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and assessments for older adult patients in the ED to assess several social and clinical factors specific to a patient. Cognitive tests are frequently used to assess older patients' ability to make decisions to gauge resources that they may need. The objective of this study was to understand who may be more likely to have positive cognitive test in the ED.

**Methods:** This was a retrospective multicenter study among older adult patients (>=65 years) presenting to two EDs (urban level one trauma center and suburban academic hospital with combined annual census of ~80,000). Patients were qualified for specialized geriatric screenings if they were identified as being at risk by the Identification of Seniors at Risk (ISAR) screen and has an Emergency Severity Score (ESI) of 3. Screening tools used to identify potential cognitive issues included the Montreal Cognitive Assessment (MoCA), and the Abbreviated Mental Test 4 (AMT4). Demographic and clinical characteristics were assessed for all patients who received a screen. Logistic regression was used to identify factors independently associated with a positive test. Adjusted odds ratios (AOR) and 95% Confidence Intervals (CI) are reported.

**Results:** There were a total of 1850 cognitive tests ordered. Of those tests ordered, 903 (48%) were able to be completed and scored. Of those 903 tests scored, 226 (25%) were positive. Between those who tested positive and negative, individuals were more likely to have a positive test if they were age 85+ compared to 65-74, (AOR=2.01, 95% CI=1.36, 2.97; p<0.001) and less likely if they were patients who were non-Hispanic Whites compared to other Races and Ethnicities (AOR=0.59, 95% CI=0.42, 0.83; p=0.002). Sec, mode of arrival and disposition were not associated with a positive cognitive score.

**Conclusion:** Screening tools are important instruments to help identify patients with potentially cognitive issues. Although their use in the ED have been limited in the past, they are becoming utilized more often with the increasing senior population and the development of geriatric ED in the United States. Findings from these assessments help to inform providers of the needs of older adult patients and their caregivers.

## 296 A Bayesian Approach to Predicting Outcomes During the Initial COVID-19 Outbreak



Nelson J, Perkins S, Holmes A, Hirschl J, Chopra Z, Medlin R, Fung C, Korley F, Burke J/University of Michigan Medical School, Ann Arbor, MI

**Study Objectives:** At the peak of the initial COVID-19 outbreak in Italy, providers were required to make decisions related to resource rationing due to a shortage of medical equipment. Identifying COVID-19 positive patients who were high-risk for severe illness early in their course could have assisted in determining the most appropriate medical management in many cases. Currently, few models exist to predict the outcome of COVID-19 positive patients. Among those that do, none to our knowledge utilize Bayesian logistic regression. The goal of this study was to generate a model that would dynamically estimate the probability of severe disease in patients who test positive for COVID-19 during their initial emergency department (ED) visit.

**Methods:** This model initially utilized a Bayesian approach with prior data based on the literature at the time, and after one week employed logistical regression using retrospective data from our own patient set. In total, data from 428 RT-PCR-confirmed COVID-19 patients who presented between March 4th and May 7th of 2020 was incorporated. Priors included: female sex, O2 Saturation, lymphocytes, LDH, and CRP. Data acquired during the patients' encounter included co-morbidities, temperature, MAP, HR, ferritin, d-dimer, hs-troponin, platelets, total bilirubin, hgb, lactate, albumin, and SOFA score. Single imputation was utilized to address patients with missing data points. Our primary outcomes were vasopressor requirement, intubation, and death.

**Results:** Utilizing these data points, a risk calculator for vasopressor requirement, intubation, and/or death was developed with a C-statistic of 0.85. See the supplementary materials for a comprehensive list of the regression coefficients, their betas, and standardized betas (Table 1) and a graph of our predicted primary outcomes compared to actual primary outcomes (Figure 1).

**Conclusion:** A model predictive of vasopressor use, intubation, and death in COVID-19 positive patients was derived. By initially incorporating Bayesian logistic regression and prior data, this model could have theoretically been utilized in medical decision-making early in US outbreak the event that resource rationing had to be pursued at our institution.

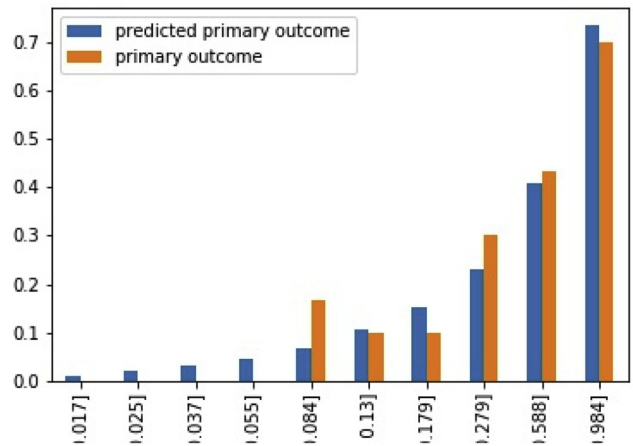


Figure 1: Predicted Primary Outcome compared to Actual Outcome. X-axis indicates probability of primary outcome, y-axis denotes Percentage of Total Patients

| Regression Coefficient | Beta  | Standardized Beta |
|------------------------|-------|-------------------|
| CRP                    | 0.02  | 0.01              |
| Ferritin               | 0     | 0                 |
| D-Dimer                | -0.01 | 0.02              |
| HS-Troponin            | 0.01  | 0                 |
| Lymphocytes            | -0.03 | 0.02              |
| Hemoglobin             | -0.02 | 0.04              |
| Lactate                | 0.02  | 0.05              |
| Lactate Dehydrogenase  | 0     | 0                 |
| Albumin                | 0.01  | 0.05              |
| Platelets              | 0     | 0                 |
| Total Bilirubin        | 0     | 0.05              |
| Creatinine             | -0.02 | 0.04              |
| Heart Rate             | 0.01  | 0.01              |
| Respiratory Rate       | 0.09  | 0.03              |
| Temperature            | 0     | 0.04              |
| O2 Saturation          | -0.1  | 0.03              |
| Age                    | 0.03  | 0.01              |
| Sex (Female)           | -0.52 | 0.13              |
| Comorbidity Count      | 0.04  | 0.04              |

Table 1: Derived regression coefficient betas and standardized betas

## 297 Emergency Visit Trends for Pediatric Anaphylaxis in Southeast Michigan



Patek P, Owda D, Levasseur K, Menoch M/Beaumont Department of Pediatric Emergency Medicine, Royal Oak, MI

**Background:** Anaphylaxis is a serious allergic reaction that has the potential to be life-threatening if not recognized and managed rapidly. Several regional studies have shown increased incidence of anaphylaxis over the past decade. There are no published studies evaluating rates in southeast Michigan.

**Study Objective:** To determine rates of pediatric anaphylaxis in southeast Michigan between January 1, 2010 and December 31, 2019 and to describe the