**Supplementary Materials**

**Table S1: ICD-CM Codes Used for Identification**

|  |  |  |
| --- | --- | --- |
| Characteristic | ICD9-CM | ICD10-CM |
| Opioid Use Disorder(abuse and dependence) | 30400-30403, 30470-30473, 30550-30553 | F1120, F1121, F1110, F11120-F11122, F11129, F1114, F11150, F11151, F11159, F11181, F11182, F11188, F1119-F11222, F11229, F1123, F1124, F11250, F11251, F11259, F11281, F11282, F11288, F1129, F1190-F11922, F11929, F11913, F11914, F11950, F11951, F11959, F11981, F11982, F11989, F1199 |
| Overdose Encounters | 96500-96502, 96509, E8500- E8502 |  |
| NAS diagnosis | 7795, 76062, 76072 | P961, P0449 |
| Methadone Maintenance Claim | Healthcare Common Procedure Coding System code H0020 |  |

**Table S2. Crude and Adjusted Odds Ratios from GEE Models (N = 174,517 deliveries, 164,759 unique women)**

|  |  |  |  |
| --- | --- | --- | --- |
|   | Model 1 - Unadjusted | Model 2 - Adjusted for OUD status (Casemix/ APCD) | Model 3 - Adjusted for all variables in table |
| Characteristics | OR | 95% CI | aOR | 95% CI | aOR | 95% CI |
| ***Maternal Demographics*** |  |  |  |  |  |  |
| Maternal Age |   |   |  |  |   |   |
|  ≤ 25 years old | 1.91 | (1.38-2.65) | 1.96 | (1.41-2.73) | 1.46 | (1.01-2.10) |
|  26-30 years old | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
|  ≥ 31 years old | 0.32 | (0.22-0.48) | 0.46 | (0.30-0.69) | 0.63 | (0.41-0.97) |
| Maternal Race/Ethnicity |   |   |  |  |   |   |
|  White non-Hispanic | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
|  Other race/ethnicity  | 0.41 | (0.29-0.59) | 0.69 | (0.47-1.01) | 0.45 | (0.30-0.68) |
| Maternal Education |   |   |  |  |   |   |
|  High School or less | 4.36 | (3.25-5.86) | 2.68 | (1.95-3.68) | 1.19 | (0.83-1.69) |
|  Some College or more | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| Marital Status |   |   |  |  |   |   |
|  Married | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
|  Not Married | 8.53 | (5.91-12.31) | 4.47 | (2.89-6.92) | 1.51 | (0.95-2.40) |
| Enrolled in MassHealth at Delivery |   |   |  |  |   |   |
|  Yes | 14.99 | (8.98-25.02) | 8.03 | (4.62-13.94) | 3.76 | (1.98-7.14) |
|  No | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| ***Pregnancy Variables*** |  |  |  |  |  |  |
| Breastfeeding at Discharge |   |   |  |  |   |   |
|  Yes | 0.18 | (0.14-0.24) | 0.39 | (0.28-0.54) | 0.66 | (0.48-0.91) |
|  No | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| Preterm or Low Birth Weight (< 37 wks or <2,500 g) |   |   |  |  |   |   |
|  Yes | 3.39 | (2.46-4.69) | 2.11 | (1.49-2.99) | 1.67 | (1.14-2.44) |
|  No | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| Adequacy of Prenatal Care |   |   |  |  |   |   |
|  Less than Adequate | 3.16 | (2.22-4.50) | 1.84 | (1.28-2.63) | 1.19 | (0.81-1.76) |
|  Adequate | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
|  Intensive | 1.33 | (0.91-1.94) | 1.19 | (0.82-1.74) | 1.00 | (0.66-1.49) |
| Method of Delivery |   |   |  |  |   |   |
|  Vaginal | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
|  C-Section | 1.30 | (0.97-1.75) | 1.25 | (0.92-1.68) | 1.30 | (0.95-1.79) |
| NAS Diagnosis |   |   |  |  |   |   |
|  Yes | 48.92 | (36.15-66.21) | 3.32 | (1.84-5.98) | 2.57 | (1.55-4.25) |
|  No | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| ***Opioid Related Variables*** |  |  |  |  |  |  |
| Enrolled in BSAS Program for Opioid Problem (12MB) |   |   |  |  |   |   |
|  Yes | 77.27 | (57.09-104.58) | 5.50 | (2.69-11.25) | 2.85 | (1.50-5.40) |
|  No | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| MOUD during month of delivery |   |   |  |  |   |   |
|  Yes | 37.54 | (27.40-51.45) | 1.22 | (0.74-2.03) | 0.76 | (0.46-1.25) |
|  No | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| Non-fatal Opioid Overdose (12MB) |   |   |  |  |   |   |
|  Yes | 177.6 | (95.38-330.66) | 7.08 | (3.61-13.89) | 2.40 | (1.11-5.17) |
|  No | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| OUD Diagnosis (Casemix or APCD) (12MB) |   |   |   |   |   |   |
|  Yes | 61.64 | (46.20-82.24) |   |   | 3.61 | (1.73-7.51) |
|  No | Ref. | Ref. |   |   | Ref. | Ref. |
| Opioid RX† Filled (3MB‡) |   |   |  |  |   |   |
|  Yes | 3.13 | (1.81-5.40) | 1.46 | (0.81-2.65) | 1.17 | (0.62-2.21) |
|  No | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| ***Mental Health Variables*** |  |  |  |  |  |  |
| ED Visits (12MB) |   |   |  |  |   |   |
|  3 or More | 12.21 | (9.13-16.33) | 4.83 | (3.37-6.92) | 2.25 | (1.56-3.24) |
|  < 3 visits | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| Anxiety Diagnosis (12MB) |   |   |  |  |   |   |
|  Yes | 12.24 | (9.10-16.48) | 3.86 | (2.68-5.58) | 1.84 | (1.21-2.82) |
|  No | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| Depression Diagnosis (12MB) |   |   |  |  |   |   |
|  Yes | 10.27 | (7.65-13.80) | 3.26 | (2.25-4.73) | 1.55 | (1.02-2.37) |
|  No | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| ***Incarceration and Homelessness Variables*** |  |  |  |  |  |  |
| Incarcerated in Prison or Jail (12MB) |   |   |  |  |   |   |
|  Yes | 51.04 | (31.14-83.67) | 3.96 | (2.18-7.20) | 1.85 | (0.96-3.57) |
|  No | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| DHCD shelter/hotel case file (12MB) |   |   |  |  |   |   |
|  Yes | 7.25 | (4.27-12.31) | 2.38 | (1.35-4.19) | 1.23 | (0.68-2.24) |
|  No | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| †*Excluding Buprenorphine, 3MB‡ = in the 3 months before delivery - exclusive, 12MB= in the 12 months before delivery - inclusive, 12MB‡ = in the 12 months before delivery - exclusive, SP=in study period (2011-2015)* |
| *APCD = All Payer Claims Database, BSAS = Bureau of Substance Addiction Services, Casemix = Hospital discharge data, DHCD = Department of Housing and Community Development, DPH = Department of Public Health, MOUD=Medication for Opioid Use Disorder, NAS = Neonatal Abstinence Syndrome*  |