

Characterizing Non-urgent Ophthalmic Utilization of Emergency Departments in Northwest Indiana

Shaker Erbini, Kyle Gospodarek, Jonathan Guerrero, Joshua Mangum, Baraka Muvuka
Indiana University School of Medicine–Northwest (IUSM–NW)

Background:

Approximately 25% of ophthalmic-related emergency department (ED) visits are non-urgent, costing an extra \$782 and 5.75 hours per patient compared to same-day outpatient care. However, the influences on such inappropriate ophthalmic-related healthcare service utilization remain unclear. This study investigates how demographics, social determinants of health (SDOH), and health characteristics influence non-urgent ophthalmic-related ED utilization.

Methods:

This retrospective study analyzed data from SDOH screenings in EPIC for ED visits across 3 Northwest Indiana urban hospitals from January 2021-March 2025. Ophthalmic-related ED visits were identified using ICD-10 codes and classified as urgent or non-urgent. Data analysis included descriptive, bivariate (Chi-Square; $p < 0.05$), and multivariate (binary logistic regression; $p < 0.05$) analyses using SPSS 31.0. The study was exempted by Indiana University (IRB #14040).

Results:

The sample consisted of 6571 ophthalmic patients with similar representations of White/Caucasian (36.9%) and Black/African American patients (40.4%), mostly under 40 (58.0%). Bivariate analysis found a statistically significant ($p < 0.05$) association between ophthalmic visit type and age, ethnicity, race, sex, sexual orientation, insurance type, family income, smoking status, length of stay, ED disposition, hospital, return visits, and number of ED visits. In multivariate analysis, age (OR = 1.005), Black/African American (OR = 1.884), other race (OR = 1.475), public insurance (OR = 1.341), other insurance (OR = 2.290), and hospital B (OR = 2.396) remained significantly ($p < 0.05$) associated with higher odds of non-urgent visits. Female sex (OR = 0.810), admitted ED Disposition (OR = 0.540), other ED disposition (OR = 0.340), and family income (OR = 0.999996) remained significantly ($p < 0.05$) associated with lower odds of non-urgent visits.

Conclusion:

Lower income, Black/African American, and non-privately insured patients demonstrated higher odds of non-urgent ophthalmic-related ED utilization. Further research should continue examining how socio-structural factors influence healthcare utilization to inform targeted interventions for optimized ophthalmic care delivery.