**Supplemental Content 6**

**Table S3.** Rates of persistent postoperative opioid use in opioid naïve population based on definitions obtained from systematic literature review.

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| --- | --- | --- |
| **Definition** | **Incidence of Persistent Use**  **N=162,803** | **Incidence of Persistent Use (Strict)**  **N=156,275** |
| **Prescriptions at Distinct Timepoint** |  |  |
| Opioid prescription beyond 30 days after date of surgery1 | 23,442 (14.4%) | 22,026 (14.1%) |
| Opioid consumed 6 weeks post-operatively (patient reported) 2,3 | 959 (0.6%) | 845 (0.5%) |
| Filled at least one opioid prescription between 90 and 180 days after surgery4-8 | 7,616 (4.7%) | 7,063 (4.5%) |
| 1) Filled prescription within 1 to 90 days after discharge; and 2) Filled at least one additional opioid prescription between 91 and 180 days after surgery9 | 5,761 (3.5%) | 5,355 (3.4%) |
| 1) Filled prescription within 30 days before surgery and 14 days after discharge; 2) Filled at least one additional opioid prescription between 90 and 180 days after surgery10-12 | 5,685 (3.5%) | 5,132 (3.3%) |
| Filled at least one opioid prescription overlapping 90 or 180 days13 | 1,854 (1.1%) | 1,663 (1.1%) |
| Opioid consumption at time of interview (180 days postoperatively) 14,15 | 1,061 (0.7%) | 944 (0.6%) |
| Opioid use, based on questionnaire, between 90 and 120 days after surgery16 | 3,149 (1.9%) | 2,906 (1.9%) |
| 1) Filled prescription within 30 days before surgery and 30 days after discharge; 2) Filled at least one additional opioid prescription between 90 and 120 days after surgery17 | 2,359 (1.4%) | 2,116 (1.4%) |
| Filled at least one opioid prescription between 90 and 365 days after surgery18 | 19,477 (11.9%) | 18,284 (11.7%) |
| Filled > 1 opioid prescription >90 days after surgery19 | 5,698 (3.5%) | 5,192 (3.4%) |
| Filled within 60 days of the 1-year anniversary date (eg, 305-425 days after the index date) 20 | 10,130 (6.2%) | 9,480 (6.1%) |
| Opioid use at 12-months (365 days) post-operatively21 | 1,370 (0.8%) | 1,247 (0.8%) |
| **Multiple Days of Prescribing** |  |  |
| Filled at 3 distinct time points: 1) 28 to 56 days, 2) 90 to 180 days, and 3) 300 to 365 days after surgery (or first two time intervals if the patient had an event (death and/or graft loss) between three and 12 months)22 | 230(0.1%) | 176 (0.1%) |
| 60 days of non-continuous prescriptions filled (within 275 days, excluding the first 90 days)23 | 1072(0.6%) | 919 (0.6%) |
| 90 days of continuous use or at least 120 days of non-continuous use (within 275 days, excluding the first 90 days)24,25 | 461 (0.3%) | 388 (0.2%) |
| Prescribed opioids for >6 contiguous months after surgery (followed for 24 months post-operatively)26 | 72 (0.0%) | 56 (0.0%) |
| Patient reported continuous consumption of opioid (with no gaps >5 days) in the 150 days after discharge27 | <5 (0%) | <5(0%) |
| Opioids prescribed uninterrupted for greater than 3 months after surgery28 | 0 (0%) | 0 (0%) |
| Continuously filled prescriptions (with no gaps >14 days) in the 12 months after discharge29 | 10 (0.01%) | <6 (0.0%) |
| Sustained opioid use was defined as a consistently filled prescription beginning within 30 days of hospital discharge and continuing with no more than 30 days elapsing between prescription refills until 6 months post-operatively. 30 | 93 (0.1%) | 64 (0.1%) |
| **Combination** |  |  |
| 1) 10 or more prescriptions; or 2) >120 days’ supply within the first year of surgery (excluding the first 90 postoperative days) 31-33 | 509 (0.3%) | 428 (0.3%) |
| 1) ≥10 opioid prescriptions (over ≥90 days); or 2) ≥120 total days’ supply dispensed (within 330 days, excluding the first 30 days) 34,35 | 286 (0.2%) | 236 (0.2%) |
| 1) Filled prescription within 15 to 90 days after discharge and filled at least one additional opioid prescription between 91 and 180 days after surgery; and, 2) either A) 1150 OMEs total dose OR B) 39 days supplied and 2 filled prescriptions36 | 535 (0.3%) | 420 (0.3%) |

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