

ABSTRACT

Purpose: Several investigators have suggested the cost-effectiveness of earlier screening, management of risk factors, and early treatment for diabetic retinopathy (DR). We aimed to evaluate the extent of health care utilization and cost of delayed care by insurance type in a vulnerable patient population.

Methods: A retrospective analysis of DR patients was conducted using Electronic Medical Record (EMR) data from January 2014 to December 2020 at Denver Health Medical Center, a safety net institution. Patients were classified by disease severity and insurance status. DR-specific costs were assessed via Current Procedural Terminology (CPT) codes over a 24-month follow-up period.

Results: Among the 313 patients, a higher proportion of non-English speaking patients were uninsured. Rates of proliferative diabetic retinopathy at presentation differed across insurance groups (62% of uninsured, 42% of discount plan, 33% of Medicare/Medicaid, $p = 0.016$). There was a significant difference in the total median cost between discount plan patients (\$1258, IQR: \$0 - \$5901) and both Medicare patients (\$751, IQR: \$0, \$7148, $p = 0.037$) and Medicaid patients (\$593, IQR: \$0, \$6299, $p = 0.025$).

Conclusions: There were higher rates of proliferative diabetic retinopathy at presentation among the uninsured and discount plan patients and greater total median cost in discount plan patients compared to Medicare or Medicaid. These findings prioritize mitigating gaps in insurance coverage and barriers to preventative care among vulnerable populations.

Translational Relevance: Advanced diabetic disease and increased downstream healthcare utilization and cost vary across insurance type, suggesting improved access to preventative care is needed in these specific at-risk populations.