

## Supplementary Online Content

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**eTable 1.** Weighted Prevalence of Prescription Opioid Use and Misuse by Comorbidity History

**eTable 2.** Baseline Characteristics of Adult Population Stratified by Reported Cancer History

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

**eTable 1.** Weighted Prevalence of Prescription Opioid Use and Misuse by Comorbidity History

<b>Comorbidity</b>	<b>Weighted % (95% CI)</b>	
	<b>Prescription Opioid Use</b>	<b>Prescription Opioid Misuse</b>
Asthma	39.7 (38.5 – 40.9)	5.2 (4.8 – 5.7)
Cancer	42.8 (41.2 – 44.5)	3.1 (2.7 – 3.6)
Chronic Obstructive Pulmonary Disease	52.6 (50.6 – 54.6)	4.8 (4.1 – 5.5)
Diabetes	42.8 (41.7 – 44.0)	2.9 (2.6 – 3.3)
Hepatitis B or C	42.7 (39.0 – 46.6)	8.3 (6.8 – 10.1)
Heart Condition	42.1 (40.7 – 43.6)	3.4 (3.0 – 3.8)
HIV or AIDS	38.5 (31.6 – 45.8)	10.6 (7.0 – 15.8)
Hypertension	41.2 (40.2 – 42.2)	3.3 (3.1 – 3.5)
Kidney Disease	50.5 (47.9 – 53.1)	3.4 (2.7 – 4.4)
Liver Cirrhosis	56.4 (49.3 – 63.1)	4.9 (2.9 – 8.1)

Abbreviations: CI, confidence interval

**eTable 2.** Baseline Characteristics of Adult Population Stratified by Reported Cancer History

Characteristics	Weighted % (95% CI)		P-Value
	No Cancer History <sup>a</sup> (N = 164,023)	Cancer History <sup>a</sup> (N = 5,139)	
<b>Age</b>			<0.001
18 to 34	31.6 (31.1 – 32.1)	4.9 (4.6 – 5.4)	
35 to 64	50.7 (50.3 – 51.1)	41.8 (40.2 – 43.3)	
65+	17.7 (17.3 – 18.1)	53.2 (51.7 – 54.9)	
<b>Sex</b>			<0.001
Male	48.7 (48.3 – 49.0)	39.8 (37.8 – 41.8)	
Female	51.3 (51.0 – 51.7)	60.2 (58.2 – 62.2)	
<b>Race</b>			<0.001
White	63.0 (62.4 – 63.5)	81.2 (79.8 – 82.5)	
African-American	12.2 (11.8 – 12.6)	7.1 (6.2 – 8.0)	
Hispanic	16.5 (16.0 – 16.9)	7.2 (6.4 – 8.1)	
Other	8.3 (8.1 – 8.6)	4.5 (3.7 – 5.5)	
<b>Year</b>			0.346
2015	24.7 (24.3 – 25.1)	24.4 (22.7 – 26.2)	
2016	24.8 (24.5 – 25.1)	24.9 (23.3 – 26.6)	
2017	25.1 (24.9 – 25.4)	24.1 (22.5 – 25.7)	
2018	25.2 (24.8 – 25.6)	26.6 (24.8 – 28.5)	
<b>Education Level</b>			<0.001
Less than high school	13.0 (12.8 – 13.3)	9.2 (8.0 – 10.6)	
High school graduate	25.1 (24.7 – 25.4)	23.8 (22.1 – 25.5)	
Some college/Associates Degree	31.0 (30.6 – 31.4)	31.5 (29.6 – 33.5)	
College graduate	30.9 (30.3 – 31.4)	35.5 (33.5 – 37.6)	
<b>Health Insurance</b>			<0.001
Private	52.9 (52.5 – 53.3)	32.9 (31.2 – 34.6)	
Public	34.5 (34.1 – 34.9)	63.8 (62.1 – 65.5)	
Other	2.3 (2.2 – 2.4)	0.7 (0.4 – 1.0)	
Unknown	10.3 (10.0 – 10.5)	2.6 (2.2 – 3.1)	
<b>Income</b>			<0.001
<\$20,000	16.8 (16.4 – 17.1)	13.5 (12.2 – 14.8)	
\$20,000 - \$49,999	29.6 (29.2 – 30.0)	31.2 (29.6 – 32.9)	
\$50,000 - \$74,999	15.9 (15.6 – 16.2)	17.0 (15.9 – 18.2)	
\$75,000+	37.6 (37.0 – 38.2)	38.2 (36.4 – 40.1)	
<b>Setting</b>			<0.001
Urban	85.8 (85.4 – 86.3)	83.5 (82.3 – 84.6)	
Rural	14.1 (13.7 – 14.5)	16.5 (15.4 – 17.7)	
<b>Employment</b>			<0.001
Full Time	50.8 (50.4 – 51.2)	29.4 (27.5 – 31.3)	
Part Time	13.2 (12.9 – 13.4)	11.7 (10.7 – 12.8)	
Unemployed	4.6 (4.4 – 4.7)	1.7 (1.4 – 2.1)	
Other	31.4 (30.9 – 31.8)	57.1 (55.4 – 58.8)	
<b>Marital Status</b>			<0.001

Married	51.3 (50.8 – 51.8)	59.8 (57.8 – 61.8)	
Widowed	5.3 (5.1 – 5.6)	13.6 (12.3 – 15.0)	
Divorced/Separated	13.7 (13.4 – 14.0)	16.9 (15.5 – 18.5)	
Never Married	29.6 (29.1 – 30.0)	9.7 (8.8 – 10.6)	
<b>Health Status</b>			<0.001
Excellent	21.7 (21.3 – 22.1)	12.6 (11.5 – 13.9)	
Very good	36.2 (35.8 – 36.5)	29.4 (27.6 – 31.1)	
Good	28.8 (28.3 – 29.2)	34.2 (32.3 – 36.1)	
Fair	10.8 (10.5 – 11.1)	16.3 (15.0 – 17.8)	
Poor	2.4 (2.3 – 2.5)	7.4 (6.4 – 8.6)	
Unknown	0.01 (0.01 – 0.03)	0	
<b>Major Depressive Episode within Year</b>	6.9 (6.7 – 7.1)	6.9 (6.1 – 7.8)	0.966
Unknown	0.7 (0.7 – 0.8)	0.7 (0.4 – 1.1)	
<b>Alcohol Use Disorder</b>	6.1 (6.0 – 6.3)	3.0 (2.5 – 3.6)	<0.001
<b>Non-Opioid Drug Use Disorder</b>	2.7 (2.6 – 2.8)	1.4 (1.1 – 1.8)	<0.001
<b>Cancer Type<sup>b</sup></b>			N/A
Bladder	-	3.5 (2.8 – 4.2)	
Breast	-	2.5 (2.3 – 2.6)	
Cervix	-	6.3 (5.6 – 7.1)	
Colon/Rectum	-	7.0 (6.1 – 7.9)	
Esophagus/Stomach	-	1.4 (1.0 – 1.9)	
Gallbladder/Liver/Pancreas	-	1.5 (1.1 – 2.0)	
Hematologic	-	8.3 (7.3 – 9.5)	
Kidney	-	2.7 (2.1 – 3.4)	
Larynx/Windpipe/Lung	-	3.8 (3.0 – 4.7)	
Melanoma	-	9.5 (8.5 – 10.5)	
Mouth/Tongue/Lip/Throat/Pharynx	-	1.5 (1.1 – 1.9)	
Ovary	-	2.9 (2.3 – 3.6)	
Prostate/Testis	-	15.6 (14.2 – 17.1)	
Uterus	-	4.4 (3.8 – 5.2)	
Thyroid	-	4.0 (3.5 – 4.7)	

Abbreviations: CI, confidence interval

<sup>a</sup>Percentages may not add up to 100 due to rounding.

<sup>b</sup>Percentages add up to > 100 due to respondents reporting multiple cancers

**eTable 3.** Baseline Characteristics of Adult Cancer Population Stratified by Recency of Cancer History

Characteristics	Weighted % (95% CI)		P-Value
	More Recent Cancer History <sup>a</sup> (N = 1,243)	Less Recent Cancer History <sup>a</sup> (N = 3,896)	
<b>Age</b>			0.763
18 to 34	4.6 (3.8 – 5.6)	5.1 (4.5 – 5.6)	
35 to 64	41.6 (38.1 – 45.1)	41.8 (40.2 – 43.4)	
65+	53.8 (50.2 – 57.4)	53.1 (51.5 – 54.7)	
<b>Sex</b>			<0.001
Male	49.0 (44.7 – 53.3)	36.9 (34.7 – 65.2)	
Female	51.0 (46.7 – 55.3)	63.1 (60.9 – 65.2)	
<b>Race</b>			0.042
White	78.8 (75.8 – 81.5)	81.9 (80.3 – 83.4)	
African-American	9.4 (7.5 – 11.8)	6.3 (5.4 – 7.4)	
Hispanic	7.4 (5.7 – 9.6)	7.2 (6.3 – 8.2)	
Other	4.4 (3.1 – 6.2)	4.5 (3.7 – 5.6)	
<b>Year</b>			0.012
2015	24.1 (21.1 – 27.4)	24.5 (22.6 – 26.5)	
2016	22.0 (19.2 – 25.1)	25.8 (23.9 – 27.6)	
2017	23.2 (20.4 – 26.3)	24.4 (22.6 – 26.2)	
2018	30.6 (27.3 – 34.1)	25.3 (23.5 – 27.2)	
<b>Education Level</b>			0.009
Less than high school	12.5 (10.0 – 15.4)	8.2 (7.0 – 9.6)	
High school graduate	24.2 (20.9 – 27.8)	23.6 (21.8 – 25.5)	
Some college/Associates Degree	29.9 (26.3 – 33.8)	32.0 (30.1 – 34.0)	
College graduate	33.3 (29.5 – 27.4)	36.2 (33.8 – 38.5)	
<b>Health Insurance</b>			0.002
Private	30.4 (27.2 – 33.7)	33.7 (31.9 – 35.4)	
Public	67.6 (64.3 – 70.6)	62.6 (60.9 – 64.3)	
Other	0.8 (0.4 – 1.9)	0.6 (0.4 – 1.0)	
Unknown	1.1 (0.7 – 2.0)	3.0 (2.5 – 3.7)	
<b>Income</b>			0.017
<\$20,000	16.7 (14.4 – 19.2)	12.4 (11.0 – 14.1)	
\$20,000 - \$49,999	31.8 (28.4 – 35.3)	31.0 (29.1 – 33.1)	
\$50,000 - \$74,999	15.7 (13.2 – 18.6)	17.4 (16.1 – 18.8)	
\$75,000+	35.7 (32.4 – 39.2)	39.0 (37.1 – 41.0)	
<b>Setting</b>			0.857
Urban	83.6 (80.8 – 86.2)	83.4 (82.1 – 84.6)	
Rural	16.3 (13.8 – 19.2)	16.6 (15.4 – 17.9)	
<b>Employment</b>			0.024
Full Time	26.2 (22.7 – 30.1)	30.4 (28.5 – 32.3)	
Part Time	10.4 (8.1 – 13.3)	12.2 (11.1 – 13.3)	
Unemployed	1.4 (0.8 – 2.4)	1.8 (1.5 – 2.3)	
Other	61.9 (58.1 – 65.6)	55.6 (54.0 – 57.2)	

<b>Marital Status</b>			0.399
Married	57.8 (54.4 – 61.3)	60.4 (58.1 – 62.6)	
Widowed	14.8 (12.4 – 17.6)	13.2 (11.7 – 15.0)	
Divorced/Separated	16.8 (14.4 – 19.6)	16.9 (15.3 – 18.6)	
Never Married	10.4 (9.2 – 11.8)	9.4 (8.5 – 10.4)	
<b>Health Status</b>			<0.001
Excellent	5.9 (4.2 – 8.1)	14.8 (13.4 – 16.2)	
Very good	22.6 (19.2 – 26.3)	31.5 (29.4 – 33.7)	
Good	32.4 (29.2 – 35.8)	34.8 (32.5 – 37.1)	
Fair	23.1 (20.9 – 25.4)	14.2 (12.6 – 16.0)	
Poor	16.0 (12.8 – 19.6)	4.7 (3.9 – 5.7)	
Unknown	0.01 (0.0 – 0.1)	0	
<b>Major Depressive Episode within Year</b>	7.6 (5.9 – 9.6)	6.7 (5.6 – 7.9)	0.613
Unknown	0.9 (0.4 – 1.9)	0.7 (0.4 – 1.2)	
<b>Alcohol Use Disorder</b>	3.0 (2.1 – 4.4)	3.0 (2.4 – 3.8)	0.977
<b>Non-Opioid Drug Use Disorder</b>	1.1 (0.6 – 1.8)	1.5 (1.1 – 2.0)	0.180
<b>Cancer Type<sup>b</sup></b>			<0.001
Bladder	4.8 (3.5 – 6.5)	3.0 (2.4 – 3.8)	
Breast	17.9 (14.7 – 21.6)	27.0 (25.1 – 29.1)	
Cervix	3.6 (2.6 – 5.0)	7.2 (6.3 – 8.1)	
Colon/Rectum	7.3 (5.7 – 9.4)	6.9 (5.9 – 8.0)	
Esophagus/Stomach	2.0 (1.1 – 3.4)	1.2 (0.8 – 1.8)	
Gallbladder/Liver/Pancreas	4.0 (2.7 – 5.8)	0.7 (0.4 – 1.1)	
Hematologic	13.9 (11.2 – 17.1)	6.6 (5.6 – 7.7)	
Kidney	2.9 (1.8 – 4.8)	2.6 (2.0 – 3.4)	
Larynx/Windpipe/Lung	6.9 (4.9 – 9.4)	2.8 (2.2 – 3.6)	
Melanoma	10.4 (8.3 – 13.0)	9.2 (8.1 – 10.4)	
Mouth/Tongue/Lip/Throat/Pharynx	1.3 (0.7 – 2.1)	1.5 (1.1 – 2.1)	
Ovary	2.0 (1.1 – 3.4)	3.2 (2.5 – 3.9)	
Prostate/Testis	18.8 (16.0 – 21.9)	14.6 (13.1 – 16.3)	
Uterus	2.4 (1.5 – 3.9)	5.1 (4.4 – 5.9)	
Thyroid	2.2 (1.5 – 3.2)	4.6 (3.9 – 5.4)	

Abbreviations: CI, confidence interval

<sup>a</sup>Percentages may not add up to 100 due to rounding.

<sup>b</sup>Percentages add up to > 100 due to respondents reporting multiple cancers