

## Post-Surgery Prescription Program

### Dartmouth-Hitchcock Medical Center – Lebanon, NH

#### Overview

Dartmouth-Hitchcock Medical Center (DHMC) is New Hampshire's only academic medical center and is headquartered on a 225-acre campus in the heart of the Upper Connecticut River Valley, in Lebanon, N.H. DHMC is New Hampshire's only Level I trauma center and is home to the Norris Cotton Cancer Center – an NCI-designated Comprehensive Cancer Center.

It is estimated that deaths secondary to prescription opioid overdose have quadrupled in the past 15 years, and now reach almost 19,000 per year. Surgeons play an important role in this epidemic because opioids that are overprescribed and not used by those patients may get diverted to others.

To address the opioid crisis, Richard Barth, Jr., M.D., chief of General Surgery at DHMC, had the idea to limit prescriptions of post-surgical narcotic pain pills to a specific number for different kinds of operations. To come up with recommendations to pass along to surgeons, Barth and his team first surveyed people who underwent one of five outpatient surgeries: partial mastectomy, partial mastectomy with a lymph node biopsy, gallbladder removal and two kinds of hernia repair. They discovered that the patients consumed only 28 percent of the opioids they were prescribed and that there was a wide range in prescribing habits on the part of the doctors.

Based on the results, they suggested to surgeons, orally and in writing, that they limit the number of narcotic pills to 5 and 10 for the two breast operations and 15 for the other three. They also told patients that they would most likely be able to manage their pain with nonnarcotic painkillers such as acetaminophen and non-steroidal anti-inflammatory drugs such as ibuprofen. The goal was twofold: to prevent long-term use of the painkillers by patients and to help block diversion of the pills to illegal users.

The results recently were published in the journal *Annals of Surgery*. The new study follows last fall's Dartmouth-Hitchcock research, also published in *Annals of Surgery*, which estimated that patients actually need only a fraction of the opioid pain medications they are generally prescribed.

“The first study showed us that there was a wide variation in the number of opioid pills prescribed to patients undergoing the same operation,” Barth explained. “For example, some patients undergoing gallbladder surgery were prescribed 10 pills, while others were prescribed 100 pills.”

The researchers attributed the variation in the number of pills prescribed to doctor's perceptions that some patients were going to need more opioids than others and because of differences in the “standard” number of pills prescribed for a particular operation by a provider.

“By setting patient expectations pre-operatively regarding the number of opioid pills that will be needed and by routinely incorporating the use of non-opioid analgesics such as ibuprofen and acetaminophen in the treatment of acute post-operative pain, we proved that we can prescribe fewer pain pills and that very few patients will request opioid refills,” Barth concluded.

## **Impact**

Surgeons at Dartmouth-Hitchcock successfully reduced prescriptions for opioid painkillers by an average of 53 percent while still providing effective relief of their patients' pain. A follow-up survey of 224 patients showed that the total number of pills prescribed dropped from 6,170 before the education initiative to 2,932 afterward. The average difference was greatest for partial mastectomies – the number of pills dropped from 19.8 to 5.1 for partial mastectomies and from 23.7 to 9.6 for partial mastectomies with a lymph-node biopsy.

“By defining post-operative opioid requirements through patient surveys and disseminating operation-specific guidelines for opioid prescriptions to surgeons, we were able to decrease the number of opioids initially prescribed by more than half,” the researchers wrote. “Decreased initial opioid prescriptions did not result in increased opioid refill prescriptions.” In fact, less than 1 percent of patients prescribed the lower number of opioid pills required a refill of their opioid prescription.

## **Lessons Learned**

“Patients were being given too many opioid pills and are only taking about 28 percent of what is prescribed,” Barth said of the initial study. “Our new study shows we can both prescribe far fewer opioids and relieve patients' pain simply by educating patients – and surgeons – about what is an appropriate quantity of opioid pain medication for five common general surgical procedures, including breast surgeries, hernia repairs and gallbladder surgery.

Barth and colleagues offer this advice: “By incorporating these findings into practice, it will be possible to both adequately treat patients' postoperative pain and decrease the amount of unused opioid pills available for misuse, abuse or diversion.”

“Our ability to decrease opioid prescribing and use with an educational intervention at our institution implies that similar educational efforts at the state and national level will also be successful in markedly decreasing opioid prescribing by surgeons on a broader scale,” Barth wrote.

## **Future Goals**

The research team is now compiling similar data for more serious inpatient surgeries to determine whether they can curb overprescribing when those patients are sent home to recuperate.

“I think [the idea] has potential to have a big impact,” Barth said. “This could easily be done by other general surgeons all across the country.”

**Contact:** Mike Barwell

Media Relations Manager

**Telephone:** 603-653-1984

**Email:** michael.r.barwell@hitchcock.org