

# Enhanced recovery program shown to successfully reduce opioid use after pancreatic cancer surgery

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By improving hospital care pathways, researchers from The University of Texas MD Anderson Cancer Center successfully reduced inpatient

opioid use by 50% after pancreatic cancer surgery and cut the median opioid prescription volumes at discharge to zero. This approach, described in a [study published](#) in *JAMA Surgery*, could help reduce the risk of long-term opioid dependence in patients.

In this [cohort study](#), which involved 832 [patients](#) undergoing pancreatic resection surgery, the researchers investigated how making incremental modifications to post-surgery procedures affected the amounts of opioids used by inpatients and at the point of discharge.

In less than four years, the total inpatient oral morphine equivalents (OME) decreased from a median of 290 mg to 129 mg, while OME at discharge decreased from a median of 150 mg to 0 mg. Over 75% of patients were discharged with  $\leq 50$  mg OME, which is fewer than 10 pills.

"Patients not regularly taking opioids are at risk of developing a new dependence after surgery, and excess pills also create a risk of misuse by [family members](#) or others in their community," said senior author Ching-Wei Tzeng, M.D., associate professor of Surgical Oncology. "Pancreatic cancer surgery can be a painful operation with a difficult recovery. This study shows that, even in this setting, easy-to-implement strategies can achieve effective pain control for our patients without putting them at risk for [opioid](#) dependence."

Opioids are potent pain-relieving medications often prescribed after major surgeries to manage post-operative pain. Pancreatic cancer surgery is considered one of the most complex abdominal operations a patient might undergo because it affects multiple organs simultaneously, which results in an expected level of pain during the early recovery period.

However, the use of opioids can be reduced by using nerve block

procedures, non-opioid medications—such as muscle relaxers and anti-inflammatories—and early patient mobilization. These low-risk, low-cost maneuvers often are not used because opioids are easy to prescribe. However, opioid misuse and addiction have become serious public health issues, and medical professionals are increasingly mindful of their prescribing practices.

The study included three consecutive cohorts, each with iterative revisions to post-surgical clinical pathways, from 2018 to 2022. After establishing a baseline and reducing length of stay, the team updated patient-provider education handouts, limited intravenous opioids, suggested a three-drug non-opioid bundle, and implemented a "5x-multiplier" (equal to OME over the last 24 hours multiplied by 5) to calculate an appropriate amount of opioids to prescribe at discharge.

Median pain scores remained  $\leq 3$  out of 10 in all cohorts, with no differences in post-discharge refill requests. Most patients did not require opioid refills after discharge, and there were no differences between cohorts. A [subgroup analysis](#) separating open and minimally invasive cases showed similar results in both groups.

Trial participants underwent 541 pancreatoduodenectomies, 285 distal pancreatectomies and six other pancreatectomies. The median age was 65 years and 611 patients were white, 90 were Hispanic, 58 were Asian, 56 were Black and 17 were other.

"Our enhanced recovery program, which includes generalizable protocols to reduce reliance on opioid medications, is the first to demonstrate continuous decreases in opioid use and distribution after pancreatic [surgery](#)," Tzeng said. "By making purposeful, successive improvements to existing processes, we showed that we can reduce the amount of opioids patients need after a [major surgery](#) while ensuring they recover well without any extra costs."

**More information:** *JAMA Surgery* (2023).  
[jamanetwork.com/journals/jamasurg.2023.4154](https://jamanetwork.com/journals/jamasurg.2023.4154)

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