

## Appendix

Table S1. ICD-9 Codes Used to Identify Co-morbidities

Co-morbidities	ICD-9 Codes	Number and Type of Claims to Identify
Acute pain for injury <sup>a</sup>	800.xx-959.xx, 338.11, 338.19	At least one inpatient or outpatient claim
Chronic pain <sup>1</sup>	274.xx, 282.6x, 307.8x, 337.20-337.29, 338.0x, 338.2x, 338.21, 338.22, 338.28, 338.28, 338.29, 338.4x, 339.xx, 346.xx, 350.xx, 353.6x, 354.xx, 355.9x, 710.xx, 712.xx-717.xx, 718.0x, 718.1x, 720.xx-723.3x, 724.xx-727.4x, 729.1x, 729.2x, 729.5x, 729.7x, 780.96, 784.0x	At least one inpatient or outpatient claim
Dental pain <sup>2</sup>	520.xx-529.xx	At least one inpatient or outpatient claim
Peripheral arterial disease <sup>3</sup>	250.7x, 440.xx-442.xx, 443.1x, 443.2x, 443.81, 443.9, 444.xx-445.xx, 446.7x, 447.1x, 447.6x, 557.1x	At least one inpatient or outpatient claim
Peripheral neuropathy <sup>3</sup>	250.6x, 337.0x, 337.1x, 337.9x, 354.xx-355.xx, 356.4x, 356.9x, 357.2x, 358.1x, 536.3x	At least one inpatient or outpatient claim

Note: <sup>a</sup> Includes all injury codes except poisoning and toxins.

1. Miller G., Guy G., Zhang K., Mikosz C. Prevalence of Non-Opioid Pain Medication and Opioid Prescription among Chronic Pain Patients. *Pain Medicine*. 2019;20(10):1948-1954.
2. Quinonez C, Gibson D, Jokovic A, Locker D. Emergency department visits for dental care of nontraumatic origin. *Community dentistry and oral epidemiology*. 2009;37(4):366-371.3.
3. Burke J, Kovacs B, Borton L, Sander S. Health care utilization and costs in type 2 diabetes mellitus and their association with renal impairment. *Postgraduate medicine*. 2012;124(2):77-91.

Table S2. Multivariable Logistic Regression Model to Predict Factors Associated with Opioid Prescriptions Among Medicaid Adult Enrollees with Diabetes, 2014

Characteristics	AOR (95% CI)	p-value
Age (years)		
19-29	0.71 (0.65-0.78)	<b>&lt;0.001</b>
30-39	0.99 (0.93-1.06)	0.714
40-49	1.13 (1.07-1.18)	<b>&lt;0.001</b>
50-64	ref	
Sex		
Female	1.31 (1.26-1.37)	<b>&lt;0.001</b>
Male	ref	
Race/Ethnicity		
White	ref	
Black	1.01 (0.96-1.06)	0.702
Hispanic	0.63 (0.57-0.69)	<b>&lt;0.001</b>
Other	0.47 (0.43-0.52)	<b>&lt;0.001</b>
Disability-based Eligibility		
Yes	1.41 (1.34-1.49)	<b>&lt;0.001</b>
No	ref	
Comorbidities		
Acute injury	2.14 (2.05-2.24)	<b>&lt;0.001</b>
Chronic pain	4.43 (4.25-4.61)	<b>&lt;0.001</b>
Dental Pain	2.16 (2.00-2.34)	<b>&lt;0.001</b>
Peripheral artery disease	1.28 (1.20-1.38)	<b>&lt;0.001</b>
Peripheral neuropathy	1.43 (1.37-1.50)	<b>&lt;0.001</b>
Census Region		
West	ref	
South	1.23 (1.14-1.34)	<b>&lt;0.001</b>
Midwest	1.06 (0.99-1.15)	0.116
Northeast	0.46 (0.41-0.51)	<b>&lt;0.001</b>

Note: Boldface indicates statistical significance ( $p < 0.05$ ). The definition of race/ethnicity is based on the CMS codebook.<sup>11</sup>

Table S3. Multivariable Logistic Regression Model to Predict Factors Associated with Opioid Prescriptions Among Medicaid Adult Enrollees without Diabetes, 2014

Characteristics	AOR (95% CI)	<i>p</i> -value
Age (years)		
19-29	0.64 (0.63-0.66)	<b>&lt;0.001</b>
30-39	0.84 (0.82-0.85)	<b>&lt;0.001</b>
40-49	0.93 (0.91-0.95)	<b>&lt;0.001</b>
50-64	ref	
Sex		
Female	1.52 (1.49-1.54)	<b>&lt;0.001</b>
Male	ref	
Race/Ethnicity		
White	ref	
Black	0.87 (0.85-0.88)	<b>&lt;0.001</b>
Hispanic	0.55 (0.53-0.57)	<b>&lt;0.001</b>
Other	0.54 (0.52-0.55)	<b>&lt;0.001</b>
Disability-based Eligibility		
Yes	1.20 (1.18-1.22)	<b>&lt;0.001</b>
No	ref	
Comorbidities		
Acute injury	2.63 (2.59-2.67)	<b>&lt;0.001</b>
Chronic pain	5.46 (5.38-5.54)	<b>&lt;0.001</b>
Dental Pain	3.36 (3.28-3.45)	<b>&lt;0.001</b>
Peripheral artery disease	1.72 (1.63-1.83)	<b>&lt;0.001</b>
Peripheral neuropathy	1.66 (1.60-1.72)	<b>&lt;0.001</b>
Census Region		
West	ref	
South	2.32 (2.27-2.38)	<b>&lt;0.001</b>
Midwest	1.82 (1.78-1.86)	<b>&lt;0.001</b>
Northeast	0.52 (0.51-0.54)	<b>&lt;0.001</b>

*Note:* Boldface indicates statistical significance ( $p < 0.05$ ). The definition of race/ethnicity is based on the CMS codebook.<sup>11</sup>