

## Supplementary Online Content

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**eTable.** Risk Factors for New Persistent Opioid Use 90-180 Days After Cardiac Surgery in Low Risk Patients for New Persistent Opioid Use

**eFigure.** Association of the Oral Morphine Equivalents of the First Prescription after Cardiac Surgery and the Likelihood of Developing New Persistent Opioid Use Among Low Risk Patients for New Persistent Opioid Use

This supplementary material has been provided by the authors to give readers additional information about their work.

**eTable.** Risk Factors for New Persistent Opioid Use 90-180 Days After Cardiac Surgery in Low Risk Patients for New Persistent Opioid Use. Low risk patients excludes patients who had preoperative use of benzodiazepines (n=4,517), muscle relaxants (n=1,691), alcoholism (n=659), chronic pain (n=476), drug abuse (n=155), and those discharged to a facility (n=3,402) after surgery.

	<b>Adjusted Odds Ratio</b>	<b>CI (95%)</b>	<b>P-Value</b>
<b>Surgery Type</b>			
<b>CABG</b>	1.0	NA	NA
<b>Valve Surgery</b>	0.70	(0.61-0.8)	<0.001
<b>Demographics</b>			
<b>Age</b>	0.99	(0.98-0.99)	<0.001
<b>Male</b>	0.85	(0.75-0.97)	0.014
<b>White</b>	0.96	(0.87-1.06)	0.49
<b>Year of Surgery</b>	0.92	(0.82-1.04)	0.20
<b>Education</b>			
<b>Less than High School Diploma</b>	1.0	NA	NA
<b>High School Diploma</b>	1.33	(0.57-3.12)	0.51
<b>Less than Bachelor Degree</b>	1.29	(0.55-3.02)	0.56
<b>More than Bachelor Degree</b>	1.09	(0.46-2.58)	0.85
<b>Income</b>			
<b>&lt;\$40,000</b>	1.0	NA	NA
<b>\$40,000-\$49,000</b>	0.91	(0.74-1.11)	0.36
<b>\$50,000-\$59,000</b>	0.98	(0.81-1.20)	0.86
<b>\$60,000-\$74,000</b>	0.96	(0.80-1.15)	0.66
<b>\$75,000-\$99,000</b>	0.92	(0.77-1.09)	0.33
<b>Greater than \$100,000</b>	0.88	(0.75-1.03)	0.11
<b>Preoperative Comorbidities</b>			
<b>Hypertension</b>	1.02	(0.89-1.17)	0.76
<b>Congestive Heart Failure</b>	1.24	(1.09-1.41)	<0.001
<b>Pulmonary Circulation Disease</b>	0.93	(0.75-1.15)	0.51
<b>Diabetes</b>	1.28	(1.14-1.44)	<0.001
<b>Chronic Lung Disease</b>	1.28	(1.13-1.45)	<0.001
<b>Rheumatoid Arthritis</b>	1.38	(1.01-1.88)	0.042
<b>Peripheral Vascular Disease</b>	1.12	(0.99-1.26)	0.077
<b>Renal Failure</b>	1.08	(0.89-1.32)	0.43
<b>Liver Disease</b>	1.33	(0.97-1.81)	0.072
<b>Obese</b>	1.10	(0.96-1.26)	0.17
<b>Weight Loss</b>	0.98	(0.65-1.47)	0.91
<b>Chronic Blood Loss Anemia</b>	1.00	(0.63-1.57)	0.99
<b>Paralysis</b>	0.87	(0.42-1.84)	0.72

<b>Neurological Disorders</b>	1.06	(0.80-1.41)	0.66
<b>Fluid and Electrolyte Disorders</b>	0.98	(0.84-1.14)	0.78
<b>Deficiency Anemias</b>	1.00	(0.85-1.16)	0.96
<b>Psychoses</b>	1.08	(0.74-1.59)	0.68
<b>Depression</b>	1.10	(0.87-1.38)	0.43
<b>Pre-Operative Medications</b>			
<b>Antipsychotics</b>	0.77	(0.3-2.01)	0.60
<b>Discharge Status</b>			
<b>Home</b>	1.0	NA	NA
<b>Facility</b>	0.92	(0.78-1.08)	0.29
<b>Length of Stay</b>	1.06	(1.03-1.08)	<0.001

**eFigure.** Association of the Oral Morphine Equivalents of the First Prescription after Cardiac Surgery and the Likelihood of Developing New Persistent Opioid Use Among Low Risk Patients for New Persistent Opioid Use.

Low risk patients excludes patients who had preoperative use of benzodiazepines (n=4,517), muscle relaxants (n=1,691), alcoholism (n=659), chronic pain (n=476), drug abuse (n=155), and those discharged to a facility (n=3,402) after surgery. An oral morphine equivalent of 300mg, (the median oral morphine equivalent [OME] prescribed) was used as the reference point. Patients that were prescribed more than 410mg OME (approximately 55 tablets of 5mg oxycodone) had an increased likelihood of developing persistent opioid 90 days after surgery. Patients that were prescribed between 5-409 OME had the same odds of becoming persistent users. Oral morphine equivalents (OMEs) are defined as the total number of opioid tablets dispensed multiplied by the dosage and also by the morphine conversion factor. Persistent opioid use is defined as a patient filling an opioid prescription within 90-180 days after surgery.

