

Efficacy of a password-protected, pill-dispensing system to enhance disposal of unused opioids after cancer surgery

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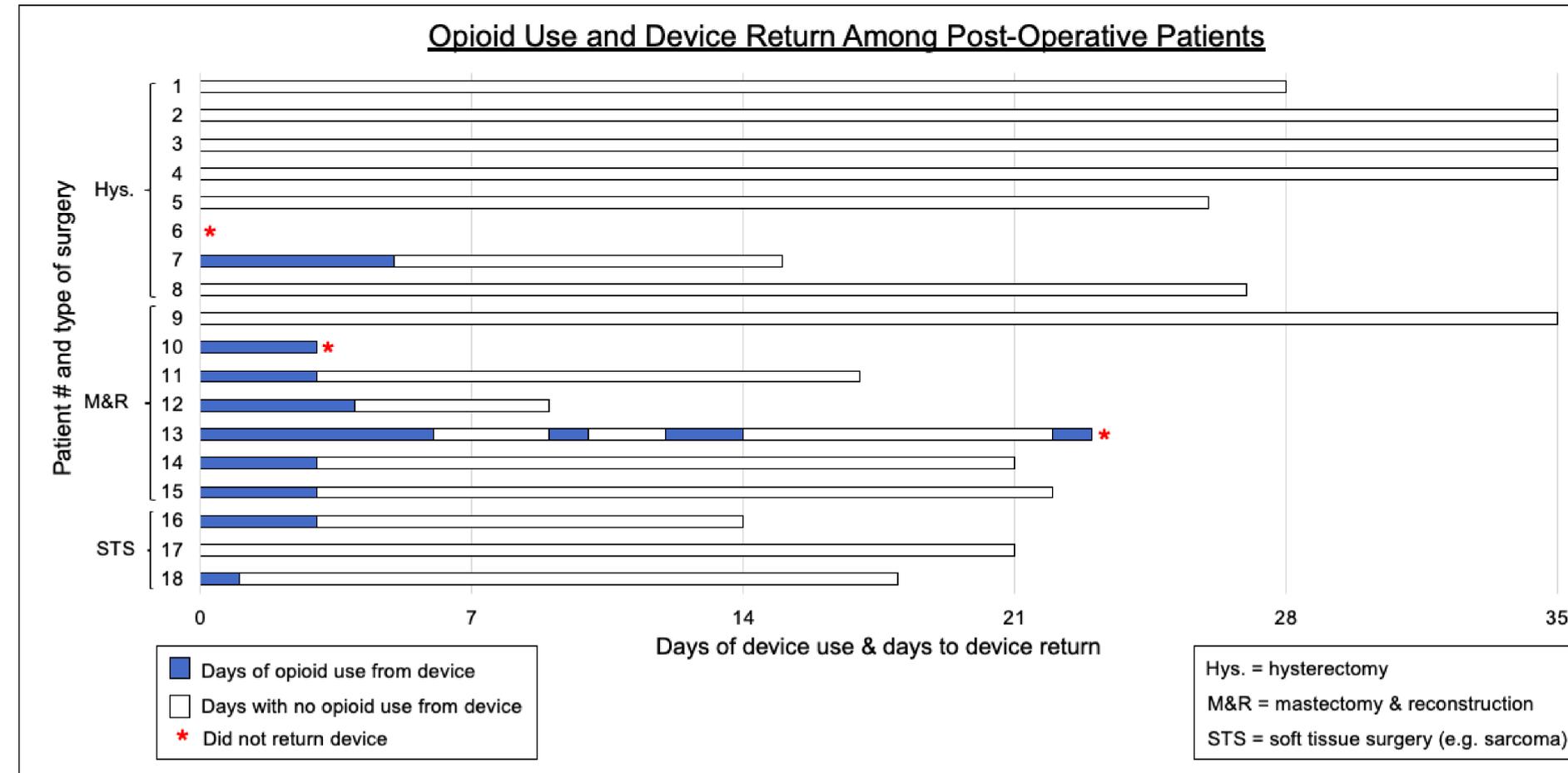
BACKGROUND

- New persistent opioid use is common post-op
 - 10% after cancer surgery in general¹
 - 17% after mastectomy & reconstruction²
- Unused post-op opioids are a source for misuse
 - 70% of opioids prescribed post-op go unused
 - 9% of unused opioids are disposed of properly
- We tested a novel system for post-op opioid storage, dispensing, and disposal
- Objectives**
 - To assess feasibility of opioid dispensing and disposal system
 - To evaluate patient-reported outcomes

METHODS

- Inclusion criteria: age \geq 18; cancer surgery; iPhone
- Opioids stored in a non-electronic, password-protected pill-dispensing device
- Passwords obtained from mobile app on provider-defined schedule (e.g., 1-2 pills q4-6h)
- Device (containing any unused pills) returned via pre-paid DEA-approved mailer
- Outcome assessments:**
 - Primary outcome:* feasibility of device return defined as \geq 50% of patients returning device within 6 weeks of surgery
 - Secondary outcomes:* patient-reported outcomes assessed qualitatively with surveys and qualitatively via semi-structured interviews

RESULTS



INTERVIEW RESPONSES

"I was glad that there was a thought process that I had to go through, so I wasn't just opening the bottle, I had to think about whether I really needed it"

"I felt safer because kids can't get into it"

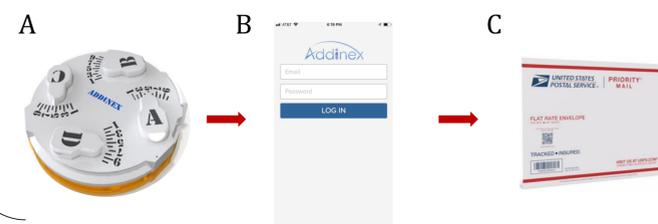
"Even though there was an extra step with the device, it wasn't more cumbersome than a regular pill bottle"

"Actually, for my type of surgery (mastectomy), I had a hard time opening a pill bottle, so actually the device may have been better"

"So, a few weeks after my surgery, I had a LEEP procedure, and I found that to be painful. But because I had the device, and the opioids weren't as accessible, I decided to take Tylenol instead. I only wanted to take the medicine that was prescribed for the procedure I had, so I decided not to take [the left-over opioids]"

"In the future, if prescribed opioids again – I would prefer the device, because I don't have that much self-control, so I would prefer the device"

ADDINEX TECHNOLOGIES PILL-DISPENSING SYSTEM



KEY RESULTS

- 15/18 patients (83%) returned the device for proper disposal
 - 13/15 devices returned (87%) containing X unused pills (X% average) that were properly disposed
- 9/18 patients (50%) used opioids, of whom:
 - 8/9 (89%) were satisfied with our pill-dispensing system
 - 7/9 (78%) preferred the system to pill bottles

CONCLUSIONS

- Use of Addinex system for opioid dispensing and disposal is feasible
- This system may represent effective strategy for reducing the availability and misuse of opioids

REFERENCES: 1. Lee et al: New Persistent Opioid Use Among Patients With Cancer After Curative-Intent Surgery. JCO, 2017; 2. Cogan et al: New and persistent controlled substance use among patients undergoing mastectomy and reconstructive surgery. Breast Cancer Res Treat, 2021; 3. Bicket et al: Prescription Opioid Analgesics Commonly Unused After Surgery: A Systematic Review. JAMA Surg, 2017