



**THE VISION AND EYE HEALTH
SURVEILLANCE SYSTEM**

A national data system for vision and eye health

New and upcoming resources
for vision surveillance

July 17, 2019

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VEHSS Website

- VEHSS 1.0
 - Site launch July 2018
 - Survey data updates
- VEHSS 2.0
 - Site launch September 2019
 - More data, new indicators
 - State data dashboards
 - Integrated prevalence estimates



VEHSS 1.0

- Review of vision and eye health data sources and indicator development
- Technical reports for data analysis
- Access data: Data queries, visualizations, public use files

V & E HSS
THE VISION AND EYE HEALTH SURVEILLANCE SYSTEM
A national data system for vision and eye health

Data Highlights

- AMERICAN COMMUNITY SURVEY**
Prevalence of self-reported blindness and difficulty seeing

[More](#)
- MEDICARE CLAIMS**
Racial disparities in eye examination rates

[More](#)
- IRIS® Registry**
Prevalence of diagnosed glaucoma

[More](#)

Explore Vision and Eye Health Data

Type: Claims Database: Topic: Category:

About VEHSS

- [Project Overview](#)
- [Reports and Papers](#)
- [Data Indicators \(Case Definitions\)](#)
- [Help](#)

Prevalence Estimates

[VEHSS Integrated Prevalence Estimates](#)

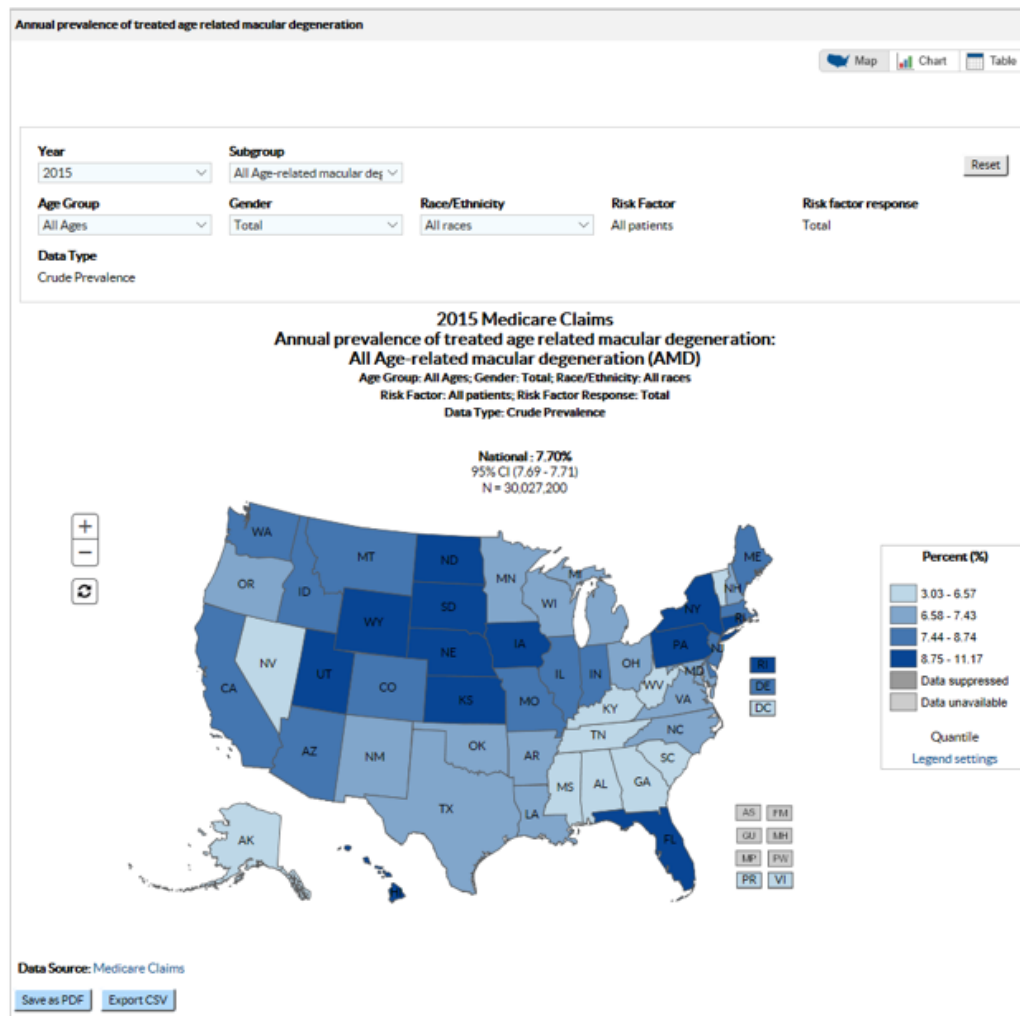
Data Sources



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Maps

Indicator: Annual prevalence of treated age related macular degeneration



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Queries

Year
2015

Subgroup
Compare All

Age Group
All Ages

Gender
Total

Race/Ethnicity
All races

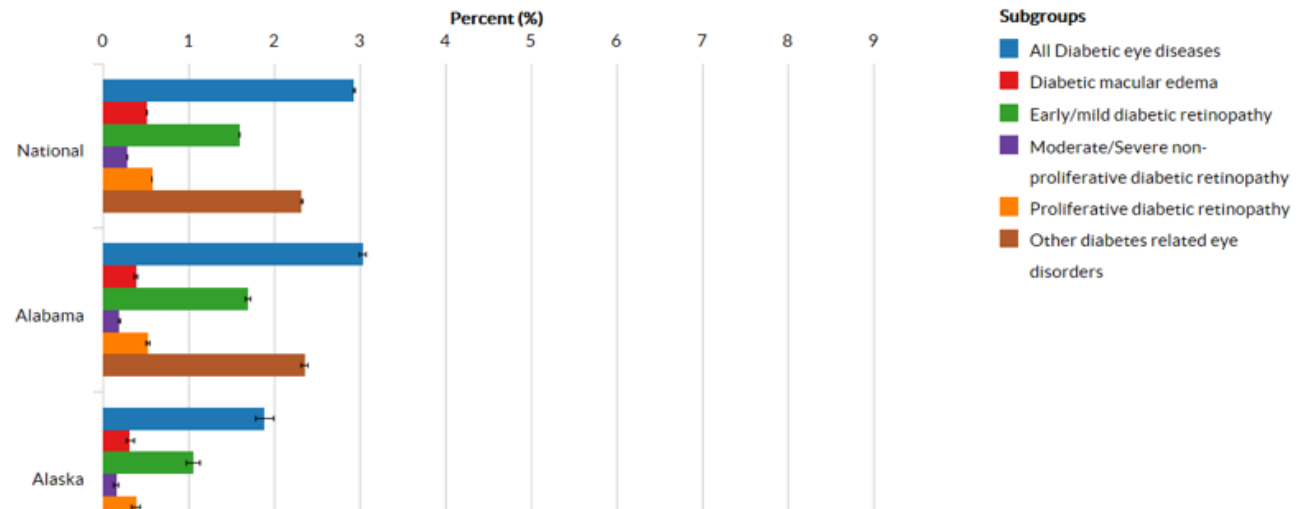
Risk Factor
All patients

Risk factor response
Total

Data Type
Crude Prevalence

Reset

2015 Medicare Claims
Annual prevalence of treated diabetic eye diseases:
Age Group: All Ages; Gender: Total; Race/Ethnicity: All races
Risk Factor: All patients; Risk Factor Response: Total
Data Type: Crude Prevalence
Compare: Subgroups



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VEHSS 2.0 - Coming September 2019

- More data
 - Medicaid MAX, Private medical insurance claims
 - More survey questions
- More indicators
 - Service utilization
 - Medical payments
- State data dashboards
 - Surveillance interface for every state and territory
 - More powerful analysis tools
 - Trend analyses



VEHSS 2.0 Homepage

The screenshot shows the VEHSS 2.0 homepage. At the top, it features the CDC logo and the text 'Centers for Disease Control and Prevention' and 'CDC 24/7: Saving Lives. Protecting People™'. Below this is the title 'Vision and Eye Health Surveillance System (VEHSS)'. The main content area is titled 'THE VISION AND EYE HEALTH SURVEILLANCE SYSTEM' and 'A national data system for vision and eye health'. Under 'Data Highlights', there are three panels: 'American Community Survey' with a map showing 'Prevalence of self-reported blindness and difficulty seeing', 'Medicare Claims' with a bar chart showing 'Racial disparities in eye examination rates', and 'IRIS® Registry' with a map showing 'Prevalence of diagnosed glaucoma'. Below these are two sections for exploring data: 'Explore VEHSS Data for One Location' and 'Explore VEHSS Data for All Locations'. The 'One Location' section includes a map of the United States with a legend for territories like American Samoa, Guam, etc. The 'All Locations' section has dropdown menus for 'Type' (Claims), 'Claims Database' (Medicare Claims), 'Topic' (Medical Diagnoses), 'Category' (Glaucoma), and 'Indicator' (Annual treated prevalence of glau), along with a 'GO' button. At the bottom, there is an 'About VEHSS' section with links for 'Project Overview' and 'Reports and Papers'.

New for VEHSS 2.0
VEHSS Location Explorer:
Access a data interface
for your state

VEHSS 1.0
VEHSS Data Explorer:
Access national data
and state maps



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VEHSS 2.0 Location Explorer

Create 1 or 2-level cross tabulations in a single year of data

More filters to narrow your query

Explore VEHSS Data for Georgia

View one year
 View all available years

Compare variable 1
 Age Groups

Compare variable 2
 Race/Ethnicity

Compare

Apply Filters [Reset](#)

Year
 2016

Response
 Yes

Age Group
 Compare All

Gender
 Total

Race/Ethnicity
 Compare All

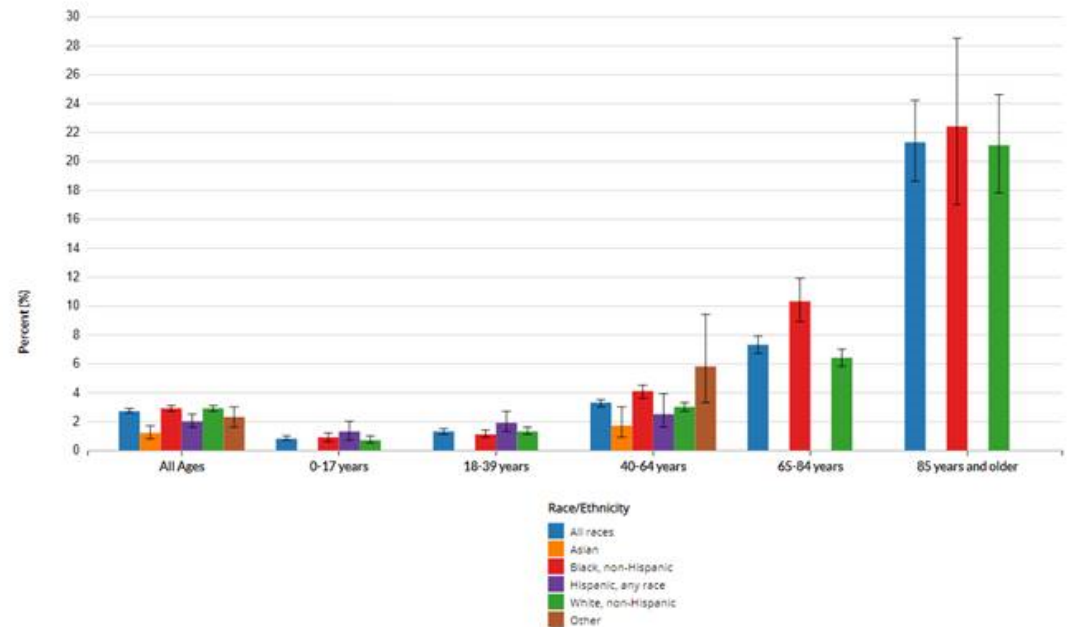
Risk Factor
 All participants

Risk factor response
 All participants

Data Type
 Crude Prevalence

Percentage of people who are blind or have serious difficulty seeing even when wearing glasses

Response: Yes
 Georgia | 2016 | ACS
 Crude Prevalence



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VEHSS 2.0 State Data Dashboard – Trend line analyses

Select all years of data for trend analyses

Explore VEHSS Data for Georgia

View one year
 View all available years

Compare variable 1
Years

Compare variable 2
Race/Ethnicity

Compare

Apply Filters [Reset](#)

Year
Compare All

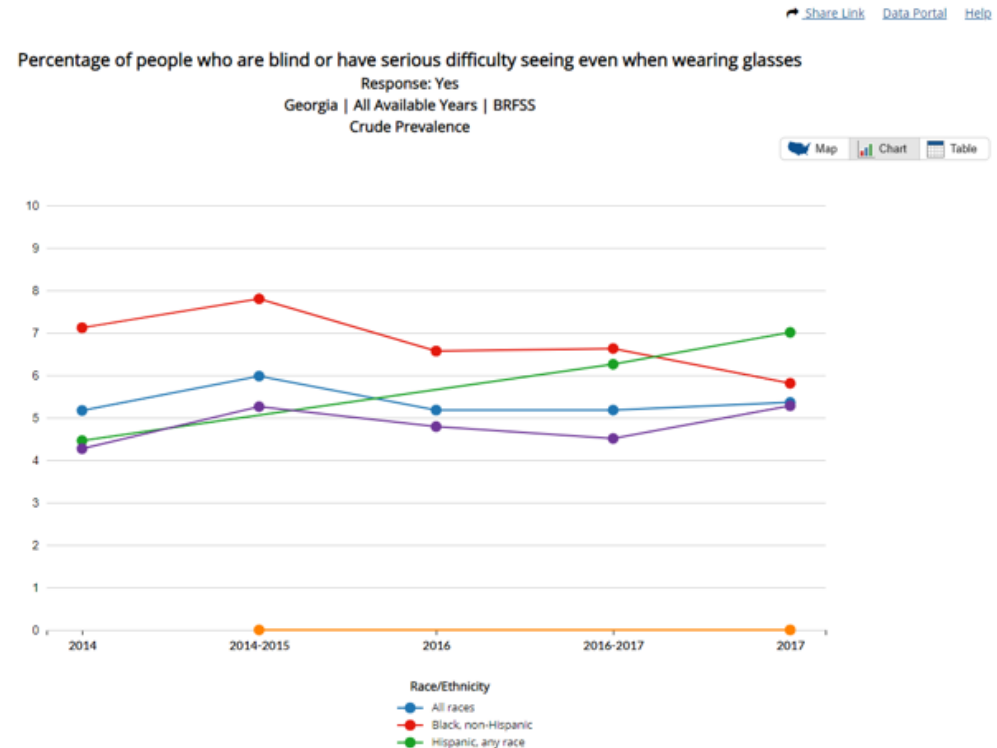
Response
Yes

Age Group
All Ages

Gender
Total

Race/Ethnicity
Compare All

Risk Factor
All participants



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Data Analyses

- Aggregates 250million+ person level records per year in 11 data sets
- Tracks 200+ indicators
- Filter and/or stratify by any combination of
 - Age group
 - Race/ethnicity
 - Sex
 - Risk factor
 - Subgroup
 - Year
 - State

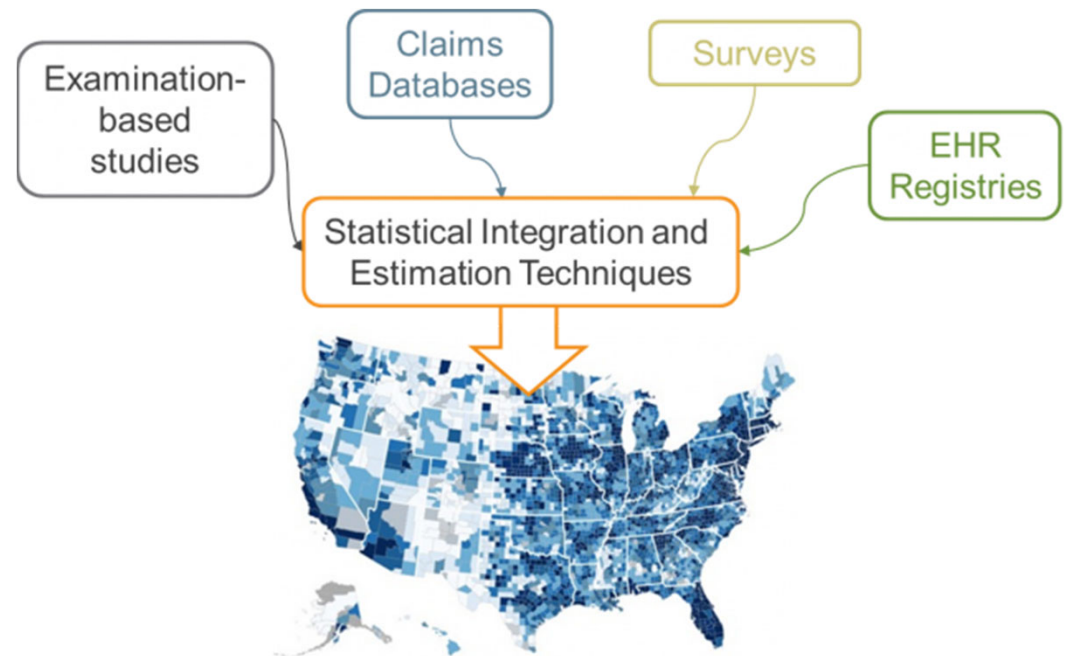
Analysis examples:

- ACS: Self-reported vision loss by state by Age*Sex
- IRIS: Diagnosed cataracts in Ohio by Sex*Race
- Medicaid: Eye exams among males in Maryland by Age*Risk Factor
- Medicare: Copayments for glaucoma surgery among non-Hispanic black females in North Carolina by service type over time



Integrated Prevalence Estimates

- State-level prevalence estimates
 - Integrative metaregression model
 - Demographic and geographic variation in indicators to adjust examination-based estimates



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Vision Loss Prevalence Estimate

- Start with best-corrected visual acuity

Meta-analysis of published examination studies

NHANES with multiple imputation

- Fill in missing age groups from self-reported low vision

Variation for ages 0-11, 12-17 from NSCH

Variation for ages 80+ or 85+ from ACS

- Missing populations and state variation

Relative prevalence in group quarters from ACS

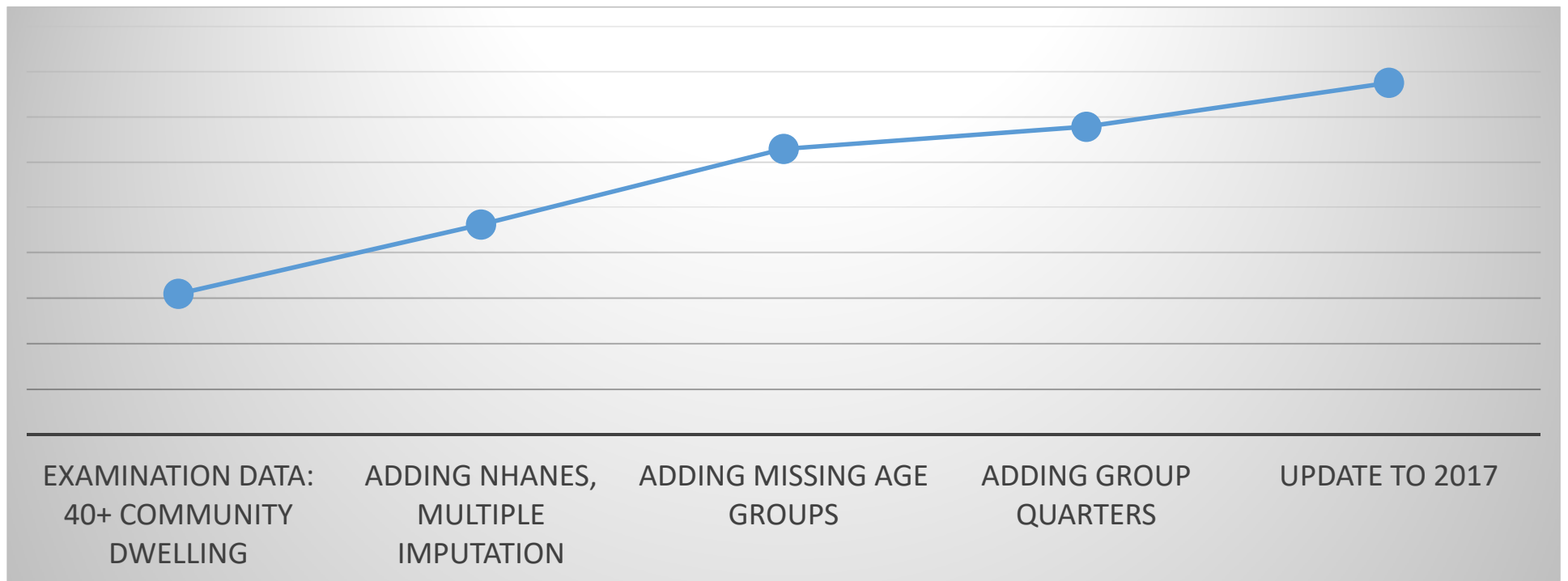
- State variation and time, population trends

State variation and population change in ACS

Time variation in published examination studies



Impact of Data Integration on National Vision Loss Prevalence Estimate



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Future Plans for Vision Surveillance

- County level estimates
- Indicator cross-validation study
- More indicators and data sources
- More integrated prevalence estimates
- Continued website enhancements





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Thank you!



at the UNIVERSITY of CHICAGO



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Focus on Eye Health National Summit



A Lifetime of Vision

July 17, 2019 | National Press Club | Washington D.C.

