**Supplementary Material**

Supplementary Table 1. Demographic, risk factor, clinical, and outcome characteristics of the overall and state-stratified 10% random samples – Kentucky, Michigan, and West Virginia, 2016–2019

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Characteristic | Overall, n (%)a | Kentucky,  n (%)a | Michigan,  n (%)a | West Virginia, n (%)a |
| **Demographic** |  |  |  |  |
| Sample size | 817 | 472 | 92 | 253 |
| Age, years |  |  |  |  |
| Median | 37.0 | 37.0 | 39.5 | 38.0 |
| Range | 1.0 - 80.0 | 1.0 - 79.0 | 21.0 - 76.0 | 19.0 - 80.0 |
| Mean (SE) | 39.0 (0.4) | 37.9 (0.5) | 43.2 (1.5) | 39.6 (0.8) |
| Age categories |  |  |  |  |
| ≤19 | 16 (2.0) | 14 (3.0) | 0 (0.0) | 2 (0.8) |
| 20-29 | 168 (20.6) | 99 (21.0) | 15 (16.3) | 54 (21.3) |
| 30-39 | 292 (35.7) | 172 (36.4) | 31 (33.7) | 89 (35.2) |
| 40-49 | 188 (23.0) | 115 (24.4) | 14 (15.2) | 59 (23.3) |
| 50-59 | 100 (12.2) | 52 (11.0) | 18 (19.6) | 30 (11.9) |
| 60-69 | 36 (4.4) | 13 (2.8) | 10 (10.9) | 13 (5.1) |
| ≥70 | 17 (2.1) | 7 (1.5) | 4 (4.3) | 6 (2.4) |
| Sex |  |  |  |  |
| Male | 511 (62.5) | 297 (62.9) | 63 (68.5) | 151 (59.7) |
| Female | 306 (37.5) | 175 (37.1) | 29 (31.5) | 102 (40.3) |
| Race/Ethnicity (n=368) |  |  |  |  |
| Caucasian/NH | 337 (91.6) | 155 (97.5) | 69 (76.7) | 113 (95.0) |
| African American/NH | 26 (7.1) | 4 (2.5) | 16 (17.8) | 6 (5.0) |
| Otherb | 5 (1.4) | 0 (0.0) | 5 (5.6) | 0 (0.0) |
| Insurance (n=301) |  |  |  |  |
| Private | 40 (13.3) | 21 (11.7) | 10 (26.3) | 9 (10.8) |
| Medicaid | 214 (71.1) | 131 (72.8) | 20 (52.6) | 63 (75.9) |
| Medicare | 22 (7.3) | 14 (7.8) | 3 (7.9) | 5 (6.0) |
| Military | 1 (0.3) | 0 (0.0) | 1 (2.6) | 0 (0.0) |
| Uninsured | 5 (1.7) | 3 (1.7) | 1 (2.6) | 1 (1.2) |
| Self Pay | 19 (6.3) | 11 (6.1) | 3 (7.9) | 5 (6.0) |
| **Risk Factor** |  |  |  |  |
| Drug use (n=627) |  |  |  |  |
| Yes | 459 (73.2) | 260 (78.3) | 47 (56.0) | 152 (72.0) |
| No | 168 (26.8) | 72 (21.7) | 37 (44.0) | 59 (28.0) |
| Injection drug use (n=557)c |  |  |  |  |
| Yes | 329 (59.1) | 189 (68.7) | 27 (33.3) | 113 (56.2) |
| No | 228 (40.9) | 86 (31.3) | 54 (66.7) | 88 (43.8) |
| Non-injection drug use (n=450)c |  |  |  |  |
| Yes | 267 (59.3) | 116 (61.7) | 37 (48.1) | 114 (61.6) |
| No | 183 (40.7) | 72 (38.3) | 40 (51.9) | 71 (38.4) |
| Homelessness, unstable housing, or transient living (n=656) |  |  |  |  |
| Yes | 92 (14.0) | 50 (11.7) | 10 (15.4) | 32 (19.8) |
| No | 564 (86.0) | 379 (88.3) | 55 (84.6) | 130 (80.2) |
| MSM (n=149)d |  |  |  |  |
| Yes | 15 (10.1) | 4 (4.3) | 11 (22.4) | 0 (0.0) |
| No | 134 (89.9) | 89 (95.7) | 38 (77.6) | 7 (100.0) |
| Incarcerated (n=317) |  |  |  |  |
| Yes | 94 (29.7) | 68 (46.3) | 10 (12.7) | 16 (17.6) |
| No | 223 (70.3) | 79 (53.7) | 69 (87.3) | 75 (82.4) |
| International travel (n=446) |  |  |  |  |
| Yes | 1 (0.2) | 0 (0.0) | 1 (1.2) | 0 (0.0) |
| No | 445 (99.8) | 226 (100.0) | 83 (98.8) | 136 (100.0) |
| Epidemiologically linked (n=229) |  |  |  |  |
| Yes | 141 (61.6) | 72 (60.5) | 14 (34.1) | 55 (79.7) |
| No | 88 (38.4) | 47 (39.5) | 27 (65.9) | 14 (20.3) |
| **Clinical** |  |  |  |  |
| History of hepatitis B (n=662) |  |  |  |  |
| Yes | 83 (12.5) | 58 (15.3) | 6 (7.2) | 19 (9.5) |
| No | 579 (87.5) | 321 (84.7) | 77 (92.8) | 181 (90.5) |
| History of hepatitis C (n=723) |  |  |  |  |
| Yes | 370 (51.2) | 226 (53.7) | 22 (26.2) | 122 (56.0) |
| No | 353 (48.8) | 195 (46.3) | 62 (73.8) | 96 (44.0) |
| Other pre-existing liver disease (n=186) |  |  |  |  |
| Yes | 83 (44.6) | 46 (40.7) | 9 (25.7) | 28 (73.7) |
| No | 103 (55.4) | 67 (59.3) | 26 (74.3) | 10 (26.3) |
| Diabetes (n=448) |  |  |  |  |
| Yes | 61 (13.6) | 29 (14.0) | 7 (8.2) | 25 (16.0) |
| No | 387 (86.4) | 178 (86.0) | 78 (91.8) | 131 (84.0) |
| Pregnancy (n=140)e |  |  |  |  |
| Yes | 11 (7.9) | 10 (13.3) | 0 (0.0) | 1 (2.4) |
| No | 129 (92.1) | 65 (86.7) | 23 (100.0) | 41 (97.6) |
| Immunosuppression (n=374) |  |  |  |  |
| Yes | 8 (2.1) | 6 (3.6) | 1 (2.0) | 1 (0.6) |
| No | 366 (97.9) | 163 (96.4) | 50 (98.0) | 153 (99.4) |
| Cardiovascular disease (n=425) |  |  |  |  |
| Yes | 138 (32.5) | 63 (30.4) | 22 (35.5) | 53 (34.0) |
| No | 287 (67.5) | 144 (69.6) | 40 (64.5) | 103 (66.0) |
| Signs or symptoms |  |  |  |  |
| Fever (n=767) |  |  |  |  |
| Yes | 269 (35.1) | 128 (27.2) | 39 (49.4) | 102 (47.0) |
| No | 498 (64.9) | 343 (72.8) | 40 (50.6) | 115 (53.0) |
| Headache (n=677) |  |  |  |  |
| Yes | 121 (17.9) | 32 (6.9) | 16 (41.0) | 73 (42.0) |
| No | 556 (82.1) | 432 (93.1) | 23 (59.0) | 101 (58.0) |
| Malaise (n=738) |  |  |  |  |
| Yes | 334 (45.3) | 124 (26.6) | 59 (85.5) | 151 (74.8) |
| No | 404 (54.7) | 343 (73.4) | 10 (14.5) | 51 (25.2) |
| Anorexia (n=725) |  |  |  |  |
| Yes | 266 (36.7) | 95 (20.7) | 47 (65.3) | 124 (64.2) |
| No | 459 (63.3) | 365 (79.3) | 25 (34.7) | 69 (35.8) |
| Nausea (n=791) |  |  |  |  |
| Yes | 646 (81.7) | 373 (79.4) | 70 (86.4) | 203 (84.6) |
| No | 145 (18.3) | 97 (20.6) | 11 (13.6) | 37 (15.4) |
| Vomiting (n=780) |  |  |  |  |
| Yes | 368 (47.2) | 153 (32.6) | 51 (70.8) | 164 (68.6) |
| No | 412 (52.8) | 316 (67.4) | 21 (29.2) | 75 (31.4) |
| Diarrhea (n=689) |  |  |  |  |
| Yes | 201 (29.2) | 126 (26.8) | 22 (33.8) | 53 (34.6) |
| No | 488 (70.8) | 345 (73.2) | 43 (66.2) | 100 (65.4) |
| Abdominal pain (n=797) |  |  |  |  |
| Yes | 561 (70.4) | 297 (63.2) | 66 (78.6) | 198 (81.5) |
| No | 236 (29.6) | 173 (36.8) | 18 (21.4) | 45 (18.5) |
| Dark urine (n=736) |  |  |  |  |
| Yes | 382 (51.9) | 153 (33.0) | 55 (96.5) | 174 (80.9) |
| No | 354 (48.1) | 311 (67.0) | 2 (3.5) | 41 (19.1) |
| Acholic stool (n=263) |  |  |  |  |
| Yes | 122 (46.4) | 22 (55.0) | 18 (48.6) | 82 (44.1) |
| No | 141 (53.6) | 18 (45.0) | 19 (51.4) | 104 (55.9) |
| Jaundice/icterus (n=769) |  |  |  |  |
| Yes | 602 (78.3) | 333 (76.0) | 70 (79.5) | 199 (81.9) |
| No | 167 (21.7) | 105 (24.0) | 18 (20.5) | 44 (18.1) |
| Date of symptom onset (range) | 7/30/2016 – 6/4/2019 | 9/13/2017 – 6/4/2019 | 7/30/2016 – 12/10/2018 | 4/3/2018 – 5/10/2019 |
| Laboratory results |  |  |  |  |
| ALT (IU/L) |  |  |  |  |
| n | 801 | 464 | 89 | 248 |
| Mean (SE) | 1779.7 (58.9) | 1556.2 (59.9) | 2338.4 (169.2) | 1997.2 (137.9) |
| AST (IU/L) |  |  |  |  |
| n | 794 | 457 | 89 | 248 |
| Mean (SE) | 1409.9 (63.1) | 1222.3 (59.1) | 2145.7 (353.5) | 1491.5 (109.6) |
| AST/ALT ratio |  |  |  |  |
| n | 794 | 457 | 89 | 248 |
| Mean (SE) | 0.8 (0.0) | 0.8 (0.0) | 0.8 (0.1) | 0.8 (0.0) |
| Total bilirubin (mg/dL) |  |  |  |  |
| n | 531 | 291 | 78 | 162 |
| Mean (SE) | 6.9 (0.2) | 6.8 (0.3) | 7.5 (0.7) | 6.7 (0.3) |
| Platelet count (K/uL) |  |  |  |  |
| n | 470 | 235 | 76 | 159 |
| Mean (SE) | 216.3 (4.1) | 212.5 (6.2) | 208.3 (8.3) | 225.8 (6.9) |
| HBsAg (n=627) |  |  |  |  |
| Positive/Reactive | 45 (7.2) | 33 (8.5) | 2 (2.4) | 10 (6.5) |
| Negative/Nonreactive | 582 (92.8) | 357 (91.5) | 80 (97.6) | 145 (93.5) |
| IgM anti-HBc (n=618) |  |  |  |  |
| Positive/Reactive | 35 (5.7) | 24 (6.2) | 5 (6.1) | 6 (4.0) |
| Negative/Nonreactive | 576 (93.2) | 356 (92.5) | 77 (93.9) | 143 (94.7) |
| Indeterminate/Borderline | 7 (1.1) | 5 (1.3) | 0 (0.0) | 2 (1.3) |
| Anti-HCV (n=659) |  |  |  |  |
| Positive/Reactive | 327 (49.6) | 219 (52.5) | 21 (25.0) | 87 (55.1) |
| Negative/Nonreactive | 331 (50.2) | 197 (47.2) | 63 (75.0) | 71 (44.9) |
| Indeterminate | 1 (0.2) | 1 (0.2) | 0 (0.0) | 0 (0.0) |
| HCV RNA viral load (n=141) |  |  |  |  |
| Undetectable | 74 (52.5) | 32 (50.8) | 9 (42.9) | 33 (57.9) |
| Detected but not quantifiable | 19 (13.5) | 7 (11.1) | 5 (23.8) | 7 (12.3) |
| Detected and quantifiable | 48 (34.0) | 24 (38.1) | 7 (33.3) | 17 (29.8) |
| HIV serology (n=134) |  |  |  |  |
| Positive/Reactive | 1 (0.7) | 1 (1.3) | 0 (0.0) | 0 (0.0) |
| Negative/Nonreactive | 132 (98.5) | 75 (97.4) | 21 (100.0) | 36 (100.0) |
| Indeterminate | 1 (0.7) | 1 (1.3) | 0 (0.0) | 0 (0.0) |
| **Outcome** |  |  |  |  |
| Hospitalized |  |  |  |  |
| Yes | 423 (51.8) | 218 (46.2) | 78 (84.8) | 127 (50.2) |
| No | 394 (48.2) | 254 (53.8) | 14 (15.2) | 126 (49.8) |
| Length of hospitalization, daysf (n=420) |  |  |  |  |
| N | 420 | 215 | 78 | 127 |
| Median | 4.0 | 4.0 | 3.5 | 4.0 |
| Range | 1.0-59.0 | 1.0-59.0 | 1.0-22.0 | 1.0-40.0 |
| Mean (SE) | 5.0 (0.3) | 5.4 (0.4) | 4.7 (0.4) | 4.6 (0.4) |
| ICUf (n=407) |  |  |  |  |
| Yes | 40 (9.8) | 20 (9.6) | 12 (16.4) | 8 (6.3) |
| No | 367 (90.2) | 188 (90.4) | 61 (83.6) | 118 (93.7) |
| Number of hepatitis A-related hospitalizationsf (n=423) |  |  |  |  |
| 1 | 397 (93.9) | 206 (94.5) | 69 (88.5) | 122 (96.1) |
| 2 | 23 (5.4) | 9 (4.1) | 9 (11.5) | 5 (3.9) |
| 3 | 2 (0.5) | 2 (0.9) | 0 (0.0) | 0 (0.0) |
| >3 | 1 (0.2) | 1 (0.5) | 0 (0.0) | 0 (0.0) |
| Fulminant hepatitisg (n=460) |  |  |  |  |
| Yes | 20 (4.3) | 9 (3.9) | 9 (11.8) | 2 (1.3) |
| No | 440 (95.7) | 219 (96.1) | 67 (88.2) | 154 (98.7) |
| Liver transplant (n=466) |  |  |  |  |
| Yes | 1 (0.2) | 0 (0.0) | 1 (1.3) | 0 (0.0) |
| No | 465 (99.8) | 234 (100.0) | 74 (98.7) | 157 (100.0) |
| Death (n=719) |  |  |  |  |
| Yes | 7 (1.0) | 5 (1.1) | 2 (2.2) | 0 (0.0) |
| No | 712 (99.0) | 459 (98.9) | 89 (97.8) | 164 (100.0) |

Abbreviations: SE, standard error; NH, non-Hispanic; MSM, men who have sex with men; ALT, alanine aminotransferase; AST, aspartate aminotransferase; HBsAg, hepatitis B surface antigen; IgM anti-HBc, immunoglobulin M hepatitis B core antibody; anti-HCV, hepatitis C antibody; ICU, intensive care unit.

a Percentages are calculated based on participants with available information and may not sum to 100.0% due to rounding.

b Other: Hispanic ethnicity or Caucasian and American Indian/Alaska Native.

c Restricted to those with available information on reported drug use.

d Restricted to male study participants.

e Restricted to female study participants.

f Restricted to hospitalized study participants. Length of hospitalization was calculated as inclusive of admission and discharge dates (e.g., if a participant was admitted on August 14, 2018 and discharged on August 18, 2018, then the length of hospitalization was recorded as 5 days). If a patient had multiple hepatitis A-related hospitalizations, the combined total days across all hospitalizations was reported.

g Fulminant hepatitis was defined by documentation of the condition in the medical record or evidence of coagulopathy and hepatic encephalopathy in a patient with previously stable liver function.