CDC's Vision and Eye Health Surveillance System (VEHSS)

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Division of Diabetes Translation



Vision Health Initiative Centers for Disease Control and Prevention

- Vision and Eye Health Surveillance System (VEHSS) developed through collaboration between CDC's Vision Health Initiative (VHI) and NORC
- Vision Health Initiative began in 2002
- VHI located in CDC's Division of Diabetes Translation
- Mission: to promote vision health and quality of life for all populations throughout all life stages, by preventing and controlling eye disease, eye injury, and vision loss resulting in disability



https://www.cdc.gov/visionhealth/index.htm 2

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REPORT

MAKING EYE HEALTH A POPULATION HEALTH IMPERATIVE

VISION FOR TOMORROW

Vision Health Initiative



Public Health Programs & Policies

Surveillance

National Academies of Sciences, Engineering, and Medicine 2016. Making Eye Health a Population Health Imperative: Vision for Tomorrow. Washington, DC: The National Academies Press. https://doi.org/10.17226/23471.

Vision and Eye Health Surveillance System

Performed an inventory of vision and eye health indicators in available datasets

Created a framework to identify and organize vision and eye health indicators

Established a single platform to summarize prevalence information from multiple data sources

VEHSS - **THE VISION & EYE HEALTH SURVEILLANCE SYSTEM**



THE VISION AND EYE HEALTH SURVEILLANCE SYSTEM

A national data system for vision and eye health

- 10 datasets providing single-source prevalence estimates
 - Nationally representative surveys
 - National Health and Nutrition Examination Survey (NHANES)
 - National Health Interview Survey (NHIS)
 - American Community Survey (ACS)
 - Behavioral Risk Factor Surveillance System (BRFSS)
 - National Survey of Children's Health (NSCH)
 - Administrative claims
 - Medicare 100% fee-for-service research identifiable files
 - Medicaid MAX
 - MarketScan commercial insurance
 - VSP Global managed vision care

Electronic Health Record Registry: IRIS® (Intelligent Research in Sight)





The 2016 American Academy of Ophthalmology IRIS[®] Registry (Intelligent Research in Sight) Database

Characteristics and Methods

Michael F. Chiang, MD,¹ Alfred Sommer, MD, MHS,² William L. Rich, MD,³ Flora Lum, MD,³ David W. Parke II, MD³

Purpose: To describe the characteristics of the patient population included in the 2016 IRIS[®] Registry (Intelligent Research in Sight) database for analytic aims.

Design: Description of a clinical data registry.

Participants: The 2016 IRIS Registry database consists of 17 363 018 unique patients from 7200 United States-based ophthalmologists in the United States.

Methods: Electronic health record (EHR) data were extracted from the participating practices and placed into a clinical database. The approach can be used across dozens of EHR systems.

Chiang et al. Ophthalmology. 2018.

https://www.aao.org/iris-registry

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THE VISION AND EYE HEALTH SURVEILLANCE SYSTEM

A national data system for vision and eye health

Over 200 vision and eye health indicators

- Eye health conditions
 - Self-reported
 - Measured
 - Claims-based diagnoses
- Visual function
 - Measured visual acuity
 - Self-reported visual function

- Healthcare service utilization
 - Eye exams
 - Medical treatments
 - Low vision services
 - Vision correction

VEHSS Indicators by Geographic Location



Geographic Disparities: County-Level Surveillance Data

Prevalence of Vision Loss, by major age groups Any vision loss Georgia | 2017 | Prevalence Estimatess Prevalence Estimates Georgia: 2.12% 95% CI (1.83 - 2.45) N = 10.429.379 Medicare claims > American Community Survey Composite estimates of Percent (%) vision loss and blindness 01.57 - 02.84 02.85 - 03.18 03.19 - 03.61 03.62 - 06.43 Quantile

Legend Settings

JAMA Ophthalmology | Original Investigation

Prevalence of Visual Acuity Loss or Blindness in the US A Bayesian Meta-analysis

Abraham D. Flaxman, PhD; John S. Wittenborn, BS; Toshana Robalik, BS; Rohit Gulia, MS; Robert B. Gerzoff, MS; Elizabeth A. Lundeen, PhD, MPH; Jinan Saaddine, MD, MPH; David B. Rein, PhD, MPA; for the Vision and Eye Health Surveillance System study group

- Advanced statistical methods (Bayesian meta-analysis) to develop composite estimates of the prevalence of vision loss and blindness in the U.S.
- Meta-regression performed on data from:
 - Five population-based studies
 - National Health and Nutrition Examination Survey (NHANES)
 - National Survey of Children's Health (NSCH)
 - American Community Survey (ACS)
 - 2010 U.S. Census data





Composite Estimates of Vision Loss and Blindness

➢ Findings

- 7.1 million people in the U.S. have vision loss
- 1.1 million of them are blind
- Vision loss or blindness prevalence was lowest in Maine (1.4%) and highest in West Virginia (3.6%)



Thank You

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

