

## INTRODUCTION

Inappropriate utilization of emergency departments (ED) for non-emergent conditions continues to burden healthcare systems.<sup>1</sup> Most of these non-emergent conditions could be better handled by primary care providers. The Emergency Severity Index (ESI) triage system categorizes ED visits as emergent and non-emergent and can be used to estimate what proportion of ED visits are non-emergent.<sup>2</sup>

## PURPOSE OF STUDY

This study investigated characteristics of University of Kentucky Internal Medicine Group (UK IMG) patients who frequently presented to the ED for non-emergent, or primary care needs. The goal is to identify trends, allowing for future studies on how to reduce ED burden through targeted interventions and improved primary care engagement.

## METHODS

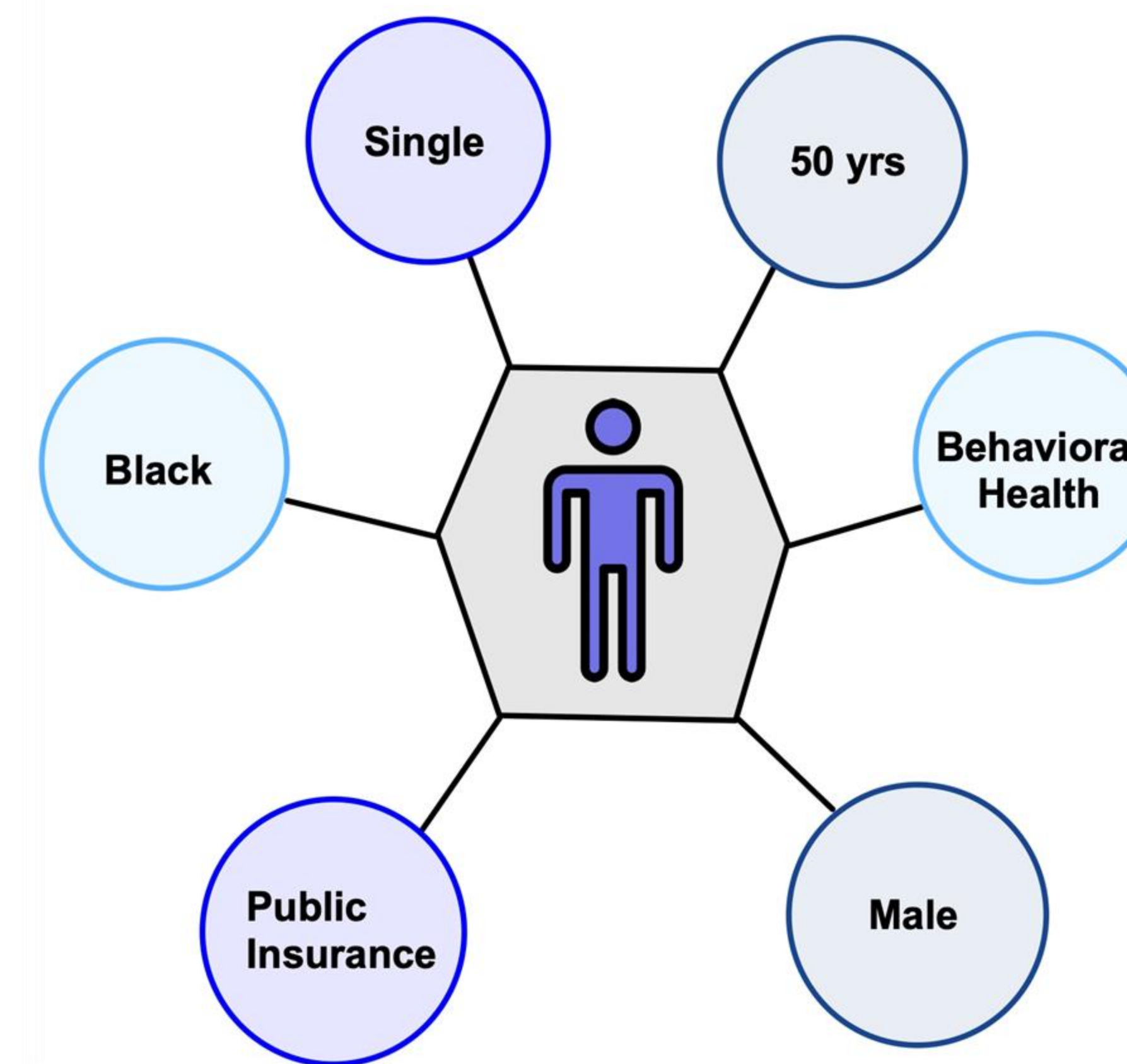
A retrospective cohort study analyzed de-identified data from January 1, 2023 to December 31, 2023 and aimed to identify characteristics of UK IMG patients who frequently presented to the UK Emergency Department (UK ED) for primary care needs. Selected characteristics included patient demographics, comorbid conditions, diagnoses, and social determinants of health. ESI scores 4-5 were utilized to identify non-emergent vs emergent visits.<sup>2</sup> The Elixhauser Comorbidity Index (ECI) was used to highlight predictors of non-emergent ED visits among the study population. The UK IMG patient ED visits that met our non-emergent inclusion criteria within the year of 2023 were 1464 out of a UK IMG sample of 11,216.

## RESULTS

Table 1. General Demographics of UK IMG Patients Presenting to ED.

Demographics		Non-Emergent	Emergent	All
N		1464	9752	11216
Age (yrs)	Mean (SD)	50.8 (11.1)	54.7 (16.8)	54.2 (16.3)
Race	Black	954 (65.2%)	2414 (24.8%)	3368 (30.0%)
	White	474 (32.4%)	6892 (70.7%)	7366 (65.7%)
	Other	36 (2.5%)	446 (4.6%)	482 (4.3%)
Ethnicity	NOT Hispanic, Latino, Spanish Origin	1434 (98.0%)	9313 (95.5%)	10747 (95.8%)
	Hispanic, Latino, Spanish Origin	25 (1.7%)	386 (4.0%)	411 (3.7%)
	Other	5 (0.3%)	53 (0.5%)	58 (0.5%)
Sex	Male	1101 (75.2%)	4357 (44.7%)	5458 (48.7%)
	Female	363 (24.8%)	5395 (55.3%)	5758 (51.3%)
Insurance Type	Public	1214 (82.9%)	6628 (68.0%)	7842 (69.9%)
	Blue Cross Blue Shield	71 (4.8%)	925 (9.5%)	996 (8.9%)
	Commercial	57 (3.9%)	1052 (10.8%)	1109 (9.9%)
	Self-pay	109 (7.4%)	968 (9.9%)	1077 (9.6%)
	TPL	4 (0.3%)	31 (0.3%)	35 (0.3%)
	Worker's Comp	1 (0.1%)	4 (0.0%)	5 (0.0%)
Marital Status	Single	1134 (77.5%)	3750 (38.5%)	4884 (43.5%)
	Married	158 (10.8%)	3231 (33.1%)	3389 (30.2%)
	Divorced	90 (6.1%)	1465 (15.0%)	1555 (13.9%)
	Other	82 (5.6%)	1306 (13.4%)	1388 (12.4%)

Figure 1. Non-emergent Patient Profile.



- **Male** patients comprised 75.2% of non-emergent visits and only 44.7% of emergent visits ( $p < 0.0001$ ).
- **Black or African American** patients comprised 65.2% of non-emergent visits, white patients comprised 32.4% and other races took up 2.5% ( $p < 0.0001$ ).
- **82.9%** of non-emergent visits were by patients using **public insurance**. Public insurance was classified as Medicare, Medicare Advantage, Medicaid, Medicaid Replacement, and Tricare, and was used as a proxy for evaluating socioeconomic status ( $p < 0.0001$ ).
- Patients are likely to be **single** (77.5%), average of **50.8 years of age** as compared to 54.7 for emergent ( $p < 0.0001$ ).

Table 2. All UK ED Diagnoses (2023)

Diagnosis Category (ICD Code Categories)	Non-Emergent	Emergent	All
N	5186	45155	50341
Mental & Behavioral Disorders	967 (18.6%)	3129 (6.9%)	4096 (8.1%)
Musculoskeletal & Connective Tissue	874 (16.9%)	2035 (4.5%)	2909 (5.8%)
Factors Influencing Health Status	716 (13.8%)	5489 (12.2%)	6205 (12.3%)
Nervous System	693 (13.4%)	2012 (4.5%)	2705 (5.4%)
Circulatory System	386 (7.4%)	5657 (12.5%)	6043 (12.0%)
External Causes of Morbidity	235 (4.5%)	1272 (2.8%)	1507 (3.0%)
Symptoms, Signs & Abnormal Clin/Lab Findings	218 (4.2%)	6835 (15.1%)	7053 (14.0%)
Endocrine, Nutritional, Metabolic	212 (4.1%)	4622 (10.2%)	4834 (9.6%)
Injury, Poisoning	198 (3.8%)	1796 (4.0%)	1994 (4.0%)
Respiratory System	167 (3.2%)	2502 (5.5%)	2669 (5.3%)
Digestive System	164 (3.2%)	2913 (6.5%)	3077 (6.1%)
Infectious & Parasitic Diseases	84 (1.6%)	1282 (2.8%)	1366 (2.7%)
Skin & Subcutaneous Tissue	70 (1.3%)	598 (1.3%)	668 (1.3%)
Genitourinary System	62 (1.2%)	2554 (5.7%)	2616 (5.2%)
Eye & Adnexa, Ear & Mastoid Process	45 (0.9%)	239 (0.5%)	284 (0.6%)
UNKNOWN	43 (0.8%)	32 (0.1%)	75 (0.1%)
Neoplasms, Blood, Blood-forming Organs	17 (0.3%)	1186 (2.6%)	1203 (2.4%)
Emergency Code Additions	14 (0.3%)	245 (0.5%)	259 (0.5%)
Neoplasms	11 (0.2%)	503 (1.1%)	514 (1.0%)
Pregnancy, Childbirth & Puerperium	3 (0.1%)	53 (0.1%)	56 (0.1%)

Table 2. The top three most frequent diagnosis categories for all UK ED 2023 non-emergent visits included **Mental & Behavioral Disorders (18.6%)**, **Musculoskeletal & Connective Tissue (16.9%)**, and **Factors Influencing Health Status (13.8%)**.

Figure 2. Relative Patient Health (ECI) in Non-emergent vs Emergent Patients.

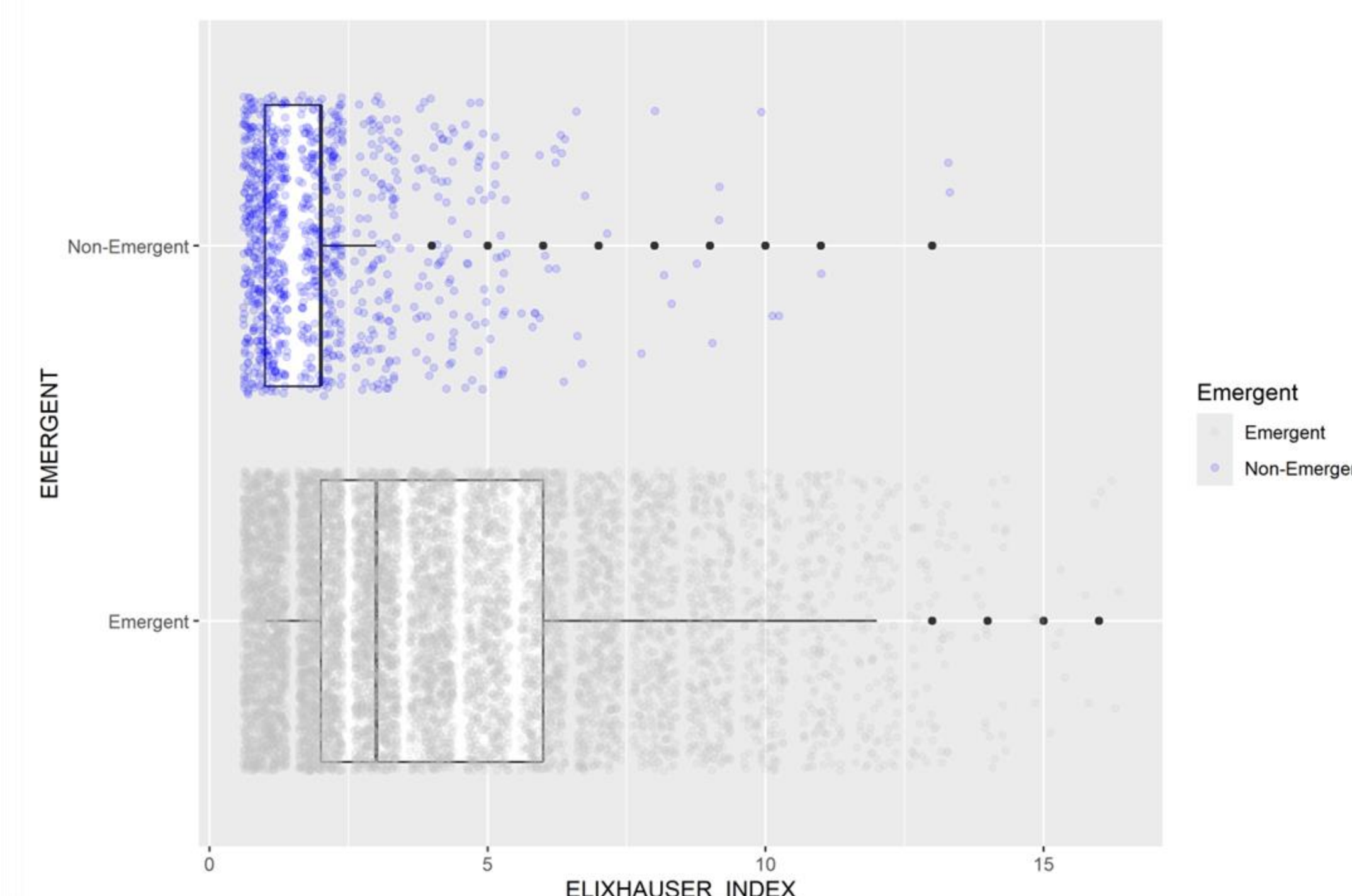


Figure 2 suggests a correlation between ESI and ECI scores used as inclusion criteria. This shows **most non-emergent patients were relatively healthy** (lower ECI score) and emergent patient health status was more variable (higher ECI score).

## DISCUSSION

UK IMG patient demographics that correlate with non-emergent UK ED visits include single, male, black patients that utilize public health insurance. Complaints upon presentation to the emergency department are most likely to include mental health or MSK complaints. In summary, **UK IMG providers could work more effectively to educate and treat male patients, single patients, black patients, patients utilizing public insurance, or patients who struggle with mental health or musculoskeletal complaints.** More focus on these populations could help to combat these non-emergent UK ED visits, reducing burden and cost for all parties.

## CONCLUSION

Considering these data points, there is room for application to primary care providers. **Education about patient demographics can empower primary care providers to focus more time and attention on the needs of these patients.** This includes educating providers on patients with complex needs, allowing them to provide better patient education to those who are more likely to utilize the ED for health management, and giving family care providers more time with these patients.

Further research opportunities could include uncovering the reason behind non-emergent ED use. Future research can also evaluate the qualitative intersections between race, mental health, and health access as a contributor to health outcomes.

Limitations include generalizability and missing data fields in patient charts. Our study specifically looked at UK IMG patients using the UK ED. Generalizability could be better achieved by expanding studies to other internal medicine groups and EDs throughout the country.

## REFERENCES AND COLLABORATIONS

