**Table 1: Characteristics of the training (development) and test (temporal validation) sets for pregnant women with a pre-existing anxiety, depression, or bipolar conditions**

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| --- | --- | --- |
| Characteristics | Training set (Index date between July 2022 and Dec 2023); n(%)  N = 95,448 | Temporal validation set (index date between Jan 2024 and June 2024); n(%)  N = 29,326 |
| Age at index date; mean(sd) | 29.40 (5.92) | 29.53 (5.92) |
| Race/Ethnicity |  |  |
| Non-Hispanic White | 65,343 (68.46%) | 19,833 (67.63%) |
| Non-Hispanic Black | 14,885 (15.59%) | 4,566 (15.57%) |
| Hispanic | 10,602 (11.11%) | 3,456 (11.79%) |
| Other Race | 4,209 (4.41%) | 1,342 (4.58%) |
| Missing | 409 (0.43%) | 128 (0.44%) |
| Rural/Urban residence |  |  |
| Rural | 16,639 (17.43%) | 4,889 (16.67%) |
| Urban | 78,809 (82.57%) | 24,437 (83.33%) |
| Relationship Status |  |  |
| Married | 52,928 (55.45%) | 16,056 (54.75%) |
| Single/No partner | 41,108 (43.07%) | 12,849 (43.81%) |
| Missing | 298 (0.31%) | 92 (0.31%) |
| Unknown | 1,114 (1.17%) | 329 (1.12%) |
| Pre-existing hypertension | 9,172 (9.61%) | 2,989 (10.19%) |
| Chronic kidney disease | 692 (0.73%) | 224 (0.76%) |
| Ischemic heart disease | 347 (0.36%) | 126 (0.43%) |
| Congestive heart failure | 155 (0.16%) | 62 (0.21%) |
| Pre-existing diabetes | 4,064 (4.26%) | 1,247 (4.25%) |
| Obesity | 42,836 (44.88%) | 13,460 (45.90%) |
| History of cesarean delivery | 3,445 (3.61%) | 912 (3.11%) |
| Substance use disorder | 18,079 (18.94%) | 5,523 (18.83%) |
| Alcohol use disorder | 2,604 (2.73%) | 895 (3.05%) |
| History of tobacco use or Nicotine dependence | 14,070 (14.74%) | 4,295 (14.65%) |
| Social support visit | 1,426 (1.49%) | 466 (1.59%) |
| Vitamin D Deficiency | 10,961 (11.48%) | 3,886 (13.25%) |
| Any ED visit | 48,230 (50.53%) | 14,491 (49.41%) |
| Any Hospitalization | 5,361 (5.62%) | 1,646 (5.61%) |
| Bipolar-related ED visit | 2,695 (2.82%) | 792 (2.70%) |
| Depression-related ED visit | 8,988 (9.42%) | 2,450 (8.35%) |
| Anxiety-related ED visit | 13,794 (14.45%) | 3,970 (13.54%) |
| Bipolar-related hospitalization | 907 (0.95%) | 286 (0.98%) |
| Depression-related hospitalization | 2,768 (2.90%) | 862 (2.94%) |
| Anxiety-related hospitalization | 3,215 (3.37%) | 986 (3.36%) |
| Social determinants of health diagnosis | 6,153 (6.45%) | 2,112 (7.20%) |
| Victim of physical or other abuse (diagnosis) | 31 (0.03%) | <11 (0.01%) |
| Fibromyalgia | 1,266 (1.33%) | 383 (1.31%) |
| Headache | 13,569 (14.22%) | 4,283 (14.60%) |
| Back pain | 9,989 (10.47%) | 2,983 (10.17%) |
| Fatigue | 1,590 (1.67%) | 442 (1.51%) |
| Endometriosis | 1,933 (2.03%) | 602 (2.05%) |
| Rheumatoid arthritis | 510 (0.53%) | 176 (0.60%) |
| Chest pain | 12,075 (12.65%) | 3,649 (12.44%) |
| Abdominal pain | 4,141 (4.34%) | 1,305 (4.45%) |
| Schizophrenia | 558 (0.58%) | 188 (0.64%) |
| Post-traumatic Stress Disorder (PTSD) | 6,656 (6.97%) | 2,118 (7.22%) |
| Any malignancy | 860 (0.90%) | 259 (0.88%) |
| Asthma | 14,949 (15.66%) | 4,733 (16.14%) |
| Mild liver disease | 2,623 (2.75%) | 926 (3.16%) |
| Severe liver disease | 56 (0.06%) | 20 (0.07%) |
| Renal disease | 540 (0.57%) | 179 (0.61%) |
| Attention-deficit Hyperactivity Disorder (ADHD) | 8,290 (8.69%) | 2,960 (10.09%) |
| Obsessive Compulsive Disorder (OCD) | 1,223 (1.28%) | 399 (1.36%) |
| Sleep disorders | 9,809 (10.28%) | 3,115 (10.62%) |
| Overall SVI score | 0.57 (0.28) | 0.58 (0.28) |
| SVI for Household Characteristics | 0.56 (0.27) | 0.57 (0.27) |
| SVI for Housing Type and Transportation | 0.60 (0.26) | 0.61 (0.26) |

Index date: First pregnancy-related visit within 90 days of estimated pregnancy start date

Sample restricted to those who had an anxiety, depression, or bipolar diagnosis in 365 days prior to the estimated pregnancy start date

Clinical variables obtained from 365 days prior to the index date

**Table 2: Model coefficients from the multivariable LASSO Cox proportional hazard regression in the training set for mental health-related emergency department (ED) visits as the outcome**

|  |  |
| --- | --- |
| Model parameters | Coefficients |
| Age at pregnancy start (years) | -0.007896 |
| Race/Ethnicity (ref = Non-Hispanic White) |  |
| Non-Hispanic Black | 0.035600 |
| Hispanic | -0.055478 |
| Other Race | -0.080636 |
| Missing | -0.254573 |
| Rural/Urban residence (ref = Rural) |  |
| Urban | 0.073375 |
| Relationship Status (ref = Single/No partner) |  |
| Married | -0.084876 |
| Missing | -0.148966 |
| Unknown | -0.141936 |
| Pre-existing hypertension | 0.135627 |
| Chronic kidney disease | 0.189165 |
| Ischemic heart disease | 0.018713 |
| Congestive heart failure | . |
| Pre-existing diabetes | 0.264654 |
| Obesity | 0.142252 |
| History of cesarean delivery | -0.053710 |
| Substance use disorder | 0.233436 |
| Alcohol use disorder | -0.024757 |
| History of tobacco use or Nicotine dependence | 0.089203 |
| Social support visit | 0.067243 |
| Vitamin D Deficiency | 0.001647 |
| Previous any ED visit | 0.550188 |
| Previous Hospitalization | 0.112064 |
| Bipolar-related ED visit | 0.857065 |
| Depression-related ED visit | 0.443939 |
| Anxiety-related ED visit | 0.453739 |
| Bipolar-related hospitalization | -0.260950 |
| Depression-related hospitalization | -0.179269 |
| Anxiety-related hospitalization | -0.052862 |
| Social determinants of health diagnosis | 0.085466 |
| Victim of physical or other abuse (diagnosis) | -0.047522 |
| Fibromyalgia | 0.227219 |
| Headache | 0.070695 |
| Back pain | 0.109807 |
| Fatigue | 0.055610 |
| Endometriosis | . |
| Rheumatoid arthritis | 0.168615 |
| Chest pain | 0.183700 |
| Abdominal pain | 0.151790 |
| Schizophrenia | 0.447720 |
| Post-traumatic Stress Disorder (PTSD) | 0.199658 |
| Any malignancy | . |
| Asthma | 0.122018 |
| Mild liver disease | 0.020668 |
| Severe liver disease | 0.444707 |
| Renal disease | . |
| Attention-deficit Hyperactivity Disorder (ADHD) | 0.064532 |
| Obsessive Compulsive Disorder (OCD) | 0.188351 |
| Sleep disorders | 0.056721 |
| Overall SVI score | 0.450206 |
| SVI for Household Characteristics | -0.068883 |
| SVI for Housing Type and Transportation | -0.235327 |

Harrell’s c-statistic in the temporal validation set = 0.710 (0.701–0.720)

Calibration slope in the temporal validation = 1.010 (0.971–1.051)

Calibration plot in the temporal validation set

A graph showing a line

AI-generated content may be incorrect.