

INTRO:

- Gabapentinoids are increasingly incorporated into multimodal analgesia protocols for surgery.
- These medications are not approved by the US FDA for use in managing surgical pain.
- Little is known regarding the effects of this off-label use on prolonged post-surgical opioid use.

OBJECTIVES:

- Estimate the association between day-of-surgery gabapentinoid administration on the risk of prolonged postsurgical opioid use.

STUDY DESIGN:

- **Data Source:** Electronic health records, 2016-2019
- **Study Population:** Patients (65+ years of age) undergoing invasive surgery (AHRQ)
- **Exposure:** Day-of-surgery gabapentinoid administration
- **Outcome:** Prolonged opioid use – at least 1 Rx in each of three 30-day windows following surgery.
- **Methods:** Risk ratios were estimated using log-binomial regression with stabilized IPTW
- **Baseline Covariates:** Estimates were adjusted for demographics (age, sex, patient-reported race), calendar time, smoking history, alcohol use, BMI, medical facility, maximum recorded preoperative pain score, surgical procedure, # outpatient prescriptions, pain related medications (opioids, benzodiazepines), and pain-related diagnoses (arthritis, cancer, depression, chronic back pain, fibromyalgia, neuralgia, headache/migraine, abdominal pain)

ANALYSES:

- **Main:** Total population of surgical patients
- **Secondary:** Patients undergoing procedure with >30% exposed: colorectal resection, hips arthroplasty, knee arthroplasty, or hysterectomy
- **Sensitivity:** Patients with prior interaction with the healthcare system: at least 1 outpatient visit and 1 prescription in the past 182 days

Day-of-surgery gabapentinoid administration was not associated with a reduction in prolonged opioid use following surgery

Cohort Summary:
N=13,958
58% Female
Mean age 73 years
82% White

Procedures with the highest % receiving gabapentinoids

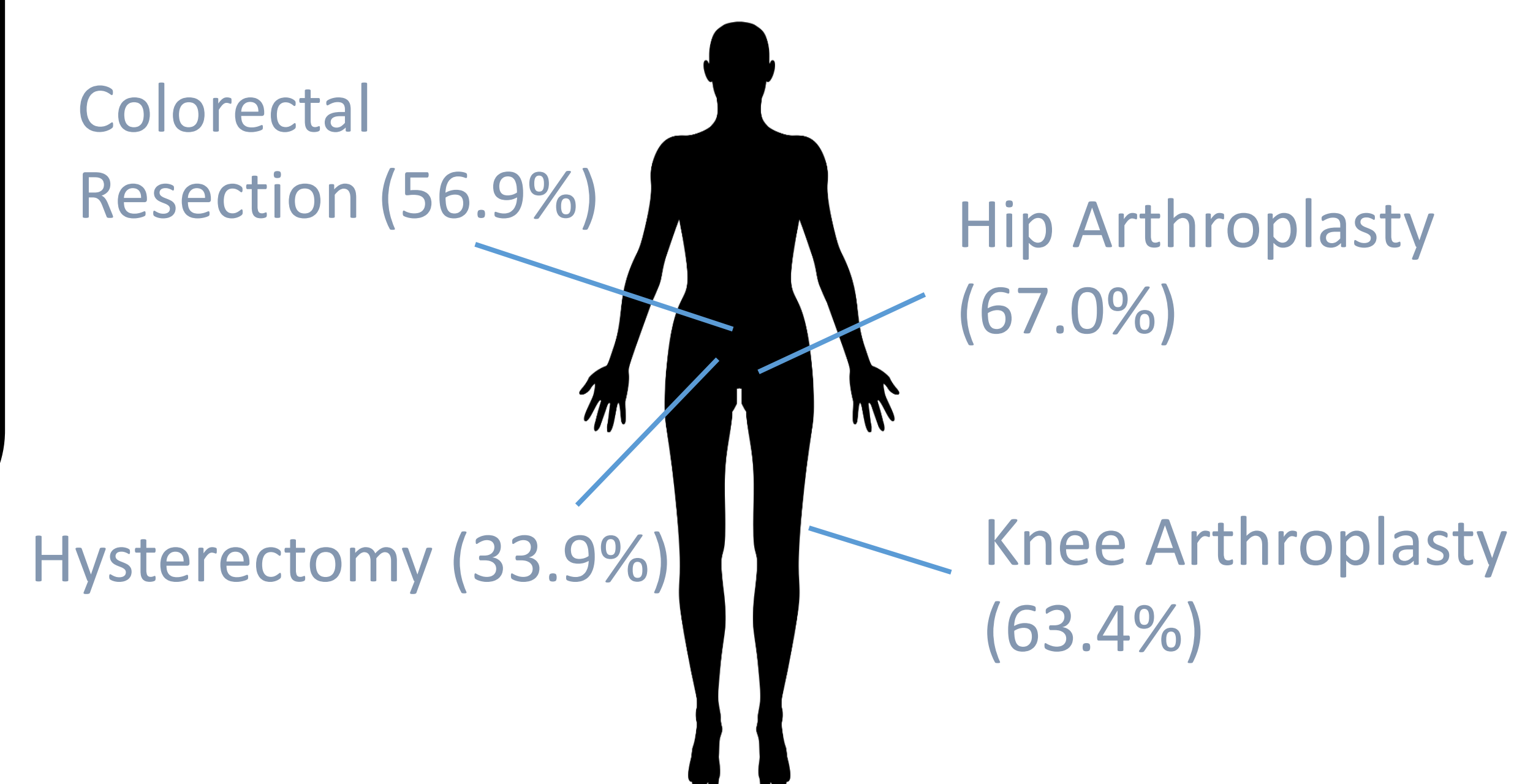


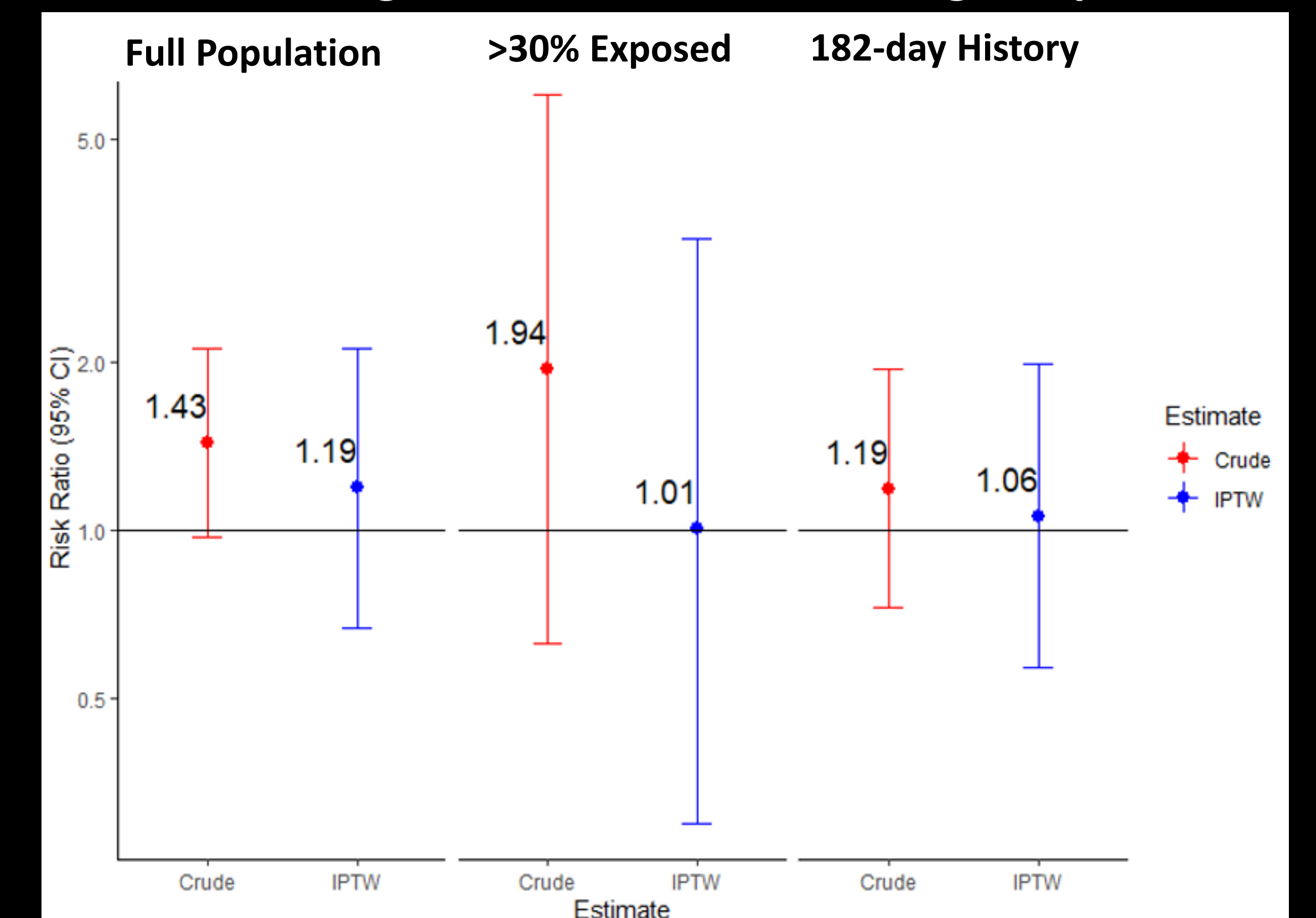
Table 1. Percent of patients administered preoperative day-of-surgery gabapentinoids and observed to have prolonged opioid use by time-period.

Time Period	Total # of Patients	Percent Exposed (95% CI)	Percent with Prolonged Opioid Use (95% CI)		
			Overall	Unexposed	Exposed
Jan 2016-June 2016	1,878	7.4% (6.2,8.6)	1.4% (0.9,2.0)	1.2% (0.7,1.8)	3.7% (0.5,6.8)
July 2016 – Dec 2016	2,310	11.6% (10.1,13.1)	0.9% (0.4,1.3)	0.5% (0.2,0.9)	3.5% (0.9,6.0)
Jan 2017 - June 2017	2,390	17.2% (15.5,18.9)	0.9% (0.5,1.3)	0.9% (0.4,1.4)	0.9% (0.0,2.0)
July 2017 – Dec 2017	2,248	21.1% (19.2,23.0)	1.0% (0.5,1.4)	0.7% (0.3,1.2)	1.9% (0.5,3.2)
Jan 2018 - June 2018	2,300	22.8% (20.9,24.7)	1.0% (0.6,1.5)	1.1% (0.5,1.6)	1.0% (0.0,1.9)
July 2018 - Dec 2018	2,484	31.1% (29.1,33.1)	0.9% (0.5,1.3)	0.8% (0.3,1.3)	1.1% (0.3,2.0)
Jan 2019 - June 2019	2,735	28.3% (26.4,30.3)	0.6% (0.3,0.9)	0.7% (0.3,1.2)	0.3% (0.0,0.8)
July 2019 - Sep 2019	1,090	31.8% (28.6,34.9)	0.2% (0.0,0.6)	0.4% (0.0,0.8)	0.0% (0.0,1.1)
Cochran-Armitage Test for Trend		p<.0001	p=.0072	p=.2167	p<.0001

KEY TAKEAWAYS:

- Risk of prolonged opioid use following surgery was low (0.91%).
- Use of preoperative gabapentinoids increased, while observed risk of prolonged opioid use decreased throughout the study period.
- Following IPTW adjustment, gabapentinoids were not associated with a reduced risk of prolonged opioid use.
- Prescribing behaviors for perioperative pain management likely changed throughout the study period.
- Off-label use of these medications to manage surgical pain should be carefully evaluated.

Crude and Weighted Risk Ratio of Prolonged Opioid Use



Read the Full Paper

Please Send Questions / Comments:
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