**eTables**

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**eTable 1: Datasets and variables in MCHP used for the study**

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| --- | --- |
| **Datasets** | **Variables used** |
| Discharge Abstract Database (hospital abstracts) | Maternal age at delivery, mother’s age at first child birth, birth order, maternal diabetes, maternal prenatal psychological distress, maternal smoking, maternal substance use, Cesarean section, gestational age, birth weight, sex, Apgar core at 5 minutes, SGA, singleton versus twin births, maternal mental disorders |
| Social Allowances Management Information Network (SAMIN) | Maternal receipt of income assistance at delivery |
| Physician claims (Medical services) data | Maternal diabetes, maternal prenatal psychological distress, maternal substance use, maternal mental disorders |
| Drug Program Information Network (DPIN) | Maternal diabetes, maternal prenatal psychological distress, maternal substance use, maternal mental disorders |
| The Manitoba Health Insurance Registry | Location of residence, marital/common law status |
| The Diabetes Education Resource for Children and Adolescents database (DER-CA database) | Maternal diabetes, maternal prenatal psychological distress |
| Child and Family Services data | Care of children by Child and Family Services |
| Families First Screen | Maternal smoking, maternal substance use |
| Canadian census data | Socioeconomic Factor Index–Version 2 (SEFI-2): An area-level measure of socio-economic status with higher scores are indicative of lower socio-economic status. Higher values indicate a lower socioeconomic status. |

**eTable 2: Administrative definitions of mental disorders used in the study**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Mental disorders** | **ICD-9-CM** | **ICD-10-CA** | **ATC Codes** | **Highest sensitivitya** | **Highest agreementb** |
| Mood and anxiety disorders | 296,300, 309,311 | F30-34, F38, F40, F41.0, F41.1, F41.3, F41.8, F41.9, F42, F43, F53 | N05AN01, N05BA, N06A, N05BE01 | ≥1H or ≥1P in 5 years | ≥1H or ≥5P OR (≥1P AND ≥4 Rx) in 5 years |
| Psychotic disorders | 295,297,298 | F11.5, F12.5, F13.5, F14.5, F15.5, F16.5, F18.5, F19.5, F20, F22, F23, F24, F25, F28, F29 |  | ≥1H or ≥1P in 5 years | ≥1H or ≥1P in 5 years |
| Substance use disorders | 291,292,303, 304,305 | F10-F19, F55, Z50.2, Z50.3 |  | ≥1H or ≥1 P in 5 years | ≥1H or ≥1P in 5 years |
| Suicide or suicide attempts | E950–E959,  E850-854, E858,  E862, E868  Y10-34 | X60–X84, Y10-Y34, Y87, T39, T40,  T42.3, T42.4,  T42.7, T43, T50.9, T58,  X44, X46, X47 |  | ≥1H in 5 years | ≥1H in 5 years |

ICD-9-CM = International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-CA = International Classification of Diseases, 10th Revision, with Canadian Enhancements; ATC code = Anatomical Therapeutic Chemical code; H =hospital visit; P =physician visit; Rx = prescription dispensed (includes antidepressants, antipsychotics, anxiolytics, mood stabilizers). a-definitions used for excluding mothers with any pre-existing mental disorders; b-definitions used for confirming mental disorders among the included mothers.

**eTable 3: Estimated incidence rate ratios (IRRs) for the regression model for any mental disorder**

|  |  |  |
| --- | --- | --- |
| **Variables** | **Adjusted IRR**  **(95% CI)** | **P-value** |
| 37 weeks  34-36 weeks  28-33 weeks  <28 weeks | Reference  0.96 (0.88, 1.05)  1.03 (0.86, 1.19)  1.53 (1.14, 2.04) | 0.42a  0.88a  0.004a |
| Maternal age at index delivery  <20 yrs  20-30 yrs  >30 yrs | 1.20 (1.09, 1.31)  Reference  0.84 (0.78, 0.91) | <0.0001  -  <0.0001 |
| Birth order | 1.04 (1.02, 1.07) | 0.0001 |
| Maternal diabetes | 1.26 (1.07, 1.48) | 0.007 |
| Maternal hypertension | 1.07 (0.97, 1.19) | 0.17 |
| Smoking | 1.52 (1.40, 1.64) | <0.0001 |
| Caesarean section | 1.12 (1.04, 1.22) | 0.004 |
| Rural residence | 0.96 (0.90, 1.04) | 0.32 |
| SEFI-2 score | 1.02 (0.98, 1.05) | 0.35 |
| Receipt of income assistance | 1.77 (1.63, 1.92) | <0.0001 |
| Not married/common-law | 1.29 (1.19, 1.40) | <0.0001 |
| Twin birth | 1.12 (0.99, 1.27) | 0.08 |
| Male | 0.99 (0.93, 1.06) | 0.80 |
| SGA | 0.99 (0.88, 1.06) | 0.86 |
| Year of the index delivery | 0.97 (0.97, 0.98) | <0.0001 |

SEFI-2 score = Socioeconomic index factor-version 2; SGA = Small for gestational age; aadjusted for multiple comparisons using Sime’s false discovery rate method.

**eTable 4: Sensitivity analysis including mothers whose children died within 5 years**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | <28 weeks  (N=133) | 28-33 weeks (N=1004) | 34-36 weeks (N=4226) | Preterm Cases  (N=5363) | Term controls (N=24940) | Adjusted IRR  (95% CI)a | P value |
| Any mental disorder | 36 (27.1%) | 189 (18.8%) | 710 (16.8%) | 935 (17.4%) | 4142  (16.6%) | 0.98 (0.91, 1.07) | 0.71 |
| Mood and anxiety disorder | 24 (18.1%) | 157 (15.6%) | 551 (13.5%) | 732 (13.7%) | 3335 (13.4%) | 0.95 (0.86, 1.04) | 0.27 |
| Psychotic disorders | <6 | <6 | 17 (0.4%) | 19  (0.4%) | 54  (0.2%) | †b | - |
| Substance use disorder | 18 (13.5%) | 53 (5.3%) | 216 (5.1%) | 287 (5.4%) | 1273 (5.1%) | 1.02 (0.87, 1.18) | 0.83 |
| Suicidal attempts or suicide | <6 | <6 | 15 (0.4%) | 21  (0.4%) | 41  (0.2%) | †b | - |

Values are N (%); IRR = Incidence rate ratio; CI = confidence intervals; aadjusted for maternal age, birth order, maternal diabetes, maternal hypertension, smoking, caesarean section, rural residence, SEFI-2 score, receipt of income assistance, marital status, twin birth, sex, SGA, and the year of index delivery; bdue to small sample size in the psychotic disorders and suicide attempts or suicide group, the models did not converge for those outcomes.