achieving control. HFrEF was independently associated with a lower odds of control (aOR 0.51; 95% CI 0.30–0.87). Adverse events occurred in 23.2% of rapid responders, 26.8% of gradual responders, and 33.5% of non-responders, but the trajectory group was not significantly associated with adverse events after adjustment. Increasing age was associated with an increased risk of adverse events (aOR 1.26 per decade; 95% CI 1.02–1.55).
**Conclusion:** Heart rate trajectory phenotypes offer meaningful prognostic insight in Afib-RVR. Non-responders constitute a high-risk phenotype with markedly lower likelihood of achieving rate control and higher crude adverse event rates. Early HR trajectories may serve as actionable intermediate markers to identify patients needing alternative therapeutic strategies or closer monitoring.

## 316 | Frequent Use of CT Angiography, Low Diagnostic Yield, and Rare Utilization of Clinical Decision-Making Algorithms in Emergency Department Patients With Suspected Acute Aortic Syndrome

Ava Kittendorf[1], Colin Greineder[2], Benjamin Burtner[2], Layth Kakish[2], Robert Pena[2]
*[1]Michigan Medicine, [2]University of Michigan*

**Background and Objectives:** Aortic dissection and other forms of AAS are life-threatening and time-dependent emergencies. The rate of aortic CT angiography (CTA) is believed to be increasing in the US, while adoption of clinical decision-making algorithms (CDAs) has remained uncommon, despite multiple evidence-based guidelines recommending their use. Our objectives were (1) to evaluate the frequency of CTA use in patients with suspected AAS in our academic ED serving a high-volume aortic surgery center, (2) to determine the rate of documented CDA use by ED providers, (3) to estimate the frequency of low-value imaging based on predicted very low pre-test probability, and (4) to determine the diagnostic yield for AAS.
**Methods:** Trained abstractors reviewed charts of patients who underwent CTA from 1/1 to 5/1/25. Duplicate patients, those with a prior history of AAS, those imaged for reasons other than suspected AAS, and those transferred to our ED with known AAS were excluded. Abstractors recorded documented CDA use, d-dimer testing, components of the AD Detection Risk Score (ADD-RS), and CTA results. Each data element was abstracted twice, with disagreements adjudicated by third review by an EM physician. Simple descriptive statistics were used for analysis.
**Results:** 356 unique patients underwent CTAs over 125 days (2.84/day). Of these, 284 (80%) meet inclusion criteria. Use of a CDA (ADD-RS plus d-dimer) was documented in just one case. D-dimer testing was performed in an additional 22/284 (7.7%) cases, but as a means of ruling out PE rather than AAS. Estimation of the ADD-RS based on abstraction of its components indicated that 247/284 (87%) and 124/284 (44%) of cases would have been classified as low (score $<2$) or very low (score $<1$) pre-test probability, respectively. AAS was diagnosed in 5/284 (1.8%) of patients. The sensitivity and NPV of the estimated ADD-RS were 60% and 98.8% using a cutoff of $<2$, and 100% and 100% using a cutoff of $<1$.
**Conclusion:** Our results indicate a rate of aortic CTA use nearly 5 times that previously reported in the literature. Conversely, documented use of a guideline-recommended CDA was rare ($<0.5\%$), and 44% of CTAs were performed in patients with very low predicted pre-test probability. Future studies aimed at defining barriers to CDA use and interventions designed to address these barriers may increase diagnostic yield for AAS without increasing the rate of missed or delayed diagnosis.

## 317 | Outpatient Care of Pregnant Patients With Acute Pulmonary Embolism in 21 United States Community Hospitals

David Vinson[1], Jemma Akkad[2], Audrey Mvemba[3], Isaac Wolfkind[4], Nachiketa Gupta[5], Samuel Rouleau[6], Madeline Somers[7], Ashok Pai[8], Mary Reed[7], Jeffrey Sperling[9], Nareg Roubinian[10], David Vinson[11]
*[1]Kaiser Permanente, [2]UC Davis Health, Sacramento, California, [3]Department of Obstetrics and Gynecology, Kaiser Permanente Oakland Medical Center, Oakland, California, [4]California Northstate University College of Medicine, Elk Grove, California, [5]Department of Emergency Medicine, Kaiser Permanente Redwood City Medical Center, Redwood City, California, [6]Department of Pulmonary and Critical Care Medicine, UC Davis Health, Sacramento, California, [7]Kaiser Permanente Division of Research, Pleasanton, California, [8]Department of Hematology and Oncology, Kaiser Permanente Oakland Medical Center, Oakland, California, [9]Department of Obstetrics and Gynecology, Division of Maternal-Fetal Medicine, Kaiser Permanente Modesto Medical Center, Modesto, California, [10]Department of Pulmonary and Critical Care Medical, Kaiser Permanente Oakland Medical Center, Oakland, California, [11]Department of Emergency Medicine, Kaiser Permanente Roseville Medical Center, Roseville, California*

**Background and Objectives:** Most studies on the safety and effectiveness of outpatient PE care (defined here as discharge home within 24 h of arrival) have systematically excluded pregnant patients. We address this knowledge gap by describing the prevalence of outpatient care, practice patterns, and 7-day safety outcomes.
**Methods:** This retrospective cohort study was conducted across 21 U.S. community emergency departments (EDs) over 14 years (2011–2024). We included adults known to be pregnant with PE-related symptoms and a primary diagnosis of PE via pulmonary vascular imaging in the ED or labor and delivery unit (LDU). We excluded those who died within 24 h before disposition decision-making. We distinguish ED/LDU only care from transferal to another service or location. Outcomes included 7-day PE-related hospitalization and all-cause mortality. We used descriptive statistics.
**Results:** Of 75 gravid patients with PE, 1 was excluded for early death. Among the remaining 74, 24 (32%) were treated as outpatients (22 diagnosed in the ED and 2 in the LDU). Eight were in the third trimester. PEs were located in main ($n = 2$), lobar ($n = 1$), segmental ($n = 16$), subsegmental ($n = 3$), and unknown ($n = 2$) pulmonary arteries. All were hemodynamically stable and most had normal pregnancy-adapted vital signs at discharge. The 1 patient with abnormal respiratory rate and oxygen saturation was discharged on oxygen. All were treated with enoxaparin. Ten were discharged home directly from the ED ($n = 9$) or LDU ($n = 1$) after a mean stay of 6.9h. Obstetrics or hospital

medicine was consulted for all. The other 14 were transferred for observation before discharge home (mean total stay of 19.6h). Echocardiography was obtained for 3 patients (all transferred), with right ventricular dysfunction in 1, who was stable on discharge. Follow-up occurred on average within 6.3 days and within 14 days for 21. Two had 7-day PE-related hospitalizations: 1 for pain needing intravenous analgesia and 1 for enoxaparin allergy. There were no deaths.

**Conclusion:** One-third of gravid ambulatory adults with acute PE in this community setting were discharged home within 24 h. Care was multidisciplinary and often included service or location transfer. Seven-day PE-related hospitalizations were uncommon. Outpatient care of ambulatory PE patients appears feasible and safe but studies of larger cohorts in other settings are needed to better understand this understudied practice.

## 318 | Antenatal Pulmonary Embolism Diagnostics in Patients With COVID-19: A Retrospective Cohort Study

Grace Heringer[1], Cole Florio[2], Aidan Campbell[1], Madeline Somers[3], David Vinson[1]
*[1]Kaiser Permanente CREST Network, Pleasanton, California, [2]California Northstate University College of Medicine, Elk Grove, California, [3]Kaiser Permanente Division of Research, Pleasanton, California*

**Background and Objectives:** The diagnostic evaluation of pulmonary embolism (PE) in pregnancy is challenging because the physiologic changes of pregnancy can mimic several PE symptoms. Concurrent COVID-19 may further complicate a clinician's PE diagnostic evaluation by increasing respiratory symptoms and augmenting the prothrombotic state. We examined how COVID-19 affects clinical presentation, PE pretest probability (using the pregnancy-adapted Geneva score), and diagnostic testing for PE in pregnant patients.

**Methods:** We performed a retrospective cohort study across 21 U.S. community medical centers from 10/1/2021 through 3/30/2023. We included pregnant outpatients ≥18 years evaluated for suspected PE with D-dimer testing, compression ultrasonography, computed tomography pulmonary angiography (CTPA), or lung scintigraphy. We excluded patients who had known PE or had early pregnancies that were still unrecognized. The COVID-19 cohort was identified by a positive polymerase chain reaction test in symptomatic patients obtained during the index evaluation or at home or a healthcare setting in the prior 5 days. We compared patients with and without COVID-19 using bivariate analysis.

**Results:** Among 860 eligible patients, median age was 30.0 years; 39.1% were in the third trimester. COVID-19 was confirmed in 147 (17.1%). Compared with non-COVID-19 patients, those with COVID-19 more often had fever (36.1% vs. 4.2%), tachycardia ≥110 bpm (66.0% vs. 34.2%), and oxygen saturation <95% (12.2% vs. 4.8%), but less often reported chest pain (49.7% vs. 65.5%) (all $p < 0.001$). Nearly all patients had low-to-intermediate pretest probability, but intermediate classification was more common in COVID-19 patients (63.3% vs. 39.0%; $p < 0.001$). COVID-19 patients more often had elevated D-dimer >1.0 mg/L (49.1% vs. 36.4%; $p < 0.001$) and more commonly underwent chest radiography (61.9% vs. 50.1%; $p = 0.004$). Among patients who underwent advanced imaging ($n = 393$), CTPA predominated in both cohorts. PE was diagnosed in 6 patients overall: 1 (0.7%) with COVID-19 and 5 (0.7%) without. Mortality was low overall ($n = 3$; 0.3%), occurring in 1 (0.7%) patient with and 2 (0.3%) without COVID-19.

**Conclusion:** COVID-19 in pregnancy was associated with a higher prevalence of abnormal vital signs, higher pretest probability, higher D-dimer values, and increased diagnostic testing, illustrating how concurrent COVID-19 may affect PE evaluation in pregnancy.

## 319 | Initial Emergency Department Blood Pressure and Acute Congestive Heart Failure Outcomes

Alexander Rennie[1], Alex Rennie[1], Brett Todd[1], Yuying Xing[2], Lihua Qu[3], Douglas Horstmanshof[1], Sarah Galla[4], David Berger[1]
*[1]William Beaumont University Hospital, [2]Corewell Health Research Institute, [3]Corewell Healtth Research Institute, [4]Cleveland Clinic / Mercy Hospital*

**Background and Objectives:** Congestive heart failure (CHF) may affect eight million Americans by 2030. These patients present to the Emergency Department (ED) with a wide range of initial blood pressure (BP), and the mainstay of therapy is diuretics. Our objective is to assess if presenting BP affects outcomes for CHF patients who receive diuretics in the ED.

**Methods:** We conducted a retrospective cohort study of a large health system from 2016 to 2022. We included ED-admitted CHF exacerbations with history of CHF and received ED diuretics. We excluded patients with history of aortic stenosis, SBP <90, need for inotropes/vasopressors, creatinine (Cr) >3, on dialysis, and missing data. Patients were divided based on triage BP. The Normal group included patients with systolic (SBP) of <120 or a diastolic BP of <80, Stage 1 included SBP ≥120 or DBP ≥80, Stage 2 included SBP ≥140–179 or DBP ≥90–119, and Hypertensive Crisis included SBP ≥180 or DBP ≥120. Primary outcome was hospital LOS and additional outcomes include readmission, mortality, ICU, BIPAP and AKI. Multivariable regression analysis was performed adjusting for age, sex, race, BMI, initial Cr, and Elixhauser Comorbidity Index and ED diuretic dosing.

**Results:** There were 10,129 patients identified of which 5515 were excluded, leaving 4614 for analysis. Patients fell into the following BP cohorts: Normal ($N = 1236$), Stage 1 ($N = 784$), Stage 2 ($N = 2055$), Hypertensive Crisis ($N = 539$); the median age was 76.0, 37.1% Black and 52.0% female. The LOS for both Stage 1 and Hypertensive Crisis patients was significantly decreased compared to Normal patients, with 8.5% reduction ($p = 0.012$) and 9.2% reduction ($p = 0.016$) respectively. Stage 2 had a 4.9% reduction in LOS that was not significant. Hypertensive Crisis patients saw a 24.9% reduction in readmission ($p = 0.025$), while other groups were reduced but not significant. Higher stages of HTN saw a large decrease in mortality. Stage 2 had 48.2% decreased mortality ($p = <0.001$), and Hypertensive Crisis had 64.5% decreased mortality ($p = 0.003$). ICU admission and AKI were not significantly different, however BIPAP usage was significantly higher in Stage 2 and Hypertensive Crisis categories.

**Conclusion:** In our cohort of ED CHF patients receiving diuretics, higher stages of presenting BP were associated with decreased LOS, readmission, and mortality. This may reflect