

**Supplementary Table 1: Zero-Inflated Poisson Regression results with restriction to one-year study period (N=1,298,075 patients)**

|  | Logistic Regression | Poisson Regression  |
|--|---------------------|---------------------|
|  | Odds ratio (95% CI) | Rate Ratio (95%CI)  |
| (Intercept)                                    | 0.42 (0.32, 0.57)   | 0.29 (0.22, 0.39)   |
| <b>Race (ref: Non-Hispanic White)</b>          |                     |                     |
| Hispanic_English                               | 0.71 (0.63, 0.81)   | 0.87 (0.76, 1.00)   |
| Hispanic_Spanish                               | 0.63 (0.52, 0.77)   | 0.59 (0.45, 0.77)   |
| <b>Sex (ref: Female)</b>                       |                     |                     |
| Male   | 0.96 (0.91, 1.02)   | 1.20 (1.10, 1.31)   |
| <b>Insurance (ref: No Insurance)</b>           |                     |                     |
| Some Private                                   | 0.56 (0.44, 0.71)   | 1.24 (1.01, 1.52)   |
| Some Private and Public                        | 0.79 (0.62, 1.00)   | 1.22 (0.99, 1.51)   |
| Some Public                                    | 0.81 (0.65, 1.02)   | 1.35 (1.09, 1.66)   |
| <b>Number of visit (ref: 1&lt;visit&lt;3)</b>  |                     |                     |
| 1 < visit                                      | 0.46 (0.40, 0.52)   | 0.30 (0.25, 0.35)   |
| 3 < visit < 5                                  | 1.77 (1.67, 1.88)   | 1.95 (1.87, 2.02)   |
| > 5 visits                                     | 3.60 (3.15, 4.12)   | 10.30 (8.93, 11.87) |
| <b>Federal Poverty Level (ref: &lt;= 138%)</b> |                     |                     |
| >138%  | 0.88 (0.80, 0.98)   | 0.85 (0.78, 0.93)   |
| Missing  | 0.79 (0.65, 0.97)   | 0.77 (0.63, 0.94)   |
| <b>PHQ (ref: zero score)</b>                   |                     |                     |
| No_info  | 0.76 (0.64, 0.90)   | 1.21 (1.01, 1.46)   |
| Mild   | 2.32 (2.06, 2.61)   | 1.18 (1.08, 1.29)   |
| Severe   | 4.22 (3.67, 4.85)   | 1.24 (1.10, 1.40)   |
| <b>Sub_abuse (ref: No flag)</b>                |                     |                     |
| Flag   | 1.66 (1.57, 1.75)   | 1.16 (1.10, 1.23)   |
| <b>Buprenorphine (ref: No flag)</b>            |                     |                     |
| Flag   | 1.31 (1.03, 1.67)   | 1.24 (0.90, 1.69)   |
| <b>Smoking status (ref: Current Smoker)</b>    |                     |                     |
| Unknown  | 0.82 (0.55, 1.23)   | 2.56 (2.06, 3.17)   |
| Former   | 0.94 (0.89, 0.98)   | 0.98 (0.91, 1.05)   |
| never  | 0.83 (0.78, 0.87)   | 0.95 (0.89, 1.00)   |
| secondhand_smoke                               | 0.87 (0.73, 1.05)   | 0.81 (0.66, 0.99)   |
| <b>Charlson score (ref: 0)</b>                 |                     |                     |
| 1  | 0.96 (0.92, 1.01)   | 0.83 (0.80, 0.87)   |
| 2  | 0.95 (0.88, 1.02)   | 0.73 (0.69, 0.78)   |
| 2+   | 0.86 (0.77, 0.96)   | 0.62 (0.53, 0.71)   |
| <b>Age at the first encounter</b>              | 0.98 (0.98, 0.99)   | 1.00 (1.00, 1.00)   |

**Supplementary Table 2: Sensitivity analysis where HEP is the based group (1,498,655 patients)**

|  | <b>Logistic Regression</b> | <b>Poisson Regression</b>  |
|--|----------------------------|----------------------------|
|  | <b>Odds ratio (95% CI)</b> | <b>Rate Ratio (95% CI)</b> |
| <b>(Intercept)</b>                             | 0.26 (0.20, 0.34)          | 0.25 (0.20, 0.32)          |
| <b>Race (ref: Hispanic-English Preferred)</b>  |                            |                            |
| Hispanic-Spanish Preferred                     | 0.94 (0.83, 1.07)          | 0.67 (0.56, 0.80)          |
| Non-Hispanic White                             | 1.46 (1.30, 1.63)          | 1.14 (0.99, 1.30)          |
|  |                            |                            |
| <b>Sex (ref: Female)</b>                       |                            |                            |
| Male   | 0.94 (0.88, 0.99)          | 1.20 (1.10, 1.31)          |
|  |                            |                            |
| <b>Insurance (ref: No Insurance)</b>           |                            |                            |
| Some Private                                   | 0.58 (0.46, 0.74)          | 1.29 (1.06, 1.58)          |
| Some Private and Public                        | 0.93 (0.73, 1.19)          | 1.22 (0.99, 1.50)          |
| Some Public                                    | 0.88 (0.70, 1.10)          | 1.36 (1.11, 1.66)          |
|  |                            |                            |
| <b>Number of visit (ref: 1&lt;visit&lt;3)</b>  |                            |                            |
| 1 < visit                                      | 0.52 (0.45, 0.59)          | 0.29 (0.25, 0.34)          |
| 3 < visit < 5                                  | 1.68 (1.59, 1.78)          | 1.95 (1.88, 2.03)          |
| > 5 visits                                     | 2.96 (2.61, 3.36)          | 10.62 (9.27, 12.18)        |
|  |                            |                            |
| <b>Federal Poverty Level (ref: &lt;= 138%)</b> |                            |                            |
| >138%  | 0.90 (0.82, 0.99)          | 0.86 (0.79, 0.93)          |
| Missing  | 0.80 (0.66, 0.98)          | 0.80 (0.66, 0.97)          |
|  |                            |                            |
| <b>PHQ (ref: zero score)</b>                   |                            |                            |
| No_info  | 0.70 (0.59, 0.83)          | 1.18 (0.98, 1.42)          |
| Mild   | 2.32 (2.07, 2.60)          | 1.18 (1.08, 1.30)          |
| Severe   | 4.26 (3.73, 4.86)          | 1.23 (1.09, 1.39)          |
|  |                            |                            |
| <b>Sub_abuse (ref: No flag)</b>                |                            |                            |
| Flag   | 1.76 (1.67, 1.86)          | 1.15 (1.09, 1.22)          |
|  |                            |                            |
| <b>Buprenorphine (ref: No flag)</b>            |                            |                            |
| Flag   | 1.34 (1.07, 1.67)          | 1.26 (0.93, 1.70)          |
|  |                            |                            |
| <b>Smoking status (ref: Current Smoker)</b>    |                            |                            |
| Unknown  | 0.57 (0.45, 0.71)          | 2.63 (2.18, 3.18)          |
| Former   | 0.96 (0.91, 1.01)          | 0.98 (0.92, 1.05)          |

|                                   |                   |                   |
|-----------------------------------|-------------------|-------------------|
| never                             | 0.84 (0.80, 0.89) | 0.95 (0.89, 1.00) |
| secondhand_smoke                  | 0.94 (0.78, 1.13) | 0.80 (0.65, 0.98) |
|                                   |                   |                   |
| <b>Charlson score (ref: 0)</b>    |                   |                   |
| 1                                 | 1.02 (0.97, 1.06) | 0.83 (0.79, 0.87) |
| 2                                 | 1.03 (0.97, 1.11) | 0.72 (0.68, 0.77) |
| 2+                                | 0.97 (0.88, 1.08) | 0.61 (0.52, 0.70) |
|                                   |                   |                   |
| <b>Age at the first encounter</b> | 0.98 (0.98, 0.99) | 1.00 (1.00, 1.00) |

**States contributing to OCHIN CHC data**

Alaska  
California  
Colorado  
Connecticut  
Florida  
Georgia  
Idaho  
Indiana  
Louisiana  
Massachusetts  
Michigan  
Minnesota  
Missouri  
Montana  
North Carolina  
New Jersey  
New Mexico  
Nevada  
New York  
Ohio  
Oregon  
South Carolina  
Texas  
Utah  
Washington  
Wisconsin

**CPT codes used to determine specialty mental health or behavioral healthy visit types:**

99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99241, 99242, 99243,  
99244, 99245, 99381, 99382, 99383, 99384, 99385, 99386, 99387, 99391, 99392, 99393,  
99394, 99395, 99396, 99397

### Supplementary Figure: Inclusion flow diagram

