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**VisionServe Alliance presentation at APH Annual Meeting 10-07-2022**

**Slide 1: Title Slide**

emPOWERed BY BIG DATA!

**Slide 2: Logo Slide**

emPOWERed by Big Data!

Contains logos for VisionServe Alliance, Aging & Vision Loss National Coalition (AVLNC), and The Ohio State University College of Optometry

Presenter: Dean A. VanNasdale, OD, PhD

**Slide 3: Rationale, Part 1 of 2**

The NASEM Report

* In fall 2014, CDC’s Vision Health Initiative provided initial funding to the National Academies of Sciences, Engineering, and Medicine (NASEM) to conduct a study to assess population health with respect to vision.
* NASEM was asked to examine the potential for public and private collaborations at the community, state, and national levels to elevate vision and eye health as a public health issue.

**Slide 4: Rationale, Part 2 of 2**

The NASEM Report

* This report was released in 2016 and provides a population health approach to improve vision and eye health and increase health equity
* Chapter 8 of the NASEM report is largely dedicated to the importance of vision rehabilitation

**Slide 5: Quote from NASEM 2016 Report**

“The inability to detect and monitor prevalence and trends in the impact of vision impairment and blindness across the United States makes it difficult to characterize the burden of poor eye health among population groups and geographic locations and to then recommend specific effective interventions.”

National Academies of Science, Engineering, and Medicine, 2016 (NASEM)

**Slide 6: The Core Functions and Essential Services of Public Health**

Pie-chart graphic indicating the core functions and essential services of public health

**Slide 7: The Core Functions and Essential Services of Public Health**

Pie-chart graphic focusing on the core “research for new insights and innovative solutions to health problems”

**Slide 8: The NASEM Report Recommendation 3**

* Identifying and validating surveillance and quality-of-care measures to characterize vision-related outcomes, resources, and capacities within different communities and populations
* Analyzing, interpreting, and disseminating information to the public in a timely and transparent manner

**Slide 9: The Core Functions and Essential Services of Public Health**

Pie-chart focusing on the function of “monitor health status to identify and solve community health problems”

**Slide 10: Monitoring Health, Part 1 of 2**

* Monitoring health is primarily done through population health surveillance systems.
* There are extremely valuable datasets with information on blindness and low vision, but these datasets have historically been underutilized for a number of reasons
  + People are unaware of the datasets
  + Different datasets may be incompatible
  + Datasets contain complementary information, but are unlikely to contain all of the information needed to answer many questions we may have
  + Insufficient capacity to extract, analyze, and interpret the data

**Slide 11: Monitoring Health, Part 2 of 2**

To make an impact at the community level, it is important to be able to use health surveillance data that is geographically precise enough to identify location and populations at greatest need for public health or clinical interventions.

**Slide 12: The Behavioral Risk Factor Surveillance System (BRFSS)**

* Administered by the Centers for Disease Control and Prevention
* Collects state data about U.S. residents regarding their health-related risk behaviors, chronic health conditions, and use of preventive services
* Estimates can be made at the state level

“Are you blind or do you have serious difficulty seeing, even when wearing glasses?”

**Slide 13: The American Community Survey**

* Administered by the United States Census
* Provides local and national leaders with information they need for programs, economic development, emergency management, and understanding local issues and conditions.
* Estimates can be made at the county level

“Are you blind or do you have serious difficulty seeing, even when wearing glasses?”

**Slide 14: The Core Functions and Essential Services of Public Health**

Pie-chart focusing on function of “diagnose and investigate health problems and health hazards in the community”

**Slide 15: Diagnose and Investigate**

Graphic indicating prevalence of arthritis described in slide text

Comorbidities: Data from the Behavioral Risk Factor Surveillance System demonstrate that 39% of those that are blind or have low vision report mobility issues, compared to 22% of those who do not report blindness or low vision in the state of Ohio.

**Slide 16: Diagnose and Investigate**

Graphic indicating prevalence of mobility issues described in slide text

Activities of Daily Living: Data from the Behavioral Risk Factor Surveillance System demonstrate that 37% of those who are blind or have low vision report mobility issues, compared to 11% of those who do not report blindness or low vision in Ohio.

**Slide 17: The Core Functions and Essential Services of Public Health**

Pie-chart focusing on function of “inform, educate, and empower people about health issues”

**Slide 18: Inform, Educate, emPOWER**

Graphic illustrating hyperlink to State Profiles on Vision and Eye Health

<http://www.cdc.gov/visionhealth/data/state-profiles>

**Slide 19: The Core Functions and Essential Services of Public Health**

Pie-chart focusing on function of “mobilize community partnerships”

**Slide 20: Mobilizing Community Partnerships**

Healthy People 2030

* Initiative that sets data-driven national objectives to improve health and well-being over the next decade
* 14 Objectives from the Vision Workgroup
* V-08: Increase the use of vision rehab services by people with vision loss
  + Baseline: 4.3 percent of adults 18 years and over with visual impairment used vision rehabilitation services in 2017
  + Target: 6.2 percent by 2030

**Slide 21: Mobilizing Community Partnerships**

* Analysis and messaging
* V-09: Increase the use of assistive and adaptive devices by people with vision loss
* Baseline: 12.4 percent of adults 18 years and over with visual impairment used assistive and adaptive devices in 2017
* Target: 15.9 percent by 2030

These objectives are not overly ambitious and could be met with coordinated efforts that include consistent messaging.

**Slide 22: Tim O’Reilly Quote**

Who has the data has the power.

**Slide 23: Aim of Big Data Project**

1. Provide state level data on prevalence of blindness and low vision among people aged 65 years and over
2. Provide county level estimates of the prevalence of blindness and low vision in each state

**Slide 24: Aim of Big Data Project**

Provide state level data on people with and without blindness and low vision on:

* Health
* Chronic Conditions
* Health Related Quality of Life
* Disability Measures
* Income and Poverty
* Education

**Slide 25: Data Examined**

* Behavioral Risk Factor Surveillance System (BRFSS). Administered by states, financial support, and protocol from CDC.
* Samples 440,000 people annually. World’s largest and oldest phone survey; Complex sampling frame; Post survey weighting
* Addresses health behaviors (smoking) and risks (obesity). Used to inform health policy
* Provides state (and regional) and aggregated national data annually.
* American Community Survey. Administered by Census. Five-year aggregated data provides county level information

**Slide 26: Case Definition of Blindness and Low Vision**

“Are you blind or do you have serious difficulty seeing, even when wearing glasses?”

* Both BRFSS and ACS ask the same vision question
* Response is yes/no; no scaled response
* Neither survey asks about vision rehabilitation
* Every survey has limitations

**Slide 27: Big Data Briefing Organization**

* Promised 6-8 page report; delivering 30-32 page report
* Executive Summary: 1½ pages
* Context: National level perspective and discussion of vision rehab services: 3½ pages
* State level prevalence
* State map showing county level distribution
* Chronic conditions, health-related quality of life, and disability measures: approximately 5 pages
* Tables: State & county level prevalence; 60 BRFSS variables comparing people with and without blindness and low vision.

**Slide 28: Big Data Findings: Prevalence**

U.S. Average = 7.3%

Lowest = 5.8% Illinois

Highest = ????

**Slide 29: Big Data Findings: Prevalence**

U.S. Average = 7.3%

Lowest = 5.8% Illinois

Highest = 12.4% Louisiana

**Slide 30: County-Level Variability**

Missouri as Example:

* Overall prevalence of blindness and low vision is 7.6%
* County with lowest prevalence: Osage County, 2.6%
* County with the highest prevalence: ??????

**Slide 31: County-Level Variability**

Missouri as Example:

* Overall prevalence of blindness and low vision is 7.6%
* County with lowest prevalence: Osage County, 2.6%
* County with the highest prevalence: Pemiscot, 21.1%

**Slide 32: Big Data Findings: Race/Ethnicity**

Graphic table listing prevalence by race/ethnicity

**Slide 33: State-Level Variability**

White

* United States 6.1%
* Lowest: New York 4.5%
* Highest: Louisiana 9.6%

**Slide 34: State-Level Variability**

Black/African American

* United States 10.5%
* Lowest: New York 7.1%
* Highest: ??????

**Slide 35: State-Level Variability**

Black/African American

* United States 10.5%
* Lowest: New York 7.1%
* Highest: Louisiana 19.3%

**Slide 36: Income: United States 65+**

Making $20,000 or less annually

* Without blindness and low vision: 16.9%
* With blindness and low vision: ????

**Slide 37: Income: United States 65+**

Making $20,000 or less annually

* Without blindness and low vision: 16.9%
* With blindness and low vision: 37.1%

**Slide 38: Income of $20,000 or less in Louisiana**

* Without blindness and low vision: 19.5%
* With blindness and low vision: 52.7%

**Slide 39: Health: United States**

Fair / Poor Health

* Without blindness and low vision: 23.3%
* With blindness and low vision: 51.4%

**Slide 40: Chronic Conditions: United States**

Table indicating prevalence of four chronic conditions among people with blindness and low vision and among people without blindness and low vision

|  |  |  |
| --- | --- | --- |
| **Condition** | **Blind/Low Vision** | **Not Blind/Low Vision** |
| Stroke | 16.9% | 7.3% |
| Diabetes | 36.4% | 22.1% |
| Depression | 26.9% | 13.9% |
| Hearing Impairment | 33.3% | 13.8% |

**Slide 41: Disability Measures: United States**

Table indicating prevalence of three disability measures among people with blindness and low vision and among people without blindness and low vision

|  |  |  |
| --- | --- | --- |
| **Condition** | **Blind/Low Vision** | **Not Blind/Low Vision** |
| Concentrating/Remembering | 29.3% | 8.2% |
| Walking/Climbing | 56.9% | 25.4% |
| Doing Errands | 35.3% | 7.7% |

**Slide 42: W. Edwards Deming Quote**

Without data, you’re just another person with an opinion.

**Slide 43: Big Data Contribution**

* State Specific data from the BRFSS and ACS
* Only study to examine health, chronic conditions, health-related quality of life, and disability measures among older people who are blind and have low vision at the state level
* Only study to provide county-level estimates of blindness and low vision for older people
* Recent data (2019) from BRFSS & ACS
* Only study where all this material resides in the same document.

**Slide 44: So What?**

Chance favors the well-prepared mind. (Louis Pasteur)

**Slide 45: Foundation**

Big Data Project serves as a foundation

* Informs strategic planning
* Drives policy development
* Engages stake holders — aging, public health
* Other materials will fill gap between state data and human experience.

**Slide 46: Foundation**

Pie-chart segment focusing on “defines magnitude and dimensions of the problem”

**Slide 47: Foundation**

Pie-chart segment focusing on “engages stakeholders: aging, public health; informs policy makers)

**Slide 48: Fill in the gap.**

Numbers have an important story to tell. They rely on you to give them a clear and convincing voice. (Stephen Few)

**Slide 49: Contact**

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**Slide 50: Thank you!**