



Vision Health Initiative (VHI)

History

1991 – 1994

- Assessed uptake of dilated eye examinations among people with diabetes using National Health Interview Survey (NHIS) data, relevant paper was published. Brechner RJ, Cowie CC, Howie LJ, Herman WH, Will JC, Harris MI. *Ophthalmic examination among adults with diagnosed diabetes mellitus* [↗](#) *JAMA* 1993;270(14):1714–8.
- The Diabetes in Egypt project included the assessment of eye complications among people with diabetes in Egypt using different methods to diagnose retinal diseases.
- Question included in CDC's Behavioral Risk Factor Surveillance System (BRFSS) diabetes module to measure the utilization of yearly dilated eye examination.
- Developed strategies to improve the reporting of legal blindness in Massachusetts.

1995 – 1996

- CDC BRFSS diabetes module expanded to include questions about visual functioning and eye care among people with diabetes.
- Published an *MMWR* article entitled: "Blindness Caused by Diabetes – Massachusetts 1987 – 1994."

1997 – 1999

- Paper published on screening methods for Diabetic Retinopathy in Egypt: Penman AD, Saaddine JB, Engelgau M: Screening for diabetic retinopathy: Utility of non-mydratric retinal photography in Egyptian adults. *Diabetic Medicine* 1998;15: 783–787.
- Yearly dilated eye examination became a national objective to be measured by state Diabetes Control and Prevention Programs (DCPCs).
- BRFSS data were used to estimate the prevalence of self-rated visual impairment among adults with Diabetes: Saaddine JB, Venkat Narayan KM, Engelgau MM, Aubert RE, Beckles GLA. Prevalence of self-reported visual impairment among adults with diabetes. U.S. 1995. *AJPH* 1999;(89),8:1200–1205.

2000 – 2001

- Pilot study of prevalence and causes of visual impairment and quality of eye care among people with diabetes in managed care organizations.
- CDC representation at the "Model Comprehensive Diabetes Management Program (CDMP)" at Joslin Clinic.
- CDC joined National Eye Health Education Program (NEHEP) on "Healthy Vision working group HP 2010."

2002

- CDC convened a meeting of distinguished experts from diverse disciplines and organizations in the vision and eye health field to identify the gaps and needs in addressing the public health perspectives of vision loss prevention and eye health promotion.
- CDC took several internal and external steps to establish a firm foundation for a “vision health initiative” from the public health perspective.

2003

- CDC received the funding from Congress for the “Blindness and Vision Loss Prevention Program.”
- CDC issued a request for the application (RFA) for “Blindness and Vision Loss Prevention Program.”
- Public health and eye disease sessions were organized for various conferences (including Chronic Disease Conference, Division of Diabetes Translation Conference.)
- Surveillance efforts utilized the NHANES and BRFSS surveys.
- CDC contracted with RTI International for economic studies describing:
 - a) the cost of vision disorders among US adults and
 - b) the cost effectiveness of interventions for vision loss prevention.
- Cooperative agreement issued with Prevent Blindness America (PBA).
- First editorial on the public health burden of vision loss and eye diseases published in *Ophthalmology*: Saaddine JB, Venkat Narayan KM, Vinicor F. Vision Loss “A Major Public Health Problem”. *Ophthalmology*. February, 2003.
- Questions to evaluate vision loss and access to eye care were added to Project DIRECT, a multiyear community diabetes demonstration project.

2004

- CDC provided technical assistance to PBA to develop a public health approach to address screening and surveillance issues, a 5-year cooperative agreement.
- Sessions were held on economics and surveillance of vision loss at the Chronic Disease Conference and BRFSS Conferences.
- Optional vision module was proposed and adopted by the 2005 BRFSS survey.
- Pilot tested NHANES ophthalmic component that included digital fundus photography to assess retinal diseases and a Frequency Doubling Technology (FDT) measure visual field.
- During the National Vision Month, an MMWR article was published on the prevalence of vision loss among those with and without diabetes.
- Cochrane systematic review was initiated to evaluate the interventions for improving coverage of screening schemes for persons with diabetic retinopathy.

2005

- BRFSS vision module implemented in five states (Ohio, Texas, Louisiana, Iowa and Tennessee) with more states participating in subsequent years.
- CDC started preparation for a strategic planning meeting for the new vision loss prevention and eye health promotion program.

- CDC funded and implemented NHANES Ophthalmic component.
- Cooperative agreement with PBA continued.
- VHI staff presented at the 2005 White House Conference on Aging.

2006

- An expert panel was convened to strategically plan the new vision loss prevention and eye health promotion program.
- CDC and RTI researchers estimated that the annual total financial burden of major adult visual disorders is \$35.4 billion (\$16.2 billion in direct medical costs, \$11.1 billion in other direct costs, and \$8 billion in productivity losses) and that the annual governmental budgetary impact is \$13.7 billion.
- Twelve states included the vision module in their BRFSS surveys.
- Two MMWR articles were published on the prevalence of visual impairment among persons with diabetes and the State data from BRFSS:
 - Centers for Disease Control and Prevention. Bailey RN, Indian RW, Zhang X, Geiss LS, Duenas MR, Saaddine JB. *Visual impairment and eye care among older adults – five states, 2005*. MMWR. 2006;55:1321–25. Reprinted in JAMA. 2007;297:582–3.
 - Centers for Disease Control and Prevention. Zhang X, Gregg EW, Cheng YJ, Thompson T, Geiss LS, Duenas MR, Saaddine JB. *Correctable visual impairment among persons with diabetes — United States, 1999–2004*. MMWR. 2006;55:1169–72. Reprinted in JAMA. 2007;297:34–6.
- A session was held on economics of vision loss at the Chronic Disease Conference.
- A session was held on surveillance of vision loss at the BRFSS conference.
- A session was held on “Obesity, Nutrition and Eye Health: A Full Circle Revealed” at the Division of Diabetes Translation annual conference.

2007

- CDC/VHI and diverse stakeholders highlight the national public health framework to prevent vision loss and promote eye health. A new report was released entitled “Improving the Nation’s Vision Health: A Coordinated Public Health Approach.”
- Vision Health Initiative (VHI) at CDC emerged as a team within the Epidemiology/Statistics branch at the Division of Diabetes Translation.
- Systematic review published on screening for diabetic retinopathy: Zhang X, Norris SL Saadine, JB, Chowdhury FM, Armour T, Kanjilal S. Effectiveness of interventions to promote screening for diabetic retinopathy. *Am J Prev Med* 2007;33(4):318–35.
- The first vision and eye health work group is developed within the National Association for Chronic Disease Directors (NACDD) jointly by staff from CDC, PBA, and other state and professional organizations.
- Eleven states used BRFSS Vision Module.
- CDC/VHI published a paper on the nation’s access to eye care: Zhang X, Saaddine JB, Lee PP, Grabowski DC, Kanjilal S, Duenas MR, Narayan KMV. Eye Care in the United States: Do we deliver to high-risk people who can benefit most from it? *Arch Ophthalmol*. 2007;125:411–418.
- First study from the CDC-RTI multiple eye diseases simulation model (MEDS) was published in Ophthalmology: Rein D, Saaddine J, Wittenborn J, Wirth K, Hoerger T, Narayan K, Clemons T, Sorensen S. Cost-effectiveness of vitamin therapy for age-related macular degeneration. *Ophthalmology* 2007;114(7): 1319–26.

- Scientific session was held on “What’s the latest on diabetes complications? Update on CDC’s National Vision and Kidney Initiatives” at the Division of Diabetes Translation annual conference.

2008

- A series of published papers on surveillance and access:
 - Health insurance coverage and use of eye care services. Zhang X, Lee PP, Thompson TJ, Sharma S, Barker L, Geiss LS, Imperatore G, Gregg EW, Zhang XP, Saaddine JB. Health insurance coverage and use of eye care services. *Arch Ophthalmol*. 2008;126(8):1121–1126.
 - Diabetes Mellitus and Visual Impairment: National Health and Nutrition Examination Survey 1999-2004: Zhang X, Gregg EW, Cheng YJ, Thompson T, Geiss LS, Duenas MR, Saaddine JB. *Arch Ophthalmol*. 2008;126(10):1421–7.
 - Measuring access to eye care: a public health perspective : Zhang X, Andersen R, Lee P, Beckles G, Duenas MR, Saaddine JB. *Ophthalmic Epidemiology*. 2008;15:6,418–425.
 - Forecasting eye disease burden among adults with diabetes: United States, 2005–2050: Saaddine JB, Honeycutt AA, Narayan KMV, Zhang X, Boyle JP. *Arch Ophthalmol*. 2008;126(12):1740–1747.
- Outstanding scientific paper award of the year. CDC/VHI publication (*Arch Ophthalmol*. 2007;125:411–418) recognized by American Public Health Association (APHA) – Vision Care Section and received the outstanding scientific paper award of the year.
- Nine states were funded to use BRFSS Vision Module.
- The vision and eye health work group established its data and statistics team to assist state health departments in describing the scope of vision impairment through data collection, analysis, and reporting.
- CDC & ATSDR honor award nomination and certificate of appreciation from the National Center for Chronic Disease Prevention and Health Promotion. Partners for Public Health Improvement between CDC/VHI and NACDD.
- Scientific session was held on “A 21st Century Perspective to Public Health and Vision Health” at the Division of Diabetes Translation annual conference.