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we fit a multivariable Poisson regression model including states, county-level death rate, mean household income, and proportion of major races/ethnicities.

Results: We examined data from 646 counties from nine states. The median rate of SARS-CoV-2 testing per 1,000 individuals differed widely, ranging from 15 in Texas to 54 in Delaware (Table). The multivariable model identified factors significantly associated with the rate of testing—state, death rate per 1,000, % non-Hispanic white, % non-Hispanic black, and % Hispanic (all P<0.05). For example, compared to Texas, higher testing rates were observed in Delaware (rate ratio [RR], 2.47) and Tennessee (RR, 2.92). In contrast, the magnitude of race/ethnicity-outcome association was smaller—eg, RR of 0.96 per 10% increase in non-Hispanic black and 0.85 per 10% increase in Hispanic demographics.

Conclusions: There were significant between-state differences in the SARS-CoV-2 testing rate. Counties with a higher proportion of race/ethnicity minorities had significantly lower testing rates while their magnitude of association was relatively small. Our findings should facilitate further investigations into the reasons for discrepancies, which will, in turn, optimize prevention and treatment strategies against this public health emergency.

### Table. Characteristics of Nine U.S. States

| State     | Number of Counties, n | Tests Per 1,000, Median (IQR) | Deaths Per 1,000, Median (IQR) | Household Income ($), mean (SD) | Non-Hispanic White (%), Median (IQR) | Non-Hispanic Black (%), Median (IQR) | Hispanic (%), Median (IQR) |
|-----------|-----------------------|-------------------------------|--------------------------------|----------------------------------|--------------------------------------|--------------------------------------|---------------------------|
| Alabama   | 67                    | 41 (35-54)                    | 0.08 (0.02-0.21)                | 57,311 (11,084)                  | 69.0 (53.4-80.5)                     | 22.7 (11.1-42.6)                     | 2.5 (1.6-3.9)               |
| Arizona   | 15                    | 46 (30-58)                    | 0.07 (0.00-0.20)                | 62,191 (10,742)                  | 54.1 (44.3-57.5)                     | 1.2 (0.7-2.7)                      | 29.9 (15.3-36.2)           |
| Delaware  | 3                     | 54 (51-78)                    | 0.36 (0.34-0.48)                | 82,986 (9,856)                   | 62.2 (60.2-68.6)                     | 24.3 (18.3-24.4)                   | 9.1 (8.1-9.4)              |
| Florida   | 67                    | 47 (41-55)                    | 0.06 (0.03-0.13)                | 67,593 (14,754)                  | 72.0 (60.2-77.3)                     | 11.0 (8.2-17.7)                    | 9.4 (5.7-19.1)             |
| Indiana   | 92                    | 31 (24-39)                    | 0.12 (0.03-0.35)                | 67,588 (11,353)                  | 93.5 (88.0-95.5)                     | 1.0 (0.5-2.9)                      | 2.9 (1.7-4.8)              |
| Nevada    | 17                    | 38 (19-63)                    | 0.00 (0.00-0.05)                | 71,692 (13,030)                  | 72.2 (65.6-79.1)                     | 1.7 (0.6-2.5)                      | 16.6 (12.5-24.2)           |
| Oregon    | 36                    | 30 (25-35)                    | 0.00 (0.00-0.03)                | 67,558 (12,403)                  | 84.6 (76.7-87.6)                     | 0.6 (0.4-0.9)                      | 8.6 (6.4-14.2)             |
| Tennessee | 95                    | 46 (36-59)                    | 0.00 (0.00-0.04)                | 60,840 (12,869)                  | 90.1 (84.6-93.4)                     | 3.4 (1.4-8.2)                      | 2.6 (1.9-4.3)              |
| Texas     | 254                   | 15 (9-25)                     | 0.00 (0.00-0.05)                | 68,689 (14,324)                  | 58.8 (41.9-73.1)                     | 3.6 (0.9-8.9)                      | 26.6 (18.1-50.2)           |

Results: From January 2018 to October 2019, 8,694 of 24,057 (36.1%) patients ages 12-17 were screened using the CRAFFT, 1,260 (14.4%) of patients screened responded “Yes” to at least one question in Part A. Of those, Part B questions were asked of 1,066 (84.6%) patients and 354 (26.5%) had at least two “Yes” responses. The substance use most frequently reported was marijuana (9% in 2018, 11% in 2019) followed by alcohol (8% in 2018, 7% in 2019). Based on the clinical protocol and patient identification, 377 brief interventions and 29 referrals to treatment were provided. Brief interventions and referrals were provided by both physicians and social workers, including at least 12 different individual health care professionals.

Conclusion: Utilizing a lower threshold for a “positive” screen identified four times (1,260 vs. 354) as many patients with moderate to high risk substance use for a further conversation with the clinical team, especially given that Part B were not asked of all patients with a “Yes” in Part A. One limitation is that the version of the CRAFFT programmed into the EHR does not specifically ask about vaping and may not have been sensitive enough to capture adolescent patients who are vaping THC or other substances. Next steps include updating to the CRAFFT version 2.1+ to better identify and address vaping, expand the program to the adolescent populations in 16 additional EDs, and expand the program to pediatric ambulatory practices.
**22 Retention of Knowledge About HIV/AIDS and HIV Testing among Adult Emergency Department Patients: Implications for HIV Testing and Prevention**

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Study Objectives: Although education about acquired immunodeficiency syndrome (AIDS)/human immunodeficiency virus (HIV) and HIV testing usually is provided along with HIV testing, it is not known how well HIV-related knowledge is retained over time, and if the type of delivery method for HIV-related education and also if patients’ health literacy affect retention. We sought to determine: (1) how well adult emergency department (ED) patients retain HIV-related knowledge over time, (2) whether retention is better when provided by a video or a content-matched pictorial brochure, and (3) whether patient health literacy moderates retention.

Methods: In a randomized, controlled trial at four geographically distinct EDs in the United States, 716 English-speaking and 657 Spanish-speaking adult patients undergoing HIV testing were stratified by primary language spoken (English or Spanish) and health literacy level (lower or higher). During an ED visit, patients were randomly assigned to one of two interventions: (a) a video regarding HIV/AIDS and HIV testing or (b) a content-matched pictorial brochure. Before and after receiving one of the two interventions and again every three months for one year, knowledge on these topics was assessed using a 25-item questionnaire. A multivariable repeated measures model, literacy level, language spoken, and intervention mode were not associated with knowledge retention over time.

Results: Of the 1,373 participants (mean age 44 years-old, 63% female), 50% had lower health literacy and 27% had not previously been tested for HIV. Before the intervention, knowledge mean scores were 14.5, and scores at post-intervention, 3 months, 6 months, 9 months and 12 months were: 17.7, 17.8, 17.9, 17.9, and 17.9 out of a total score of 25. Knowledge mean scores were slightly higher in the pictorial brochure arm than the video arm at 3 months (Δ0.48, 95% CI: 0.07, 0.89) and at 9 months (Δ0.45, 95% CI: 0.04, 0.86), but were similar at 6 months (Δ0.33, 95% CI: -0.07, 0.72) and 12 months (Δ0.21, 95% CI: -0.21, 0.62) post-intervention. In the multivariable model, literacy level, language spoken, and intervention mode were not associated with knowledge retention over time.

Conclusion: Retention of HIV/AIDS and HIV testing knowledge was high in both the video and pictorial brochure arms. Both modes of information delivery were efficacious in maintaining knowledge retention, regardless of language spoken and health literacy level.

**23 Adverse Events after Emergency Department Discharge for Conditions With High Variability in Hospital Discharge Rates**

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Study Objectives: The Acute Unscheduled Care Model is an ACEP-proposed alternative payment model for emergency physicians that has been supported for implementation by the Center for Medicare and Medicaid Innovation and is under consideration by private insurers. This model aims to reduce avoidable admissions for conditions that have high variability in disposition decisions. Our study aims to describe existing variability in hospital-level discharge rates and determine whether higher discharge rates were associated with higher rates of adverse events (AEs) after hospital discharge.

Methods: We performed a retrospective cohort study of hospital-level AE rates after emergency department (ED) discharge for seven common conditions in adults that have previously been described as having high rates of variability in disposition decisions. We used 2017 all-payer ED and hospital data from the California Office of Statewide Health Planning and Development database for hospitals with at least 10,000 ED visits. We excluded visits that did not have record linkage numbers to allow AE tracking. We then labeled the first ED-discharge visit per person per condition as an index visit, indicated if there was at least 1 AE (ED revisit or hospital admission for the 7 conditions) within 30 days of each index, and then calculated the AE rates per condition per hospital. In a preliminary analysis, we compared AE rates for one of the conditions (UTI), for hospitals with discharge rates in the highest and lowest quartiles using a t-test.

Results: After exclusions, 271 hospitals were included. The variability of hospital-level discharge rates for each condition is displayed in Table 1. We included 1,223,266 index visits for the 7 conditions of interest. The overall AE rate was 8.2%. AE rates by condition were: skin and soft tissue infection 14.6%, COPD exacerbation 9.7%, UTI 8.5%, abdominal pain 7.5%, altered mental status 7.2%, chest pain 5.8%, and syncope 4.8%. For UTIs, we compared the mean AE rate (8%) for hospitals in the lowest quartile of discharge rates to the mean AE rate (9%) in the highest quartile and found no significant difference in AE rates (p=0.69).

| Table 1. Hospital-level emergency department discharge rates for selected conditions (N=271 hospitals) |
| Condition | 25th Percentile | Median | 75th Percentile | Interquartile Range |
| COPD exacerbation | 60% | 69% | 77% | 17% |
| Syncope | 85% | 92% | 96% | 11% |
| UTI | 84% | 89% | 93% | 9% |
| Altered mental status | 88% | 94% | 97% | 9% |
| Skin and soft tissue infection | 81% | 86% | 90% | 9% |
| Chest pain | 90% | 96% | 98% | 8% |
| Abdominal pain | 98% | 99% | 99% | 1% |

Conclusions: As proposed novel ED payment models aim to incentivize safe discharges, our analysis found differences in discharge rates for some but not all conditions that have previously been identified as having high variability in discharge rates. We found that AE rates after ED discharge differed by condition. Our preliminary finding that there was no difference in post-discharge AE rates at hospitals with relatively high and low discharge rates for UTIs does have important implications for the adoption of novel payment models. Our findings suggest that increased discharges may be able to be safely incentivized without resulting in higher rates of AEs after discharge, although further analyses will be needed in order to determine other drivers of post-discharge AEs.