**ONLINE SUPPLEMENT – *Supportive Care in Cancer***

**Title:** Cancer survivorship and its association with perioperative opioid use for minor non-cancer surgery

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**Supplemental Table 1: Procedure codes used to identify index minor surgeries**

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| **Minor surgery** | **Current Procedural Terminology code** |
| Hemorrhoidectomy | 46221, 46945, 46946, 46250, 46260, 46257, 46258, 46261, 46262, 46255 |
| Laparoscopic appendectomy | 44970 |
| Laparoscopic cholecystectomy  | 47562, 47563, 47564 |
| Parathyroidectomy | 60500 |
| Thyroidectomy | 60240 |
| Varicose vein removal  | 37785 |

**Supplemental Figure 1: Cohort flow diagram for cancer survivor cohort**

Patients where index cancer is 1st and only cancer diagnosis (N= 616527)

Total observations in SEER registry data

(N= 784151)

Patients with a minor procedure of interest (N=25453)

Patients meeting all enrollment criteria (i.e. procedure occurred during study, age>65, cancer occurred 2 or more years before surgery, continuous enrollment in Medicare A, B, D) (N=4061)

Patients with >1 cancer diagnosis (N= 167624)

Exclude patients without a minor procedure

(N= 591074)

Patients who did not meet enrollment criteria

(N= 21392)

Patients meeting hospice and other surgery wash-out criteria (N=1969)

Patients with any other surgery or hospice care during wash-out (N=2092)

Patients with no opioid fill ≤ 6 months before surgery (N= 1486)

Exclude patients who did not meet opioid wash-out criteria (N= 483)

Final Cohort (N=1486)

**Supplemental Figure 2: Cohort flow diagram for non-cancer control cohort**

Total observations in 5% control data

(N=735311 )

Patients with a minor procedure of interest (N=33041)

Patients meeting all enrollment criteria (i.e. procedure occurred during study, age>65, continuous enrollment in Medicare A, B, D) (N=12779)

Exclude patients without a minor procedure

(N= 702270)

Patients who did not meet enrollment criteria

(N= 20262)

Patients meeting hospice and other surgery wash-out criteria (N=5047)

Patients with any other surgery or hospice care during wash-out (N=7732)

Patients with no opioid fill ≤ 6 months before surgery (N= 3682)

Exclude patients who did not meet opioid wash-out criteria (N= 1365)

Final Controls (N= 3682)

**Supplemental Table 2: Modified Poisson regression estimates of the adjusted relative risk of a perioperative opioid prescription fill for a non-cancer-related minor surgery associated with cancer survivorship, by cancer type**



Note: Adjusted risk ratio estimates were obtained by modified Poisson regression weighted with stabilized inverse probability of treatment weights calculated based on the observed characteristics reported in the table, as well as SEER registry region and year of index minor surgery; the modified Poisson model also controlled for these covariates. Stabilized IPTW were calculated separately within each cancer subtype; the full non-cancer control cohort served as the control population within each cancer type model.

CI=Confidence interval; ED=Emergency department