

Demographic Disparities in Diagnosis of Eosinophilic Esophagitis: A Retrospective Analysis

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Introduction

- Eosinophilic esophagitis (**EoE**) is a chronic, immune-mediated disease¹
- Delayed or missed diagnosis can lead to fibrosis, strictures, and recurrent food impaction (**FI**)¹⁻²
- Estimated 10,494 U.S. patients may miss an early diagnosis due to lack of biopsy yearly^{2,5,9}
- Question: How do demographic disparities affect the diagnosis of EoE?**

Methods

- Retrospective analysis using TriNetX United States Collaborative Network
- Patients ≤ 21 years with FI (ICD-10 T18.12) between Jan 2016-Dec 2024
- EoE defined by ICD-10 K20.0 diagnosis on or after FI encounter
- Annual incidence of EoE in patients stratified by sex, race, and ethnicity
- Analyses performed with TriNetX analytic tools and R 4.4.2.

Results

Table 1. Demographic comparison between patients with a history of food impaction (FI) with and without a subsequent diagnosis of eosinophilic esophagitis (EoE)

Demographic	All FI, N (%)	FI and EoE, N (%)	FI and No EoE, N (%)	OR (95% CI)	p value
Age at diagnosis (years), mean \pm SD	11.9 \pm 6.3	14.7 \pm 4.3	-	-	
Sex					
Male	3,954 (63.6)	1,338 (72.4)	2,616 (59.9)	Reference	-
Female	1,850 (29.8)	359 (19.4)	1,491 (34.2)	0.5 (0.4-0.5)	<.001
Unknown	411 (6.6)	152 (8.2)	259 (5.9)	1.1 (0.9-1.4)	.221
Ethnicity					
Not Hispanic or Latino	3,844 (61.9)	1,275 (69.0)	2,569 (58.8)	Reference	-
Unknown Ethnicity	1,934 (31.1)	498 (26.9)	1,436 (32.9)	0.7 (0.6-0.8)	<.001
Hispanic or Latino	437 (7.0)	76 (4.1)	361 (8.3)	0.4 (0.3-0.5)	<.001
Race					
White	4,123 (66.3)	1,396 (75.5)	2,727 (62.5)	Reference	-
American Indian or Alaska Native	16 (0.3)	10 (0.5)	6 (0.1)	3.2 (1.2-9.7)	.032
Asian	158 (2.5)	25 (1.4)	133 (3.1)	0.4 (0.2-0.6)	<.001
Black or African American	608 (9.8)	83 (4.5)	525 (12.0)	0.3 (0.2-0.4)	<.001
Native Hawaiian or Other Pacific Islander	24 (0.4)	10 (0.5)	14 (0.3)	1.4 (0.6-3.2)	.556
Other Race	268 (4.3)	59 (3.2)	209 (4.8)	0.6 (0.4-0.7)	<.001
Unknown Race	1,018 (16.4)	279 (15.1)	739 (16.9)	0.7 (0.6-0.9)	<.001

Figure 1. Overall incidence of EoE between 2016 and 2024

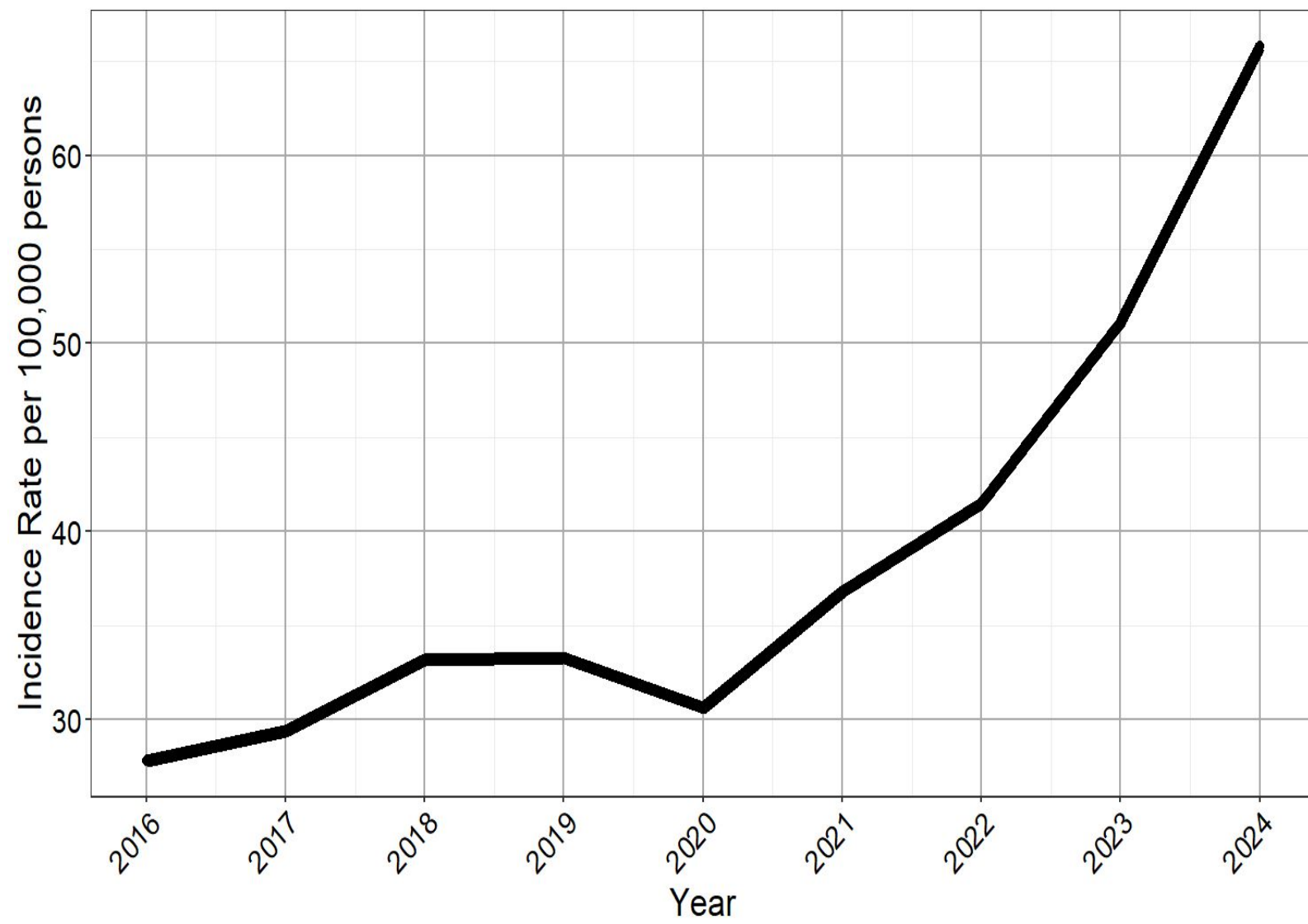


Figure 2. Sex-stratified incidence of EoE between 2016 and 2024

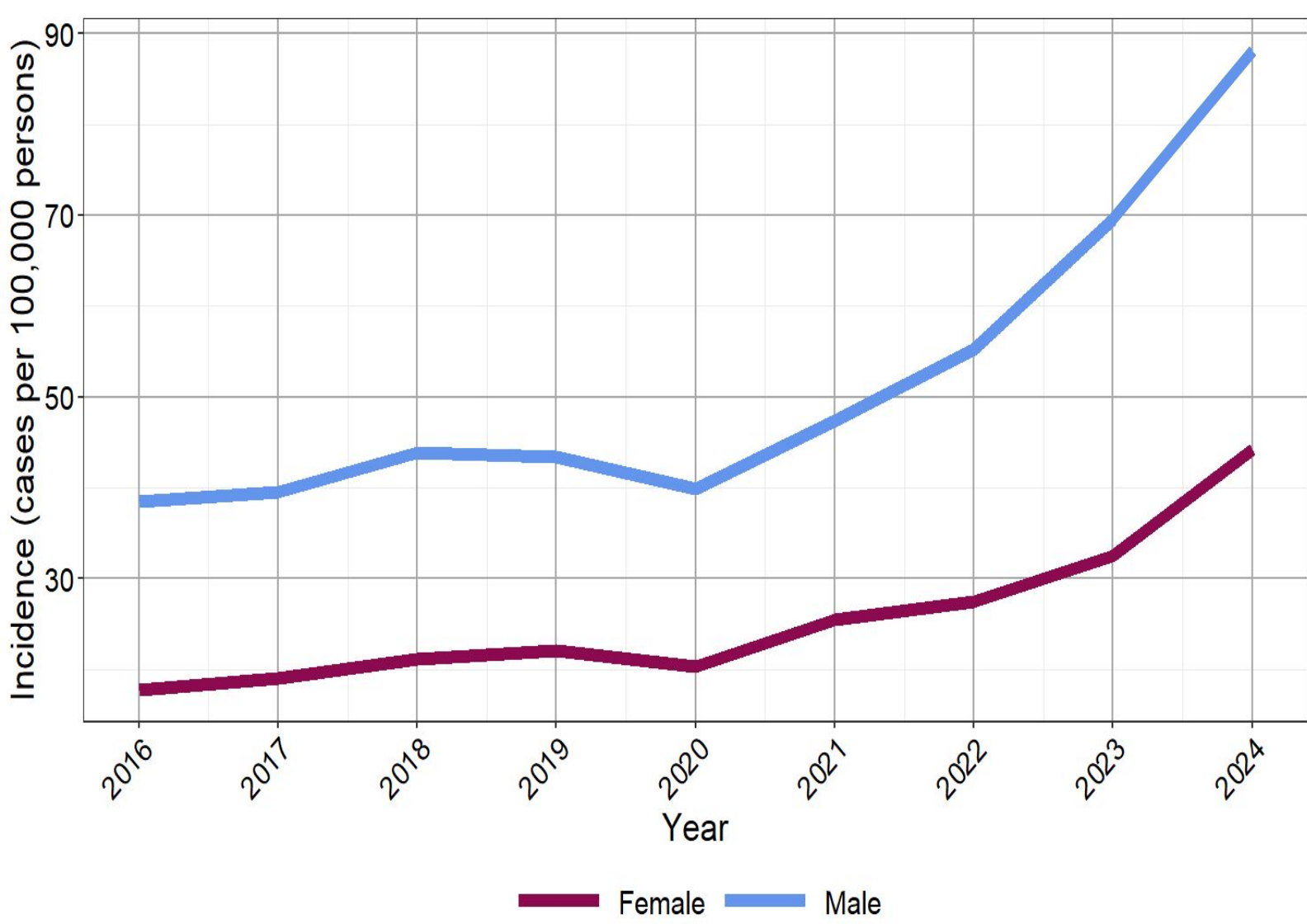


Figure 3. Ethnicity-stratified incidence of EoE between 2016 and 2024

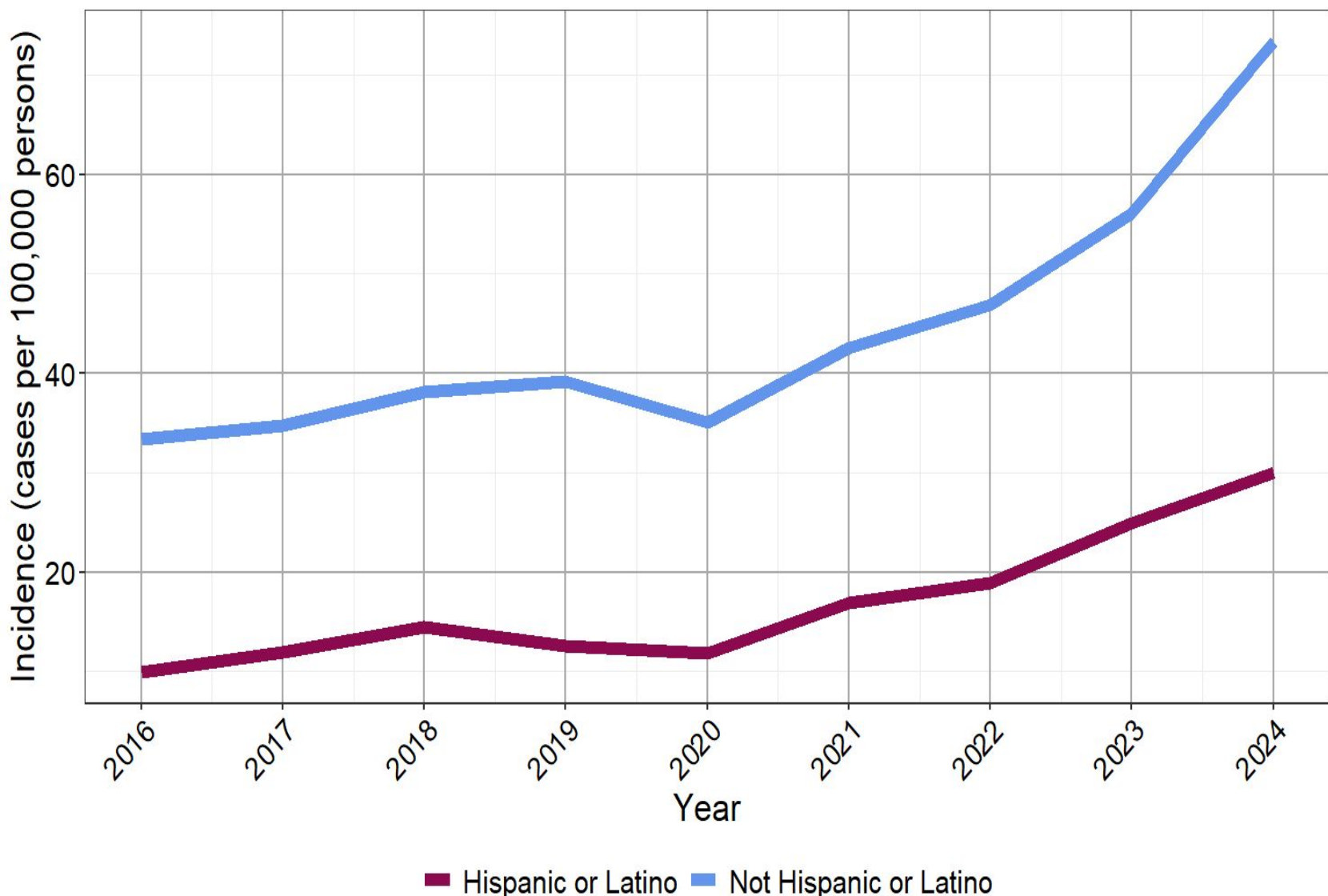
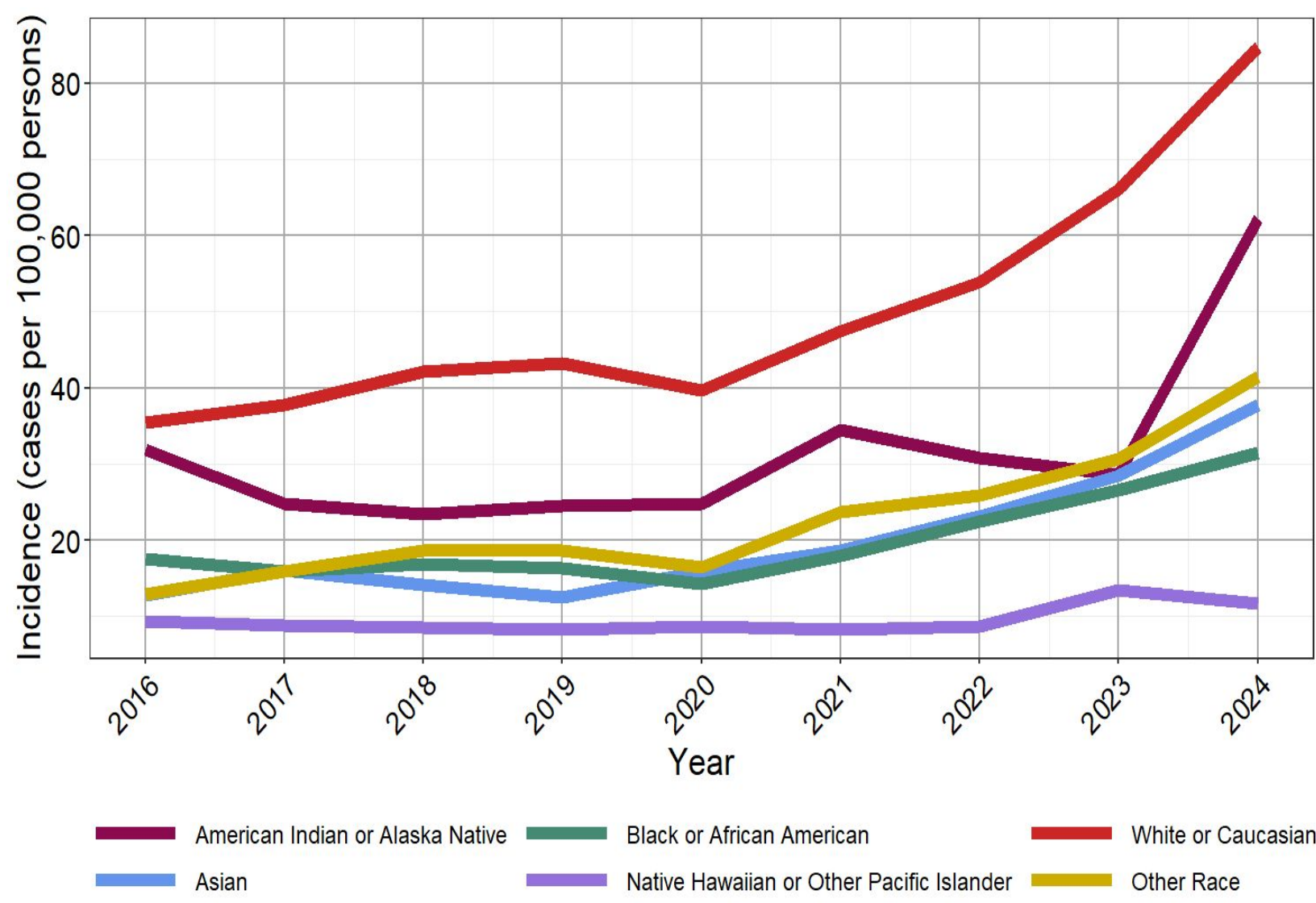


Figure 4. Race-stratified incidence of EoE between 2016 and 2024



Conclusion and Discussion

- Prevalence of EoE increased:
 - 40 per 100,000 inhabitant-years in 2017
 - 110 per 100,000 in 2022¹¹
- Rise in EoE incidence outpaced the increase in biopsies performed during FI, suggesting contributions from both delayed diagnosis and a true rise in disease burden^{11,14}
- Relatively fewer Black, Asian, and Hispanic patients are diagnosed than White or Indigenous patients
- Males make up more of the EoE diagnoses than Females
- Delays in care can result in esophageal fibrosis, stricture formation, and recurrent FI, increasing long-term morbidity^{12,14}
- Early recognition and updated diagnostic guidelines can help slow disease progression and improve outcomes for children at risk of EoE

References

