Determining the Epidemiology of *Giardia* Infections among High-Risk ZIP Codes in Sedgwick County, Kansas, 2017-2022 Sonalli Kurlekar, MPH<sup>1</sup>, Hayrettin Okut, Ph.D.<sup>2</sup>, Kaylee Hervey, MPH<sup>1</sup>, Christine Steward, MPH<sup>1</sup> <sup>1</sup>Sedgwick County Health Department, Wichita, Kansas <sup>2</sup>The University of Kansas School of Medicine-Wichita, Wichita, Kansas

> Received Apr. 18, 2025; Accepted for publication Apr. 18, 2025; Published online Apr. 21, 2025 https://doi.org/10.17161/kjm.vol18.23850

**Introduction.** Giardiasis, a common intestinal parasitic infection, has increased in Sedgwick County. The Sedgwick County Health Department (SCHD) identified a 110% rise in *Giardia* cases from 2017-2022 (n >150) compared to 2011-2016 (n <80). This study assessed incidence trends and risk factors using Poisson regression to identify high-risk groups and geographic patterns.

**Methods.** Laboratory-confirmed *Giardia* cases were obtained from EpiTrax, the Kansas reportable disease case management system. Annual incidence rates (cases per 100,000 population) were calculated for total cases and by ZIP Code using midyear census estimates. The analysis included 26 Sedgwick County ZIP Codes. Poisson regression modeled incidence rate ratios (IRRs) with 95% confidence intervals (CIs), adjusting for ZIP Code, gender, and age group (1-24, 25-54, 55-74,  $\geq$ 75 years).

**Results.** Annual giardiasis incidence increased from 3.71 per 100,000 in 2017 to 8.96 in 2022. Three ZIP Codes had significantly higher risk (IRR 1.92 in 67214, IRR 2.01 in 67213, IRR 2.27 in 67218). The average incidence in high-risk ZIP Codes (73.4 per 100,000) was nearly double that of others (38.1 per 100,000). Males aged 25-54 in 67218 had the highest risk (IRR: 7.90, CI: 1.39-5.53).

**Conclusions.** Giardiasis incidence was highest in ZIP Codes with recent immigrants from Africa and Asia, where limited healthcare, inadequate sanitation, and differing preventive practices may contribute to infection. Underreporting due to asymptomatic infections and missed diagnoses may have underestimated the true burden. Targeted interventions, including sanitation improvements, culturally tailored education, and enhanced surveillance, are essential to reduce transmission and prevent future increases in giardiasis.

Copyright © 2025 Kurlekar, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial No Derivatives (by-nc-nd) License. (CC-BY-NC-ND 4.0: https://creativecommons.org/licenses/by-nc-nd/4.0/)