management of Pain Medications

4.4.1.1 Appropriate Initiation and Titration of Opioid Analgesics

Opioid analgesics are the appropriate treatment for acute pain and acute on chronic pain. The hospital system has an obligation to ensure the safe initiation and titration of opioids. Procedures should also be instituted to ensure that opioids are tapered once acute pain is controlled, and that opioids are not escalated unless the patient's pain is responding to opioids. Safe initiation and titration requires a thorough and accurate medication reconciliation process. This process may require confirmation through multiple sources including family, home health agencies, outpatient clinics and offices, pharmacies and Prescription Drug Monitoring Programs (PDMPs).

For patients with opioids-responsive pain, patient-controlled analgesia (PCA) allows safe and effective initiation and titration of opioids; unfortunately PCA therapy is under-utilized in these patients. All staff, from the physician to the pharmacist and nurse, should be involved in 1) ensuring the appropriate use of the PCA, 2) educating the patient and family about its use and 3) checking the pump is delivering the appropriate doses. For example, confused patients and patients who are unable to hit the button should not be given a PCA. Different order sets for different doses of the PCA should be established depending on the tolerance of the patient to opioids. For example, low doses should be given for opioid-naïve patients, moderate dose ranges for patients who have been on some chronic opioids and high doses for opioid-tolerant patients, e.g., cancer patients or terminal patients.

4.4.1.2 Side Effects of Opioid Analgesics

Hospitals have a responsibility to put into place a structure to monitor and minimize the side effects of opioids. This structure should include the proper screening, education and preemptive treatment of potential side effects. Such an approach may aid in maximizing effectiveness while reducing the severity of side effects and adverse events. For example, when a prescriber orders an opioid, all the information he or she needs should be together in one place and readily available. This information should include:

- Doses of opioids used in the last 24 hours
- Pain scores, sedation scale and vitals
- Laboratory values, especially renal function
- Allergies and reactions
- Medications that can interact and co-analgesics

Patients with one or more of the following risk factors should be monitored closely:

- Concurrent use of other central nervous system (CNS) depressants such as benzodiazepines and anticholinergic medications
- Sleep apnea or other respiratory diseases
- CNS diseases
- Cardiovascular diseases
- Renal disease or liver disease that may affect clearance of opioid medication

A pharmacist should be involved in choosing and dosing opioids in patients with significant renal or hepatic impairment.

4.4.1.3 Converting to a Discharge Regimen

In anticipation of discharge, transitioning PCA therapy to an oral opioid regimen should ideally occur at least 24 hours before sending the patient out. Establishing a standard protocol can reduce the delay in discharge while ensuring the patient's comfort. A best practice protocol should include the following elements:

1. Overlapping the basal portion with the long-acting oral medication for eight to 12 hours to allow the oral medication to become effective. For example, if the oral medication is started at bedtime, the PCA can be stopped in the morning.
2. Ensuring the available bolus doses match or exceed the basal dose, when the basal is stopped.
3. Initiating a short-acting opioid as needed, when the bolus portion is stopped.

Conversion of opioids should be checked or double-checked by pharmacists, because of the potential for human error. Conversion tables and calculators are available to assist in the conversion but should be considered as guides and not overly relied upon.

4.4.2 Order Sets

Many hospitals prefer order sets that can help standardize care. Order sets that encourage best practice include elements such as:

- Using scheduled non-opioids for mild pain
- Offering oral or preferred intravenous medications for moderate pain, with default doses that can be changed
- Avoiding range orders
- Offering timely rescue medications
- Allowing opioid dosing in anticipation of painful dressing changes or other events
- Coupling of as-needed or rescue opioids to the maintenance or basal opioid, to avoid multiple-opioid combinations

4.4.3 Non-pharmacological Interventions

Many non-pharmacological interventions are available for pain management. Unfortunately, most are not available in the hospital setting because they are usually not covered by insurance or considered part of the “ancillary services” included in the room charge. Outside professionals may be willing to come in to provide these services or some hospital staff may already have the expertise. Hospital staff may need training and education about the benefits, use and availability of these interventions. The following is a list of interventions that have evidence-based support:

- Cognitive-behavioral approaches
- Distraction techniques
- Relaxation
- Guided imagery
- Acupuncture
- Cold therapy
- Heat therapy
- Massage
- Transcutaneous Electrical Nerve Stimulator (TENS)
- Music therapy

4.5 Special Populations

Certain populations may pose particular challenges for hospital staff in managing their pain. These patients often require higher doses of medications or have particularly complex psychosocial factors associated with their pain. Caring for these special populations will require additional training and education of the staff that may not be practical to give to the entire hospital. If a hospital has a sufficient census of a particular patient population, having a dedicated unit or a unit that focuses on the patient population can benefit both the patients and the staff. Alternatively certain staff can be trained on each unit to care for the special pain population. These special populations can include:

- Cancer patients
- Patients with sickle cell disease
- Patients with comorbid psychiatric or psychological conditions
- Patients with a substance use disorder
- Geriatric patients
- Patients at the end of life

Step 5: Choose Metrics and Develop a Data Collection Plan

Metrics for a pain management quality improvement project are based on the project's scope and aims. Although interest is high on outcomes, a tunnel-vision approach that focuses only on the end result will miss what can happen in the intermediary steps if the end outcomes are not achieved. Thus, metrics should include structure, process and outcomes related to the specific aims of quality improvement goals. Data collection should include at least three key steps in the process-improvement measurement including 1) identifying problems or opportunities for improvement, 2) obtaining baseline measurements, and 3) tabulating results after the new improved process has been implemented. Measurements should also be repeated periodically to monitor the new process. Measures should be few, easy to collect and cover short periods to be most useful.

Evidence-based quality measures can be devised to suit the aims of specific projects. Example indicators include:

- Pain is treated with regularly administered analgesics
- A multimodal approach is used
- Pain is prevented and controlled to a degree that facilitates function and quality of life
- Patients are adequately informed and knowledgeable about pain management.²⁹

Below are possible data sources and specific measures that can be considered.

5.1 Existing Pain Management Performance Metrics

5.1.1 HCAHPS Survey

Patient satisfaction with pain management is publically reported via the HCAHPS post-discharge patient survey, which provides a standardized measure for comparisons of hospitals on topics important to consumers and creates incentives to improve quality of care. The principal audience for this accountability data is the purchasers and potential patients as well as healthcare administrators. A portion of hospitals' Inpatient Prospective Payment System from CMS is linked to performance on a set of quality measures. Pain management is one of six components that are used to calculate an overall score for each hospital, covering the patients' experience of care domain. This overall score is used in the Hospital Value-Based Purchasing program to incentivize hospitals to improve their scores. The pain management items in the HCAHPS survey are:

1. During this hospital stay, how often was your pain well controlled?
Answer options: Always, usually, sometimes or never.
2. During this hospital stay, how often did the hospital staff do everything they could to help you with your pain?
Answer options: Always, usually, sometimes or never.

Hospitals are compared based on the percentage of patients who report “always” in response to these questions.

The HCAHPS items are validated and important to hospitals because they are publically reported and linked to reimbursement. A hospital’s ranking compared to similar hospitals, especially when this ranking is low, can be an important motivator of efforts to invest in and improve pain management. Limitations of the HCAHPS survey are a low response rate and a delay in reporting. Therefore, an impact on these scores may not occur until months after the impact on patient care. Though the survey answers track to a specific unit and service from which a patient was discharged, they reflect a patient’s whole hospitalization experience, and so may be influenced by care provided in other locations, e.g., emergency room, procedures, other units and services that cared for the patient during that hospital stay. These scores reflect heavily on perception and consumer satisfaction around pain management, but do not address safety and misuse issues.

5.1.2 Internal Protected Sources of Data to Drive Quality Improvement

In addition to the publically reported HCAHPS scores, internally protected data about pain management can be used to drive improvement:

- **Joint Commission Accreditation Survey Results:** Although Joint Commission accreditation requires hospitals to collect and analyze data on performance, outcomes and other activities to help provide quality care, there are no specific required or standardized Joint Commission pain measures. Based on accreditation survey requests for improvement, many hospitals examine some aspect of documentation of pain reassessments or development and adherence to local policies that address the Joint Commission medication management standards (e.g., construction of PRN range opioid orders with clear indications and avoidance of therapeutic duplication, e.g., two PRN opioid orders).
- **Incident Event Reports:** Voluntary reporting such as Patient Safety Net or other electronic incident databases, adverse drug reports and naloxone events can be used to highlight individual cases of suboptimal pain management or safety issues. These reports can be examined individually or aggregated to analyze trends and factors related to under-treatment, over-treatment and misuse or technology-related problems (e.g., analgesic pump malfunction). Root cause analysis can reveal opportunities to enhance interdisciplinary communication and other processes affecting continuity of care (e.g., medication reconciliation, patient handoffs).

5.2 Suggested Metrics for Hospital Pain Management Improvement Projects

In addition to the existing measures listed above, measures can be selected to assess various aspects of a pain management improvement project, including effectiveness of pain management, safety and appropriateness of opioid prescribing, patient satisfaction and utilization. Possible structural and process measures are listed below.

Structural Measures:

- Staff knowledge and competency in screening and basic pain management (see [Step 3](#) for examples of key structure aspects)
- Formulary guidelines for prescribing opioids, especially high-risk, long-acting opioids such as fentanyl patches or methadone
- Computer physician order guardrails and best practice alerts
- Pain management policies
- Access to timely specialist consultations and other pain resources, e.g., psychologist, integrative therapies, etc.
- Percent or number of prescribers and/or pharmacists who have registered with the state PDMP program to run opioid-prescribing reports

Process Measures:

- Patient and family education/engagement (e.g., opioid safety counseling, side effect education, collaborative goal setting)
- Documentation, e.g., pain screening, comprehensive assessment, pain diagnoses, reassessments, sedation monitoring:
 - > Frequency of pain assessment and documentation, e.g., percentage of patients who have pain assessed in accordance with the unit or hospital protocol
 - > Percentage of patients who receive a medication or other intervention after a recorded moderate or severe pain score
 - > Time to reassessment of pain after an indicated intervention
 - > Appropriate completion of scales to gauge opioid sedation / respiratory suppression
- Drug utilization reviews, for example:
 - > Percentage of patients who receive medications or routes that should be avoided, e.g., meperidine, intramuscular injections
 - > Percentage of patients with moderate or severe pain who receive multimodal analgesia, e.g., at least one non-opioid analgesic
 - > Appropriate use of as-needed medications prior to pain-inducing activities, e.g., wound care, physical therapy

- Opioid prescribing compliance, e.g., with published guidelines
- Percent of patients who are admitted or discharged on opioid medication for whom a PDMP report was run to screen for misuse or diversion
- Percent of patients discharged on long-acting opioids with an identified prescriber to follow pain management, e.g., primary care clinician or pain or palliative care specialist

Appendix A also lists an example set of measures for an improvement project.

Data can be obtained by a variety of methods including patient surveys and medical record audits, incident event reports (e.g., Patient Safety Net and adverse drug reaction reports), drug utilization reviews, reviews of flowcharts detailing how pain is currently managed, systematic observation of current practices and educational needs assessments including survey of staff knowledge and attitudes.³⁰ Because a high degree of precision is not necessary for improvement purposes, small samples, for example 20-30 cases per sample, can be adequate. A common rule of thumb is to aim for 10 percent of eligible events. For more information about determining a valid sample size for quality improvement see http://patientsafetyed.duhs.duke.edu/module_b/steps/step4.html.

5.3 Patient-Reported Outcome Measures

Any pain management improvement initiative should include some form of patient-reported outcome measures. These measures include pain levels as well as impact on function and satisfaction with pain care. As per Joint Commission accreditation requirements, each hospital must guarantee periodic assessment of pain for their patients. Thus medical records track pain levels, including Numerical Rating Pain Ratings, Visual Analog Pain Ratings and possibly other pain assessments. While pain severity is a good measure to track for improvements with interventions, especially for acute pain, it may be less useful for patients with chronic pain and pain that is not responsive to opioid medications.

Standardized surveys, though they are not collected as part of routine care at many hospitals, provide the opportunity to focus on function and quality of life, aspects that are more relevant than pain severity ratings in patients with chronic or non-opioid responsive pain. The American Pain Society has validated a patient outcome questionnaire designed for quality improvement purposes for adult surgical or medical inpatients experiencing acute or cancer pain (APS-POQ-R, see Appendix B).³¹ The survey contains 23 items asking for evaluation of pain in the past 24 hours. Survey items include pain severity, pain interference with activity, sleep, emotions, analgesic side effects, pain relief and perceptions of care (e.g., helpfulness of information received, perception of being allowed to participate in decisions about pain treatment as much as the patient wanted, satisfaction with results of pain treatment). The survey can be used as a pre-/post-practice change measure.

5.4 Other Outcome Measures

Depending on the goals and scope of a project, additional outcome measures can be selected. General categories could include adverse events as well as utilization. Adverse events can be collected via incident reports, the medical record or primary data collection. These could include mild to severe events such as opioids side effects (itching, constipation) to respiration depression and ICU transfer or mortality rates. Reports from electronic medical records can be generated to track these outcomes. Care should be taken in choosing, interpreting, and using and reporting these measures. For example, naloxone administrations might indicate over-use of opioids or inappropriate use of naloxone. Naloxone administrations do not necessarily indicate that opioids were used inappropriately, and tracking this measure may lead to under-treatment of pain or reluctance to use needed opioids or naloxone.³²

Utilization, including readmissions and length of stay, is a common outcome of improvement projects. Common and appropriate outcomes for pain management improvement projects include hospital length of stay, seven- and 30-day emergency room visits, and 30-day readmissions. Like HCAHPS scores, these outcomes can be difficult to improve without significant and systematic changes to the healthcare system that focus on both inpatient and outpatient care processes. Furthermore, for medical patients with chronic pain, readmissions may be driven by their underlying medical problems, emphasizing the importance of concurrently tracking pain process measures.

Step 6: Deploy Interventions and Monitor Impacts

Efforts to improve pain management should focus on improved patient care including assessment, treatment efficacy and safety, as well as organizational structures and processes. The focus should be on increased patient engagement in the treatment plan and implementation of evidence-based treatment regimens customized to fit the circumstances. A systems approach and framework to design interventions to improve pain management needs to be multilevel as the interventions address the behaviors of providers, patients and the healthcare organization.

The goal is continuous improvement of the quality of pain management. Small improvements and progress should be celebrated. No one best method of monitoring applies to all hospitals, although timeliness in audit and feedback is important for information to be useful. Using standardized measures as outlined above in Step 5 allows for comparisons with baseline and tracking improvements over time. Simple control charts (visual representations of change or stability in the process being measured over time) that can be accessed on a hospital's quality website elevate the

visibility of the initiative. A control chart can help monitor process stability and control and can display common cause variation inherent in a process. A guide to control charts can be found at: <http://www.isixsigma.com/tools-templates/control-charts/a-guide-to-control-charts/>.

Key areas of focus for interventions are listed below, including examples of possible specific interventions.

6.1 Interventions to Ensure Engagement and Coordination of Clinicians from Multiple Disciplines

A key principle of high-quality pain management is the engagement and coordination of care from different disciplines to work with the patient and family around pain control. Yet the roles of various providers are not often specified in pain care, and their efforts and communication may not be coordinated. Thus, creating structures and processes to engage and bring these providers together is an important part of an improvement project. Possible interventions in this domain include:

- Creating a protocol that specifies roles for bedside nurses, physicians, case managers, social workers and spiritual care providers in the management of pain, including when each of these would be consulted to help with pain management. For example, case management might arrange home visiting nurses for all patients being discharged on opioids. Spiritual care or social work might be consulted routinely for psychosocial support and guided relaxation
- Creating venues for physician-nurse communication about pain, e.g., create a protocol for nurses to round with physicians and include specific items about pain management in those rounds
- Adding pain management as a topic at already scheduled meetings that include different disciplines, e.g., discharge or multidisciplinary rounds
- Creating a “time-out” procedure that is activated to bring the physician to be bedside when the nurse observes uncontrolled pain
- Creating an admissions checklist for patients with pain that ensures that the primary care or pain physician is contacted to discuss the patient’s pain management regimen

6.2 Implementation of Protocols that Recognize and Treat Pain Promptly

Given the evidence for the negative consequence of inadequately controlled pain in the hospital, the emphasis on pain management should be a timely and comprehensive assessment and reassessment that leads to an accurate diagnosis and prevention of pain and available prompt rescue treatment. To achieve this, processes should be systematized through protocols, hospital policies and order sets. Possible interventions in this domain include:

- Revising hospital policies to specify the use of appropriate pain assessment scales, treatment of pain and reassessment
- Performing audits to assess compliance
- Creation of templates to record a comprehensive pain assessment into admission and daily progress notes in the electronic medical record (EMR) so that attention to pain becomes prompt and routine. Documentation fields within the EMR should be available to every discipline to communicate the plan of care for pain
- Hourly rounding by bedside nurses to assess patient needs, including pain and need for as-needed medications
- Structuring team rounds so that physicians inquire about pain and treatment side effects on a daily basis at rounds, e.g., ask patients whether pain adequately managed
- Creating triggers to alert physicians when patient is admitted on chronic opioids, has uncontrolled pain or is followed by outpatient pain clinic
- Automatic consults to pain, pharmacy or palliative care when a patient has uncontrolled pain, e.g., a peak pain score of six or greater (of 10)
- Adding peak pain score to the vitals signs area of rounding reports used on a daily basis by physicians
- Creating reports from the medical record to identify all patients with peak pain score of six or greater, or patients who are receiving more than three doses per day of intravenous opioids

6.3 Educational Interventions for Patients and Families

Each patient's pain care must be customized, and patients should be encouraged to participate in their treatment plan. Such patient-centered care requires the development of patient education and counseling resources to inform patients and families in a consistent manner about their available pain control options, how to utilize the options and what goals and outcomes are realistic. Educational interventions can range from single episodes of face-to-face instruction or provision of written materials, videos, audiotapes or Web-based educational information to more intensive, multicomponent interventions including individualized and supervised exercise, education and

telephone calls. The diversity of clinical situations, patient needs and patient preferences support the need for an individualized approach that is age-appropriate, geared to the person's and family's level of comprehension and general health literacy, cultural and linguistic competency and supported by timely opportunities to ask questions and receive authoritative and useful answers. Possible interventions in this domain include:

- Creating or adopting patient and family education materials, and systematically distributing them to patients who have pain or are using opioid medications
- Creating templates to record each patient's individual pain management plan, including goals, planned treatments and expectations for inpatient and follow-up pain care
- Having a pain nurse or pharmacist meet with all patients early in hospital stay if they are on opioids at admission, or are indicated to be discharged on opioids
- Compiling list of pain resources to provide easy reference for patients and families so that they can request them

6.4 Educational Interventions for Prescribers

Physicians often report the need for education about pain management, so this area is ripe for systematized improvement. Pain education is required as part of continuing medical education, so this need can be used as a prompt to increase participation in trainings. A number of online and in-person programs have been developed, the completion of which could be required by a hospital or clinical program. Additionally programs with trainees, e.g., students or residents, can educate attending physicians by providing faculty with developing tools to help them teach their trainees. Possible interventions in this domain include:

- Online pain education models that provide continuing medical education credit. Examples include:
 - > Providers Clinical Support System: view webinars and models of clinical support systems for opioid therapies at <http://pcss-o.org>.
 - > Opioid Prescribing (Boston University): view an overview and training tools on safe opioid prescribing in chronic pain at <http://www.opioidprescribing.com/overview>.
 - > Training Xchange: online course for communication about opioid prescribing for chronic pain at <http://www.trainingxchange.org/our-programs/cope-rems>.
 - > Pain Management Model (University of Wisconsin): free module designed for residents at <http://projects.hsl.wisc.edu/GME/PainManagement>.
- Using regular faculty meetings, grand rounds and case review sessions as an opportunity to provide pain content
- Scheduling sessions to provide education and demonstration of the prescription drug monitoring plan, in conjunction with assistance with registration for the program

- Use of resources that include both learner and faculty guides for teaching trainees, e.g., Professor EBM: <http://www.professorebm.com/>
- Promoting attendance at courses focused on improving communication about pain management, e.g., The Institute for Healthcare Communication: <http://healthcarecomm.org/training/faculty-courses/difficult-clinician-patient-relationships/>
- Compiling a list of pain resources to provide easy reference for providers

6.5 Safety and Ensuring Appropriate Opioid Prescribing

Interventions to improve pain management should be counterbalanced with interventions to monitor safety and efforts to identify patients who may be at risk for inappropriate opioid use or diversion. Policies, protocols and order sets are an important improvement tool in ensuring that best practices are followed. Possible interventions in this domain include:

- Specifying the routine monitoring and documentation of sedation scales in conjunction with pain assessment as part of unit or hospital policies
- Creating order sets for initial as-needed dosing of opioid medications for acute pain in opioid-naïve patients, as a way to specify preferred medications and limiting doses
- Implementing guidelines for maximum starting opioid doses in patients with COPD or who are heavy smokers
- Designating a team member, e.g., the unit pharmacist, to run reports in the state Prescription Drug Monitoring Program (PDMP) for all patients who are receiving opioids on admission
- Creating protocols to limit escalations in long-acting medications, e.g., fentanyl patch, methadone
- Avoiding certain high-risk medications in non-operative settings, e.g., meperidine
- Requiring specialist pain consultant, e.g., pain or palliative care providers, or pharmacist involvement for high-risk medications such as methadone
- Conducting case reviews of patients who have experienced adverse drug events with opioids, e.g., who received naloxone
- Adding reminders in the EMR to make sure every patient on an opioid has a bowel regimen ordered

Step 7: Improving Transitions of Care for Patients with Pain

7.1 Elements of a “Quality” Discharge

Transitions are vulnerable times for all patients, and this is even more true for patients with pain and/or complicated pain management regimens.³³ Patients frequently face challenges in getting prescriptions filled after discharge, or confusion about how to take their medications. This confusion leads to increased pain and return to emergency rooms and re-hospitalization. With careful planning, these negative outcomes can be avoided. Systematizing procedures that ensure consistent pain control after discharge is important, as opposed to relying on individual and busy providers to remember key steps.

Since most hospitalized patients with acute or chronic pain will likely continue to have pain at discharge, those responsible for the future outpatient management of pain should be informed of the treatment plan. Communication with patients, caregivers and outpatient medical professionals about expectations and strategies for pain control in the outpatient setting should be initiated early in the hospital stay. All patients should have careful medication reconciliation, timely completion of a discharge summary with confirmation of receipt by primary care provider, patient education on managing their pain and an appointment with their outpatient pain prescriber.

An example checklist, which could be completed for all patients being discharged on opioids medication, is shown below in Table 6.

Table 6: Discharge Checklist for Patients Going Home with Long-term Opioid

✓ Identify outpatient provider who is willing to prescribe opioids
✓ Run a Prescription Drug Monitoring Program (PDMP) report to identify concerning fill patterns, e.g., multiple providers, multiple pharmacies
✓ Ensure that outpatient provider is comfortable with discharge regimen
✓ Check that an appointment is scheduled with outpatient pain provider
✓ Ensure that pain is stable on discharge regimen for at least 24 hours
✓ Ensure that insurance will cover any new medications
✓ Check with pharmacy where patient plans to fill prescription to ensure that it has sufficient supply to fill the discharge prescription
✓ Give the patient a follow-up number where patient or pharmacy can call the prescribing provider for any problems with the discharge prescription
✓ Use the teach-back method to ensure that patient understands how to take medications after discharge
✓ Give the patient a phone number to call for questions about how to take medications or increased pain

7.1.1 Transitioning to an Outpatient Pain Regimen

The outpatient prescriber of chronic medications should be identified early in the hospitalization. If possible, direct communication (phone, email) will help design a regimen that is appropriate and will be sustainable after discharge. If a treatment will be unavailable in the outpatient setting, then transition to alternatives must be made well before discharge, to ensure that the post-discharge regimen will be effective. For example, in only very rare cases, e.g., as malignant bowel obstruction, will parenteral opioids need to be provided at home. Thus, most patients must be transitioned to enteral preparations. Additionally, many insurances do not cover certain opioid preparations or adjuvant medications that are available in hospitals. Pharmacies may not stock certain opioid preparations or other medications. Before a new medication is started on the inpatient side, prescribers should verify that their insurance will cover it. Before discharge, a pharmacy should be identified to ensure that it carries the prescribed medications and has sufficient quantity to fill the planned prescription. Patients should be stable on the planned regimen for an extended period of time prior to discharge. Monitoring the response to therapy for at least 24 hours should provide evidence about the safety and durability of the plan.

7.1.2 Access to Specialists After Discharge When Appropriate

In some cases, the outpatient prescribing physician may be a pain or palliative care specialist, while in others specialists may be consulted for outpatient procedural interventions. If an ongoing consultation with specialists is recommended, the inpatient team should help patients arrange appointments and be explicit about the roles of the consultants in communication with the primary care provider. In the event that patients have access to inpatient consulting services that are not available after discharge, the consultants should be queried about outpatient management and their advice communicated to the primary care provider.

7.1.3 Cost Considerations in Outpatient Pain Regimens

Some medications, particularly newer or rarer brand-name formulations, may not be covered by patients' health insurance plans, and some may be covered only with specific prior authorization requirements. Furthermore, some insurers have responded to the rise in overdose and deaths involving prescription opioids by imposing dose ceilings and/or limitations on the number of pills or patches they will cover in a given period of time. In any case, the pain medication list should be checked for coverage prior to discharge, and any necessary pre-authorizations should be obtained. In different hospital settings, the best person for this role may vary between a pharmacist, social worker, discharge planning nurse or hospitalist.

7.1.4 Other Logistical Considerations When Discharging Patients on Controlled Substances

In most situations, a prescription for controlled substances must still be printed on tamper-resistant paper. The prescriber must have a license with the Drug Enforcement Administration (DEA) adequate to the schedule of the controlled substance. Prescriptions should be checked for the correct formulation and appropriate directions for the amount of medication prescribed. The pharmacy where the patient will fill the prescription should be open at the time of discharge, and have an adequate supply. When in doubt about any of these issues, the discharging prescriber should contact the pharmacy directly and consider faxing a copy of the patient's prescription to the pharmacy to confirm that it will be able to fill the patient's prescribed medication. Finally, discharge prescriptions should include appropriate contact information for the prescribing physician in case of any mistakes or pharmacist's concerns.

7.1.5 Assess Risk for Failure of Outpatient Management and Misuse of Outpatient Prescribed Opioids

Outpatient management is more likely to fail (and risk of readmission increases) when patients do not obtain adequate benefit from their treatment plan or suffer adverse medication consequences. Patients or care providers may have unrealistic expectations for the performance of their medications when they are outside the hospital, but appropriate education throughout the hospitalization and at discharge may improve expectations. Patients and families should be educated about what constitutes a pain crisis and when to contact their physicians, in order to avoid emergency room visits. Assessment and clear communication to both patients and outpatient providers of any adverse effects of patients' regimen at admission and during the hospitalization will also inform long-term outpatient management. All patients discharged on opioids should have a documented discussion of the short- and long-term adverse effects of their medications. Additionally, hospitals or services may wish to create limits for the amount of opioids that will be prescribed on discharge, e.g., requiring that a patient have a follow-up appointment with a pain or primary care provider in one to two weeks, and providing only enough medications to get through to that appointment.

Many patients admitted to the hospital with a painful condition have a history of opioid misuse or addiction, or are at high risk for these. Acute pain due to trauma, surgery, fracture or other conditions for which opioids are of benefit should always be treated. Compared to an ambulatory setting, prescribing opioids is safer in the hospital, as doses are controlled by medical staff and patients are monitored. However, prescribers should be careful in setting expectations for chronic opioid therapy that might be continued outside the hospital. Once the cause of the acute pain is resolved, a plan should be made to taper the patient off opioids. If ongoing pain treatment is necessary after discharge, the patient's risk level for opioid misuse will inform discharge planning. Hospitalists will want to prescribe lower-risk medications and communicate expectations to the patient about follow-up and adherence to the regimen prescribed. Hospitalists should also be aware that the highest-risk patients, particularly those with active substance abuse, may have difficulty finding providers who are willing to prescribe ongoing opioid therapy.

Section II: How to Implement and Sustain a Pain Management Quality Improvement Program for Hospitalized Medical Patients

Risk factors for opioid misuse and abuse include:

- Personal history of substance abuse, including alcohol as well as street drugs
- Family history of substance abuse, including alcohol
- Age between 16 and 45
- Psychological disease, including depression, bipolar disorder, anxiety and PTSD
- A personal history of sexual abuse
- Heavy smoking

There are several validated tools to assess risk for opioid misuse that are designed for use in the ambulatory setting.²¹ The opioid risk tool, a five-item questionnaire that risk-stratifies patients into low, medium and high risk, can be found at http://www.partnersagainstpain.com/printouts/Opioid_Risk_Tool.pdf.

Strategies for prescribing in patients at higher risk for opioid misuse include:

- Avoiding intravenous of opioids when patients are able to take oral medication
- Setting clear expectations about how opioids will be taken – i.e., establishing a daily schedule for taking oral long-acting opioids, or “no more than X pills per day” for short-acting opioids
- Use of non-opioid therapies such as NSAIDs, tricyclic antidepressants, gabapentin, acetaminophen and SNRIs, as well as non-pharmacologic therapies and regional blocks
- Issuing opioid prescriptions at discharge with no more than a two-week supply

No model adequately predicts which patients will misuse or suffer complications from opioids, although the risks of complication do rise with increasing dose and active substance use disorder. Universal precautions for prescribing opioids at discharge include documentation of any aberrant behavior and screening for substance use disorder. Appropriate urine toxicology testing on admission may identify secondary drug use, although care is warranted in interpreting the results. An algorithm for interpretation of urine drug testing is included in [Appendix D](#).

State-based Prescription Drug Monitoring Programs (PDMPs) are key tools for institutions and health professionals to use in screening for evidence of misuse or diversion of opioid medications. These programs track data from all prescriptions of controlled substances that have been filled and make the data available to health professionals who are registered. Almost all states within the U.S. have operational programs. Websites and contact information for each state can be found on the Prescription Drug Monitoring Program Training and Technical Assistance Center website: www.pdmpassist.org.

Accessing the state PDMP to review the patient's pattern of refills can provide clues about recent patterns of use of prescribed controlled substances. Patients with evidence of any trouble with controlling their use of medication in the past may benefit from discharge plans that require highly structured medication dispensing, if risk-benefit analysis still favors opioids for pain control. All patients on chronic opioids should identify someone close to them (family member, friend or paid caregiver) who can help assess response to treatment with opioids. In high-risk patients such a person is imperative for monitoring for adverse consequences and controlling the access to medications. Controlling access may require locking up the medication, dispensing limited supplies or use of bubble packs. Prescription of naloxone and education on its use to both patients and care providers should be provided for any high-risk patient.

7.2 Patient Education about Pain at Discharge

Patient education is an area of discharge planning that is often overlooked and is ripe for improvement. Enacting systems to ensure appropriate patient education is essential to improvement in this area. For example, education could be completed as part of the discharge process by the bedside nurses, using educational materials. A pharmacist or pain nurse could be asked to see all patients who are being discharged home on opioid medications.

Patients on pain medication regimens must be educated about expected magnitude and timing of analgesia, side effects and drug-drug and drug-disease interactions that may affect the levels of pain control or side effects. Clinicians should provide this information in clear language and images. A sample teaching brochure that can be used at the time of discharge is available in [Appendix E](#). Checking for the patient's understanding using the "Teach Back" method is an effective way to identify any gaps in communication.

"Teach Back" occurs after a patient education session when the clinician asks the patient to explain, in his/her own words, the lesson(s) imparted. Any discrepancies or gaps should prompt more education, and another round of Teach Back. Such an interaction gives the opportunity to provide a small amount of information, check for understanding and then reinforce or add to that information. Teach Back is best understood as a test of the clinician's skill in presenting the information, and may also provide an indication of the durability of the discharge plan.

To help patients begin to practice their own pain management, protocols can be implemented to help patients begin to manage their own pain a few days before discharge. Education materials can include areas to write out a patient's pain management regimen, so that they understand all of the medications that are being used to treat their pain, and which they take as needed and which they should take whether or not they are having pain.

Patient education materials may enhance adherence to recommended treatments and improve pain control. In addition to standard discharge teaching and materials, pain-specific materials may be used. [Appendix C](#) includes a Sample Opioid Medication Guide for Patients and Caregivers.

7.3 Post-discharge Resources

The time between discharge and follow-up with primary care provider has been identified as a period of high risk for hospital readmission, and many quality improvement interventions have focused on bridging this gap in the continuum of care. Improving the quality of pain management can take advantage of these existing processes. The patient's pain control and use of medication should be assessed during the discharge phone call and at home care visits, and effective problem solving may prevent unnecessary visits to the emergency room or urgent care setting.

Some important questions to consider during post-discharge contact include:

1. Were you able to fill your pain medication prescriptions?
2. Are you keeping track of when you take your medications? Have you made any changes to the prescribed schedule?
3. Have you or has anyone else noted any side effects (e.g., constipation, sedation or sleepiness)?
4. Do you know when you have a follow-up appointment with your doctor?
5. Do you know when to call your doctor if your pain gets worse?

Completing a performance improvement project for pain management can be very rewarding. We wish you and your team the best of success.

Resources

- **Prescription Drug Monitoring Program Training and Technical Assistance Center:** provides list of states with Prescription Drug Monitoring Programs and contact information and websites for active programs: <http://www.pdmpassist.org/content/state-pdmp-websites>
- **Urine Drug Testing Algorithm:** <http://depts.washington.edu/anesth/education/forms/pain/UW-UDTinterpretationAlgorithm.pdf>
- **COPE-REMS** is a continuing medical education activity offered through the University of Washington School of Medicine. This online interactive course is aimed at healthcare providers, including physicians, registered nurses, ARNPs, physician assistants, psychologists and other care managers who are involved in treating patients with chronic pain and opioid prescribing. The approach of the COPE (Collaborative Opioid Prescribing Education) program is to promote a shared decision-making approach between providers and patients. Course content covers opioid safety requirements as described by the U.S. Food and Drug Administration (FDA) in its 2012 approval of a Risk Evaluation and Mitigation Strategy (REMS) for long-acting and extended-release opioids. COPE-REMS uses realistic video vignettes of providers and patients to demonstrate clinical practice through a self-paced tutorial course. <http://www.trainingxchange.org/our-programs/cope-rems>
- **Opioid Risk Tool (ORT):** http://depts.washington.edu/anesth/education/pain/docs/Opioid_RiskTool.pdf
- **Institute for Healthcare Improvement:** <http://www.ihl.org/Pages/default.aspx>
- **Free Online Excel Calculator from UW Pain Provider Toolkit:** <http://depts.washington.edu/anesth/education/pain/>

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Appendix



Appendix A:

Example Set of Quality Indicators for Improvement Projects²⁹

Quality Indicator	Measure (tool)
Process (assessment and treatment)	
The type or source of pain is documented	<p>Is there any documentation of pain? <input type="checkbox"/> yes <input type="checkbox"/> no</p> <p>In the medical records where there is some documentation of pain is the pain diagnosis or type of pain identified? (e.g. acute, chronic, somatic, neuropathic, visceral, myofascial) <input type="checkbox"/> yes <input type="checkbox"/> no</p>
Pain is reassessed at appropriate intervals following intervention.	Percent of documented nursing reassessments that comply with specific policy (e.g. IV PCA) or physician order? _____
Pain is treated by the oral route	Percent of patients who are PO that are treated with oral analgesics _____
Pain is treated with regularly administered analgesics, and when possible a multimodal approach is used (e.g., combinations of regional or local techniques, with non-opioid, opioid, adjuvant analgesics and non-pharmacologic methods).	<p>Percent of patients with pain receiving non-opioid alone, opioid alone, regional techniques (e.g. neuraxial) and various combinations of non-opioid, opioid, and regional techniques.</p> <p>Percent of patients with scheduled versus PRN non-opioid orders (patient question)</p> <p>Did you use any non-drug interventions in addition to analgesics to manage your pain? <input type="checkbox"/> yes <input type="checkbox"/> no</p> <p>If yes, please check all that apply: <input type="checkbox"/> relaxation <input type="checkbox"/> meditation <input type="checkbox"/> deep breathing <input type="checkbox"/> other (please describe) <input type="checkbox"/> walking <input type="checkbox"/> imagery <input type="checkbox"/> visualization <input type="checkbox"/> heat <input type="checkbox"/> cold _____ _____</p> <p>How often did a nurse or doctor encourage you to use non-medicine methods? <input type="checkbox"/> Never <input type="checkbox"/> Sometimes <input type="checkbox"/> Often</p>

Quality Indicator	Measure (tool)
Outcomes	
<p>Pain is prevented and controlled to a degree that facilitates function and quality of life</p>	<p>How often were you in moderate to severe pain in the first 24 hours (after admission or surgery)?</p> <p><input type="checkbox"/> always <input type="checkbox"/> almost always <input type="checkbox"/> often <input type="checkbox"/> almost never <input type="checkbox"/> never</p> <p>Circle the number that best described how, during the first 24 hours, pain interfered with your:</p> <p>Activity, mood, sleep, (may add other items for specific populations)</p> <p>0 = does not interfere, 10 = completely interferes</p> <p>Note: Consider using three-item “PEG” or “APS-POQ-R”</p> <p>The PEG, consisting of three items, has been found similarly responsive to full Brief Pain Inventory scales. Using a 0-10 scale the patient is asked to rate pain average in the last week? How, during the past week, pain has interfered with general activity and enjoyment of life.</p> <p>The APS-POQ-R is a 23-item validated QI survey for adult inpatients with acute and cancer pain that measures six aspects of quality including: (1) pain severity and relief; (2) impact of pain on activity, sleep, and negative emotions; (3) side effects of treatment; (4) helpfulness of information about pain treatment; (5) ability to participate in pain treatment decisions; and (6) use of non-pharmacological strategies.</p>
<p>Patients are adequately informed and knowledgeable about pain management</p>	<p>Adequacy of information you received about pain and pain control options while in hospital:</p> <p>1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent</p> <p>Were you allowed to participate in decisions about your pain treatment as much as you wanted to? 0 = not at all to 10 = very much so</p>

Appendix B:

APS Patient Outcome Questionnaire (APS-POQ-R)³¹

The following questions are about pain you experienced during the first 24 hours in the hospital or after your operation.

	No pain											Worst pain possible											
	0	1	2	3	4	5	6	7	8	9	10												
1. On this scale, please indicate the least pain you had in the first 24 hours:	<input type="checkbox"/>																						
2. On this scale, please indicate the worst pain you had in the first 24 hours:	<input type="checkbox"/>																						
3. On this scale, please indicate the average pain you had in the first 24 hours:	<input type="checkbox"/>																						
	Never in severe pain											Always in severe pain											
	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%												
4. How often were you in severe pain in the first 24 hours? Please circle your best estimate of the percentage of time you experienced severe pain:	<input type="checkbox"/>																						

	Does not interfere											Completely interferes										
	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
5. Circle the one number below that best describes how much pain interfered or prevented you from:																						
a. Doing activities in bed such as turning, sitting up, repositioning.	<input type="checkbox"/>																					
b. Doing activities out of bed such as walking, sitting in a chair, standing at the sink.	<input type="checkbox"/>																					
c. Falling asleep	<input type="checkbox"/>																					
d. Staying asleep	<input type="checkbox"/>																					
	Not at all											Extremely										
	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
6. Pain can affect our mood and emotions. On this scale, please circle the one number that best shows how much the pain caused you to feel:																						
a. Anxious	<input type="checkbox"/>																					
b. Depressed	<input type="checkbox"/>																					
c. Frightened	<input type="checkbox"/>																					
d. Helpless	<input type="checkbox"/>																					

	None											Severe
	0	1	2	3	4	5	6	7	8	9	10	
7. Have you had any of the following side effects ? Please circle "0" if no; if yes, please circle the one number that best shows the severity of each:												
a. Nausea	<input type="checkbox"/>											
b. Drowsiness	<input type="checkbox"/>											
c. Itching	<input type="checkbox"/>											
d. Dizziness	<input type="checkbox"/>											
	No relief											Complete relief
	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	
8. In the first 24 hours, how much pain relief have you received? Please circle the one percentage that best shows how much relief you have received from all of your pain treatments combined (medicine and non-medicine treatments):	<input type="checkbox"/>											
	Not at all											Very much so
	0	1	2	3	4	5	6	7	8	9	10	
9. Were you allowed to participate in decisions about your pain treatment as much as you wanted to?	<input type="checkbox"/>											

	Extremely Dissatisfied										Extremely Satisfied											
	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
10. Circle the one number that best shows how satisfied you are with the results of your pain treatment while in the hospital:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
	Not at all helpful										Extremely helpful											
	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
11. Did you receive any information about your pain treatment options? <input type="checkbox"/> No <input type="checkbox"/> Yes a. If yes, please circle the number that best shows how helpful the information was:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
12. Did you use any non-medicine methods to relieve your pain? <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, check all that apply:																						
<input type="checkbox"/> cold pack <input type="checkbox"/> deep breathing <input type="checkbox"/> distraction (such as watching TV, reading) <input type="checkbox"/> heat <input type="checkbox"/> imagery or visualization <input type="checkbox"/> massage <input type="checkbox"/> other (please describe) _____											<input type="checkbox"/> meditation <input type="checkbox"/> listen to music <input type="checkbox"/> prayer <input type="checkbox"/> relaxation <input type="checkbox"/> walking											
13. How often did a nurse or doctor encourage you to use non-medicine methods? <input type="checkbox"/> Never <input type="checkbox"/> Sometimes <input type="checkbox"/> Often																						

Appendix C:

Sample Opioid Medication Guide for Patients and Caregivers

Patient Counseling Document on Extended-Release/Long-Acting Opioid Analgesics
Patient Name:
The DO's and DON'Ts of Extended-Release/Long-Acting Opioid Analgesics
<p>DO:</p> <ul style="list-style-type: none"> • Read the Medication Guide • Take your medicine exactly as prescribed • Store your medicine away from children and in a safe place • Flush unused medicine down the toilet • Call your healthcare provider for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088.
<p>Call 911 or your local emergency service right away if:</p> <ul style="list-style-type: none"> • You take too much medicine • You have trouble breathing, or shortness of breath • A child has taken this medicine
<p>Talk to your healthcare provider:</p> <ul style="list-style-type: none"> • If the dose you are taking does not control your pain • About any side effects you may be having • About all the medicines you take, including over-the-counter medicines, vitamins, and dietary supplements
<p>DON'T:</p> <ul style="list-style-type: none"> • Do not give your medicine to others • Do not take medicine unless it was prescribed for you • Do not stop taking your medicine without talking to your healthcare provider • Do not break, chew, crush, dissolve, or inject your medicine. If you cannot swallow your medicine whole, talk to your healthcare provider • Do not drink alcohol while taking this medicine
<p>For additional information on your medicine go to: dailymed.nlm.nih.gov</p>

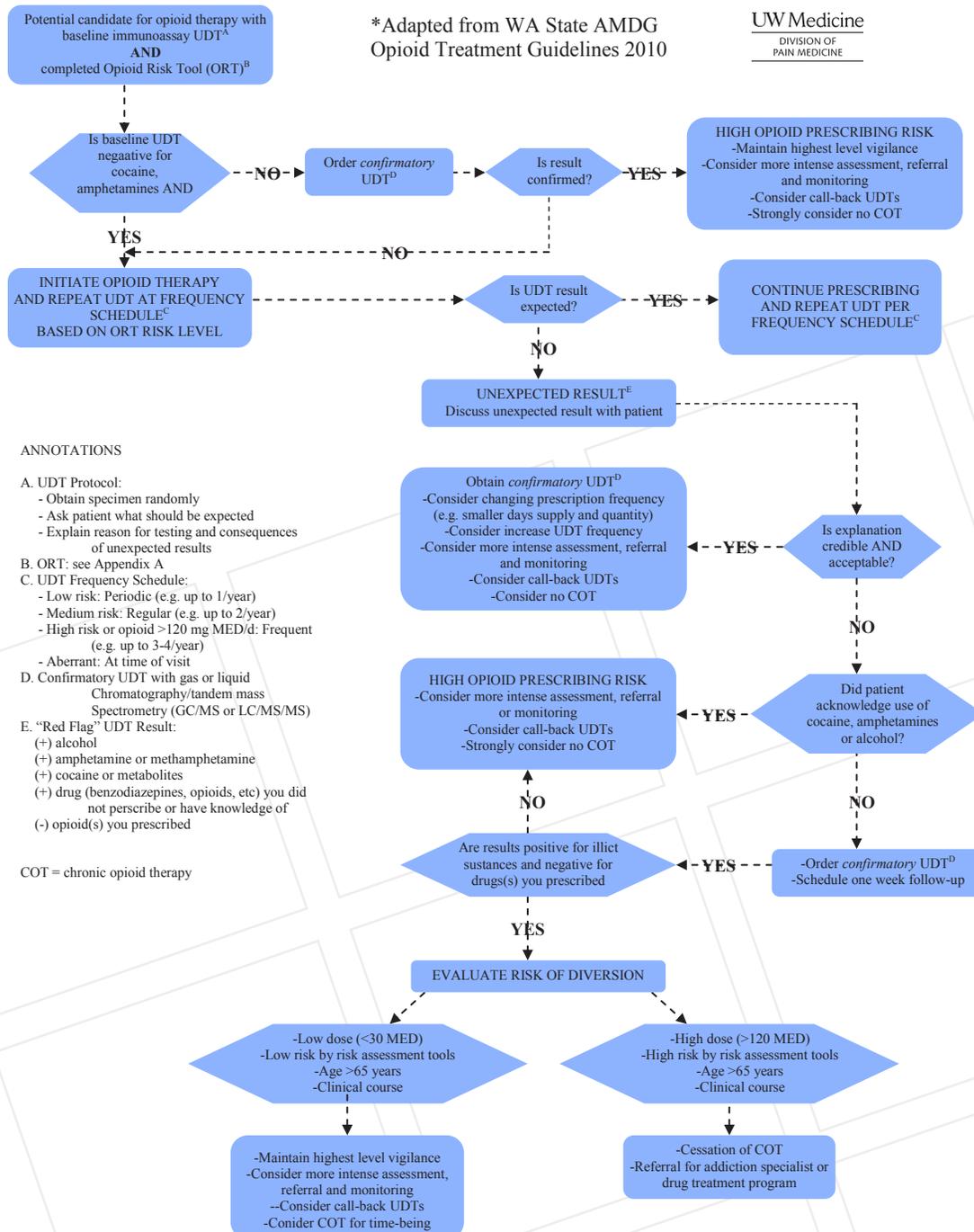
Patient Counseling Document on Extended-Release/Long-Acting Opioid Analgesics
Patient Name:
Patient-Specific Information
<hr/>
<p>Take this card with you every time you see your healthcare provider and tell him/her:</p> <ul style="list-style-type: none"> • Your complete medical and family history, including any history of substance abuse or mental illness • The cause, severity, and nature of your pain • Your treatment goals • All the medicine you take, including over-the-counter (non-prescription) medicines, vitamins, and dietary supplements • Any side effects you may be having
<p>Take your opioid pain medication exactly as prescribed by your healthcare provider.</p>

Appendix D:

Algorithm for Interpretation of Urine Drug Testing

View this University Algorithm at: <http://depts.washington.edu/anesth/education/pain/>

Urine Drug Testing (UDT) Interpretative Algorithm for Monitoring Opioid Treatment*



Appendix E:

Managing Pain at Home Sample Brochure

When to Call Your Doctor:

- If you are taking more than **2 EXTRA DOSES** of pain medicine for break-through pain for more than 2 days
- If you are experiencing side effects that interfere with your daily activities
- If you are unable to swallow or keep your pills down
- If you have not had a bowel movement for more than 3 days

When to Call Your Doctor **RIGHT AWAY:**

- Allergic reactions such as:
 - Hives (raised, itchy bumps)
 - Swelling or tingling in mouth or throat
- Pain crisis (extreme, uncontrolled pain)

When to go to the Emergency Department or call **9-1-1:**

- Sudden trouble breathing
- Sudden, severe chest pain



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Managing Your Pain at Home



TIPS FOR MANAGING YOUR PAIN

You are leaving the hospital. You may have several new prescriptions to take when you're home. One or more of those prescriptions will be for pain relief. Here are some tips to make sure you have a comfortable recovery.

Understanding Your Pain

- Not everyone can achieve a zero pain level. How much pain is okay for you?
- Is your pain keeping you from sleeping, eating, or walking?
- Do you have a history of pain? What methods of pain relief have worked in the past?

How Else Can I Control My Pain?

- Keep a pain diary
 - Track pain episodes and what treatments worked and didn't work
- Heat or Ice
 - Apply 10-20 minute time periods
- Distraction
 - Watching movies, listening to music
- Massage
- Deep Breathing Exercises

What is a Pain Crisis?

"Pain that is severe, uncontrolled, and causing distress for a person, family members, or both."

How Can I Prevent a Pain Crisis?

- Do not let your pain get too high before taking your prescribed medication(s)
- The higher it gets, the harder it becomes to manage
- When you are finding it harder to keep your pain under control, call your doctor to make possible changes to your plan

How Will I Be Refilling My Pain Medication?

- Make a solid plan with your nurse or case manager **BEFORE** you leave the hospital.
- If you don't have a solid plan, let your nurse or case manager help you create one so you take all of your doses.

- **Do you have enough doses before your next doctor's appointment?**
- It is important you attend your next doctor's appointment because that is when you will get your pain medication refill if you need it.

What are the Common Medication Side Effects?

- Constipation
- Nausea
- Sleepiness or unusual drowsiness
- Read your medication information sheets carefully as **these may vary.**
- **Ask Questions!**

