Pain management pharmacy service in a community hospital

TERESA FAN AND TANYA ELGOURT

Purpose. The implementation of a pain management pharmacy service in a community hospital is described.

Summary. The medical staff at Saint John's Health Center (SJHC) in Santa Monica, California, decided that one of the steps toward the goal of appropriate and adequate analgesia was the addition of a full-time pain management pharmacist (PMP) in 1999 along with a new pain physician. In preparation for the PMP position, the PMP attended conferences and continuing-education seminars on the treatment of acute and chronic pain. The PMP also conducted daily patient rounds with the pain physician. The daily responsibilities of the PMP include printing a daily list of patients using patient-controlled analgesia (PCA), making rounds for all patients receiving PCA, and completing an initial review and evaluation of the patient within 24 hours of starting PCA. In addition, the PMP is responsible for providing recommendations to the attending physician if the patient's pain control is inadequate or if intolerable adverse effects are noted and documenting these recommendations in the physician's progress notes, providing education to the patient regarding PCA use, and recommending a consultation with the pain physician in complicated cases. In the eight-year period that the PMP service has been established, the number of PCA patients has progressively increased more than 50%, from approximately 1200 PCA patients per year in 1999 to 1710 in 2007.

Conclusion. The pharmacy department at a community hospital successfully implemented a pain management program. The PMP provided pain management services to patients and a valuable resource to other health care staff.

Index terms: Analgesics and antipyretics; Pain; Patient-controlled analgesia; Pharmaceutical services; Pharmacists, hospital; Pharmacy, institutional, hospital; Rational therapy

Am J Health-Syst Pharm. 2008; 65:1560-5

Problem

Pain is one of the most important issues in health care today. Each year, over 50 million people experience chronic pain and another 25 million people experience acute pain due to injury or surgery.[1,2] Pain is also a costly problem, accounting for more disability than cancer and heart disease combined and for over $60 billion in lost productivity each year.[3] The idea of pain as the fifth vital sign was originated in 1995 by Dr. James N. Campbell, past president of the American Pain Society.[4] In 2001, the Joint Commission adopted pain management standards stating that every patient has a right to have pain assessed and treated.[5] Poor management of postoperative pain has been linked to reduced quality of life and interferes with physical therapy.[6] Those consequences translate not only into reduced patient satisfaction but also into an increased economic burden that is reflected in the length of hospital stay and number of readmissions for the treatment of uncontrolled pain.

As part of the ongoing patient-satisfaction and quality-improvement program, the management of patients' pain has become one of the primary focuses of our institution. Results from an annual patient satisfaction survey conducted in 1999 indicated suboptimal scores (<70%) with regard to pain management throughout the hospital. The medical staff and administrators at Saint John's Health Center (SJHC) understand that the impact of pain is evident at social, clinical, and regulatory levels. SJHC's medical staff decided that one step toward meeting the goal of appropriate and adequate analgesia was the addition of a full-

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DOI 10.2146/ajhp070597

time pain management pharmacist (PMP) in 1999 along with a new pain physician.

Analysis and resolution

SJHC, a 340-bed community hospital, provides a full spectrum of treatment and diagnostic services, specializing in cancer care, orthopedic care, cardiac care, and women's health services. The role of the PMP was a relatively new concept in 1999, and hiring such a specialist was a difficult task. One of the clinical pharmacists at SJHC expressed interest in this challenging area and accepted the position. Most health care institutions do not have dedicated pharmacist positions specializing in pain management. Currently, additional qualifications are not required for a pharmacist to specialize in pain management, so the role is typically not well-defined. This lack of definition is in part due to the relatively few opportunities that pharmacists had for specialized training in pain management in 1999.

In preparation for the PMP position, the pharmacist attended numerous pain seminars provided by the American Pain Society, the Partners Against Pain program sponsored by Purdue Pharma, and the Pain Conference held by City of Hope on the treatment of acute and chronic pain. The PMP also conducted daily patient rounds with the pain physician. The PMP completed over 30 continuing-education hours on pain management and visited University of California Davis's pharmacy department for a mini-training, where the SJHC pain physician practiced. The SJHC pain physician wanted to structure this new pharmacy management service similar to the University of California Davis's pain management service. The pain physician, with board certifications in anesthesia, pain management, and psychiatry, came to SJHC from a tertiary teaching hospital, where the multidisciplinary team approach is used in pain management. He emphasized the importance of having a PMP join his practice and attend rounds for selected patients requiring pain management.

As part of the self-training, the PMP called on hospitals with pain management programs and found that most of the pharmacy pain services are either staffed continuously or for at least two shifts each day. The PMP was advised that a pain management service run Monday through Friday by a pharmacist would most likely fail. Questions about vacation, weekend, and after-hours coverage arose. The response to such questions at that time was that the pain physician was available to the medical and surgical staff for consultation for patients who needed pain and symptoms management 24 hours a day, seven days a week, when the PMP was not available to see patients. The pain physician also has another physician covering his shift when he is not available. If the PMP is not able to resolve certain therapy-related issues, the PMP contacts the attending physician and recommends a consultation with the pain physician.

Having resolved the basic question of patient coverage, a pharmacy pain management service policy was approved by the pharmacy and therapeutics (P&T) committee. The policy included management of all inpatients throughout the hospital—intensive care unit and medical–surgical patients. The PMP's daily responsibilities include

- Printing a daily list of patients using patient-controlled analgesia (PCA),
- Making rounds for all patients receiving PCA,
- Completing an initial review and evaluation of the patient within 24 hours of starting PCA,
- Providing recommendations to the attending physician if the patient's pain control is inadequate or if intolerable adverse effects are noted and documenting these recommendations in the physician's progress notes,
- Providing education to the patient regarding PCA use, and
- Recommending a consultation with the pain physician in complicated cases.

One of the first issues the pain physician recognized was that PCA at SJHC was underutilized, considering the hospital's medical–surgical and surgical–oncology patient populations. PCA use for acute and acute-chronic pain management was promoted by the PMP and pain physician via patient consultations. Initially, during daily patient rounds, the PMP recommended PCA instead of intermittent opioid injections and monitored patients' PCA use. As the pain management program developed, the activities of the PMP expanded.

During rounds for patients using PCA, the PMP now first assesses the patient's level of pain, sedation, and knowledge of using the PCA pump and whether the patient is experiencing any adverse effects or complications from PCA. This assessment is documented in the chart by the PMP. If a problem is identified or if the patient has a high risk of developing a problem with PCA, the primary care physician is notified, and a decision is made as to whether a treatment course recommended by the PMP can be followed or if a pain consultation from the pain physician is needed. When the patient is doing well and tolerating an oral diet, either a note is left on his or her chart or the primary care physician or surgeon is contacted for PCA to be discontinued and switched to oral analgesics with or without a long-acting opioid. Orders for adjuvant medications are written by the PMP after a discussion of recommendations with the primary care physician or surgeon.

The P&T committee oversees the performance and activities of the

PMP by reviewing all protocol exceptions, therapeutic updates, formulary issues, and other problems. The PMP presents a semiannual quality-assurance report on pain management to the P&T committee. The quality-assurance report includes data such as the number of patients using PCA, the number of comfort care and palliative care patients seen by the PMP, the number and type of interventions performed, drug-utilization reviews completed, and adverse drug events and medication errors reported that relate to pain management. The P&T committee then forwards the semiannual PMP report to the medical executive committee for review.

The role of the PMP at SJHC, who began by focusing on the management of patients using PCA and performing clinical and cost-saving interventions, has expanded over the past eight years to include many other clinical services, consultations, and projects.

Managing PCA patients. Since the PMP service was established, the number of patients receiving PCA has progressively increased by more than 50%, from approximately 1200 patients in 1999 to 1744 patients in 2005. In 2006, the number of patients receiving PCA decreased to 1555 due to a change in pain management procedures by one of the orthopedic surgery groups. By 2007, the number of patients increased to 1710, most likely due to several new surgeons joining the SJHC medical staff.

PMP referral program. In the initial stages of the pharmacy pain management program, the focus of the PMP was limited to patients receiving PCA. However, as the medical and nursing staff became familiar with the clinical functions and knowledge base of the PMP, the PMP was frequently requested to assist in pain management for patients not using PCA. To accommodate patient needs, a PMP referral program was implemented in 2002. This program allows any member of the health care team—nurses, case managers, physical therapists, social workers, and physicians—to initiate a PMP referral by placing a phone call or writing a chart order for such a referral.

When evaluating a referred patient, the PMP reviews the patient's history and physical assessment, previous medication use, and current pain and symptoms management plan. The PMP works as a consultant and does not have order-writing privilege as part of this service. The primary care physician is contacted about the patient's current pain management plan, along with new recommendations. The number of referrals increased from 26 in 2002 to 255 in 2007.

Patients may be referred to the PMP for many reasons. For example, members of the health care team may need help controlling a patient's acute or chronic pain, converting pain medication from the oral to parenteral route or vice versa, or adjusting the pain management plan in preparation for discharge. Patients may also require the assistance of the PMP if they have experienced adverse effects from pain medication, frequently use short-acting opioids, demonstrate a need for bowel regulation, or exhibit drug-seeking behavior. The PMP also provides patient and family education regarding the pain management regimen.

Clinical interventions. Due to the expanded scope of the PMP's service after the implementation of the PMP referral program, the PMP's recommendations now include the use of adjuvant therapies to alleviate patients' pain and symptoms, adjustments of the patients' current pain management plan, referral to other relevant clinical specialists, adherence to formulary agents, and patient education at discharge.

In the current health care climate of cost savings and cost containment, the "discharge facilitation" intervention was added in 2007 and documents the savings associated with the patient's early or timely discharge due to the intervention of the PMP. All discharge facilitation interventions are triggered by a PMP referral for those patients whose perception of pain or refusal to adjust pain medications or route of administration is the sole reason delaying discharge. Ideally, discharge planning should start on the day of a patient's admission. If there is a pain management issue, a PMP referral can be initiated anytime during the patient's stay.

A retrospective review of PMP referrals over a 12-month period was conducted to evaluate the effect of the PMP on discharge facilitation. Of the 249 total referrals received and evaluated from August 2006 to July 2007, 6 of the 249 patients were discharged on the same day after their pain and symptoms regimen was changed, 10 were discharged within 24 hours, and 20 were discharged within 48 hours.

At SJHC, the approximate cost per day of hospitalization is $2,700, as estimated by the finance department. This cost (excluding depreciation and amortization) reflects total expenses per adjusted patient-day. Assuming the $2,700/day cost of hospitalization, the cost saving attributable to the PMP's interventions was approximately $97,200 for the 12-month period evaluated.

Mandatory PMP consultation. In 2006, the medical staff developed a pain management consultation procedure to encourage compassionate, high-quality, effective, and efficient management of certain patients' pain symptoms. When patients are admitted with a diagnosis of pain management, they are subject to a mandatory evaluation by the PMP. A physician's order is not necessary to initiate the evaluation. The PMP provides recommendations to the attending physician and documents them in the patient's medical record.

A pain physician consultation is required after 48 hours of hospital-

ization for a diagnosis involving pain management when (1) pain control is inadequate, (2) the attending physician declines or refuses to follow the pain management regimen suggested by the PMP, or (3) complicating and confounding factors, such as drug-seeking behavior, are identified. The PMP works very closely with the pain physician, especially for patients who require close monitoring and need frequent dosage adjustments for the control of pain and symptoms. In patients with complex pain syndromes or drug-seeking behavior, the PMP recommends to the primary care physician a formal pain physician consultation.

Additional PMP projects. *Comfort care protocol.* The comfort care protocol for the dying patient was implemented in 2003. The PMP's role is to assess each patient treated with this protocol for the management of pain, agitation, and dyspnea. Pharmacologic strategies to manage pain, dyspnea, and other symptoms are based on the wishes of the patient or surrogate. The dosages of opioid and anxiolytic agents are adjusted to achieve a level of patient comfort and sedation that meets the patient's goals for pain and symptom management. Sometimes opioids and sedatives may be continued to provide comfort, despite their adverse effect on mental status and physiological parameters, if such treatment is consistent with patient or surrogate preference for symptom management. To achieve this level of care, education and goal setting are of utmost importance to patients, patients' families, and staff. The PMP works closely with the multidisciplinary team of clinical nurse specialists, spiritual care workers, and social workers to continue the dialogue with staff nurses and family members in order to achieve the goal of comfort care.

Palliative care consultation team. Palliative care services are available in one of every five hospitals in the United States.[7] SJHC's palliative care consultation team (PCCT) was formed and pilot tested in 2006. The PCCT consists of a palliative care physician, PMP, spiritual care workers, clinical nurse specialist, and social workers. The PCCT meets twice weekly for rounds and family meetings. The team's goal is to treat patients with advanced stages of illness and their families with respect, love, and support, which includes managing pain and other symptoms; acknowledging and addressing suffering; respecting patients' goals, preferences, and choices; and avoiding interventions intended to prolong the dying process.[8] If a patient is reported and identified as having pain and symptoms management issues, the team members assess the patient and contact the palliative care physician to adjust the pain and symptoms regimen.[9]

Meperidine restriction policy. In 2003, meperidine use was restricted at SJHC because its use as a first-line agent for the management of acute and chronic pain was strongly discouraged in guidelines endorsed by the Agency for Health Care Policy and Research (AHCPR), American Pain Society, and Joint Commission. The PMP presented meperidine-use issues at medicine and surgery committee meetings and recommended establishing restricted-use guidelines for and autosubstitution of meperidine. The guidelines, as recommended by AHCPR, the American Pain Society, and the surgery and medicine committees at SJHC, allow the pharmacists to discontinue meperidine if its use does not follow the guidelines. Autosubstitution orders for an equianalgesic dosage of either hydromorphone or morphine are then written by the pharmacists.

Topical medication patch policy. While evaluating SJHC's data on adverse drug reactions and medication errors, the PMP noticed a trend related to transdermal patch administration of fentanyl. Adverse reactions had been reported in patients whose fentanyl patches fell off with an unknown duration of therapy, resulting in patients experiencing opioid withdrawal. Some patients were found with multiple expired patches that were placed on different days. The PMP brought these findings to various nursing committees, and a new clinical practice process was initiated to improve medication administration record (MAR) documentation to ensure patient safety. This process, spearheaded by the PMP, was expanded to include all transdermal patch preparations.

At the time of drug-order entry on the MAR, a linked order is included for a second entry so nurses can document the location of the patch, time of administration, and when the next patch is due. The integrity and adhesion of the patch must be checked and documented during each shift. The hospital's medication administration policy was also revised and now includes the new process for transdermal patch administration and documentation.

Educational responsibilities. In addition to clinical responsibilities, the PMP has assumed various educational and multidisciplinary team activities. The PMP is frequently asked to provide inservice education and lectures to the hospital's medical and nursing staff. Some of the presentations given by the PMP include biannual intensive care unit nursing training modules, quarterly pain management lectures for new nursing graduates and new hires at SJHC, community lectures, and presentations to the postgraduate assembly of physicians for SJHC. The PMP also produces drug information publications for the SJHC newsletter and continuous e-mail updates on pain management issues for nursing and pharmacy staff.

The PMP serves as a member of the pain committee, working alongside a group of dedicated nurses, clinical nurse specialists, a psychia-

trist, a pain management physician, and an oncologist. The pain committee reviews regulatory standards, provides staff education, and assists in any pain management issues in both outpatient and inpatient settings. The PMP attends weekly multidisciplinary discharge rounds on the oncology unit. The discharge rounds include discussions of pain and symptoms management and are geared toward facilitating patient discharges or transfers to other health care facilities with the optimal choice of treatment modalities. The clinical input of the PMP is considered so valuable by the medical staff that in 2007 the PMP was invited to be a member of the medical staff cancer committee to serve as a resource for the staff oncologists on various pain management issues.

Drug-diversion and medication-error monitoring. The PMP also has a primary role in drug-diversion and medication-error monitoring by reviewing the automated medication dispensing system override and dispense reports as part of the medication monitoring and utilization reviews. The override reports refer to the selected emergency medications taken out of the automated system by nursing without a pharmacist's review. All other medication orders are profiled, and nursing can obtain drugs from the system only after the pharmacist has reviewed and entered the orders. Occasionally, medication errors and drug diversions are found during the reviews of such override reports.

In 2005, a trend was noticed on the medication-error report and attributed to the confusion between oxycodone preparations, such as oxycodone immediate-release tablets or capsules versus oxycodone extended-release products and other oxycodone combination products. The PMP worked with the hospital's and the automated medication dispensing system's computer information systems to make the product selection easier to read and clarified the MAR labels to include both generic and brand names. Formulary changes and autosubstitutions also occurred due to the PMP's efforts. By monitoring daily "dispense/waste/credit" reports of controlled substances from the automated system and comparing the drug therapies ordered for patients with the actual dispensing report from the system, the PMP has detected several diversion problems and brought them to the attention of appropriate administrators. Nursing and hospital administration always contact the PMP to assist with diversion issues identified by other methods and to be involved in regulatory inquiries and surveys.

Formulary management. The PMP reviews formulary and nonformulary items related to pain and symptoms management and recommends medications to be reviewed for addition to or deletion from SJHC's formulary.

Discussion

The role of hospital pharmacists usually focuses on a broad range of clinical pharmacy services, such as general pharmacokinetic monitoring, target drug programs, conversion from i.v. to oral route, disease management programs, and patient education. Studies have demonstrated that clinical pharmacists' interventions lead to financial savings and a reduction in the rate of adverse drug events.[10,11]

The PMP at SJHC provides pharmaceutical care at the patient bedside, and the provision of some services (e.g., adjusting and titrating pain medication, monitoring patient responses) can require significant amounts of time. Patient consultations are essential to the PMP's effectiveness. The individualized patient treatment plans as well as provision of education to patients, families, and members of the health care team are precisely the services that have made the PMP's contribution to this hospital invaluable and have made the PMP an indispensable member of the health care team. This contribution is demonstrated by numerous hospital awards and accommodations received by the PMP in the past few years.

The PMP now attends rounds for patients who are receiving epidural infusions with or without PCA who are under the care of anesthesiologists in order to assess their pain. The safety of local anesthetic use with or without an opioid is also being assessed by the PMP. Anesthesiologists are contacted for patients who experience any adverse effects or if pain is not adequately controlled.

The PMP, working together with the health care team, continues to improve pain management in SJHC's patient population and has been involved in the development of many new protocols and programs created to meet patient and staff needs. The annual patient satisfaction survey conducted in 2003, four years after instituting the PMP program, showed markedly elevated scores of over 90% with regard to patients' positive perceptions of their pain management. On subsequent surveys (between 2004 and 2007), the pain management scores ranged between 85% and 90%. These scores indicate a significant increase over the pre-PMP program scores of below 70%.

SJHC's commitment to addressing pain management issues is also evidenced by a mandatory hospital competency on pain management for all clinical staff, including all pharmacists at the health center. In addition, two clinical staff pharmacists have been trained by the PMP to cover this pharmacy service when the PMP is not available.

Pharmacists' expertise in pain management must be cultivated. Currently, there are numerous opportunities for specializing in pain management, including postgraduate residency programs that specialize in pain management and

palliative care[12,13] and focused certificate training programs in pain.[14,15] Postdoctoral training of pharmacists will provide a pipeline of clinicians, educators, and scientists who are committed to quality pain management care.

Conclusion

The pharmacy department at a community hospital successfully implemented a pain management program. The PMP provided pain management services to patients and a valuable resource to other health care staff.

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