5th Annual

FOCUS ON EYE HEALTH NATIONAL SUMMIT

VISION TO ACTION: Collaborating Around a National Strategy

Wednesday, July 13, 2016
National Press Club | Washington, DC
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The Focus Initiative is a virtual forum for those working in vision and public health. This professional network encourages the sharing of resources (research, webinars, events, etc.) among the vision and public health community.

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#eyesummit
Kathleen Murphy, DNP, RN, NEA-BC, FAAN
University of Texas Medical Branch
Jinan Saaddine, MD, MPH
CDC Vision Health Initiative
National Academies of Sciences, Engineering, and Medicine
Consensus Study on Public Health Approaches to Reduce
Vision Impairment and Promote Eye Health

Study Sponsors:
American Academy of Ophthalmology
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Association for Research in Vision and Ophthalmology
Centers for Disease Control and Prevention
National Alliance for Eye and Vision Research
National Center for Children’s Vision and Eye Health
National Eye Institute
Prevent Blindness
Research to Prevent Blindness
Overview of Forthcoming National Academies of Sciences, Engineering, and Medicine’s Consensus Study on Public Health Approaches to Reduce Vision Impairment and Promote Eye Health
National Academies of Science, Engineering, and Medicine’s Consensus Study on: Public Health Approaches to Reduce Vision Impairment and Promote Eye Health

Steven Teutsch, MD, MPH
Adj. Prof. UCLA
Sr. Fellow Public Health Institute
Sr. Fellow, U. of So. Cal.

July 13, 2016

Prevent Blindness’ 2016 Focus on Eye Health National Summit: Vision to Action – Collaborating Around a National Strategy
Disclosure

- The committee is currently in the midst of the review process. Comments made by members of the committee should not be interpreted as positions of the committee, or of the Health and Medicine Division or the National Academies of Sciences, Engineering, and Medicine.
- We cannot discuss the content of the draft report as this may change, nor discuss the deliberations of the committee.
Statement of Work

The National Academies of Sciences, Engineering, and Medicine will conduct a consensus study to examine the core principles and public health strategies to reduce visual impairment and promote eye health in the United States. The study will describe limitations and opportunities to improve vision and eye health surveillance; reduce vision and eye health disparities; promote evidence-based strategies to improve knowledge, access and utilization to eye care; identify comorbid conditions and characterize their impact; and promote health for people with vision impairment. The study will also 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. Specifically, the committee will examine and make recommendations on the following...
Statement of Work (cont.)

(1) **Characterizing the Public Health Burden.** Describe and characterize the public health significance of eye disease (e.g., glaucoma, macular degeneration, diabetic retinopathy, and cataract) and vision loss, and the relationship between vision loss and quality of life, health disparities, and comorbid conditions. Identify opportunities to improve surveillance, monitoring, and data integration strategies and to define metrics to support a more accurate assessment of the public health burden of eye diseases and vision loss.

(2) **Prevention and Care.** Explore innovative models of care, innovative technologies, their application to eye disease/vision impairment detection and management, as well as barriers to their development and use. Examine and explore current and future areas of research on public health interventions that target prevention; access to, and utilization of, vision and eye care; and improved patient outcomes.
(3) **Evidence-Based Health Promotion Interventions.** Identify strategies to develop, test, and encourage the implementation of health promotion interventions that are evidence based for people with vision impairment.

(4) **Eye Health and Vision Loss as a Public Health Priority.** Categorize and discuss the possible short- and long-term collaborative strategies to promote vision and eye health as a public health priority, including: (a) the role of public–private partnerships (e.g., improving public awareness; improving vision and eye care through federal, state, and community–based partnerships, and enhancing professional education); (b) the role of federal government and state and local communities in integrating vision and eye health interventions into existing public health programs (including systems and policy changes that support vision and eye health) that are both implementable and sustainable; and (c) engagement of key national partners to form collaborations for research, service delivery, outreach, and community–based studies to successfully improve access and quality to vision and eye care.
Study Sponsors

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Committee on Public Health Approaches to Reduce Vision Impairment and Promote Eye Health

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Heather E. Whitson, M.D., M.H.S.
Duke University

www.nationalacademies.org/hmd/Activities/PublicHealth/ReduceVisionImpairment.aspx
Today’s Agenda

Intro and Population Health
Steven M. Teutsch, M.D., M.P.H.

The Changing Health Care System
Eve Higginbotham, M.D.

Vulnerable Populations and Access to Care
Sandra S. Block, O.D., M.Ed., M.P.H.

Aging and Comorbidities
Heather E. Whitson, M.D., M.H.S.
Problem: America is Not Getting Good Value for Its Health Care Dollar

Prepared for the Robert Wood Johnson Foundation by the Center on Social Disparities in Health at the University of California, San Francisco. Source: OECD Health Data 2007. Does not include countries with populations smaller than 500,000. Data are for 2003. *Per capita health expenditures in 2003 U.S. dollars, purchasing power parity
Total Health and Social Services Expenditures
OECD Nations, 2005

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

- Preamble to the Constitution of the World Health Organization, 1948

**Public health** is responsible for creating the conditions for people to be healthy
The Total Population and Subpopulations

The Health System
Ecologic Model of Health

- Policies
- Programs
- Information
- Clinical care

- Behavioral outcomes
- Specific risk factors, diseases, & conditions
- Injuries
- Well-being & health-related Quality of Life
- Health equity
Healthy People
Live in Healthy Communities

- Meet basic needs of all
  - Safe, sustainable, accessible and affordable transportation
  - Affordable, accessible and nutritious healthy foods
  - Affordable, high quality, socially integrated and location-efficient housing
  - Affordable, high quality health care
  - Complete and livable communities including affordable and high quality schools, parks and recreational facilities, child care, libraries, financial services, and other daily needs
- Quality and sustainability of environment
- Adequate levels of economic and social development
- Social and health equity
- Social relationships that are supportive and respectful

Adapted from: Linda Rudolph and the California Strategic Growth Council, Health In All Policies Task Force
Core Public Health Functions and Essential Services

http://www.cdc.gov/nphpsp/essentialservices.html
Can Healthcare Reform Transform Eye Health in the United States?

Eve J. Higginbotham SM, MD
Vice Dean, Perelman School of Medicine
Senior Fellow, Leonard Davis Institute
Professor, Ophthalmology
University of Pennsylvania
Can Healthcare Reform Transform Eye Health in the United States?

- The Broad Context for Healthcare Reform
- Measurable Advances following the Passage of the Affordable Care Act
- Implications of the Medicare Access & CHIP Reauthorization Act of 2015 (MACRA)
- Important Role of Prevent Blindness
U.S. Spending Higher: Health Spending in Selected OECD Countries, 1980–2012

Note: PPP = Purchasing power parity.

Health Disparities Persist

- Systemic structural and institutional factors contribute significantly to disparities in health\(^1\)
- Age, ethnicity, sex, and chronic health conditions contribute to disparities in vision impairment and age related eye diseases\(^2\)
- Visual impairment related to glaucoma and diabetic retinopathy is more common among African Americans and Latinos compared to non Hispanic whites\(^3\)

Visual Impairment Has an Emotional Impact

- ≥70% of people fear blindness more than
  - being deaf
  - having to use a wheelchair
  - losing a limb\(^1\)

- Only cancer and heart disease are feared more\(^2\)

- Patients with severe vision loss (≥20/200) would trade 39% of their remaining years for permanent normal vision\(^3\)
  - Similar to patients with moderate to severe stroke, severe angina, pre-surgical ulcerative colitis, and severe tuberculosis\(^3\)

- Current health, sustainability of health, and subjective well being are important population health metrics\(^4\)

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Of all the forms of inequality, injustice in health care is the most shocking and inhumane.

Martin Luther King, Jr., 1966
The Affordable Care Act Broadly Impacts the Health Care

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>I.*</td>
<td>Quality, Affordable Health Care for All Americans</td>
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<tr>
<td>II.*</td>
<td>Medicaid Expansion</td>
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<tr>
<td>III.*</td>
<td>Improving the Quality and Efficiency of Health Care</td>
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<tr>
<td>IV.*</td>
<td>Prevention of Chronic Disease and Improving Public Health</td>
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<tr>
<td>V.*</td>
<td>Health Care Workforce - Supports training of Primary care Doctors</td>
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</table>

*Pertinent to Eye Health Initiatives*
The Affordable Care Act Broadly Impacts Healthcare

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<td>VI</td>
<td>Transparency and Program Integrity - Reporting of gifts to physicians, state-driven changes to litigation of medical malpractice</td>
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<tr>
<td>VII*</td>
<td>Improving access to innovative medical technologies</td>
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<td>VIII*</td>
<td>Community living assistance services and supports</td>
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<td>IX*</td>
<td>Revenue Provision, e.g. excise tax on cosmetic services, medical device tax on the device manufacturing sector</td>
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<tr>
<td>X</td>
<td>Reauthorization of the Indian Health Care Improvement Act</td>
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*Pertinent to Eye Health Initiatives
Specific Positive Impactors of the Affordable Care Act to Eye Health

- Expansion of Medicaid
- Increased use of Electronic Medical Records
- Use of Evidence-Based Practice Guidelines
- Ambulatory Surgery Centers Become Attractive Models for Outpatient Surgical Procedures
- Pediatric Vision Exams are Reimbursed - Mandated
Although the Proportion of Uninsured Has Been Reduced, the Number of Uninsured Individuals Remains High

1-year American Community Surveys.
Uninsured Rates Declined Among Whites, Blacks, and Latinos in 2014

Percent of adults ages 19–64 who are uninsured

Medical home capability is defined using a 12-item set of advanced functions from six categories: access/communication, patient tracking/registry, care management, test/referral tracking, quality improvement, and external coordination.

*p < 0.05, referent to medium capability.

Medicare Access and CHIP Reauthorization Act (MACRA): New Medicare Payment Law that aims to fundamentally change the health care payment system.

MACRA repeals the SGR formula (Fee for service)

MACRA aligns reimbursement to quality and outcomes

MACRA incentivizes clinicians to participate in risk-bearing, coordinated care models

Emphasis on Population Health May Negatively Impact Eye Health Unless...

- Eye health is advanced as an integral component of population health
- Eye care providers become better integrated into health systems
- Access to preventive services is optimized
- Efforts related to health promotion are intensified
  - important role of Prevent Blindness
    - Particularly in the areas of prevention, need for care, access to care, and chronic eye disease education
Can Healthcare Reform Transform Eye Health in the United States?

- Only if we are prepared as a community
Global Burden of Disease and Access to Care for Vulnerable Populations

Sandra S. Block, OD, M Ed MPH
Professor, Illinois College of Optometry
The author has no financial relationships with commercial interests relevant to this presentations to disclose.
What drove me to be a part of the NASME?

- I have been an eye care provider for more than 30 years. My experiences have peaked my interest in public and population health.
- My professional path has taken me to work with populations that typically poor advocates for themselves.
  - Infants, toddlers, preschoolers, and school aged adolescents in Illinois
  - Children and adults with disabilities across the globe
- Studies have shown people with intellectual disability and developmental disability world wide have poor access to eyecare.
  - Life expectancy for this group has changed from 9 years to more than 50 years of age with the advancement of health care. (though not universal for all races)
- In 1995, we looked at a small population of 900 SO athletes and found that only 33% of those reported having an eye exam in the past 3 years.
2010 Global Burden of Disease (WHO)

- 285 million people are visually impaired
- Of those, 39 million are blind and 246 receive low vision services
- Of this enormous number, up to 80% of these individuals have preventable causes of visual impairment and blindness
- 90% of visually impaired and blind individuals reside in developing countries
Global Burden of Disease

- While the data has showing some improvement in the prevalence in total amount of blindness, there are some issues that are concerning.
- We have heard at a previous PB Summit of the disparities that are felt by women. The study showed that 60% of blindness is found in women.
- Other inequities exist but before we address these at-risk groups I wanted to remind everyone of the primary causes vision loss.
Global Burden of Disease

- The data was analyzed by looking at three age groups: children (0-14), adults (15-49) and adults over 49 years of age. The data reflects the changing demographics:

<table>
<thead>
<tr>
<th>Ages (in years)</th>
<th>Population (millions)</th>
<th>Blind (millions)</th>
<th>Low Vision (millions)</th>
<th>Visually Impaired (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-14</td>
<td>1,848.50</td>
<td>1.421</td>
<td>17.518</td>
<td>18.939</td>
</tr>
<tr>
<td>15-49</td>
<td>3548.2</td>
<td>5.784</td>
<td>74.463</td>
<td>80.248</td>
</tr>
<tr>
<td>50 and older</td>
<td>1,340.80</td>
<td>32.16</td>
<td>154.043</td>
<td>186.203</td>
</tr>
<tr>
<td>all ages</td>
<td>6,737.50</td>
<td>39.365 (0.58)</td>
<td>246.024 (3.65)</td>
<td>285.389 (4.24)</td>
</tr>
</tbody>
</table>
Vulnerable Populations

- Lower socioeconomic status or poverty
- Developing countries
- Cognitive, physical, mental health or other disability
- Language barriers
- Cost of services
- Transportation
- Ethnicity
- Education level
- Youth and elderly
Chicago Public Schools

- Schools - 675
- Enrollment - 404,151
- 41.6% African American, 44.1% Latino
- 87% of the students are from low-income families

- 14,929 students received comprehensive eye exams – birth to high school graduation
- 14,663 students were enrolled in CPS
- Students were referred by school due to failing a vision screening, lost glasses, teacher referral, or parent request
## Demographics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Clinic Patients</th>
<th>Sending Schools</th>
<th>All CPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black/African American</td>
<td>60.6%</td>
<td>57.9%</td>
<td>41.4%</td>
</tr>
<tr>
<td>Latino/Hispanic</td>
<td>35.4%</td>
<td>37%</td>
<td>44.7%</td>
</tr>
<tr>
<td>Male</td>
<td>45.7%</td>
<td>50.4%</td>
<td>50.3%</td>
</tr>
<tr>
<td>Special Education</td>
<td>21%</td>
<td>12.9%</td>
<td>12.6%</td>
</tr>
<tr>
<td>Free/Reduced Lunch</td>
<td>94.3%</td>
<td>88.7%</td>
<td>83.5%</td>
</tr>
<tr>
<td>Neighborhood Poverty</td>
<td>0.489</td>
<td>0.462</td>
<td>0.205</td>
</tr>
</tbody>
</table>
## Pretreatment Academic Indicators

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Clinic Patients</th>
<th>Sending School</th>
<th>All CPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance</td>
<td>94%</td>
<td>93.4%</td>
<td>93%</td>
</tr>
<tr>
<td>Grade Point Average (GPA)</td>
<td>2.42</td>
<td>2.49</td>
<td>2.58</td>
</tr>
<tr>
<td>Math Scores</td>
<td>-0.324</td>
<td>-0.161</td>
<td>0.019</td>
</tr>
<tr>
<td>Reading Scores</td>
<td>-0.317</td>
<td>-0.149</td>
<td>0.015</td>
</tr>
</tbody>
</table>
CCSR - University of Chicago Consortium on Chicago School Research

- MOU with CPS – data sharing for standardized tests, GPAs, along with other academic measures.
- IEI at Princeton contracted with CCSR to analyze the impact of attending IEI at Princeton on academic performance.
- Vision data was matched to academic data by student ID numbers (unique identifiers).
Notes of Interest

- ~50% of students presenting reported a previous prescription.
- 86% of students who reported having glasses presented for an exam without them.
- 35% had entering VA’s poorer than 20/40
Results

- High School students: A significant positive effect (0.045, p=0.03) was seen for reading.

Math scores:
- Elementary students: A significant positive effect (0.015, p=0.045) was observed for math scores.
- High School students: A significant positive effect (0.073, p=0.00) was seen for math.

- Latinos:
  - Reading scores improved
Conclusion

- Corrective lenses improve academic performance
- The effect may be more significant than we found due to the fact that we had no control of lens wear.
- The effect was lost in the second year which may be attributed to change in prescription, loss of glasses, or simply stopped wearing them
What are some of the challenges that we need to address?

- We need to ensure that all individuals who need eye care can receive quality eyecare?
- How best can we identify those in greatest need?
  - Better surveillance on the prevalence of eye health and vision problems in vulnerable population - National Center on Children’s Vision and Eye Health is committed to improved documentation of vision services
  - Research on how to prevent or reduce the progression of vision problems
What are some of the challenges that we need to address?

- Improvements on identifying those at greatest risk for visual impairment and blindness –
  - Screenings -
  - New Technology
  - Comprehensive eyecare
- Improved access to quality eyecare
- Equity in services
Thank you!

sblock@ico.edu
Vision Impairment in the Aging Population

Heather E. Whitson, MD, MHS
Duke University Medical Center
The “Silver Tsunami” has arrived
Prevalence of Chronic Vision Impairment in the U.S. is strongly age-related

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Legal Blindness</th>
<th>Uncorrectable Low Vision</th>
<th>All Visually Impaired</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Persons</td>
<td>%</td>
<td>Persons</td>
</tr>
<tr>
<td>60-69</td>
<td>59,000</td>
<td>0.3</td>
<td>176,000</td>
</tr>
<tr>
<td>70-70</td>
<td>134,000</td>
<td>0.8</td>
<td>471,000</td>
</tr>
<tr>
<td>&gt;80</td>
<td>648,000</td>
<td>7.0</td>
<td>1,532,000</td>
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Data from National Health Interview Survey
The Ultimate Geriatric Syndrome: Multiple Chronic Conditions (MCC)

- MCC is Common
  - 2/3 of Medicare population has 2 or more chronic conditions
  - 23% have 5 or more chronic conditions

- Patients with MCC are at increased risk for
  - Hospitalization
  - Complications
  - Disability
  - Institutionalization
  - Death

Source: Medical Expenditure Panel Survey 1998 (N=24,072)
MCC is the Rule, not the Exception, in Eye and Vision Care in Seniors

% of Population with Chronic Condition(s)

- Hypertension
- Heart disease
- Arthritis
- Eye disorders
- Diabetes

Source: Medical Expenditure Panel Survey (ages 65+ years)

Anderson & Horvath. Public Health Reports 2004
Comorbidities that are especially common in seniors with vision impairment

- Depression
- Hearing Impairment
- Cognitive Impairment
- Balance Impairment/Falls

Brody et al. Ophthalmology 2001
Lin et al., J Am Geriatr Soc 2004
Klaver CC et al., Am J Epidemiol 1999
Whitson HE et al., Arch Gerontol Geriatr 2010
Lord SR et al., Clin Geriatr Med 2010
The Challenge of Comorbidity and Vision

Health is a Two-Way Street

Comorbidity affects treatment plans and outcomes for eye disease

Poor vision affects patient experience and ability to care for other chronic conditions
The Double Whammy Effect on Health
Disability Rates in Comorbid Vision and Cognitive Impairment

Patients with Multiple Chronic Conditions Still Really Value Vision

- 390 patients with ocular disease (ages 27 to 89)
  - 250 with “serious” comorbid illness (DM, heart disease, ESRD, cancer, or stroke)

- Time trade-off utility questions
  - E.g., how many years of remaining life would you trade for good vision?

No significant difference in response in those with vs. without the serious comorbid conditions

- Conclusion: Vision loss is a MAJOR detractor from patient-perceived quality of life, whether or not the patient has serious systemic comorbid disease

One Geriatrician’s Plea for A Better Way

- Care focused on the (whole) person
- Value driven by patient’s goals
- Coordination across disciplines
- Partnering with communities
- Communication that empowers patients and caregivers