SM, Hsia RY, et al (2013). Factors associated with short-term bounce-back admissions after emergency department discharge. *Ann Emerg Med*, 62(2), 136-144.

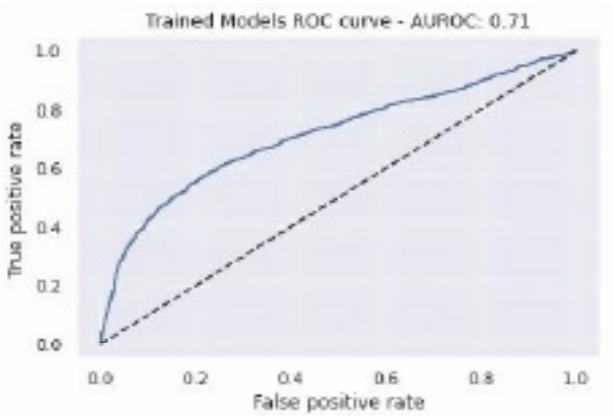

Figure 1. Area Under Receiver Operating Curve

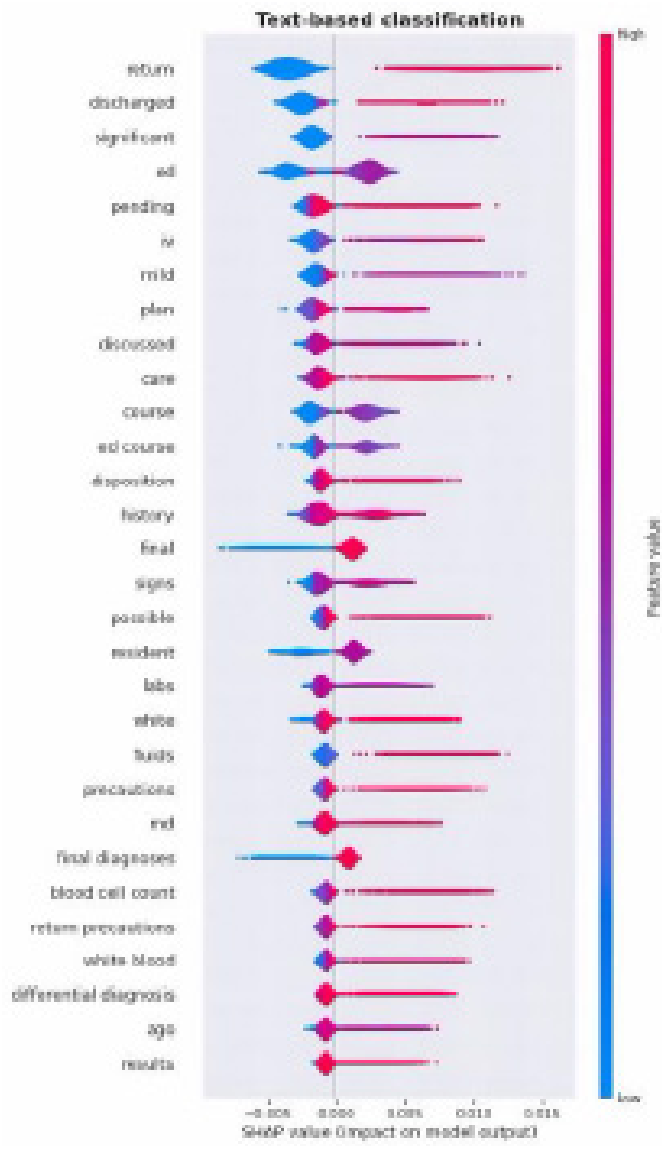

Figure 2. Shapley Additive exPlanations.

3 (O-A1) Point-of-care Ocular Ultrasound vs Ophthalmoscopy for the Evaluation of Acute Visual Complaints in the Emergency Department

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Oral Presenter: Ruth Lewis, MD

Objectives: The objective of this study was to compare the test characteristics of emergency physician (EP)-performed ophthalmoscopy with ocular point-of-care ultrasound (POCUS) using formal ophthalmologist evaluation as the gold standard.

Background: According to the 2017 National Hospital Ambulatory Medical Care Survey, visual complaints account for over 1% of all emergency department (ED) visits nationwide. Prior to the introduction of POCUS, EP-performed non-dilated ophthalmoscopic exam was considered standard of care. However, limited training and experience significantly limits the accuracy of this physical examination.

Methods: This was a single-center, prospective, observational study of a convenience sample of adult patients who presented to an urban, university hospital with >105,000 visits annually. Patients who presented with acute visual complaints were eligible to be enrolled between January 2017–May 2019. The treating physician, a PGY1-3 emergency medicine (EM) resident performed a visual inspection of the eye and the non-dilated fundoscopic examination. A separate PGY1-3 EM resident, blinded to the indication, performed the ocular POCUS using the Logiq e linear transducer (4-10 MHz) and a separate visual examination of the eye without the use of an ophthalmoscope. Each resident had performed >25 previous ocular ultrasounds per the American College of Emergency Physicians and Accreditation Council for Graduate Medical Education guidelines for EM POCUS training. Using a power analysis of 80%, our sample size calculation of 40 patients was based on previous data demonstrating a 50% difference in sensitivities between ocular POCUS and EP-performed ophthalmoscopy for diagnosing acute ocular pathology with an average prevalence of 30% in patients presenting with acute visual complaints. Data is presented as proportions with 95% confidence intervals (CI). Statistical analysis included Fisher exact and chi-square tests.

Results: 226 patients were enrolled, 104 of whom had a formal consultation and evaluation by a board-certified ophthalmologist within 24 hours of the patient's ED visit. 87 patients were diagnosed with ocular pathology yielding a prevalence of 83.65% (95% CI 32.12-45.18). The following are the test characteristics for EP-performed ophthalmoscopy: sensitivity 16.49% (95% CI 9.73-25.4); specificity 100% (95% CI 59.04-100); and accuracy

67.85% (95% CI 75.12-90.18). The following are the test characteristics for ocular POCUS: sensitivity 87.21% (95% CI 78.27-93.44); specificity 100% (95% CI 81.47-100); and accuracy 95.08% (95% CI 88.98-98.35).

Conclusion: Point-of-care ocular ultrasound was more sensitive and specific than EP-performed ophthalmoscopic examination for the diagnosis of acute ocular pathology in the emergency department.

4 (O-E1) Food Insecurity and Housing Instability Screening and Follow-up in a Pediatric Emergency Department

Kellie Bacon, MPH; Shelby K. Shelton, MPH, CCRC; Soheil Saadat, MD, PhD; Jason Douglas, PhD; Theodore Heyming, MD; Rammy Assaf, MD

Oral Presenter: Victor M. Cisneros, MD, MPH, CPH

Objectives: This pilot study examines the impact of screening and referral services for food insecurity (FI) and housing instability (HI) in a pediatric emergency department (PED) serving a large community.

Background: FI and HI disproportionally impact children within underserved communities. Pediatric EDs are uniquely positioned to address FI and HI in communities with inequitable access to food and housing resources. This study examines the impact of FI and HI screening and referral systems in a PED serving a large community.

Methods: From March 2021–February 2022, 1,981 PED patients participated in a 16-question cross-sectional survey addressing FI and HI and child/caregiver health status. All participants received passive referrals to food and housing resources. Research assistants contacted participants who screened positive for FI/HI at three and six weeks to readminister the survey. Summary statistics describe FI and HI outcomes.

Results: Of 218 patients (11.0% surveyed) who screened positive for FI/HI, 149 (68.3%) were contacted at three and six weeks. Of these 149, 60.5% were food insecure, and 77.2% were housing insecure at the index ED visit. After administration of passive referrals, 50.7% and 45.3% of baseline-positive patients reported FI at three and six weeks, respectively. Additionally, 47.3% and 42.7% reported HI at three and six weeks, respectively. Participants who self-reported good health had a lower rate of FI compared to those who reported poor health status.

Conclusion: While we observed encouraging FI reductions among PED patients, no significant change was noted in HI, and both generally persisted. FI was associated with lower overall health status compared to HI. EDs are ideal environments for detecting FI and HI; however, additional research is necessary to examine resource uptake among FI and HI patients.

5 (O-C2) The Association of Image Gain Intensity to the Accuracy of Point-of-care Ocular Ultrasound

Albert Lee, MD; Megan E. Guy, MD; Edmund Hsu, MD; Ryan Gibney, MD; Brenda Nash, RDMS; Nora Perez-Moreno, RDMS; Matthew Whited, MD; Jessa Baker, MD; Melissa Chang, MD; Nicole Finney, MD; Shreya Gupta, MD; Reem Sarsour, MD; Jonathan Rowland, MD

Oral Presenter: Soheil Saadat, MD, PhD

Objectives: To determine the effect on sensitivity, specificity, positive predictive value, and negative predictive value of detecting ocular pathology by stratifying gain settings on ocular point-of-care ultrasound (POCUS).

Background: POCUS plays a pivotal role in evaluating ocular complaints in the emergency department (ED). The rapid and non-invasive nature of ocular POCUS makes it a safe and informative imaging modality. Previous studies have investigated using ocular POCUS to diagnose posterior vitreous detachment (PVD), vitreous hemorrhage (VH), and retinal detachment (RD); however, little is known about the sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of detecting ocular pathology at stratified gain levels.

Methods: We performed a retrospective review of ED patients who received ocular POCUS examinations and ophthalmology consultations as part of their evaluation for eye complaints at our urban Level I trauma center ED from November 2017–January 2021; 383 of 706 exams qualified for the study. The primary analysis looked at the ability of emergency physicians to recognize any posterior chamber abnormality on ocular POCUS.

Results: The images were found to have an overall sensitivity of 81% (95% confidence interval [CI] 76-86%); specificity of 82% (95% CI 76-88%); PPV of 86% (95% CI 81-91%); and NPV of 77% (95% CI 70-83%). Images acquired with a gain of (25, 50] had a sensitivity of 71% (95% CI 61-80%), specificity of 95% (95% CI 85-99%); PPV of 96% (95% CI 88-99%); and NPV of 68% (95% CI 56-78%). Images acquired with a gain of (50, 75] had a sensitivity of 85% (95% CI 73-93%); specificity of 85% (95% CI 72-93%); PPV of 86% (95% CI 75-94%); and NPV of 83% (95% CI 70-92%). Images acquired with a gain of (75, 100] had a sensitivity of 91% (95% CI 82-97%); specificity of 67% (95% CI 53-79%); PPV of 78% (95% CI 68-86%); and NPV of 86% (95% CI 72-95%). Secondary analysis looked at each gain range further stratified by specific pathology (PVD, VH, and RD).

Conclusions: High (75, 100] gain on ocular POCUS has a high degree of sensitivity for detecting any posterior chamber abnormality, as compared to intermediate (50, 75] and low