Improving Pain Management in Patients with Cancer

BY DYLAN ZYLLA, MD

In June 2014 Park Nicollet Oncology Research and HealthPartners Institute, Minneapolis, Minn., implemented a quality improvement (QI) initiative aimed at improving pain management in patients with cancer. In addition to the multidisciplinary team members identified in Table 1, page 41, a number of nursing staff was also involved in the QI initiative.

Patients with Cancer Hurt

Cancer pain is very common, having a negative impact on a patient's quality of life (QOL) and often requiring opioids for control. Controlling cancer pain is critical because the pain is prevalent throughout a patient's treatment course—from diagnosis, through active treatment, during palliative care, and at hospice and end of life (EOL). A 2007 study by van den Beuken and colleagues looked at the prevalence of pain in patients with cancer over the last 40 years and found that two-thirds of patients with advanced and metastatic cancer will experience some type of pain.[1] More importantly, the study found that almost half of those patients at times experienced moderate or severe levels of pain.[1] Another meta-analysis looked at QOL as a prognostic indicator of survival, finding that patients who report no pain have markedly better survival than patients reporting higher pain-tiered scores.[2]

Several years ago, the *Journal of Clinical Oncology* published a series of articles on pain management, including a landmark study about personalized pain goals in oncology, or the pain value that a patient identifies as one they consider comfortable or acceptable.[3] Personalized pain goals go beyond simply reporting a patient's pain score. Instead clinicians ask, "What level do you want your pain to be at?" or "What level of pain can you accept and feel comfortable with?" and then document that goal in the patient's medical record. Most cancer patients treated at Park Nicollet communicate personal pain goals between a level 3 and 4.

> The mission of our QI initiative soon became clear: to improve patient quality of life by achieving better pain control with fewer side effects, and using the most cost-effective medications.

Getting Started

Prior to 2014, clinic-wide patient satisfaction surveys revealed that Park Nicollet was scoring low on two key questions: "How often does staff do everything they can to help you with your pain or discomfort?" and "How often is your pain or discomfort well-controlled?" (Nationally 50 percent was the benchmark, but Park Nicollet's score was about half of that or 25 percent). As our team began to look at ways we could improve those scores, we realized that there was not much research or data specifically on pain medications that cancer patients are prescribed and how their pain is controlled.

Opioids have been making headlines in national news for some time now. Certainly one area we wanted to look at when developing this QI initiative was the cost of opioids—specifically high-dollar drugs that were costing our patients hundreds of

Exterior view of Park Nicollet Oncology Research and HealthPartners Institute, Frauenshuh Cancer Center, Minneapolis, Minn.

dollars out-of-pocket each month. Our hospital pharmacy data showed that morphine, for example, may only cost a $100/month, but long-acting oxycodone had a price tag three times that amount. In addition to high out-of-pocket costs for patients, this pricing discrepancy was creating downstream issues, for example an increased workload on our nursing staff to obtain pre-approvals or prior-authorizations and delays in patients receiving their medication as we waited to hear back from payers.

The mission of our QI initiative soon became clear: to improve patient quality of life by achieving better pain control with fewer side effects and using the most cost-effective medications. To fulfill this mission, we would:

- Determine if rollout of an opioid and constipation patient information sheet, along with a 24-hour call-in request, would improve patient satisfaction and overall pain control.
- Analyze trends in pain management of cancer patients, opioid utilization patterns, and survey data to help create a pain protocol.
- Determine if physician education on opioid cost data would lead to a change in prescribing patterns, decreasing out-of-pocket costs for patients and nurse time spent on obtaining pre-authorizations.

Next the team developed an aim statement or goals for the QI initiative:

- To increase the percentage of patients with a documented personalized pain goal.
- To increase the percentage of patients achieving their personalized pain goal.
- To decrease cost of care by reducing the use of high-cost, long-acting opioids.

A series of actionable interventions was identified, including:

- Developing a patient education piece.
- Implementing a 24-hour call-back process for critical symptoms.
- Adding a validated symptom assessment tool into our EHR (Epic).
- Developing a process where clinicians would be alerted for critical symptoms.
- Creating Pain Protocol/Epic Smartsets.
- Conducting physician education on the cost of opioids.

Educating Patients & Providers

Park Nicollet created a patient information sheet on opioid use (Figure 1, page 42). The tool is highly utilized in clinic, and we've found the information on constipation management (constipation

Table 1. Multidisciplinary Team Involved in the QI Initiative to Improve Pain Management in Patients with Cancer

TEAM MEMBER	DEPARTMENT	ROLE/RESPONSIBILITY
Dylan Zylla, MD	Oncology	Team Leader
Sarah Van Peursem, RN	Oncology	Nursing Supervisor
Lisa Illig, MD	Palliative Care	Pain & Symptom Expert
Adina Peck, DNP	Oncology	Nurse Practitioner
Pam Pawloski, PharmD	Health Partners Institute	Pharmacist/Researcher
Jim Fulbright, MS/MBA	IT—Business Intelligence	Epic Report Developer
Sara Richter, MS	Park Nicollet Institute	Statistician
Gladys Chuy, MHA	Park Nicollet Health Services	QI Leader
Amber Larson, MHA	Park Nicollet Health Services	QI Leader

being a side effect of opioid use) the most helpful to patients. Interestingly, we found that many cancer patients were fearful of opioid use—likely due to the extensive news coverage on the opioid epidemic in this country. With this tool we now had the opportunity to discuss opioid addiction. Clinicians were able to explain, "I'm prescribing this medication to help control your pain. I think it is safe and that you are not likely to become addicted in this setting." We also found that a number of patients did not know the difference between short-acting and long-acting narcotics—specifically, what these differences mean and how to take them. So clinicians used the patient information sheet to help ensure that patients were taking their medications appropriately.

Next, we implemented a nursing protocol for documenting personalized pain goals. Specifically, we revised our rooming and check-in process so that nurses asked patients: "What is your pain goal?" or "What pain level do you want to be at?" and documented the information in the EHR to capture that data.

Finally, our palliative care physician presented pain management cases at one of our staff meetings, discussing pain control and sharing pharmacy data about the cost of different opioids. Anecdotally, we received feedback from physicians and nurse practitioners that this single education session helped jump-start conversations about drug costs and prescribing patterns, both of which are discussed later in this article.

Pulling the Data on Personalized Pain Goals

We analyzed 18 months of data on reported pain levels in our cancer patients (Figure 2, page 43), finding that 13 to 15 percent of the cancer patients seen at our clinic every month reported moderate or severe pain. When we zeroed in on patients taking opioids that number increased to between 20 to 25 percent.

Next, we pulled data on personalized pain goals from our EHR, specifically how often a personalized pain goal was obtained and how often a personalized pain goal was achieved (Figure 3, page 44). Prior to our QI initiative, which was implemented in June 2014, data showed that we had collected personalized patient goals for between 15 and 30 percent of patients. (We later learned that these were new-start chemotherapy patients.) After roll-out of the patient education piece and the nursing protocol, the percentage of personalized pain goals obtained increased dramatically. As the data in Figure 3 shows, we were able to increase collection and documentation of personalized pain goals from 16 percent to 71 percent in one year. We did not see much change in the percentage of patients who had achieved their personalized pain goal in that same time period. Today, about 85 percent of our patients report that they have achieved their pain goal.

(continued on page 43)

Figure 1. Patient Education & Information Worksheet

PAIN CONTROL USING OPIOIDS

Controlling your pain when you have cancer

At Frauenshuh Cancer Center, we care about your pain control. Pain from cancer cannot always be controlled completely, but we try to make it tolerable for you. You have been prescribed an opioid prescription pain medication to help control your pain. If you have pain that is not well managed by your opioid prescription within the next 24 hours, call Frauenshuh Cancer Center.

HOW DO I TAKE THIS MEDICATION SAFELY?

- Take your medicines as prescribed.
- Do not adjust the dose without talking to your care team.
- Do not drive or operate machinery until the medicine effects are gone and you can think clearly.
- Do not break, crush, or chew a pill unless your oncologist told you to.
- Do not drink alcohol or take illegal drugs.
- Keep your medicine in a safe and secure place away from children and pets.

Unless your care team tells you, do not take other over-the-counter medications that have acetaminophen (Tylenol) if you are taking an opiate combined with acetaminophen, including:

- Norco (hydrocodone and acetaminophen)
- Vicodin (hydrocodone and bitartrate and acetaminophen)
- Percocet (oxycodone and acetaminophen)

WHAT CAN I DO TO MANAGE CONSTIPATION FROM PAIN MEDICINE?

- Treat constipation with a laxative. Follow the guidelines below to treat your constipation.
  - Start with 1 to 2 tablets of over-the-counter senna at bedtime.
  - If you do not have a bowel movement, start taking 2 tablets of senna 2 times a day.
  - If you are still constipated after taking 2 tablets 2 times a day, add 1 capful of over-the-counter polyethylene glycol (Miralax) in the morning.
  - If you are still constipated, take 4 tablets of senna 2 times a day and polyethylene glycol (Miralax) 2 times a day.
- Drink plenty of water each day.
- Eat foods high in fiber, such as fruits, vegetables, beans, and whole-grain cereals and breads (if your diet allows.)
  - Prunes, raisins, and dried apricots may also be helpful.
- Exercise regularly by walking and moving around as much as you are able.

If you have not had a bowel movement for 3 days or have constipation with vomiting or abdominal pain, call Frauenshuh Cancer Center.

WHAT IS THE DIFFERENCE BETWEEN SHORT-ACTING AND LONG-ACTING PAIN MEDICATION?

- Short-acting medications—used for fast pain relief. You take these on an as-needed basis.
- Long-acting medications—used for continuous pain control. You must take these on a schedule to control severe pain. Long-acting medications are not used for fast pain relief, so staying on a schedule is very important to keep your pain under control.

WHAT ARE THE POSSIBLE SIDE EFFECTS?

- Constipation—Most people who take opioid pain medications develop constipation and need laxatives to have regular bowel movements. See left for recommendations.
- Nausea, vomiting, or itchiness—Take your medication with food to help prevent these symptoms. Usually, these symptoms improve over the first week. If the symptoms do not improve or are severe, call Frauenshuh Cancer Center.
- Dry mouth.
- Dizziness and drowsiness.
- Blurred vision.

WHAT ABOUT ADDICTION?

Usually, patients with cancer who take prescription opioids to manage pain or other symptoms do not become addicted.

But, people who have a history of drug or alcohol abuse may become addicted to opioids. Tell your care team if you have a current or past problem with drugs or alcohol. We can help safely manage your cancer symptoms and pain.

WHEN DO I CALL 911?

Call 911 if you have:

- Trouble breathing
- Swelling of your face, lips, tongue, or throat
- Signs of overdose, including:
  - Confusion or severe sleepiness
  - Severe nervousness or restlessness
  - Slow breathing
  - Seizures.

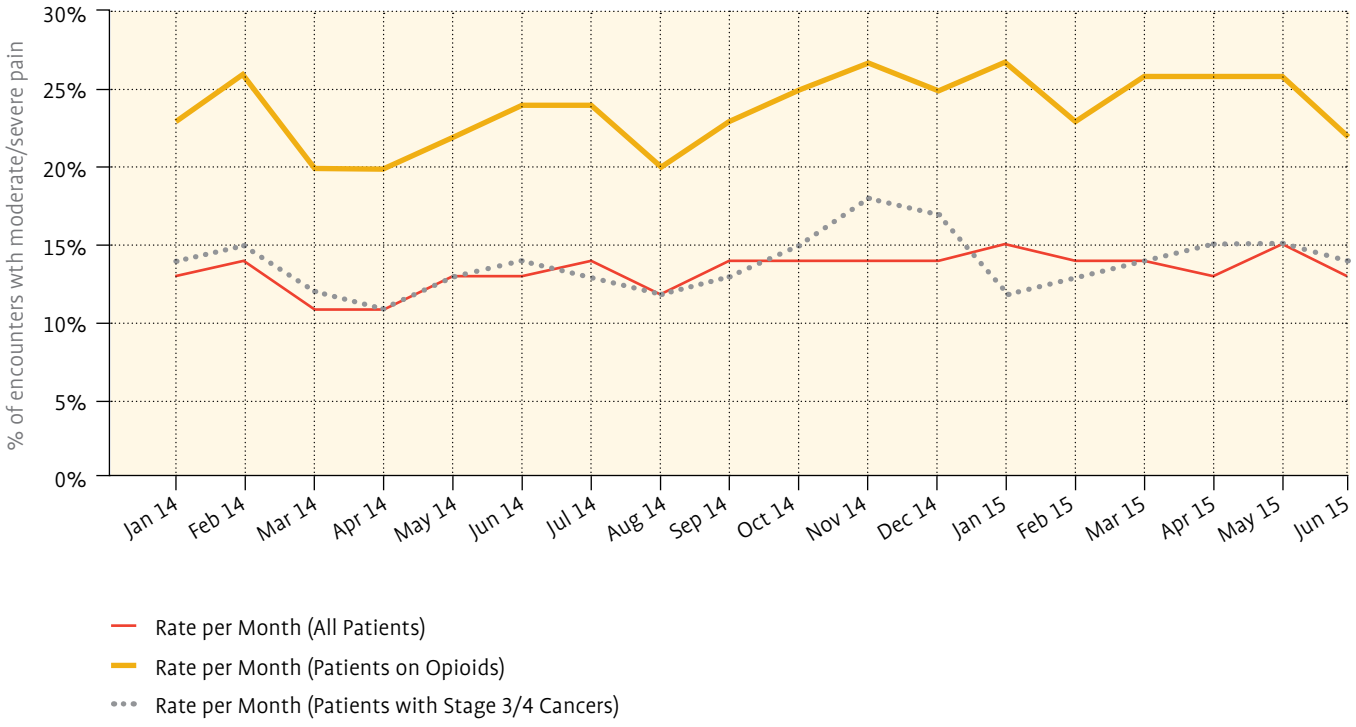
TELEPHONE NUMBER

If you have questions call: 952.993.0000

Frauenshuh Cancer Center
Weekdays, 8:00 am-5:00 pm
Your call is directed to a nurse.

HealthPartners CareLine℠
Weekdays, 5:00 pm-8:00 am
Weekends and holidays, 24 hours
Your call is directed to a nurse line for medical advice.

Figure 2. Percentage of Patients with Moderate to Severe Pain (≥ 4)



(continued from page 41)

Pulling the Data on Prescribing Patterns

We then looked at our prescribing patterns. We pulled data on the medications our physicians were prescribing and how many new prescriptions were generated, zeroing in on the more expensive agents (Figure 4, page 45). The low-cost agents would be considered methadone and the long-acting morphine. The high-cost agents would be fentanyl and oxycodone long-acting. Prior to the implementation of our QI initiative, prescriptions were split fairly equally between low- and high-cost agents. After June 2014, when providers were educated about these cost differences and the effect this has on a patient's out-of-pockets costs and the time nurses spend to obtain pre-authorizations, we started to see a change in prescribing habits. After a few months where the percentages stayed relatively stagnant, we saw an even more dramatic change; one year later, in June 2015, the number of unique prescriptions for low-cost opioids had more than doubled the number of prescriptions for high-cost opioids.

Going Forward

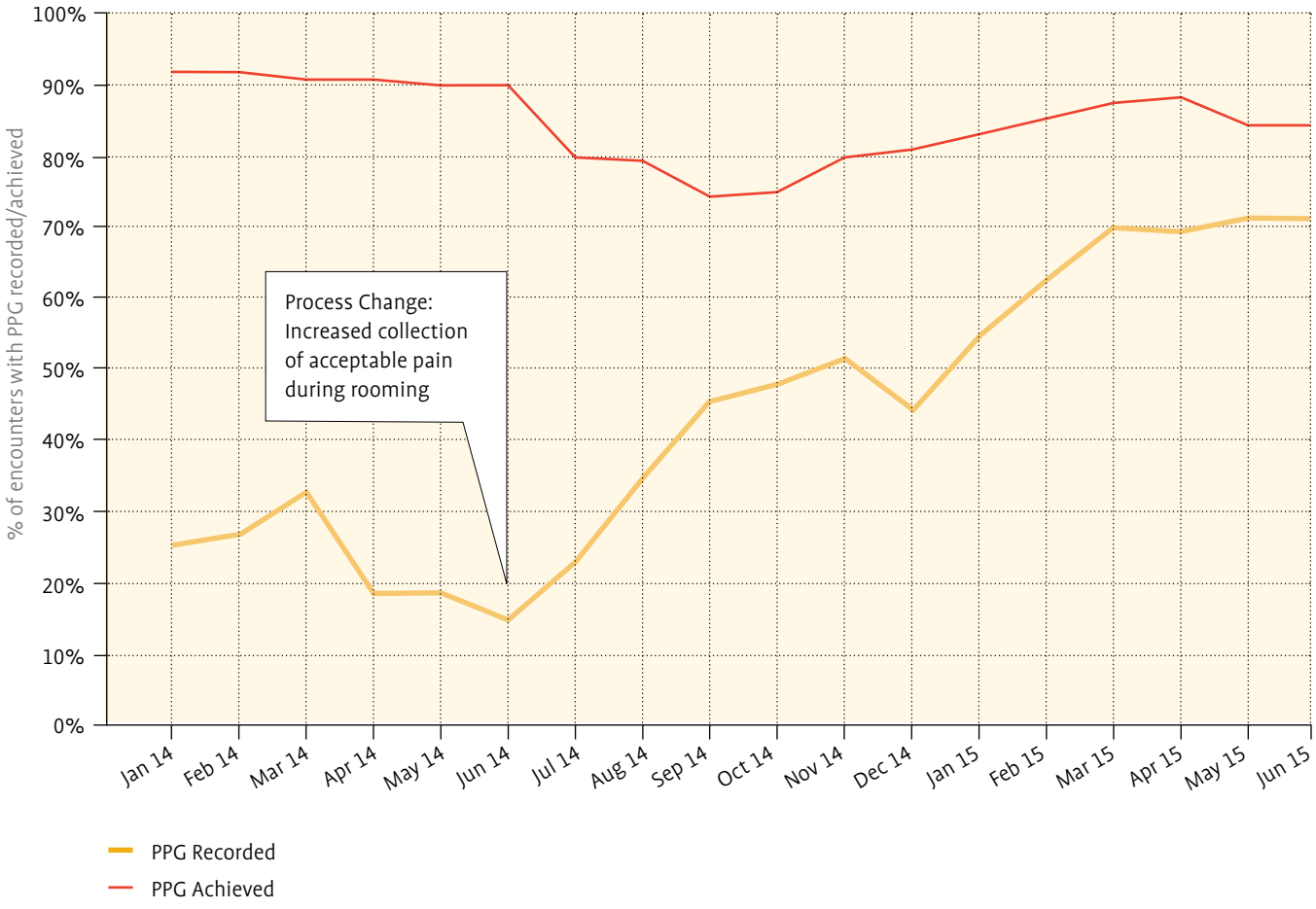
We have written a grant to use validated tools to track patient-reported outcomes related to pain, including a process for importing them directly into the EHR. Specifically, we are trying to use the "My Chart" functionality in Epic to generate reports on a regular basis. Our goal: to be able to generate automatic triggers based on the patients' personalized pain goals so that clinicians receive automatic alerts when patients are a certain number of points above their personalized pain goal. Eventually, we'd like to incorporate NCCN Guidelines related to pain management. For example, NCCN Guidelines to manage pain in stage IV lung cancer patients exist, but we suspect that our clinicians may not always be leveraging these tools. Finally, as stated above, we may look into why some of our patients are still being prescribed (or are still on) the high-cost medications. Obviously some have contraindications or allergies to certain medications, but we may look to see if we can make additional QI improvements in this area.

Lessons Learned

There were some limitations to our QI initiative. As stated previously, the data showed that we didn't realize much improvement in overall pain levels reported by patients. If we were to take a deeper dive into the data, we suspect that there was some improvement in high-pain patients (those on opioids), and we plan to look at this in the future. We also did not measure physician compliance related to opioid prescribing patterns, and this is another area we may look into in the future.

Improving pain in cancer patients is important and achievable. What we took from our experience is that even a fairly simple QI initiative can be very effective at hitting the IOM's Triple Aim of improving quality of care, increasing patient satisfaction, and decreasing costs. Most important, our team was able to make these system and work flow changes without undue burden on staff. In fact, in addition to improved pain management through a process for collecting personalized pain goals for every cancer patient and decreasing financial toxicity by reducing the number of high-cost, long-acting opioids prescribed, we were actually able to reduce staff time spent on paperwork for prior-authorizations and pre-approvals for these medications. Finally, with any QI initiative that your cancer program implements you have to accept that it's not going to be perfect. And while you may not get the results you want right out of the gate, practice improvement and quality improvement is all about continuing to try. OI

Figure 3. Percentage of Patient Encounters Where Personalized Pain Goals Were Recorded and Achieved



Dylan Zylla, MD, is a medical oncologist at Park Nicollet Oncology Research, Health Partners Institute, Frauenshuh Cancer Center, Minneapolis, Minn.

References

1. van den Beuken-van Everdingen MJH, de Rijke JM, Kessels AG, Schouten HC, et al. Prevalence of pain in patients with cancer: a systematic review of the past 40 years. *Ann Oncol.* 2007;18:1437–1449.

2. Quinten C, Coens C, Mauer M, et al. Baseline quality of life as a prognostic indicator of survival: a meta-analysis of individual patient data from EORTC clinical trials. *Lancet Oncol.* 2009;10(9):865-871.

3. Hui D, Bruera E. A personalized approach to assessing and managing pain in patients with cancer. *J Clin Oncol.* 2014;32:1640-1646.

Author's Note

For more on this quality improvement initiative, the author would like to direct readers to a 2017 article published in the *Journal of Oncology Practice*: Zylla D, Larson A, Chuy G, Illig L, et al. Establishment of personalized pain goals in oncology patients to improve care and decrease cost. *J Oncol Pract.* 2017;13(3) e266-e272.

Figure 4. Comparison of High- and Low-Cost Long-Acting Opioids