**Appendix 1. Incidence, supply days, and cost of opioid prescription by reported type of injury and year (2010-2019)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Incidence (95% CI) | Supply days (95% CI) | Cost (2020 US $) (95% CI) |
| Year | Other injury | Occupational injury | Other injury | Occupational injury | Other injury | Occupational injury |
| 2010 | 15.8 (14.2–17.4) | 22.4 (18.9–25.9) | 5.1 (3.2–6.9) | 10.0 (6.3–13.6) | 49.8 (13.4–86.2) | 86.2 (36.3–136.0) |
| 2011 | 17.7 (15.7–19.6) | 22.6 (19.1–26.0) | 6.3 (4.0–8.5) | 17.4 (11.9–22.8) | 36.8 (18.2–55.3) | 107.0 (61.6–152.3) |
| 2012 | 16.1 (14.1–18.0) | 23.2 (19.6–26.8) | 7.0 (4.9–9.0) | 11.7 (7.7–15.8) | 46.1 (24.3–67.9) | 93.4 (28.2–158.6) |
| 2013 | 14.3 (12.7–15.9) | 17.9 (15.3–20.6) | 5.7 (4.2–7.3) | 9.5 (5.4–13.6) | 51.5 (24.5–78.4) | 29.0 (17.2–40.8) |
| 2014 | 14.8 (13.1–16.5) | 20.0 (16.9–23.0) | 6.3 (4.7–8.0) | 13.1 (8.2–18.0) | 29.6 (16.6–42.7) | 79.5 (29.2–129.8) |
| 2015 | 14.6 (13.1–16.2) | 20.2 (17.1–23.2) | 4.5 (3.1–5.9) | 10.2 (6.4–14.0) | 21.1 (16.3–25.9) | 65.3 (42.7–87.8) |
| 2016 | 10.8 (9.5–12.2) | 15.6 (12.9–18.3) | 4.7 (3.4–6.0) | 12.3 (7.8–16.8) | 24.7 (14.9–34.4) | 80.6 (39.6–121.7) |
| 2017 | 9.4 (8.2–10.7) | 13.9 (11.2–16.7) | 4.9 (3.8–5.9) | 9.8 (5.6–14.0) | 29.8 (15.7–43.9) | 78.2 (28.5–127.9) |
| 2018 | 14.5 (12.9–16.1) | 16.1 (13.2–18.9) | 7.5 (5.7–9.3) | 14.1 (9.4–18.7) | 24.8 (16.8–32.8) | 76.0 (39.6–112.3) |
| 2019 | 13.2 (11.3–15.0) | 16.2 (12.7–19.7) | 7.5 (5.2–9.7) | 17.3 (11.8–22.8) | 27.9 (18.1–37.7) | 91.0 (33.4–148.6) |

**Appendix 2. Opioid supply days: Part 1 of the two-part model: logistic regression results**

|  |  |  |
| --- | --- | --- |
| **Variable** | **AOR** | **95% CI** |
| Occupational injury-caused condition | 1.30\*\*\* | 1.17 – 1.43 |
| Sex (Reference: Female) | 1.03 | 0.94 – 1.14 |
| Age category (Reference: 18-29) | 1.00 | 1.00 – 1.00 |
|  30-44 | 1.11 | 0.95 – 1.30 |
|  45-64 | 1.25\*\*\* | 1.07 – 1.46 |
|  65+ | 0.84\* | 0.68 – 1.02 |
| Race and ethnicity (Reference: Non-Hispanic White) |  |  |
|  Hispanic | 0.90 | 0.79 – 1.03 |
|  Non-Hispanic Black | 1.06 | 0.94 – 1.20 |
|  Non-Hispanic other | 0.90 | 0.74 – 1.09 |
| Marital status (Reference: Married) |  |  |
|  Widowed  | 0.87 | 0.73 – 1.05 |
|  Divorced  | 1.06 | 0.93 – 1.21 |
|  Separated | 0.96 | 0.74 – 1.23 |
|  Never married | 0.79\*\*\* | 0.70 – 0.90 |
| Education (Reference: Bachelor's degree or higher) |  |  |
|  Less than High school diploma | 1.62\*\*\* | 1.38 – 1.92 |
|  High school diploma  | 1.46\*\*\* | 1.28 – 1.68 |
|  Some College  | 1.32\*\*\* | 1.15 – 1.52 |
| Working during the survey year (Reference: No) | 0.83\*\*\* | 0.74 – 0.93 |
| Current smoker | 1.42\*\*\* | 1.27 – 1.58 |
| One or more comorbidity | 1.19\*\*\* | 1.05 – 1.35 |
| Physically active | 0.85\*\*\* | 0.78 – 0.92 |
| Health insurance (Reference: Private) |  | 1.00 – 1.00 |
|  Public | 1.34\*\*\* | 1.19 – 1.51 |
|  Uninsured | 1.03 | 0.87 – 1.22 |
| Family poverty status (Reference: High income) |  |  |
|  Poor | 1.20\*\* | 1.02 – 1.39 |
|  Near poor | 1.25\*\* | 1.02 – 1.54 |
|  Low income | 1.16\*\* | 1.00 – 1.34 |
|  Middle income | 1.15\*\*\* | 1.02 – 1.30 |
| Region (Reference: Northeast) |  |  |
|  Midwest | 1.51\*\*\* | 1.28 – 1.77 |
|  South | 1.60\*\*\* | 1.38 – 1.88 |
|  West  | 1.32\*\*\* | 1.12 – 1.55 |
| Year-fixed effects (Reference: 2010) |  | 1.00 – 1.00 |
| 2011 | 1.14 | 0.96 – 1.34 |
| 2012 | 1.04 | 0.86 – 1.26 |
| 2013 | 0.93 | 0.78 – 1.11 |
| 2014 | 1.06 | 0.89 – 1.27 |
| 2015 | 0.84 | 0.70 – 1.01 |
| 2016 | 0.75\*\*\* | 0.63 – 0.90 |
| 2017 | 0.62\*\*\* | 0.51 – 0.75 |
| 2018 | 0.72\*\*\* | 0.59 – 0.88 |
| 2019 | 0.69\*\*\* | 0.56 – 0.85 |

\* p<0.10, \*\* p<0.05, \*\*\* p<0.01

**Appendix 3. Opioid supply days: Part 2 of the two-part model: GML results**

|  |  |  |
| --- | --- | --- |
| **Variable**  | **GLM Coefficients** | **95% CI** |
| Occupational injury-caused condition | 32.77\*\*\* | 22.66 – 42.87 |
| Sex (Reference: Female) | 6.38 | -2.63 – 15.39 |
| Age category (Reference: 18-29) |  |  |
|  30-44 | 22.23\*\*\* | 11.00 – 33.46 |
|  45-64 | 30.90\*\*\* | 19.30 – 42.51 |
|  65+ | -4.00 | -20.56 – 12.56 |
| Race and ethnicity (Reference: Non-Hispanic White) |  |  |
|  Hispanic | -16.26\* | -28.82 – -3.69 |
|  Non-Hispanic Black | -20.94\*\*\* | -29.72 – -12.15 |
|  Non-Hispanic other | -4.14 | -23.27 – 14.99 |
| Marital status (Reference: Married) |  |  |
|  Widowed  | 7.44 | -10.36 – 25.24 |
|  Divorced  | 2.61 | -9.53 – 14.75 |
|  Separated | 0.7 | -17.07 – 18.47 |
|  Never married | -7.15 | -18.63 – 4.34 |
| Education (Reference: Bachelor's degree or higher) |  |  |
|  Less than High school diploma | 7.43 | -6.96 – 21.83 |
|  High school diploma  | 11.31\* | 0.89 – 21.72 |
|  Some College  | 17.63\*\* | 6.44 – 28.82 |
| Working during the survey year (Reference: No) | -54.17\*\*\* | -64.90 – -43.44 |
| Current smoker | 20.38\*\*\* | 8.93 – 31.84 |
| One or more comorbidity | 18.72\*\*\* | 9.82 – 27.63 |
| Physically active | -10.64\*\* | -18.12 – -3.16 |
| Health insurance (Reference: Private) |  |  |
|  Public | 29.86\*\*\* | 18.13 – 41.58 |
|  Uninsured | 17.63\* | 1.23 – 34.03 |
| Family poverty status (Reference: High income) |  |  |
|  Poor | -7.62 | -22.38 – 7.14 |
|  Near poor | -0.59 | -17.79 – 16.61 |
|  Low income | -10.46 | -22.17 – 1.26 |
|  Middle income | 3.81 | -7.25 – 14.86 |
| Region (Reference: Northeast) |  |  |
|  Midwest | -4.02 | -17.41 – 9.38 |
|  South | 5.32 | -7.60 – 18.24 |
|  West  | 2.98 | -11.50 – 17.46 |
| Year-fixed effects (Reference: 2010) |  |  |
| 2011 | 15.14\* | 0.56 – 29.72 |
| 2012 | 13.37 | -2.42 – 29.15 |
| 2013 | 6.68 | -7.76 – 21.12 |
| 2014 | 17.28\* | 1.93 – 32.64 |
| 2015 | 11.10 | -3.23 – 25.43 |
| 2016 | 18.38\* | 3.29 – 33.46 |
| 2017 | 30.00\*\*\* | 13.76 – 46.25 |
| 2018 | 15.04 | -2.29 – 32.38 |
| 2019 | 20.58 | -0.73 – 41.89 |

\* p<0.10 , \*\* p<0.05 , \*\*\* p<0.01

**Appendix 4. Opioid costs: Part 1 of the two-part model: logistic regression results**

|  |  |  |
| --- | --- | --- |
| **Variable** | **AOR** | **95% CI** |
| Occupational injury-caused condition | 1.32\*\*\* | 1.21 – 1.45 |
| Sex (Reference: Female) | 1.01 | 0.93 – 1.09 |
| Age category (Reference: 18-29) |  |  |
|  30-44 | 1.13 | 0.98 – 1.30 |
|  45-64 | 1.25\*\* | 1.08 – 1.42 |
|  65+ | 0.79\*\* | 0.66 – 0.94 |
| Race and ethnicity (Reference: Non-Hispanic White) |  |  |
|  Hispanic | 0.90\ | 0.81 – 1.00 |
|  Non-Hispanic Black | 1.05 | 0.95 – 1.16 |
|  Non-Hispanic other | 0.95 | 0.79 – 1.15 |
| Marital status (Reference: Married) |  |  |
|  Widowed  | 0.95 | 0.81 – 1.12 |
|  Divorced  | 1.05 | 0.94 – 1.17 |
|  Separated | 1.05 | 0.84 – 1.32 |
|  Never married | 0.82\*\*\* | 0.73 – 0.92 |
| Education (Reference: Bachelor's degree or higher) |  |  |
|  Less than High school diploma | 1.60\*\*\* | 1.38 – 1.86 |
|  High school diploma  | 1.48\*\*\* | 1.31 – 1.68 |
|  Some College  | 1.35\*\*\* | 1.19 – 1.52 |
| Working during the survey year (Reference: No) | 0.84\*\*\* | 0.76 – 0.93 |
| Current smoker | 1.38\*\*\* | 1.26 – 1.52 |
| One or more comorbidity | 1.15\*\* | 1.04 – 1.28 |
| Physically active | 0.86\*\*\* | 0.80 – 0.93 |
| Health insurance (Reference: Private) |  |  |
|  Public | 1.28\*\*\* | 1.16 – 1.43 |
|  Uninsured | 0.92 | 0.80 – 1.07 |
| Family poverty status (Reference: High income) |  |  |
|  Poor | 1.13 | 0.97 – 1.30 |
|  Near poor | 1.19 | 1.00 – 1.42 |
|  Low income | 1.13 | 0.99 – 1.28 |
|  Middle income | 1.11 | 0.99 – 1.22 |
| Region (Reference: Northeast) |  |  |
|  Midwest | 1.17\* | 1.03 – 1.34 |
|  South | 1.34\*\*\* | 1.17 – 1.52 |
|  West  | 1.09 | 0.96 – 1.26 |
| Year-fixed effects (Reference: 2010) |  |  |
| 2011 | 1.08 | 0.94 – 1.25 |
| 2012 | 1.03 | 0.88 – 1.21 |
| 2013 | 0.84\* | 0.73 – 0.98 |
| 2014 | 0.91 | 0.79 – 1.07 |
| 2015 | 0.92 | 0.79 – 1.07 |
| 2016 | 0.65\*\*\* | 0.55 – 0.76 |
| 2017 | 0.55\*\*\* | 0.47 – 0.65 |
| 2018 | 0.65\*\*\* | 0.55 – 0.77 |
| 2019 | 0.6\*\*\* | 0.50 – 0.72 |

\* p<0.10, \*\* p<0.05, \*\*\* p<0.01

**Appendix 5. Opioid costs (in 2020 dollars): Part 2 of the two-part model: GML results**

|  |  |  |
| --- | --- | --- |
| Variable | GLM coefficients ($) | 95% CI |
| Occupational injury-caused condition | 134\*\* | 49 – 219 |
| Sex (Reference: Female) | 89\* | 18 – 160 |
| Age category (Reference: 18-29) |  |  |
|  30-44 | 53 | -41 – 148 |
|  45-64 | 99 | -18 – 215 |
|  65+ | -34 | -179 – 110 |
| Race and ethnicity (Reference: Non-Hispanic white) |  |  |
|  Hispanic | -139\*\*\* | -208 – -71 |
|  Non-Hispanic black | -122\*\* | -204 – -39 |
|  Non-Hispanic other | -69 | -183 – 45 |
| Marital status (Reference: Married) |  |  |
|  Widowed  | -105\* | -202 – -8 |
|  Divorced  | 15 | -75 – 105 |
|  Separated | -107\*\* | -183 – -31 |
|  Never married | 17 | -81 – 116 |
| Education (Reference: Bachelor's degree or higher) |  |  |
|  Less than High school diploma | 25 | -71 – 121 |
|  High school diploma  | 67 | -35 – 169 |
|  Some college  | 117\*\* | 30 – 205 |
| Working during the survey year (Reference: No) | -250\*\*\* | -340 – -160 |
| Current smoker | 13 | -60 – 86 |
| One or more comorbidity | 3 | -98 – 104 |
| Physically active | -52 | -119 – 14 |
| Health insurance (Reference: Private) |  |  |
|  Public | 84 | -16 – 183 |
|  Uninsured | 10 | -75 – 95 |
| Family poverty status (Reference: High income) |  |  |
|  Poor | -35 | -130 – 60 |
|  Near poor | 96 | -57 – 249 |
|  Low income | 12 | -78 – 103 |
|  Middle income | -4 | -88 – 81 |
| Region (Reference: Northeast) |  |  |
|  Midwest | -150\* | -300 – 0 |
|  South | -60 | -213 – 93 |
|  West  | -101 | -247 – 45 |
| Year-fixed effects (Reference: 2010) |  |  |
| 2011 | -28 | -157 – 101 |
| 2012 | -4 | -159 – 151 |
| 2013 | -5 | -167 – 158 |
| 2014 | -32 | -177 – 113 |
| 2015 | -65 | -189 – 60 |
| 2016 | 29 | -112 – 170 |
| 2017 | 109 | -83 – 301 |
| 2018 | -33 | -187 – 121 |
| 2019 | 33 | -138 – 203 |

\* p<0.10, \*\* p<0.05, \*\*\* p<0.01