SUPPLEMENTAL TEXT AND TABLES

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Demographic characteristics of patients with self-reported chronic pain at chronic pain screening, by presence/timing of documented pain diagnosis (N = 10,091)

Supplemental Table 1. Adjusted probability of each treatment following screening among patients who self-reported chronic pain on a screener without an existing pain diagnosis (N = 4,328)

|  | Opioid analgesics | Non-opioid analgesics | Onsite physical medicinea | Referrals for pain-related careb | MH/SUDc  medications | Onsite MH/SUD visits | Referrals to MH/SUD cared |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Average adjusted probability, % [95% CI]e | | | | | | |
| Age |  |  |  |  |  |  |  |
| 18-34 | 3.8 [2.6 – 5.0] | 30.8 [28.2 - 33.5] | 22.3 [19.9 - 24.6] | 6.3 [4.8 - 7.8] | 26.5 [23.9 - 29.1] | 16.9 [14.8 - 19.1] | 6.9 [5.4 - 8.5] |
| 35-54 | 4.1 [3.3 - 4.9] | 31.6 [29.7 - 33.5] | 16.1 [14.6 - 17.6] | 8.5 [7.3 - 9.6] | 31.7 [29.8 - 33.6] | 16.7 [15.1 - 18.2] | 6.1 [5.0 - 7.2] |
| 55-64 | 4.7 [3.5 - 5.8] | 30.6 [27.8 - 33.3] | 14.3 [12.2 - 16.5] | 9.0 [7.2 - 10.8] | 31.4 [28.8 - 34.1] | 14.7 [12.7 - 16.8] | 5.8 [4.3 - 7.3] |
| ≥65 | 6.9 [4.5 - 9.4] | 26.8 [22.5 - 31.2] | 13.5 [9.9 - 17.1] | 7.2 [4.5 – 10.0] | 24.6 [20.8 - 28.5] | 9.3 [6.4 - 12.2] | 2.7 [1.0 – 4.4] |
| Sex |  |  |  |  |  |  |  |
| Male | 4.4 [3.5 – 5.3] | 30.7 [28.8 – 32.6] | 16.9 [15.4 – 18.5] | 8.4 [7.2 – 9.6] | 29.7 [27.8 – 31.5] | 15.2 [13.7 – 16.7] | 5.7 [4.7 – 6.8] |
| Female | 4.5 [3.7 – 5.3] | 30.8 [29.1 – 32.5] | 17.1 [15.7 – 18.5] | 7.7 [6.6 – 8.7] | 29.9 [28.3 – 31.6] | 16.1 [14.7 – 17.4] | 6.1 [5.2 – 7.1] |
| Race/Ethnicity |  |  |  |  |  |  |  |
| Non-Latinx White | 6.4 [5.2 – 7.5] | 29.3 [27.2 – 31.4] | 15.2 [13.4 – 16.9] | 9.5 [8.0 – 11.0] | 33.8 [31.7 – 36.0] | 18.1 [16.4 – 19.9] | 5.8 [4.6 – 7.0] |
| Non-Latinx Black | 6.4 [4.5 – 8.4] | 26.5 [22.8 – 30.1] | 16.8 [13.7 – 19.9] | 8.4 [6.0 – 10.7] | 26.3 [22.7 – 29.9] | 15.0 [12.0 – 18.0] | 5 [3.1 – 7.0] |
| Non-Latinx Other | 1.5 [0.1 – 2.9] | 33.3 [28.7 – 38.0] | 19.1 [15.4 – 22.9] | 7.8 [5.0 – 10.5] | 31.2 [26.7 – 35.7] | 20.0 [16.1 – 24.0] | 8.9 [5.9 – 11.9] |
| Latinx | 3.0 [2.2 – 3.8] | 32.9 [30.8 – 35.0] | 18.5 [16.9 – 20.2] | 6.9 [5.7 – 8.1] | 26.3 [24.3 – 28.3] | 12.6 [11.1 – 14.1] | 5.6 [4.5 - 6.8] |
| Other | 2.0 [0.5 - 3.5] | 30.5 [25.7 - 35.4] | 14.7 [10.9 - 18.4] | 6.0 [3.4 - 8.7] | 30.4 [25.6 - 35.2] | 15.0 [11.2 - 18.8] | 6.8 [3.9 - 9.7] |
| Mental health (MH) diagnoses |  |  |  |  |  |  |  |
| None documented | 4.6 [3.9 - 5.2] | 31.8 [30.4 - 33.2] | 17.2 [16.1 - 18.3] | 8.1 [7.2 - 8.9] | 29.5 [28.0 - 30.9] | 15.7 [14.3 - 17.1] | 6.2 [5.4 - 7.1] |
| 1+ diagnosis documented | 4.0 [2.7 - 5.3] | 25.8 [22.7 – 29.0] | 15.8 [12.9 - 18.6] | 7.6 [5.5 - 9.7] | 31.3 [27.9 - 34.7] | 15.7 [12.7 – 18.7] | 4.9 [3.2 – 6.6] |
| Substance use disorder (SUD) diagnoses |  |  |  |  |  |  |  |
| None documented | 4.5 [3.9 – 5.1] | 30.0 [28.7 – 31.3] | 17.2 [16.1 – 18.2] | 8.1 [7.3 – 8.9] | 29.3 [28.0 – 30.6] | 15.4 [14.4 – 16.5] | 5.9 [5.2 – 6.6] |
| 1+ diagnosis documented | 3.5 [1.4 – 5.7] | 45.2 [39.0 – 51.5] | 13.7 [8.5 – 18.8] | 5.9 [2.7 – 9.1] | 38.1 [32.0 – 44.3] | 18.2 [14.0 – 22.4] | 7.3 [3.8 – 10.8] |
| Charlson Comorbidity Indexf |  |  |  |  |  |  |  |
| 0 | 4.3 [3.5 – 5.0] | 31.7 [30.1 – 33.4] | 17.9 [16.6 – 19.2] | 8.1 [7.1 – 9.1] | 28.6 [27.1 – 30.2] | 16.2 [14.9 – 17.5] | 6.2 [5.3 – 7.1] |
| 1-2 | 4.6 [3.6 – 5.7] | 29.7 [27.4 – 32.0] | 15.3 [13.4 – 17.2] | 8.3 [6.9 – 9.8] | 31.3 [29.1 – 33.5] | 14.2 [12.4 – 15.9] | 5.5 [4.3 – 6.8] |
| 3-4 | 5.2 [2.2 – 8.1] | 25.9 [18.6 – 33.2] | 13.5 [7.0 – 20.0] | 4.0 [0.6 – 7.5] | 30.9 [23.7 – 38.1] | 15.6 [9.4 – 21.9] | 4.0 [0.1 – 7.8] |
| ≥5 | 5.1 [0.4 – 9.9] | 19.3 [9.1 – 29.6] | 16.3 [5.6 – 27.0] | 4.0 [-1.4 – 9.4] | 46.4 [33.7 – 59.1] | 26.1 [14.7 – 37.4] | 10.2 [1.8 – 18.7] |
| Treatment prior to chronic pain screeng |  |  |  |  |  |  |  |
| No prior treatment | 3.4 [2.8 – 3.9] | 26.9 [25.6 – 28.3] | N/D | 7.8 [7.0 – 8.6] | 21.2 [19.8 – 22.7] | 11.5 [10.5 – 12.6] | 5.7 [5.0 – 6.4] |
| Received prior treatment | 41.1 [32.5 – 49.7] | 54.2 [50.5 – 58.0] | N/D | 18.1 [9.8 – 26.3] | 62.7 [58.8 – 66.5] | 55.6 [47.3 – 64.0] | 15.3 [7.8 - 22.8] |
| Pain diagnosis |  |  |  |  |  |  |  |
| None documented | 2.8 [2.1 - 3.5] | 16.4 [14.8 - 17.9] | 2.1 [1.5 - 2.7] | 2.9 [2.2 - 3.6] | 27.3 [25.6 – 29.0] | 14.9 [13.5 - 16.4] | 5.7 [4.7 - 6.7] |
| Newly documented | 6.0 [5.1 - 6.9] | 43.3 [41.4 - 45.3] | 29.5 [27.7 - 31.4] | 12.4 [11.0 - 13.7] | 32.1 [30.3 - 33.8] | 16.3 [14.9 - 17.7] | 6.2 [5.2 - 7.2] |
| PEG total score severity |  |  |  |  |  |  |  |
| Non-severe | 3.0 [2.3 - 3.7] | 27.2 [25.3 – 29.0] | 14.8 [13.3 - 16.3] | 6.1 [5.1 - 7.2] | 26.5 [24.8 - 28.3] | 14.4 [12.9 - 15.8] | 5.0 [4.0 - 5.9] |
| Severe | 5.6 [4.8 - 6.5] | 33.7 [31.9 - 35.5] | 18.7 [17.3 – 20.0] | 9.4 [8.3 - 10.5] | 32.6 [30.9 - 34.4] | 16.8 [15.4 - 18.2] | 6.8 [5.8 - 7.9] |

a Onsite physical medicine includes referrals to chiropractor and acupuncture.  
b Referrals for pain-related care include pain management specialist, rheumatology, orthopedic or neurological   
 surgery, and physical therapy and rehabilitation.  
c MH=Mental health. SUD= substance use disorder.   
d MH/SUD visits and external referrals included psychiatrist, psychiatric nurse, clinical psychologist, licensed   
 clinical social worker, licensed professional counselor, marriage and family therapist, and/or alcohol and drug   
 counselor

e 95%Confidence Interval

f Charlson Comorbidity Index. Weighted index of diagnosis codes; higher weights indicate more severe morbidity.

g Note that the independent variable *treatment prior to chronic pain screen* is specific to the treatment of interest. For example, in the model examining opioid   
 analgesic treatments, this independent variable accounted for opioid analgesic treatment prior to screen, not all other treatments. Acupuncture/chiropractic   
 treatment prior to chronic pain screen was not determined due to insufficient data. PT = physical therapy.

Supplemental Methods. Post-hoc exploratory analyses of chronic pain and treatment among Latinx patients.

We conducted post-hoc exploratory analyses to better understand the relationship between Latinx ethnicity and receipt of a newly documented chronic pain diagnosis. Results revealed that Latinx patients reported average PEG total scores within the severe range (*M* = 7.2, *SD* = 2.1), while non-Latinx White patients reported slightly lower, but non-severe average PEG total scores (*M* = 6.6, *SD* = 2.3), a statistically significant difference (t7762 = 11.72,*p*<0.0001). We also investigated the association between language and PEG total scores. While a significant portion of Latinx patients (40.7%) reported Spanish as their preferred language, findings remained consistent even after accounting for language, suggesting that findings were unlikely due to comprehension difficulties.

To better understand the finding that Latinx patients were less likely to receive opioid medications and mental health treatments (ARDs = -7.5% to -3.3%; *p*s <0.0001), we conducted post-hoc exploratory analyses examining prevalence of MH/SUD disorders by race/ethnicity groups. Results showed that compared to non-Latinx White patients, Latinx and Black patients have a lower prevalence of both MH and SUD disorders. Forty-five percent of non-Latinx White, 35% of Latinx, and 32% of Black patients have a MH diagnosis at screening. Similarly, 16% of non-Latinx White, 7% of Latinx, and 11% of Black patients have a SUD diagnosis. Pairwise comparisons of MH and SUD prevalence between Latinx and Black compared to non-Latinx White patients were statistically significant (*p*s <0.0001).

Supplemental Table 2. Demographic characteristics of patients with self-reported chronic pain at chronic pain screening, by presence/timing of documented pain diagnosis (N = 10,091)

|  | Existing pain diagnosisa  (n=5,763) | Newly documented pain diagnosisb (n=2,282) | No documented pain diagnosisc (n=2,046) | Total  (N=10,091) |
| --- | --- | --- | --- | --- |
|  | *M* (*SD*) or N (%) | | | |
| Age |  |  |  |  |
| 18-34 | 629 (10.9%) | 539 (23.6%) | 515 (25.2%) | 1,683 (16.7%) |
| 35-54 | 2,673 (46.4%) | 1,079 (47.3%) | 847 (41.4%) | 4,599 (45.6%) |
| 55-64 | 1,693 (29.4%) | 492 (21.6%) | 474 (23.2%) | 2,659 (26.4%) |
| ≥65 | 768 (13.3%) | 172 (7.5%) | 210 (10.3%) | 1,150 (11.4%) |
| Sex |  |  |  |  |
| Male | 2,111 (36.6%) | 997 (43.7%) | 901 (44.0%) | 4,009 (39.7%) |
| Female | 3,652 (63.4%) | 1,285 (56.3%) | 1,145 (56.0%) | 6,082 (60.3%) |
| Race/Ethnicity |  |  |  |  |
| Latinx | 2,539 (44.1%) | 934 (40.9%) | 679 (33.2%) | 4,152 (41.1%) |
| Non-Latinx Black | 655 (11.4%) | 252 (11.0%) | 217 (10.6%) | 1,124 (11.1%) |
| Non-Latinx White | 2,015 (35.0%) | 751 (32.9%) | 846 (41.3%) | 3,612 (35.8%) |
| Non-Latinx Other | 317 (5.5%) | 188 (8.2%) | 157 (7.7%) | 662 (6.6%) |
| Other | 237 (4.1%) | 157 (6.9%) | 147 (7.2%) | 541 (5.4%) |
| Insurance |  |  |  |  |
| Medicaid | 3487 (60.5%) | 1,528 (67.0%) | 1,238 (60.5%) | 6,253 (62.0%) |
| Medicare | 984 (17.1%) | 214 (9.4%) | 276 (13.5%) | 1,474 (14.6%) |
| Private | 1,008 (17.5%) | 352 (15.4%) | 354 (17.3%) | 1,714 (17.0%) |
| Other Public | 2 (0.0%) | 5 (0.2%) | 7 (0.3%) | 14 (0.1%) |
| Uninsured | 282 (4.9%) | 183 (8.0%) | 171 (8.4%) | 636 (6.3%) |
| Preferred Language |  |  |  |  |
| English | 4,501 (78.1%) | 1,844 (80.8%) | 1,738 (84.9%) | 8,083 (80.1%) |
| Spanish | 1,111 (19.3%) | 382 (16.7%) | 267 (13%) | 1,760 (17.4%) |
| Other | 151 (2.6%) | 56 (2.5%) | 41 (2.0%) | 248 (2.5%) |
| PEG scores |  |  |  |  |
| Total PEG | 7.2 (2.1) | 7.0 (2.2) | 6.2 (2.4) | 7.0 (2.2) |
| Pain intensity (P) | 7.4 (1.9) | 7.4 (2.0) | 6.7 (2.1) | 7.2 (2.0) |
| Interference with life enjoyment (E) | 7.0 (2.7) | 6.8 (2.8) | 5.9 (3.0) | 6.8 (2.8) |
| Interference with general activity (G) | 7.2 (2.5) | 6.9 (2.7) | 6.0 (3.0) | 6.9 (2.7) |
| Pain conditions |  |  |  |  |
| Cancer pain | 5 (0.1%) | 0 (0.0%) | N/A | N/A |
| Chronic pain condition | 2,876 (49.9%) | 671 (29.4%) | N/A | N/A |
| Fibromyalgia | 310 (5.4%) | 49 (2.1%) | N/A | N/A |
| Headaches | 1,005 (17.4%) | 246 (10.8%) | N/A | N/A |
| Low back pain | 2,344 (40.7%) | 714 (31.3%) | N/A | N/A |
| Neuropathic pain | 78 (1.4%) | 19 (0.8%) | N/A | N/A |
| Non-lumbar back pain | 1,696 (29.4%) | 413 (18.1%) | N/A | N/A |
| Pain ≥1 joints | 3,740 (64.9%) | 1,069 (46.8%) | N/A | N/A |
| Rheumatologic condition | 287 (5%) | 58 (2.5%) | N/A | N/A |
| Other pain conditions | 945 (16.4%) | 177 (7.8%) | N/A | N/A |
| Charlson Comorbidity Indexd |  |  |  |  |
| 0 | 2,804 (48.7%) | 1,540 (67.5%) | 1,239 (60.6%) | 5,583 (55.3%) |
| 1-2 | 2,491 (43.2%) | 668 (29.3%) | 700 (34.2%) | 3,859 (38.2%) |
| 3-4 | 326 (5.7%) | 54 (2.4%) | 73 (3.6%) | 453 (4.5%) |
| ≥5 | 142 (2.5%) | 20 (0.9%) | 34 (1.7%) | 196 (1.9%) |
| Mental health (MH) diagnosis |  |  |  |  |
| Any mental health disorder | 2,941 (51.0%) | 839 (36.8%) | 840 (41.1%) | 4,620 (45.8%) |
| Anxiety disorder | 1,366 (23.7%) | 384 (16.8%) | 367 (17.9%) | 2,117 (21.0%) |
| Bipolar/psychotic disorder | 476 (8.3%) | 130 (5.7%) | 158 (7.7%) | 764 (7.6%) |
| Depression disorder | 1,565 (27.2%) | 400 (17.5%) | 400 (19.6%) | 2,365 (23.4%) |
| Other mental health disorder | 1,409 (24.4%) | 341 (14.9%) | 363 (17.7%) | 2,113 (20.9%) |
| Substance use disorder (SUD) diagnosis |  |  |  |  |
| Any substance use disorder | 895 (15.5%) | 289 (12.7%) | 324 (15.8%) | 1,508 (14.9%) |
| Opioid use disorder | 423 (7.3%) | 109 (4.8%) | 135 (6.6%) | 667 (6.6%) |
| Alcohol use disorder | 382 (6.6%) | 138 (6.0%) | 145 (7.1%) | 665 (6.6%) |
| Other substance use disorder | 358 (6.2%) | 112 (4.9%) | 117 (5.7%) | 587 (5.8%) |
| Any MH/SUD diagnosis |  |  |  |  |
|  | 3,122 (54.2%) | 934 (40.9%) | 936 (45.7%) | 4,992 (49.5%) |

*Notes*:

a Existing pain diagnosis:Patients with a documented pain diagnosis within one year prior to a   
 positive chronic pain screen

b Newly documented pain diagnosis: Patients with a newly documented chronic pain diagnosis in the EHR on the   
 day of screening or within 90 days post-screening.  
c No documented pain diagnosis: Patients with no documented pain diagnosis in either period.   
d Charlson Comorbidity Index. Weighted index of diagnoses codes; higher weights indicate more severe morbidity.