

# Pediatric Vision Screening in Alberta

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## Introduction

- Vision is important for cognitive, social, psychological development and overall quality of life in children.<sup>1</sup>
- Currently, Alberta has no vision screening program, and instead has optional optometric eye exams covered by government<sup>2</sup> including the Eye See Eye Learn Program.<sup>3</sup>
- The uptake of this service has not been formally evaluated.
- Vision screening programs in other provinces have been established to identify preventable vision loss

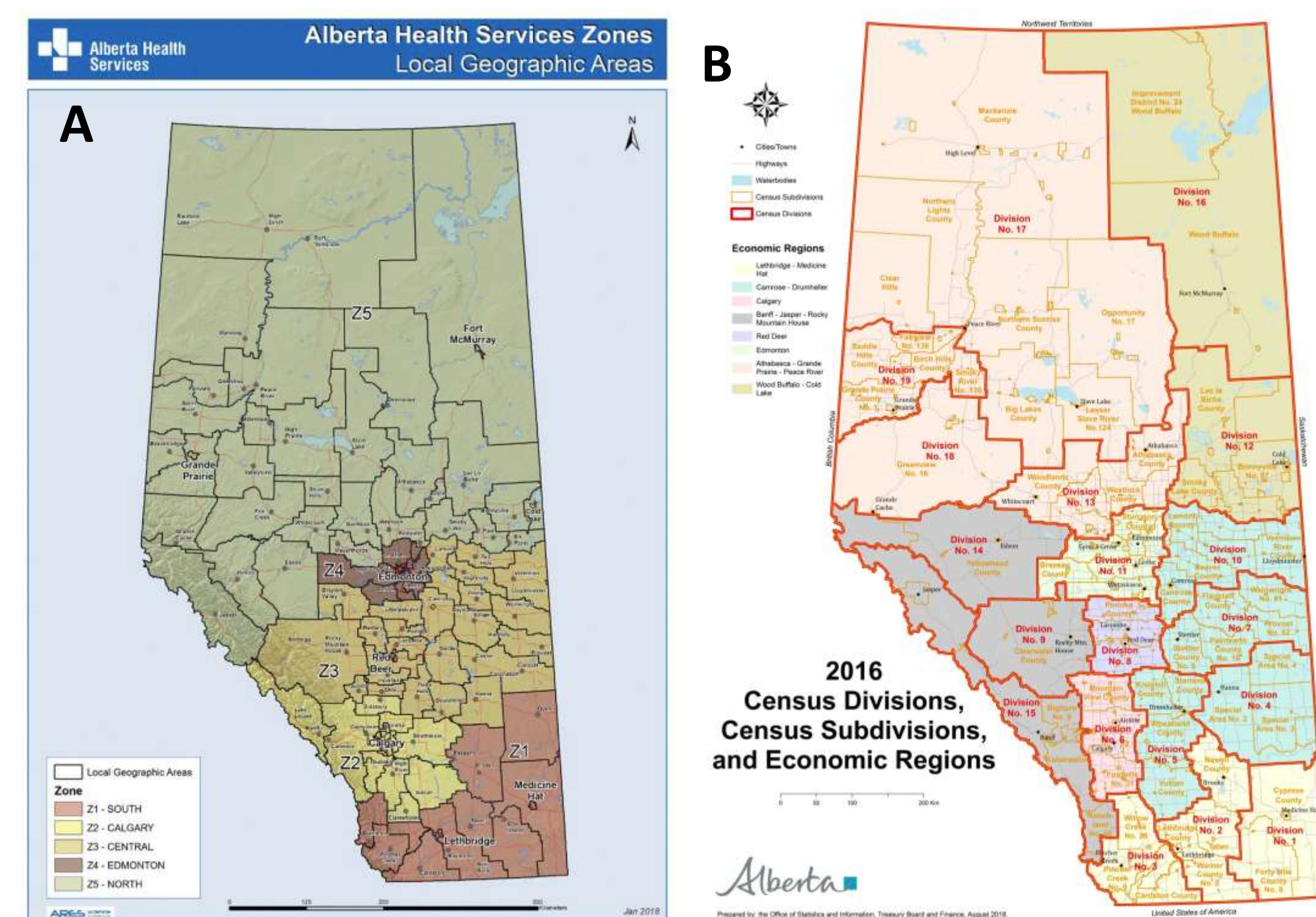
## Objective

- To determine the utilization of available vision care resources among children in Alberta
- To determine if there are any patterns in who is accessing vision care.

## Methods

- A retrospective review of aggregated billing information from Alberta Health Services (AHS) on children between 0 to 10 years old who had an optometric visit between 2014 to 2020
- In each year, the proportion of children getting their first optometric visit was calculated and stratified by:
  - AHS zone of residence
  - Local Geographic Areas (LGAs)
- LGAs were grouped into <25th, 25th to 50th, 50th to 75th, and >75th percentile categories based on various socioeconomic variables extracted from 2016 Canadian census data

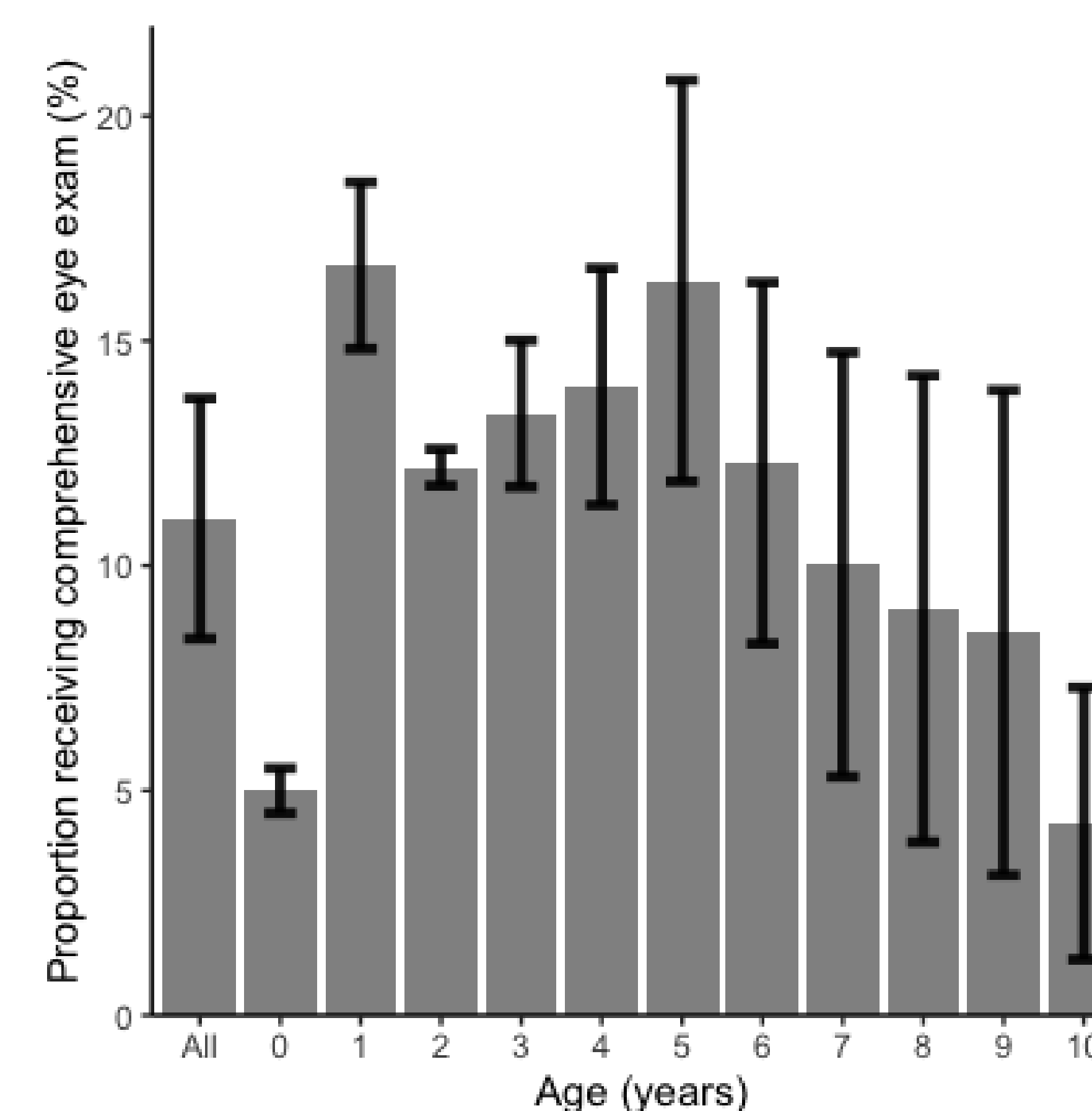
**Figure 1.** A) Map of Alberta Health Services zones and Local Geographic Areas mapped to B) Alberta census divisions and subdivisions in 2016



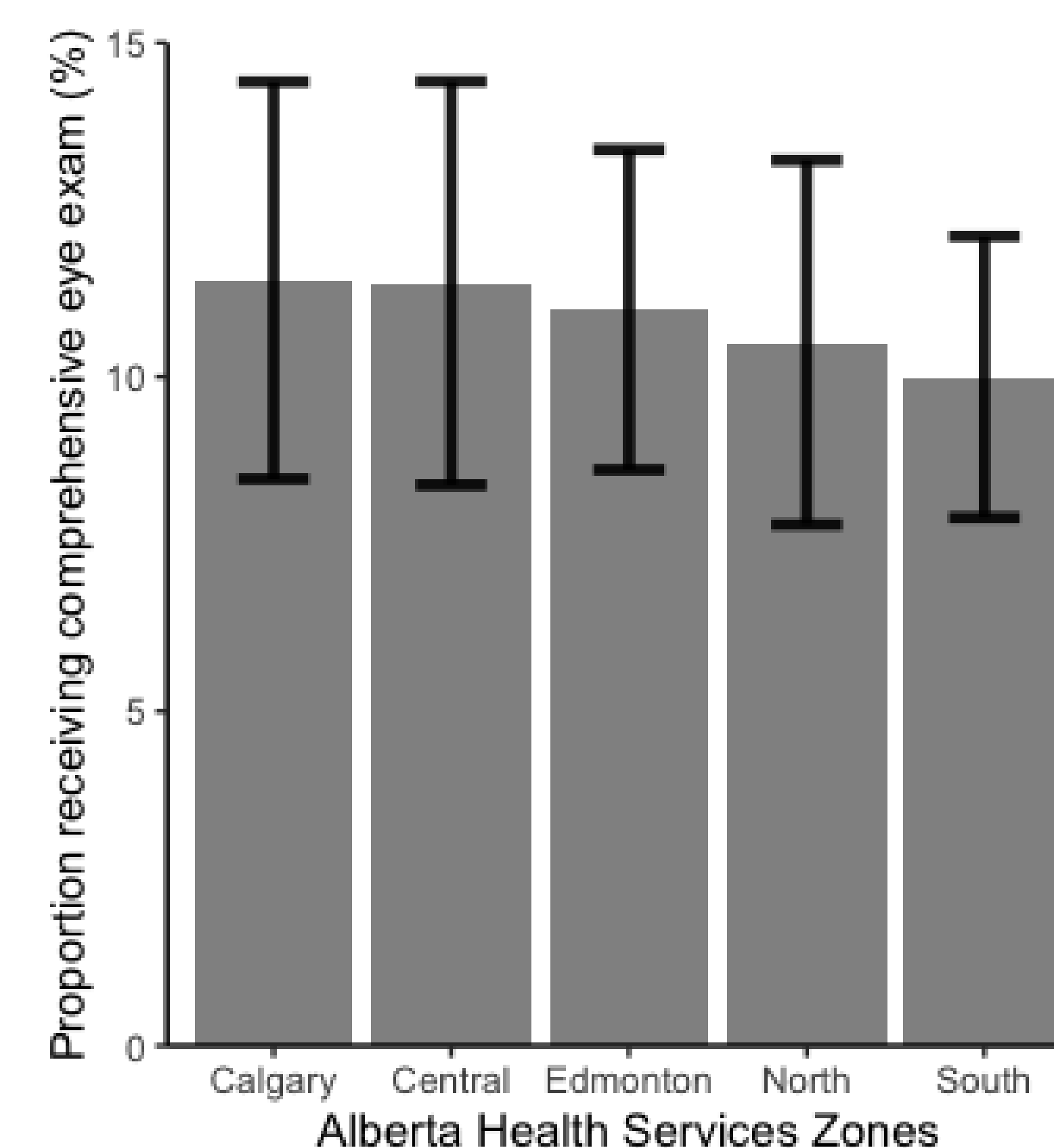
## Results

- In each year between 2014 to 2020, there were approximately 635,000 children under 10 years old, and 11.1 ± 2.7 % received an optometric visit

**Figure 2.** Proportion of children under 10 receiving their first comprehensive eye exam stratified by age groups



**Figure 3.** Proportion of children under 10 receiving their first comprehensive eye exam stratified by AHS zones



**Table 1.** Residence and facility zone matrix of children under 10 who received a comprehensive eye exam

	Calgary	Edmonton	Central	South	North
Calgary	96.2	1.9	2.9	3.6	1.8
Edmonton	2.1	92.4	9.0	1.3	11.8
Central	0.8	4.5	83.8	0.8	2.0
South	0.6	0.2	0.6	93.4	0.4
North	0.3	1.0	3.6	0.8	84.1

- In Central and North, almost twice as many sought care outside their own AHS zones compared to Calgary, Edmonton, and South

## Results

**Table 2.** Proportion of children under 10 receiving comprehensive eye exam stratified by various socioeconomic factors showing decreased rates in areas with lower resources

Socioeconomic factor	LGA (n)	Total (n)	Seen (n)	Rate (%)
<b>AHS rural status</b>				
Metro	31	1,991,375	220,909	11.1
Moderate metro influence	16	514,346	58,864	11.4
Rural OR rural central area	8	106,401	11,555	10.9
<b>Population density per square kilometer</b>				
>75th percentile	14	665,715	71,950	10.8
75th-50th percentile	11	608,884	69,220	11.4
50th-25th percentile	16	966,853	108,618	11.2
<25th percentile	14	370,670	41,540	11.2
<b>Income</b>				
>75th percentile	14	603,162	69,148	11.5
75th-50th percentile	14	860,117	97,684	11.4
50th-25th percentile	13	695,585	76,507	11.0
<25th percentile	14	453,258	47,989	10.6
<b>Proportion designated as low-income according to LIM-AT</b>				
<25th percentile	14	548,883	63,358	11.5
25th-50th percentile	14	800,611	89,910	11.2
50th-75th percentile	13	575,666	63,419	11.0
>75th percentile	14	686,962	74,641	10.9
<b>Highest education achieved</b>				
Postsecondary (>75th percentile)	14	616,384	69,182	11.2
Secondary (>75th percentile)	15	759,086	83,966	11.1
No diploma (>75th percentile)	14	627,425	67,141	10.7
<b>Proportion of aboriginal population</b>				
<25th percentile	15	928,740	105,887	11.4
25th-50th percentile	12	477,305	53,939	11.3
50th-75th percentile	12	606,851	67,673	11.2
>75th percentile	16	599,226	63,829	10.7
<b>Proportion whose first language is not official language (English, French)</b>				
<25th percentile	13	346,653	39,032	11.3
25th-50th percentile	15	784,292	89,784	11.4
50th-75th percentile	13	640,612	71,670	11.2
>75th percentile	14	840,565	90,842	10.8

## Conclusion

- Currently many of Alberta's children do not receive vision screening despite annual comprehensive eye exams being covered by AHS.
- Children from lower socioeconomic backgrounds may be disproportionately affected.
- Alberta should consider the creation of a comprehensive vision screening program

## References

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