National
Eye
Institute

NATIONAL INSTITUTES OF HEALTH

**National Eye Health
Education Program**

NEHEP

FIVE-YEAR AGENDA

June 2006

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ACKNOWLEDGEMENT

Dear Colleagues and Friends,

Since its inception more than 15 years ago, the National Eye Health Education Program (NEHEP) has successfully fulfilled its goal to "prevent blindness through public and professional education programs and the encouragement of regular, dilated eye examinations." Its initial efforts focused on glaucoma and diabetic eye disease, and then NEHEP added an innovative program dedicated to low vision rehabilitation in 1999. The benefits of coordination and cooperation between professional, lay, and nonprofit organizations were evidenced when vision objectives were added to *Healthy People 2010*, the Nation's health promotion and disease prevention framework. The breadth of the Partnership significantly expanded with each new initiative and it now includes almost 60 organizations. Moreover, the Healthy Vision Community Awards Program, which was launched five years ago, will further extend the work of the NEHEP Partnership by "seeding" partnerships within local communities and between organizations, which may not have worked together otherwise. It has been a busy and productive decade and a half, to say the least. However, the expected growth in population of the older adults, the influx of immigrants from other parts of the world, and the growth in the gap between those individuals who have access to the health care they need and those who do not have access underscore the importance of programs such as NEHEP. To continue to fulfill its goal in the next five years, NEHEP must strategically plan its future. National Eye Institute-supported research has provided a wealth of information that can change the lives of all Americans. However, only by effectively using our resources and relationships can blindness be prevented.

On behalf of the members of the Planning Committee, the Subcommittees, and the Partnership, I am privileged to share with you the Five-Year Agenda for NEHEP. This Agenda outlines the work ahead for the entire Partnership for the next several years. The Program still aims to prevent blindness using strategies that are culturally appropriate, health literate, and evidence-based. The Partnership will be strengthened, the work with other government agencies will be enhanced and broadened, and the programs will be evaluated and improved on an ongoing basis to enhance effectiveness. Never before has there been such a need to ensure and protect the "visual life line" for the entire Nation, and we have never before had the wealth of knowledge to do so. It is time to intensify our efforts and recommit ourselves to the goal of preventing blindness.

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TABLE OF CONTENTS

<u>**APPENDICES**</u>

1. INTRODUCTION

Eye disease, a major public health problem in the United States, causes significant suffering, disability, loss of productivity, and diminished quality of life for millions of people. The National Eye Institute (NEI), one of the Federal government's National Institutes of Health, addresses this public health problem through education programs of biomedical research, disease prevention, and health promotion. In 1991, NEI established the National Eye Health Education Program (NEHEP) with the aim of increasing awareness among health care professionals and the public of scientifically based health information that can be applied to preserving sight and preventing blindness. NEHEP works in partnership with a variety of public and private organizations that conduct eye health education programs. This Five-Year Agenda provides strategic objectives that will guide program efforts for educating people at high risk for potentially blinding eye diseases and those in need of vision rehabilitation.

The NEHEP Planning Committee advises NEI on the overall development, implementation, and evaluation of NEHEP activities. The Five-Year Agenda incorporates input and guidance from the Planning Committee and its Subcommittees, with ultimate guidance and approval from the National Advisory Eye Council, the advisory group to NEI. This Five-Year Agenda is built upon best practices, current research, and scientific literature. This Agenda will be accomplished by: 1) setting results-oriented program priorities, 2) providing a framework for developing and implementing activities for high-risk audiences, 3) building NEHEP Partnership support for the program objectives, and 4) establishing and implementing a comprehensive evaluation plan to assess the effectiveness of program activities. The guiding principles of this Agenda encompass culturally appropriate, health-literate approaches; audience definition; and evaluation of the process and outcomes related to the various education programs. In addition to serving as a roadmap, the Agenda will outline efforts to work with a variety of organizations and engage the support of eye and other health care professionals in educating the public.

A. NEHEP GOAL

The NEHEP goal is to ensure that vision is a health priority by translating eye and vision research into public and professional education programs. All NEHEP programs and activities are designed to reflect this goal. To accomplish this goal, NEHEP supports collaboration among eye health professionals, health care providers, patients, and the public.

B.   NEHEP OBJECTIVES

Four objectives have been established to help ensure that NEHEP reaches its goal of making vision a health priority. The following objectives will serve as a framework for guiding all program activities:

1.   Develop and implement culturally appropriate, health-literate, and evidence-based education programs that address early detection, treatment, and low vision rehabilitation of eye diseases and disorders in all settings and life stages of high-risk populations.

2.   Build, strengthen, and sustain partnerships with organizations to implement eye health education programs.

3.   Provide leadership to Federal, state, and local government agencies and public- and private-sector organizations and agencies on eye health-related issues.

4.   Establish a research and evaluation base that facilitates development of effective program interventions.

II.   NEHEP PRIORITY AREAS

The priority areas were established by the NEHEP Planning Committee; the Glaucoma, Diabetic Eye Disease, and Low Vision Subcommittees; and the NEHEP Partnership. They reflect five major areas of concentration to further the NEHEP goal and ensure that current program activities are enhanced and new ones are created to effectively reach people at highest risk for eye disease and those in need of vision rehabilitation services. Each priority area has specific goals and objectives. The five priority areas listed below, and their respective objectives and calls to action, are outlined on the following pages.

- **Priority Area One:** The National Eye Health Education Program.

- **Priority Area Two:** The NEHEP Partnership.

- **Priority Area Three:** Glaucoma, Diabetic Eye Disease, and Low Vision Education Programs.

- **Priority Area Four:** Development of new education programs targeted to older adults on the importance of early detection and timely treatment of age-related eye diseases.

- **Priority Area Five:** Evidence-based education programs as dictated by science and the needs of the American public.

A.   PRIORITY AREA ONE: THE NATIONAL EYE HEALTH EDUCATION PROGRAM

Over the next five years, NEHEP will continue to build on the strengths of NEI as the lead Federal government agency for eye health education. Because of the extensive eye research NEI supports, NEHEP is in a unique position to disseminate the most current research findings, as well as to facilitate information exchange among other organizations concerned with eye health. It is important that eye health messages targeted to professionals and to the public are consistent. Therefore, NEHEP will work to strengthen its role as the Federal government's lead agency on eye health by engaging in activities that encourage others to look to NEHEP for support.

Goal:

1.   Strengthen NEHEP as a facilitator in an exchange of information that promotes eye health education, low vision rehabilitation, and the prevention of blindness and visual impairment among those at highest risk for eye diseases and among leaders in the eye health field.

Objectives:

1.   Develop at least one new method that will increase the visibility of NEHEP as a leader in public eye health education.

2.   Fund at least one eye health education program in all 50 states via the Healthy Vision Community Awards Program.

3.   Develop and maintain a database of model eye health education programs.

4.   Publish at least two papers on NEHEP-related activities in professional publications.

5.   Present NEHEP-related activities at a minimum of five professional meetings.

6.   Collaborate with at least three Federal agencies on eye health-related activities.

CALL TO ACTION

NEHEP will serve as a conduit for information exchange among the leaders in the eye health field and will provide opportunities to dialogue, collaborate, and implement objectives to promote vision as a health priority.

NEI will also review and assess recommendations from public and private organizations to strengthen the overall program efforts. NEI staff will continue to provide innovative communication and networking opportunities for these organizations, and it will continue to educate the American public about those at highest risk for eye diseases and the importance of early detection, timely treatment, and low vision rehabilitation. To ensure that it continues to convey the most recent research findings to the public, NEHEP will also continue to monitor research over the next five years.

B. PRIORITY AREA TWO: THE NEHEP PARTNERSHIP

The NEHEP Partnership consists of more than 60 public and private national-level organizations interested in eye health education. The purpose of the Partnership is to establish ongoing, interactive, mutually beneficial relationships with NEI and other organizations to achieve NEHEP goals and objectives.

The ability of NEI to support eye health education programs that impact communities depends heavily on the work of the Partnership. The Partnership is one of the primary vehicles through which NEI is able to promote critical eye health messages, disseminate the latest eye research findings, and facilitate communication.

Collaborating with a diverse group of organizations with a myriad of goals, target audiences, and organizational priorities requires a systematic approach to initiating, cultivating, and maintaining these relationships. Given the essential role of the Partnership, the activities of NEI over the next five years will include strengthening, enhancing, and expanding the Partnership, as appropriate.

Goals:

1.   Build and strengthen the leadership roles of the Partnership as a resource for promoting critical eye health messages and disseminating the latest eye research findings.

2.   Strengthen and expand collaborations for implementing the eye health Agenda among a diverse group of organizations with a myriad of goals, target audiences, and organizational priorities, including profit and not-for-profit organizations.

Objectives:

1.   Develop at least two new communication vehicles for the Partnership that will allow for the sharing of information and promotion of ideas.

2.   Develop at least five new collaborations to advance the eye health agenda by facilitating coordination among the Partnership and other organizations.

3.   Develop at least two new opportunities for information exchange among industry and for-profit organizations to advance the eye health agenda.

4.   Continue assessing the NEHEP Partnership and determine the need to add new partners as appropriate, and maintain an active Partnership.

CALL TO ACTION

Given the challenge of making vision a health priority for the Nation, maximizing reach and resources, minimizing duplicative efforts, and increasing the impact of calls to action are vital. The Partnership will advise NEI about its programmatic and strategic directions in the upcoming months and years. By identifying educational and programmatic gaps, NEHEP can more appropriately focus resources within its priority areas.

The NEI staff will work individually with organizations to determine opportunities for collaboration. These activities will include establishing the level and parameters of organizational involvement and exploring opportunities for educating shared target audiences. Partnership organizations will incorporate eye health messages into their existing programs and resources. New organizations that have an interest in eye health education and/or represent a particular target audience will also be invited to participate in Program activities.

C.   PRIORITY AREA THREE: GLAUCOMA, DIABETIC EYE DISEASE, AND LOW VISION EDUCATION PROGRAMS

Making vision a health priority in the lives of the American public involves disseminating key messages that not only provide information, but encourage action. The societal and personal impact of potentially blinding diseases such as glaucoma and diabetic eye disease may be reduced through early detection and appropriate treatment, including low vision rehabilitation. Glaucoma, diabetic eye disease, and low vision currently exist as program areas for NEHEP, each with a particular key message and target audience. It is critical that these messages be strengthened, delivered, and reinforced. The next five years will be dedicated to enhancing activities for each program area.

GLAUCOMA

Goals:

1. Provide information about glaucoma to people at highest risk for the disease (African Americans over age 40 and everyone over age 60, especially Mexican Americans) and/or those with glaucoma, as well as people with a family history of glaucoma.

2. Provide glaucoma information to health care providers to increase their awareness of the need for regular comprehensive dilated eye examinations for people at highest risk.

Objectives:

1. Develop and implement at least two initiatives for populations at highest risk for glaucoma.

2. Develop and implement at least one collaborative effort with an organization representing the populations at highest risk for glaucoma.

3. Develop and disseminate at least one educational tool in Spanish in a culturally appropriate and health-literate manner.

4. Develop and implement two strategies for health care providers working with the populations at highest risk for glaucoma.

DIABETIC EYE DISEASE

Goals:

1. Create awareness about diabetic eye disease among people with diabetes, with an emphasis on those at highest risk (African Americans, Hispanics/Latinos, American Indians, and Alaska Natives), and/or those with diabetic eye disease.

2. Create awareness about diabetic eye disease to primary care and other health care providers.

Objectives:

1. Develop and implement a new program for American Indians and Alaska Natives with diabetes.

2. Develop collaborations with the Partnership and other organizations to reach people with diabetes.

3. Develop and implement a new module on diabetic eye disease in English and Spanish for use with lay health educators.

4. Develop and implement two strategies to educate health care providers about the eye complications of diabetes.

5. Implement a communication mechanism with the National Diabetes Education Program to ensure that vision complications are incorporated into their messages.

LOW VISION REHABILITATION

Goals:

1. Create awareness among children and adults, their families and friends, and the general public about available low vision rehabilitation services.

2. Create awareness among providers who work with children and adults with vision impairments of the potential benefits of low vision rehabilitation services.

Objectives:

1. Develop and implement a new initiative targeted to parents of children with visual impairments.

2. Develop and implement at least three collaborations with organizations that work with people with visual impairments to increase awareness of low vision rehabilitation services.

3. Adapt and/or develop alternative formats for NEI/NEHEP materials for those who have visual impairment.

4. Develop a new Web-based resource for eye care professionals that promotes low vision rehabilitation services in the continuum of care for people with visual impairments.

5. Develop and implement at least one collaboration with health care providers to promote the benefits of low vision rehabilitation services.

CALL TO ACTION

To continue strengthening each of these program areas, an annual review of the science and literature will be conducted to assess the need for new messages and resources. Media-related activities will be developed and implemented to ensure messages reach targeted populations. Eye health education activities and education programs will include an overarching message platform to educate high-risk populations and encourage them to take recommended actions to protect their vision. Primary care providers play an important role in health education and will be a focus of programmatic activities. By using theoretically based, culturally appropriate, and health-literate approaches, NEHEP will develop education programs and messages that promote healthy vision among those populations at highest risk for eye diseases and conditions. For information on prevalence rates of eye disease, see Appendix A.

D. PRIORITY AREA FOUR: DEVELOPMENT OF NEW EDUCATION PROGRAMS TARGETED TO OLDER ADULTS ON THE IMPORTANCE OF EARLY DETECTION AND TIMELY TREATMENT OF AGE-RELATED EYE DISEASES

Healthy aging is becoming increasingly important to the American public as people are living longer. A key component to healthy aging is independence, something that can be compromised by eye disease or blindness. Healthy vision is important for people of all ages. However, as people age, the prevalence of eye diseases and conditions increases. The most common causes of low vision and blindness among older adults are age-related macular degeneration, glaucoma, cataract, and diabetic retinopathy. Although age-related eye diseases are prevalent in older adults, some blindness and low vision may be prevented or treated. The number of people who are blind or who have low vision is expected to nearly double by the year 2020. Therefore, it is imperative for NEHEP to develop an eye health education program targeted to older adults.

Goal:

1. Create awareness of the most common causes of low vision and blindness among older adults: age-related macular degeneration, glaucoma, cataract, and diabetic retinopathy.

Objectives:

1. Conduct qualitative research on older adults' awareness of the importance of eye health and the benefits of low vision rehabilitation services.

2. Develop and implement a communication plan for an older adult education program.

CALL TO ACTION

The Planning Committee will identify and recruit, from among the Partnership, individuals to establish the Older Adult Subcommittee, which will forge the direction and foundation of program area activities. Appropriate qualitative research will be conducted to design an effective program that will be conducted in collaboration with the Partnership and other organizations (see Appendix B).

E. PRIORITY AREA FIVE: EVIDENCE-BASED EDUCATION PROGRAMS AS DICTATED BY SCIENCE AND THE NEEDS OF THE AMERICAN PUBLIC

As new science emerges, there may be new messages around eye health. NEHEP will continually assess the science and the needs of the public to provide direction for new education programs and resources that may impact public health.

Goal:

1. Evaluate the need for new evidence-based education programs and resources regarding other eye diseases and the resulting societal impacts.

Objectives:

1. Conduct an annual review of the scientific literature to determine the need for new public health education programs and resources on eye disease.

2. Assess the needs of the American public at least once every two years to determine their eye health education needs.

CALL TO ACTION

The Planning Committee will identify and recruit, from among the Partnership, individuals who, will identify areas in which there is a need for new, evidence-based education programs and resources related to eye disease. Systematic literature reviews and/or other research methods will be conducted to determine the need for new, evidence-based education programs/resources. This research and data will be used to direct program planning and collaborative opportunities for the Partnership.

III. THEORETICAL FRAMEWORK FOR NEHEP

Public health education interventions, materials, education programs, and resources are most likely to be successful when there is a clear understanding of targeted health behaviors and their environmental contexts. Therefore, theoretical models are imperative to the development, management and evaluation of public health education initiatives because they answer the why, what, and how in program planning. Theories guide the search for **why** people do not care for themselves in healthy ways or follow public health or medical advice. Theories help identify **what** needs to be done before developing and implementing interventions, and **how** to design program strategies to effectively reach individuals or populations. Because health problems,

populations, cultures, and contexts vary, many theoretical models have been used to shape past NEHEP education programs. The models will continue to frame the development of future NEHEP education programs and the evaluation of those education programs. Specific theories and frameworks include, but are not limited to, the Social Learning Theory,[1] the Transtheoretical Model and Stages of Change Model,[2] Diffusion of Innovation,[3] the PRECEDE-PROCEED Model,[4,5] and Social Marketing[6] (see Appendix C).

IV. CROSS-CUTTING ISSUES

The following information highlights two cross-cutting issues that will guide the development of all NEHEP activities: cultural competency and health literacy. The audiences at highest risk for eye diseases and conditions include the following: 1) older adults, 2) people with diabetes, 3) Hispanics/Latinos, 4) African Americans, and 5) American Indians and Alaska Natives. Each of these populations has also been reported to have low health literacy. These populations have been the subject of focus groups and other types of in-house research over the past few years to examine the most effective ways to communicate eye health messages to them. Each population is unique in terms of its risk for eye disease, its knowledge and understanding of eye disease and eye health, and how programs around eye health will be effective for each. Although NEHEP activities over the next five years will focus on these high-risk populations, others may be added as new science emerges and specific eye health messages are developed.

A. HEALTH LITERACY

Health literacy is defined as the degree to which people have the ability to obtain, process, and understand basic health information and services needed to make appropriate health decisions.[7] Populations most likely to experience low literacy levels are older adults, racial and ethnic minorities, people with low education levels, people with low income levels, non-native speakers of English, and people with compromised health status.[8] Often, limited health literacy skills are equated with low literacy and education levels. However, health literacy encompasses two dimensions: communication capacities, measured in terms of literacy skills, and knowledge of various health topics. Educated people may have low health literacy when they have to make health decisions about topics with which they are unfamiliar. To increase knowledge and influence behaviors around healthy vision, NEHEP will work to ensure all public education programs and materials, particularly those targeted to select populations, encompass health literacy.

B. CULTURAL COMPETENCY

Cultural competency is a complex issue composed of a variety of concepts, including cultural awareness, cultural knowledge, cultural skill, cultural encounters, cultural appropriateness, and cultural sensitivity.[8,9] It is a concept that is integral to the success of all health education campaigns, especially those targeted to special populations. Cultural competency is complex in that it is a term with varying definitions. In its document, *National Standards for Culturally and Linguistically Appropriate Services in Health Care*[10] the Office of Minority Health defines cultural competency as follows:

A set of congruent behaviors, attitudes, and policies that come together in a system, agency, or among professionals that enables effective work in cross-cultural situations. "Culture" refers to integrated patterns of human behavior that include the language, thoughts, communications, actions, customs, beliefs, values, and institutions of racial, ethnic, religious, or social groups. "Competence" implies having the capacity to function effectively as an individual and as an organization within the context of the cultural beliefs, behaviors, and needs presented by consumers and their communities.

In a jointly developed document on culture, health, and literacy, World Education and the National Institute for Literacy define cultural competency more simply as "the ability of a service provider or educator to address the needs of their recipient populations in a way that acknowledges and is sensitive to their cultural differences. This includes finding ways to communicate in a manner that is culturally and linguistically appropriate."[11] The National Center for Cultural Competence expands on these definitions by suggesting cultural competency requires that organizations do the following:[9]

- Have a defined set of values and principles, and demonstrate behaviors, attitudes, policies, and structures that enable them to work effectively cross-culturally.

- Have the capacity to 1) value diversity, 2) conduct self-assessments, 3) manage the dynamics of difference, 4) acquire and institutionalize cultural knowledge, and 5) adapt to diversity and the cultural contexts of the communities they serve.

- Incorporate the above in all aspects of policymaking, administration, practice, and service delivery, and systematically involve consumers, key stakeholders, and communities.

By the definitions provided, it is clear that for materials, education programs, or resources to be considered culturally appropriate, their content must stretch beyond the translation of text into a native language or the use of photographs or drawings of a specific population. Culturally appropriate materials, resources, or education programs consider the values, lifestyles, and needs of a specific population in the design, development, implementation, and evaluation of any resource or education program. NEHEP will work to ensure that cultural competency is addressed in all of its education programs to effectively reach its select populations.

An expanded literature review on best methods for communicating with NEHEP target audiences can be found in Appendices D and E.

V. EVALUATION

Evaluation will be an active and ongoing component of all program activities. The types of evaluation methodology proposed will depend on the priority area and its objectives. Two methods that will be employed are process and outcome evaluation.

A.   PROCESS EVALUATION

Process evaluation is used to assess the elements of program development and delivery, including the quality, appropriateness, and reach of the program or activity. This type of evaluation can be used during the entire life of the program, from planning through implementation.

During the planning stages, process evaluation focuses on the quality and appropriateness of the materials and approaches being developed. For example, literature reviews are conducted to inform the development of materials and messages. Messages and materials are pre-tested with intended target audiences, content experts, members of the NEHEP Partnership, and health education/communication specialists. Focus groups with target populations are used to gather information about specific topics.

Once the program has been implemented, process evaluation will be used to assess the elements of program development and delivery. Data can be obtained by tracking materials distribution; media coverage of NEHEP priority areas; media placements in professional/trade journals, magazines, and newsletters; Web hits on specific NEI Web pages; the number of presentations at professional conferences; and consumer feedback obtained from bounce-back cards placed in publications.

B.   OUTCOME EVALUATION

Outcome evaluation is used to measure the longer-term effects of programs and is related to judgments about whether, or to what extent, the program goals and objectives have been met. It can be used to justify priority areas; document changes in the target audiences' knowledge, attitudes, and behaviors; provide evidence of success or the need for additional resources; and encourage ongoing cooperation and collaboration with NEHEP representatives. NEHEP will monitor outcome data from the following sources:

- Knowledge, Attitudes, and Practices (KAP) Survey Regarding Eye Health and Disease. Funded in 1990 and 2005 by the Lions Clubs International Foundation and NEI, this survey is designed to measure the public's knowledge, attitudes, and practices about eye health and disease.

- National Health Interview Survey (NHIS). Data from 2002 and 2007 will be analyzed to assess progress toward meeting the eye health objectives set forth in *Healthy People 2010,* Focus Area 28. As appropriate, other relevant Federal surveys such as the Behavioral Risk Factor Surveillance System (BRFSS) and the National Health and Nutrition Examination Survey (NHANES) will be analyzed.

Trends in the public's knowledge, attitudes, and practices will be examined. Results will be used to guide the development of messages and education programs for NEHEP target audiences, and to guide future planning and research.

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Appendix A
Prevalence Information

I.   GLAUCOMA PREVALENCE DATA

Glaucoma is a leading cause of blindness and visual impairment for Americans, affecting as many as 2.22 million people nationwide.[1]   An additional 2 million are unaware they have the disease. Glaucoma is one of the leading causes of blindness among African Americans. There are no symptoms of glaucoma in the early stages of the disease. Vision loss from this disease is permanent and cannot be reversed. Although glaucoma cannot be cured, it can be controlled if it is detected and treated early.

Recent studies have confirmed that the rate of glaucoma increases with age and that African Americans have higher rates of the disease than Whites or Hispanics/Latinos. African Americans are almost three times more likely to develop visual impairment due to glaucoma than other ethnic groups.

Results from the Los Angeles Latino Eye Study (LALES) suggest that the prevalence of open-angle glaucoma is high among Latinos of Mexican ancestry. Results also reveal an absence of gender-related differences, but they did find that older Latinos have a higher prevalence of open-angle glaucoma than younger Latinos.[2]

II.   DIABETIC EYE DISEASE PREVALENCE DATA

Diabetes has become an epidemic in the United States, and projections for new cases in the coming years are alarming. In 2003, 18.2 million people were estimated to have diabetes, representing 6.3 percent of the U.S. population.[3] People with diabetes have a significantly higher risk of blindness than the general population. Diabetic eye disease is a complication of diabetes and a leading cause of blindness. There are no symptoms in the early stages of diabetic eye disease.

The prevalence of diabetic retinopathy in people with diabetes is high. It is estimated that 40.8 percent of adults aged 40 and older with diabetes have diabetic retinopathy and that 8.2 percent have advanced, vision-threatening retinopathy. More than 4 million Americans (3.4 percent) aged 40 and older have some form of diabetic retinopathy and this number is projected to reach 6.1 million by the year 2020.[4] No gender differences have been reported in any racial/ethnic groups for diabetic eye disease.

The prevalence of diabetic retinopathy increases, on average, across successive age groups. However, lower prevalence rates of diabetic retinopathy have been observed in the oldest group (75 years and older) compared with those aged 65 to 74.[4]

Prevalence rates for diabetes are higher among racial and ethnic minorities than the general population. African Americans, Hispanics/Latinos, American Indians, and Alaska Natives aged

20 and older are at least 1.5 times more likely to have diagnosed diabetes than their White counterparts. Studies have found that the prevalence and severity of diabetic retinopathy is greater in African Americans with type 2 diabetes than in non-Hispanic Whites.[5] No gender differences have been reported between any racial/ethnic groups for diabetic retinopathy.

Data from LALES suggest that the prevalence of diabetic eye disease is high among Latinos, primarily those of Mexican ancestry.[6] Researchers also found that Latinos appear to have a higher rate of severe, vision-threatening diabetic eye disease than non-Hispanic Whites.

Diabetic retinopathy also poses a serious health threat to American Indian and Alaska Native populations. One study showed a 49 percent prevalence of diabetic retinopathy in Oklahoma Indians. Pima Indians, the most widely studied American Indian group, also have excessive rates of diabetic retinopathy.[7]

In recent years, researchers have identified an emerging epidemic of type 2 diabetes among children and adolescents. American Indian, Hispanic/Latino, and African American children are especially affected.

III. LOW VISION PREVALENCE DATA

Low vision affects more than 2 million Americans and ranks behind only arthritis and heart disease as the reason for impaired daily functioning in Americans over the age of 70.[8] Low vision is defined as a visual impairment that is not corrected by standard eyeglasses, contact lenses, medication, or surgery and that interferes with the ability to perform everyday activities. It is most commonly described in terms of remaining visual acuity (central vision) and visual field (peripheral or side vision).[9] Loss in central vision causes difficulty in detail discrimination, e.g., reading and discriminating fine detail and color. Peripheral vision loss causes orientation and mobility problems, such as having difficulty seeing curbs/steps or difficulty seeing in low-light conditions.

Baseline data from the 2002 National Health Interview Survey (NHIS) indicate that approximately 14 per 1,000 Americans aged 18 and older with a visual impairment use vision rehabilitation services. According to the same study, 22 percent of people aged 18 and older with visual impairment use visual and adaptive devices.

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Appendix B
Eye Health Needs of Older Adults
Literature Review

I.   INTRODUCTION

The purpose of this literature review is to provide information about the eye health care needs of older adults. Age-related eye diseases and conditions are the most important drivers for the various types of eye health care required by older adults. The most common age-related eye diseases or conditions are cataract, age-related macular degeneration (AMD), primary open-angle glaucoma, diabetic retinopathy, and presbyopia. For each, we provide a definition, describe the prevalence in the older adult population, and briefly summarize current prevention and treatment practices. The impact of vision loss from these diseases and the public health implications are also discussed. A brief description of the older adult population is provided in terms of demographic and cultural characteristics, as well as communication strategies that may be effective in delivering eye health care messages to this audience.

II.   EYE DISEASES AND CONDITIONS IN OLDER ADULTS

As people advance in age, normal functions of the eye tissues decrease and blinding disorders increase in frequency. Age-related eye diseases and visual loss are common in the older adult population. In 2003, it was reported that almost half of more than 20,000 Medicare recipients developed at least one of three eye diseases (i.e., diabetic retinopathy, glaucoma, or macular degeneration) over a 9-year period.[1] Although age-related eye diseases are prevalent in older adults, some blindness and low vision resulting from these diseases may be prevented or treated.

On the basis of demographics from the 2000 U.S. Census, an estimated 937,000 Americans aged 40 and older are blind and another 2.4 million suffer from low vision.[2] The specific causes of blindness and other visual impairments are substantially different by race and ethnicity. Regardless of the cause, the number of people who are blind or who have low vision is expected to nearly double by the year 2020, largely because of the aging of the U.S. population.

CATARACT

Cataract is defined as opacity in the lens, which interferes with vision.[3] Cataract is the most common age-related eye disease and is also the most treatable cause of vision loss in older adults.[4]

It is estimated that more than 17 percent of Americans aged 40 and older have cataract in either eye, and 5 percent of Americans aged 40 and older report having surgery to remove cataract from one or both eyes.[5] Cataract is more prevalent in women than in men. In the United States, cataract causes about 50 percent of the cases of vision loss among White, African American, and Hispanics/Latinos. African American men are more likely to be blind from cataract than White

men.[2] A recent study among Hispanics/Latinos found that cataract occurred in 20 percent of this population and approximately 3.9 percent had cataract extractions in at least one eye.[6]

Although there is no proven primary prevention for cataract, it has been suggested that reducing sunlight exposure may slow the pace of eye deterioration and delay the development of cataract.[7] The risk of developing cataract has been found to be highest among individuals with high sun exposure at younger ages.[8] A diet rich in fruits and vegetables may reduce the risk of developing cataract and several studies have been conducted to test these theories. One study found that adherence to the *Dietary Guidelines for Americans* protects against cataract in women.[9] A high intake of fruits and vegetables also has been found to have a modest protective effect on cataract in women.[10]

While there are no effective medical interventions for cataract, surgical treatment is highly effective. Modern cataract surgery is very safe and can be performed as an outpatient procedure under local anesthesia. Cataract surgery can be used as treatment when daily activities and quality of life are affected or when changes in eyeglasses are no longer effective. Treatment also is indicated when cataract interferes with the treatment of other eye diseases, such as diabetic retinopathy, macular degeneration, or glaucoma.[3,4] Cataract surgery can generate improvement in visual functional status and result in a better quality of life for older adults.

AGE-RELATED MACULAR DEGENERATION

Age-related macular degeneration (AMD) is the leading cause of irreversible vision loss in the industrialized world. Two forms of AMD exist. Exudative AMD, also known as neovascular or wet AMD, causes central vision loss. Nonexudative AMD, the most common form, is known as dry AMD and progresses more slowly than exudative AMD.

The overall prevalence of AMD in the U.S. population aged 40 and older is estimated at 1.47 percent, with 1.75 million individuals affected.[11] Owing to the rapid aging of the U.S. population, this number is projected to increase to almost 3 million by 2020. Another 7 million individuals have large drusen in one or both eyes and are at an increased risk for developing advanced AMD. The disease is more common in Whites than in African Americans and is a leading cause of blindness (54 percent of the cases) among White Americans.[2] The incidence of AMD increases dramatically with age among both men and women: 16 percent of White women over 80 years of age are affected with advanced AMD, while 12 percent of White men over 80 years of age are affected with advanced AMD[11.]

Lifestyle modifications may reduce the risk of developing AMD. These changes include refraining from smoking, preventing high blood pressure, reducing body mass index, increasing intake of the carotenoids found in dark green leafy vegetables, and wearing sunglasses that block ultraviolet and high-energy radiation.[11,12] Moderate wine consumption has also been found to be associated with decreased odds of developing AMD.[13]

High-dose supplements of vitamins C and E, beta-carotene, and zinc can be effective in treating AMD. These supplements have been shown to slow the rate of progressive vision loss over a 5-year period, but only when the condition is not extremely advanced.[14] It also has been suggested that these supplements may lower the risk of developing AMD.[3,15] Two other

nutritional supplements, lutein and zeaxanthin, have been shown to improve visual function in AMD patients.[16] If supplementation were in widespread use among individuals at risk for developing AMD, vision loss could be prevented in more than 300,000 people over age 55 during a 5-year period.[17]

In addition to dietary supplementation, laser and photodynamic therapy have both been used in the treatment of exudative AMD.[18,19] These treatments may reduce the risk of severe vision loss and limit the extent of damage associated with AMD. However, AMD is complex and challenging to treat.

GLAUCOMA

Glaucoma describes a number of disorders that result in optic nerve damage due in part to elevated intraocular pressure. Glaucoma produces gradual and progressive visual field loss that results from a progressive loss of optic nerve fibers. Glaucoma is the third most common cause of vision loss and is a significant cause of blindness in the world.

The prevalence of primary open-angle glaucoma among Americans aged 40 and older is estimated at 1.86 percent, affecting 2.22 million Americans.[20] These prevalence estimates do not include those diagnosed with elevated intraocular pressure only, often a precursor to the development of glaucoma. The incidence of glaucoma increases with age but the disease is more prevalent among individuals with a family history of glaucoma, those of African American descent, and people with diabetes. The age-adjusted prevalence among African Americans is three times that of Whites. The prevalence of glaucoma among Hispanics/Latinos is highest among those of Mexican descent.[21]

Although glaucoma cannot be prevented, early detection and treatment can reduce the progression of the disease. An early symptom of glaucoma is peripheral field loss, which occurs before central vision is affected. Patients who notice changes in their peripheral vision should be evaluated immediately. When intraocular pressure is present, several drug interventions are available to delay the onset of glaucoma.

Glaucoma treatments include medicines, laser trabeculoplasty (draining of fluid), conventional surgery, or a combination of any of these. Although these treatments may help to save remaining vision, they do not improve sight already lost from glaucoma. The goal of glaucoma treatment is to reduce intraocular pressure by 20 to 50 percent.[22] The most common treatments for early glaucoma are medicines in the form of eye drops or pills that cause the eye to make less fluid or help fluid drain from the eye. Topical beta-blockers or systemic agents can be used to medically lower intraocular pressure. Laser trabeculoplasty and conventional surgery also reduce intraocular pressure by draining fluid from the eye.[23]

DIABETIC RETINOPATHY

Diabetic retinopathy causes vision loss due to various diabetes-related changes in the eye. These changes can lead to proliferative diabetic retinopathy or macular edema. The development of retinopathy depends on the length of time a person has diabetes rather than his or her age.

People with type 1 (insulin-dependent) are at a higher risk for developing vision-threatening diabetic retinopathy.

The prevalence of retinopathy increases with age to a point, reflecting higher rates of diabetes in older individuals, but prevalence drops in the highest age groups (>75 years of age), most likely due to decreased survival of individuals with diabetes.[24] Diabetic retinopathy is the fourth most common cause of vision loss in older adults.[25] Some form of retinopathy affects 40 percent of the adult population with diabetes, while vision-threatening retinopathy develops in 8 percent of the adult population with diabetes. In the general U.S. population, retinopathy and vision-threatening retinopathy occur in 3.4 percent (4.1 million persons) and 0.75 percent (899,000 persons) of people, respectively.

The early detection and treatment of diabetic retinopathy can prevent blindness. Therefore, a comprehensive eye exam is recommended shortly after diagnosis of diabetes and annual exams should be obtained thereafter. Good control of blood glucose levels is important in delaying the onset and progression of diabetic retinopathy, and can reduce its severity.[25,26,27] Other associated medical conditions known to worsen diabetic retinopathy, such as high blood pressure and high cholesterol, should also be controlled appropriately.[25,26]

Laser treatment can reduce the onset and severity of vision loss and blindness due to diabetic retinopathy and macular edema. In particular, pan retinal laser photocoagulation has been shown to reduce the risk of visual loss by 50 percent. Another form of laser treatment, focal laser therapy, can reduce the risk of visual loss when used in patients with significant macular edema.[3]

PRESBYOPIA

Presbyopia literally means "aging eye" and usually begins to manifest itself in people aged 40 and older. Although it may lead to significant visual loss, it usually does not cause blindness. The most common symptom is the inability to read comfortably at close distances. Presbyopia is very prevalent among the older adult population, ultimately affecting 100 percent of the population.[28]

Presbyopia is usually treated with glasses or lenses, including reading glasses, bifocal glasses, multifocal glasses, multifocal contact lenses, or intraocular lenses. Changes continue over time and stronger correction is needed with advancing age. New surgical options, such as conductive keratoplasty, are already available in many countries.[29]

III. DILATED EYE EXAMS AND THE PREVENTION OF VISION LOSS

Age-related eye diseases are often asymptomatic at early stages. Therefore, an annual eye exam can help in the detection of age-related eye disease before obvious symptoms develop and prevent vision loss. The general public must be made aware that regular eye exams are necessary even in the absence of symptoms. The public must also be made aware that a test for visual acuity, such as for glasses or a driver's license, will not detect sight-threatening conditions. Instead, people must see an optometrist or an ophthalmologist for a comprehensive dilated eye examination.

Although data are limited as to the benefits and cost-effectiveness of vision screening in older adults, the American Academy of Ophthalmology recommends an eye exam every 1 to 2 years for patients aged 65 and older. These recommendations are based on the high prevalence of common, asymptomatic vision problems in older adults. However, a recent meta-analysis of the benefits of vision screening in people aged 65 and older found no evidence that community-based screening of asymptomatic older people results in improvements in vision.[30] Further research is warranted to determine the efficacy of annual eye screenings in older adults.

IV. IMPACT OF VISION LOSS IN OLDER ADULTS

PHYSICAL AND MENTAL HEALTH

Visual impairment is closely associated with fair or poor health status and restricted activity.[31] Age-related eye diseases increase the risk for accidents, falls, and hip fractures.[32] In 1998, it was reported that 11 percent of older patients with reduced vision had a history of falls compared to 4.4 percent of older patients with normal vision.

Individuals with age-related eye diseases also suffer psychologically, experiencing grief, anxiety, social isolation, and depression.[32,33] Since depression may exacerbate functional impairment of vision problems, treating depression may reduce excess disability resulting from impaired vision. AMD patients, in particular, experience significant emotional distress and a profoundly reduced quality of life.[34] Low vision can be a significant psychological loss.[35] Vision loss also produces stress for the family members of affected patients.[32]

DEPENDENCY

Age-related eye diseases can threaten the ability of older adults to live independently, thus profoundly affecting their lifestyle. There exists an association between loss of vision and loss of overall function.[36,37,38,39] Visual impairment can also interfere with daily activities.[40] AMD patients often require assistance with daily living activities. Vision loss impairs driving ability of older adults, which poses a safety risk for both drivers and passengers.[41]

V. PUBLIC HEALTH IMPLICATIONS

PUBLIC EDUCATION

The *Healthy People 2010* vision goal is to "improve the visual health of the Nation through prevention, early detection, treatment, and rehabilitation," and it includes objectives to reduce visual impairment due to glaucoma, cataract, and diabetic retinopathy.[42] Well-designed community and public health programs can have a great impact on the prevention and treatment of vision problems.[43] However, few communities have enough resources to expand efforts beyond diabetes-related eye diseases.[44] It is imperative that public education messages be distributed regarding all eye diseases and conditions that affect older adults.

Public health education messages for older adults must take health literacy into consideration. Health literacy is the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.

The impact of low health literacy on health care is a concern that spans all racial/ethnic groups, but is of particular importance in populations where low literacy levels are more prevalent.[45] Studies have shown that health literacy is a considerable problem among the older adult population. The prevalence of inadequate and marginal health literacy is higher among persons aged 85 and older compared with younger persons.[46] Public education programs and materials must address health literacy in order to effectively reach their target populations.

VARIABLE ACCESS TO EYE CARE

Variable access to eye care can lead to variations in the prevalence of age-related eye diseases and loss of visual function in different populations. The geographical distribution of eye care professionals is not known. Rural and medically underserved areas may have shortages that lead to an inability for some individuals to obtain necessary eye care. Furthermore, people living in rural locations are more likely to be uninsured and are less likely to use preventive care services than those living in urban areas.[47]

Another factor affecting variable access to appropriate eye care services is lack of adequate health insurance coverage. Those who have no health insurance coverage are less likely to receive needed care.[48] For those who do have health insurance coverage, although eye exams are usually covered, glasses and other vision improvement aids are not consistently covered. By law, regular fee-for-service Medicare may not cover refractive services (eye exams for eyeglasses) although some Medicare+Choice managed care plans may offer them. Medicare also only covers annual dilated eye exams for high-risk beneficiaries: people with diabetes, people with a family history of glaucoma, and African Americans aged 50 and older. The 2006 CMS Medicare Physician Fee proposal does include a provision for free glaucoma screenings for Hispanics/Latinos aged 65 and older, but it has not yet been approved by Congress.

People covered by Medicaid, which is seen by providers as less desirable because of low reimbursement rates, often do not receive the care they need simply because they are Medicaid recipients. Many providers restrict the number of Medicaid patients seen, and, in some cases, refuse to see Medicaid patients entirely. It has also been shown that minorities who do have insurance are nearly three times more likely to be covered by publicly funded programs, such as Medicaid, and are less likely to have employment-based coverage than Whites.[49]

The type of health insurance model may affect the coordination of primary and specialty care and may affect access to appropriate eye care.[50] It was found that older persons with diabetes in a managed care organization were more likely to have had a dilated eye exam when compared with fee-for-service enrollees.[51] Contrarily, Southern California Medicare beneficiaries in managed care received cataract surgery at rates that were 50 percent lower than those in fee-for-service plans.[52] In another study, a high rate of untreated eye disease was found among both managed care and fee-for-service Medicare beneficiaries, although managed care participants exhibited a greater need for future eye care services within 6 months than fee-for-service participants.[50]

COORDINATION OF SCREENING, EXAMINATION, AND TREATMENT

The detection and treatment of serious eye diseases are not integrated with quality-of-life services. For instance, rehabilitation services that help people return to work are not linked with public health services or home health services for older adults. Additionally, given the growing number of older adults with low vision, rehabilitation services that help older adults to function independently are either already overburdened or will become so in the near future. Incorporating vision screening and treatment into quality-of-life services and public health and community programs could aid in getting older adults to receive eye examinations.

Primary care physicians (PCPs) can play an important role in influencing the eye health care of older adults. Because older adults may not be forthcoming about vision problems when consulting PCPs about other medical concerns, PCPs should question patients about their vision. PCPs should recommend or encourage patients to obtain regular comprehensive dilated eye exams and can ensure that appropriate patients are examined for vision problems. PCPs can also refer patients with low vision to rehabilitative services and support groups.[53] Some researchers even suggest that for eye diseases to be detected, eye exams should take place in primary care settings, particularly for patients who are older than 65, in poor health, report poor vision, have had infrequent eye examinations, or have inadequate insurance coverage for eye care.[54]

REHABILITATION SERVICES

Once vision has been lost, rehabilitation services are important. Comprehensive low vision rehabilitation programs include clinical assessments, training, counseling, and other support services for persons with visual impairments. These programs aim to increase independence and productivity, improve the performance of daily activities, and improve quality of life. Vision rehabilitation can help a person with a visual impairment cope with vision loss, travel safely, take care of his or her home, meet career objectives, and enjoy leisure activities.

A recent study of patients with AMD found that patients in a low vision clinic who received an intensive, group health education program experienced an improved sense of security in performing daily activities.[40] On the other hand, patients who received minimal individual intervention tended to deteriorate. For AMD patients in their 80s and 90s, rehabilitation can be challenging, but quality of life can be improved.[55]

VI. PROFILE OF THE OLDER ADULT POPULATION

DEMOGRAPHIC PROFILE

The NEHEP target audience profile analysis of adults aged 60 years and older revealed that 56 percent of the population are women and 44 percent are men. Approximately 85 percent are White, 8 percent African American, 5 percent Hispanic/Latino, 1 percent American Indian or Alaska Native, and 1 percent Asian. About 60 percent of adults aged 60 and older are married and 58 percent reside in two-person households. Additionally, approximately 28 percent live alone, 11 percent live in three- to four-person households, and 4 percent live with five or more people. Seven percent have children living with them.

In terms of geographic location, 37 percent of adults aged 60 and older reside in the South, 21 percent in the West, 19 percent in the North Central region, and 18 percent in the Northeast. Among older adults, 78 percent are not employed or are retired, while 14 percent are employed full-time and 7 percent are employed part-time. Twenty-two percent of adults aged 60 and older have a household income of $60,000 or more, while 28 percent have an income of less than $20,000.

CULTURAL ISSUES

Cultural issues that arise as a result of the aging process are significant factors affecting delivery of health care to the aging population. Older people may unwittingly assume the stereotypes of old age. Expectations regarding health diminish with age, sometimes realistically, but often not. Older people with treatable symptoms tend to dismiss their problems as an inevitable part of aging. As a result, they may not seek medical care and may suffer needless discomfort and disability. They may not even seek treatment for serious conditions including vision loss and visual impairments. A recent study documents that a significant number of older adult patients had not seen an optometrist for more than 3 years and only 16 percent of patients with treatable visual impairments were under ophthalmic care.[56]

The process of aging may be troubling for older adults who once recovered quickly from an illness or who were generally healthy. Patients may be afraid that their complaints will be dismissed as trivial or that if they complain too much about minor issues, they will not be taken seriously in the future. Some older patients do not mention symptoms because they are afraid of the diagnosis or treatment. They may worry that the physician will recommend surgery, suggest costly diagnostic tests or medications, or tell them to stop driving. There is a pervasive fear of blindness among older adults and limited knowledge about age-related vision loss.[57]

Aging baby boomers bring different expectations, experiences, and preferences to aging than did previous generations. Their needs vary from their parents' generation. People between the ages of 50 and 64, for example, are more likely than those over the age of 65 to want to participate actively in health care treatments and decisions, use complementary or alternative medicine, and search the Internet for health information.

CHANNELS OF COMMUNICATION

The NEHEP target audience profile analysis revealed that among adults aged 60 and older, 57 percent are heavy television viewers and about 58 percent are heavy newspaper readers. Additionally, 29 percent of older adults are heavy magazine readers and 51 percent are medium to light magazine readers. About 27 percent of older adults are heavy radio listeners and 58 percent are light radio listeners.

The number of adults over the age of 65 who use the Internet nearly doubled between 2000 and 2004 to 22 percent, which translates to about 8 million Americans aged 65 and older.[58] Although the Internet is increasingly being used to gain knowledge about health-related topics, many older adults are not computer literate and cannot imagine why they should spend money and time learning how to use a computer. However, Internet usage continues to increase among this population and should not be dismissed as an effective tool to reach older adults. Internet

materials developed for older adults should be designed to address health literacy levels, cognitive abilities, and vision problems that may affect this population.

NEI conducted focus groups and interviews in 1997 among people with low vision ranging in age from 45 to 75 and older.[59] Participants indicated that the eye care professional's office is the most logical and efficient place to distribute information about low vision. However, many older adults are not already part of the eye care system. Other channels of communication to reach this population include health care settings, low vision clinics, pharmacies, the clergy, nonprofit vision organizations, the American Association of Retired Persons (AARP), senior centers, television, and state governments. Older adults with low vision preferred messages in the form of large-print brochures, videos, a toll-free number, and transit advertising. They also expressed the need for a script that they could use in the doctor's office with specific questions they should ask regarding low vision symptoms and eye health care.

VII. CONCLUSIONS

The issues surrounding age-related eye diseases are growing challenges for public health professionals. The leading causes of visual impairment and blindness in older adults include cataract, age-related macular degeneration, glaucoma, diabetic retinopathy, and presbyopia. The prevalence of these diseases is expected to increase with the aging of the U.S. population. To reduce visual impairment and blindness due to these diseases, the public must be educated about each condition, its symptoms, and the potential for loss of vision and blindness without proper preventive care and treatment. The importance of regular eye exams as a preventive measure in healthy adults prior to vision loss must be stressed in educational campaigns. General awareness of the importance of regular dilated eye exams must be increased in the older adult population and among their health care providers. Dietary lifestyle changes and reduced exposure to sunlight are additional preventive measures that should be stressed.

Obtaining access to appropriate eye care services is an important health need for older adults. Access to appropriate surgical treatment for cataract and corrective lens for presbyopia can substantially reduce visual impairment in older adults. Disparities in the prevalence of low vision and blindness due to the inability of minorities to access appropriate eye health services must be addressed. The detection and treatment of eye diseases must also be incorporated into quality-of-life services. PCPs should be trained to recommend that older patients see an eye care professional regularly and immediately report any signs of impaired visual function. Preventing and treating visual loss can have a positive impact on the physical and mental health of patients, can reduce dependency, and can have a significant impact on their quality of life.

Lay knowledge and the subjective assessment of risk have been identified as important motivators for influencing older people's health care decisions. Referrals for eye health care from physicians or health care professionals are critical because many older adults are not aware of guidelines with respect to eye exams. The involvement of family members in health information dissemination and medical decisionmaking is important for older patients. Intergenerational programs that allow the participation of family members may help to provide support and address issues such as transportation, which can be a significant barrier to the receipt of preventive services and health care. Education programs and materials targeting older adults should be health literate and culturally appropriate with respect to the unique issues that older

adults face, such as worries about the loss of independence, unwillingness to seek medical attention, and fears of the medical system.

LIMITATIONS OF RESEARCH

The magnitude of vision problems in the older adult population is not completely understood. Current estimates of blindness and vision loss are based on best-corrected visual acuity and do not reflect the burden of low vision and blindness due to uncorrected refractive error, potentially an important cause of visual impairment in the United States. People with limited eyesight may also be less likely to have the necessary eye exams, thus affecting the accuracy of prevalence estimates. Furthermore, state-based blindness registries have not been successful in documenting prevalence, risk factors, or trends in vision loss.[60]

There are limited prevalence data for older adult minority populations in the United States. Estimates for African Americans and Hispanics/Latinos are based on only a few population-based eye studies, and no information is currently available on the prevalence of eye disease and vision loss in American Indians, Alaska Natives or Asian Americans. Additional research needs to be conducted for these minority populations to more fully understand the prevalence of age-related eye diseases and low vision.

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Appendix C
Theoretical Models

Many models and theories have contributed to the fields of health education and health communication, have had a direct bearing on past NEHEP programs, and will continue to frame the development of future NEHEP programs. Specific theories include, but are not limited to, the Social Learning Theory,[1] the Transtheoretical Model and Stages of Change Model,[2] Diffusion of Innovation,[3] the PRECEDE-PROCEED Model,[4,5] and Social Marketing.[6]

I. SOCIAL LEARNING THEORY

Social Learning Theory is a model of behavior change in which it is assumed that relationships exist among a person's thought processes, behavior, and environment. The emphasis of this approach is on behavior change through direct behavior change techniques, on targeting cognitive variables, and strategic alterations of the environment to stimulate, reinforce, encourage, and maintain desired behavior changes.

II. TRANSTHEORETICAL MODEL AND STAGES OF CHANGE MODEL

Prochaska and DiClemente's Stages of Change Model has been vigorously applied to smoking cessation programs, as well as other addictive behaviors, acquisition, and psychological distress programs. This model states that there are various stages in the process of change. They are precontemplation, contemplation, preparation, action, maintenance, and relapse. People can progress from one stage to the next or they can relapse to a previous stage, either to work themselves ultimately to maintenance or relapse again. The amount of progress made is a result of the stage the person was in when beginning the program, thus, someone in the action or maintenance stage would likely be highly successful, while someone in the contemplation stage would be much less likely to be successful.[2,7] Social support, which is defined as the comfort, assistance, and/or information one receives through formal or informal contacts with individuals or groups, becomes particularly important during certain stages in the Stages of Change.[5] Other theories or constructs complement or are related to social support and also have an effect on Stages of Change. Social networks, for example, provide a great deal of information about the flow of resources. Social networks have been found to influence a number of health behaviors such as the influence of social groups on the decision to seek medical care.

III. DIFFUSION OF INNOVATION

Diffusion of Innovation helps to achieve broad-based changes in a person's health status and in community structures to support and encourage such changes. Rogers defines an innovation as "an idea, practice or object that is perceived as new by an individual or other unit of adoption." Diffusion is then defined as "the process by which an innovation is communicated through certain channels over time among the members of a social system."[3] For effective diffusion of innovations to occur, programs cannot be disseminated only on an individual level. Effective diffusion involves the implementation of strategies through a variety of settings and systems, using a variety of formal or informal media and communication channels.[8] The constructs

described by this theory provide a set of generalizations that lead to changes in organizational and community structures, as well as to changes within populations.

The characterization of adopters uses the criterion of innovativeness, or the degree to which an individual or other unit of adoption is predisposed to adopting new ideas or practices.[3] Innovativeness is conceived of as a continuous variable that is divided into various categories. An accepted group of categories that helps define this concept is 1) innovators, 2) early adopters, 3) early majority, 4) later majority, and 5) laggards. There is some debate about the definition and description of these categories, but the most often used characterizations have been quite precisely defined: Innovators are eager to try new ideas and are interested in taking risks, early adopters are willing to take calculated risks and serve as role models for others members in the social system, the early majority adopt new ideas just before the average member of a social system, the later majority adopt the ideas after the average member of a social system and are often reacting to economic or social pressures, and finally, laggards are the last to accept an innovation.

To enhance the probability of a person's adoption of a new health practice, programs need to attend to characteristics of the adoption process as they relate to complexity of the behavior, offer opportunities for the person to observe others engaging in the practice, and provide situations in which the person may try the new behavior. The relative benefits of the new behavior versus the status quo must be strongly presented. Programs must ensure that the new behavior is compatible with people's lifestyle, and that they have opportunities to confirm the value of adopting new behaviors as opposed to reverting to the previous behaviors.

IV.   PRECEDE-PROCEED MODEL

The PRECEDE-PROCEED Model is not an actual model used to explain or predict relationships and outcomes. Rather, it is a framework used to enhance the quality of health education programs by providing guidance on a systematic planning process. The acronym of the PRECEDE model, primarily a model used for program planning, stands for Predisposing, Reinforcing, Enabling Constructs in Educational Diagnosis and Evaluation. The PRECEDE is a strong model that speaks to the acknowledged problem of disjointed planning in health education and it can be applied to health education in a variety of situations. Initial attention is directed to outcomes rather than to inputs, thus forcing program planners to begin the planning process from the outcome end; it encourages asking "why" before asking "how." This directed deductive thinking helps the planner consider the real conditions rather than to develop program ideas and choose methodologies in a subjective manner.

The second part of this model, PROCEED, stands for Policy, Regulatory, and Organizational Constructs in Educational and Environmental Development. This construct was added to the PRECEDE framework in recognition of the need for health promotion interventions that go beyond traditional educational approaches to change unhealthy behaviors.[5] It highlights the importance of environmental factors as determinants of health and health outcomes. The framework for this model is a nine-phase process that begins with the proposition that health behaviors are complex, multidimensional, and influenced by a variety of factors: 1) social diagnosis, 2) epidemiological diagnosis, 3) behavioral and environmental diagnosis, 4) educational and organizational diagnosis, 5) administrative and policy diagnosis, 6) implementation, 7) process evaluation, 8) impact evaluation, and 9) outcome evaluation.[5]

V.   SOCIAL MARKETING

The above theoretical tenets are translated into effective health programs through the application of social marketing principles. Social marketing is a term that was created by a combination of marketing and social theories. It is an innovative approach to communication that uses the planning elements of marketing—product, price, promotion, and place—within the various behavioral theories such as Diffusion of Innovation and Social Learning Theory, as described above, to reach broad audiences to direct behavior change. The seven steps of the social marketing approach, as defined by Kotler, are: 1) problem definition, 2) goal setting, 3) audience segmentation, 4) analysis of audience approach, 5) influencing channel analysis, 6) strategies and tactics, and 7) implementation and evaluation.[6]

The social marketing process was used to guide the development of the procedures and materials thus far created by NEHEP, and will continue to be used to do so. For example, NEHEP will draw from the research in, and direction from, social marketing and other theories and models to develop an exchange process between program providers and the various audiences. The development of the work with various partnership organizations will be guided by discussions and the expressed needs, desires, and objectives of those organizations and NEHEP target audience needs.

One model of social marketing, known as Consumer-Based Health Communication (CHC), underlines the importance of starting from the consumer's reality to successfully market healthier lifestyles. To change behavior patterns, it is important to know what motivates and reinforces the consumer's current behavior, what barriers impede the adoption of a new behavior, and what rewards the consumer perceives for making the change. CHC poses a series of strategic questions whose answers—developed from solid consumer research and disciplined creativity— ensure communications that are relevant and meaningful to the consumer audience. These questions focus on the target, purpose, promise, support, openings, and image of the intended message. The immediate result of the CHC process is a strategy statement—a few pages that outline the realities of the consumer in relation to the proposed health behavior to be marketed (e.g., going for a regular eye exam). The statement then guides all aspects of program implementation (public relations, direct marketing, media advocacy, and skills-building), creating environments supportive of the health behavior, policy development, or interpersonal influence. Over time, as consumers change, answers to the questions are continually reviewed and updated as necessary.

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Appendix D
Effective Education to Target Populations

I.   EXECUTIVE SUMMARY

This section describes and presents information gathered on the delivery of outreach programs to target populations relevant to NEHEP. The five populations are as follows: 1) older adults, 2) people with diabetes, 3) Hispanics/Latinos, 4) African Americans, and 5) American Indians and Alaska Natives. These populations have been the subject of NEI-funded focus groups and other types of in-house research over the past few years. This research was conducted to gain a better understanding of the most effective ways to deliver eye health messages and the most appropriate settings for these messages to reach target populations. In addition to the in-house research, a literature review was conducted to learn more about the cultural and communication issues that face these populations and the most current accepted and proven practices that have worked in the delivery of health education and promotion messages.

HEALTH LITERACY

Health literacy is a fundamental concept that has a significant impact on health outcomes. It is defined as the capacity to obtain, process, and understand basic health information and health services needed to make appropriate health decisions. The impact of low health literacy on health care is a concern that spans all racial/ethnic groups, but it is of particular importance in populations where generally low literacy levels are more prevalent. Poor health literacy is common among racial and ethnic minorities, older adults, and patients with chronic conditions.[1] Health literacy has been identified as a significant barrier to the receipt of health care services and is increasingly recognized as a problem that impacts health care quality and costs. To effectively reach their target audiences, outreach programs and materials for all populations must take health literacy into account.

OLDER ADULTS

Outreach programs and materials targeting older adults should be culturally sensitive to the unique issues that older adults face, such as worries about the loss of independence, unwillingness to seek medical attention, and fears of the medical system. There is a pervasive fear of blindness among older adults and limited knowledge about age-related vision loss. Lay knowledge and the subjective assessment of risk have been identified as important motivators for influencing older people's health care decisions. Referrals for eye health care from physicians or health care professionals are critical because many older adults are not aware of eye exam guidelines. The involvement of family members in disseminating health information and making medical decisions is important for older adults. Intergenerational programs that allow the participation of family members can help to provide support and address the issue of transportation that can be a significant barrier to the receipt of preventive services and health care. Educating community members and establishing relationships with community leaders have been found to be effective in this population.

The eye care professional's office is the most logical and efficient place to distribute information about low vision. However, many older adults are not already part of the eye health care system. Other channels of communication to reach this population include health care settings, pharmacies, the clergy, nonprofit vision organizations, AARP, senior centers, television, and state governments. Focus group research revealed that older adults with low vision prefer messages in the form of large-print brochures, videos, a toll-free number, and transit advertising. They also expressed the need for a script that they could use in the doctor's office with specific questions they should ask regarding low vision symptoms and eye health care.

Although the Internet is increasingly being used to gain knowledge about health-related topics, many older adults are not computer literate and often feel they have "missed the computer age." However, with the aging of the baby boomer generation, the Internet should not be dismissed as an effective tool to reach older persons, and it will become increasingly important as a source of health information. In fact, the number of adults over the age of 65 who use the Internet nearly doubled between 2000 and 2004 to 22 percent. In addition, 58 percent of Americans aged 50 to 64 currently use the Internet.[2] Internet materials developed for older adults should be designed to address health literacy levels, cognitive abilities, and vision problems that may affect this population.

PEOPLE WITH DIABETES

Diabetes has become an epidemic in the United States, and projections for new cases in the coming years are alarming. In 2005, 20.8 million people were estimated to have diabetes, representing 7 percent of the U.S. population.[3] Health care professionals provide direct access to people with diabetes who are in the medical care system and can serve as the most credible source for eye health information and referrals. Outreach strategies should focus not only on educating people with diabetes, but also the health care professionals who are in contact with them. Primary care physicians can play a vital role in preserving vision in their patients by encouraging appropriate disease management and by ensuring patients undergo periodic evaluations by eye care professionals to receive needed eye care. Pharmacists offer an access point for insulin-taking diabetic patients, who are at higher risk for diabetic eye disease. Partnerships with diabetes-related health care providers are essential for successful outreach efforts.

Frequent communication is essential to assist patients with diabetes in managing their disease and to ensure that they are aware of and receive necessary eye care. To sustain the positive effects of short-term diabetes interventions, patients require ongoing support over the long term. Clinical staff involvement can benefit patients by helping them gain a better understanding of diabetes management, and of theoretical principles underlying patient empowerment. Providing educational materials that take health knowledge, literacy level, and health into account can improve patients' ability to manage their disease.[4]

Community-based diabetes support and education groups can help to establish trusting, caring relationships over time and bridge communication gaps between patients and providers. Elements considered essential to the success of community education programs are provider partnerships, community classes, health workers who provide outreach and support, and a connection between education and clinical care. Examples of community outlets for information

about diabetic eye disease include community health centers, health maintenance organizations, hospital outpatient clinics and emergency rooms, churches, supermarkets, and eye care chains.

HISPANIC/LATINO POPULATIONS

The Hispanic/Latino population includes Mexicans, Cubans, Puerto Ricans, Central Americans, and others of Hispanic origin. For this population, cultural factors are extremely important and strongly influence the quality of health care they receive. When compared with non-Hispanic/Latino individuals, Hispanics/Latinos usually express more caution about the degree to which they should trust others and about how helpful people are. This concept of mistrust or distrust is sometimes extended to the relationship this population has with their doctors or other health care professionals. Hispanics/Latinos may experience language discrimination and immigrants and non-native English speakers may need a medical translator. Spirituality and religious beliefs strongly influence health care decisions and the role of family in medical decision making is seen as necessary among Hispanics/Latinos.

Broadcast and print media are effective channels of communication for Hispanic/Latino populations. Television was the most frequently cited source of news and information by participants of a national survey. Radio, video, and audio news releases; information commercials; printed public service announcements (PSAs); Spanish-language or bilingual brochures; and special exhibits are also effective. Valuable communication channels include Hispanic/Latino health care professionals or others who work in Hispanic/Latino communities, pharmacists, public and nonprofit health care facilities that serve Hispanics/Latinos, and clinic and health center educators and volunteers who serve this community.

Focus group research identified a strong need for a general eye health awareness message for Hispanics/Latinos. Participants indicated that simple, straightforward messages are the most productive and informative. They expressed a strong interest in eye health and eye exam information, regardless of whether they had already developed any type of eye disease.

Community-based outreach is highly effective for Hispanics/Latinos. The use of "promatoras" (lay health educators) is an outreach model that has been internationally recognized for effectively disseminating information to Hispanic/Latino communities. The success of this model is attributed to the use of Spanish-speaking lay people and community leaders who provide culturally and linguistically appropriate information. Health fairs and community events provide other means for direct access to the Hispanic/Latino population and are effective ways to deliver health information. Collaboration with community leaders and the media are important for successful community-based outreach.

AFRICAN AMERICAN POPULATIONS

The African American population is genetically, culturally, and socioeconomically diverse. Education programs must address these differences and subcultures to be effective. African Americans tend to have large extended families and strong family ties. The role of family in medical decisionmaking is important. Spirituality and faith are integral to the culture and should not be overlooked in the development of outreach programs and materials. The incorporation of

spiritual concepts, faith components, and non-traditional learning tools are effective ways to reach this population.

The setting in which information is communicated to African American patients is an important factor to consider in outreach efforts. Patient-centered, experiential approaches are more effective than lecture-based teaching. African Americans may experience more support and learn better in community-based settings, such as within family and religious groups, rather than in clinical situations. Community-based education is effective in making initial contact with this population. Peer educators and trained health education workers can be instrumental in building trust within the community.

Mass media channels (e.g., television, radio, print) are also effective in reaching the African American population. Using several channels of communication will provide repetition of the messages, an important factor in increasing awareness and knowledge. Organizations within the community can offer direct access to the target audience, reinforce and expand upon media messages, and provide referral to services. Together with the media, community channels can form a strong support network.

AMERICAN INDIANS AND ALASKA NATIVES

American Indian and Alaska Native populations are diverse with varying cultural values and should not be considered as one homogenous population. The cultural values and traditional practices of both American Indians and Alaska Natives present important considerations for education efforts. Education programs must be conducted in a way that respects the authority, autonomy, and identity of each tribal community. Storytelling is a key approach to educating this population. Visual presentations are preferable to brochures. Interactive videos have been used successfully for educational outreach efforts.

Written messages should be presented in a believable, personal, and non-threatening way and validated by credible American Indian and Alaska Native sources and by scientific information. Materials should be written in adaptable formats and aimed at American Indians and Alaska Natives with various levels of education and literacy skills. Use of pictures and graphics is recommended, as they enhance the written message.

Stakeholder interviews with members of American Indian and Alaska Native associations and organizations that provide vision-related programs and/or services to their members revealed that the most effective approach used to communicate health information to this community was one-on-one personal contact. Stakeholders use a variety of methods to disseminate information to American Indians and Alaska Natives, including radio spots, posters, articles in tribal newsletters, mass mailings, Websites, health educators, and community health fairs.

Other effective communication channels for American Indians and Alaska Natives include television, senior centers, schools, existing diabetes education programs, health care providers, hospitals, community health representatives, and tribal networks of social services and health care. The involvement of the tribal community and tribal leaders is essential for successful education efforts.

II. HEALTH LITERACY

Health literacy is the degree to which individuals have the capacity to obtain, process, and understand basic health information and health services needed to make appropriate health decisions. The 1992 National Adult Literacy Survey findings indicate that approximately 90 million adults may lack the needed literacy skills to effectively use the U.S. health system.[5] Low health literacy predominantly affects the most vulnerable populations, but it continues to grow as a problem for all Americans. In recent years, the Institute of Medicine and the Agency for Healthcare Quality and Research published reports linking low health literacy with negative patient outcomes.[6] The problem of low health literacy is also increasingly recognized as a problem that influences health care quality and costs.[7]

Health literacy has an effect on a person's ability to make sound health decisions about his or her health care, and it has a significant impact on the effectiveness of education efforts. Patients with limited health literacy are more likely not to use preventive health services such as vaccinations and mammograms, and more likely to improperly read medication dosing instructions and referral paperwork.[8] In a series of focus groups and interviews with patients who have inadequate or marginal health literacy, the patients reported experiencing problems with navigation, completing forms, following medication instructions, participating in provider-patient interactions, reading appointment slips, and using coping strategies.[9] A study among African American adults suggests that patients who have marginal or inadequate functional health literacy will have difficulty reading, understanding, and interpreting most written health texts and instructions.[10] In Hispanic/Latino populations, these health literacy problems can be further complicated for those with limited English proficiency.

Studies attest that health literacy is also a marked problem among older adults. One study found that there was considerably higher prevalence of inadequate and marginal health literacy among people aged 85 and older.[11] A second study found this higher prevalence exists even in an affluent geriatric retirement community.[12] Failing eyesight, reduced memory, and hearing loss have been found to be variables that adversely affect reading ability and impact health outcomes.[13] These findings are particularly troubling given that eye disease and low vision noticeably increase with older age and that the average life span for Americans is increasing over time. The higher prevalence of poorer reading and comprehension with aging heightens the need to develop additional or different communications strategies that can address health literacy across diverse groups, but with particular attention to those over the age of 65.

Low health literacy often affects those with compromised health status. In fact, inadequate health literacy has been found to be independently associated with worse glycemic control and higher rates of retinopathy among primary care patients with type 2 diabetes, and it may contribute to the disproportionate burden of diabetes-related problems among disadvantaged populations.

III. CULTURAL CONSIDERATIONS

The most effective public health education programs are those that address or overcome issues specific to the intended target population. One substantial issue is culture. Medical care quality is affected by cultural factors such as value systems, customs, patient-identified ethnicity,

nationality, and stereotypes.[14]   Cultural competence involves learning skills that allow a caregiver to "effectively and efficiently explore the aspects of a patient's culture that might impact the clinical encounter."[15]

OLDER ADULTS

Cultural issues resulting from the aging process are significant factors affecting the delivery of health care to the aging population. Older people may unwittingly assume the stereotypes of old age. Expectations regarding health diminish with age, sometimes realistically, but often not. Older people with treatable symptoms tend to dismiss their problems as an inevitable part of aging. As a result, they may not seek medical care and may suffer needless discomfort and disability. They may not even seek treatment for serious conditions including vision loss and visual impairment. A recent study documents that a significant number of older patients had not seen an optometrist in more than 3 years and only 16 percent of patients with treatable visual impairments were under ophthalmic care.[16]

The process of aging may be troubling for older adults who once bounced back quickly from an illness or who were generally healthy. Patients may be afraid that their complaints will be dismissed as trivial or that if they complain too much about minor issues, they will not be taken seriously later on. Some older patients do not mention symptoms because they are afraid of the diagnosis or treatment. They may worry that the physician will recommend surgery, suggest costly diagnostic tests or medications, or tell them to stop driving. There is a pervasive fear of blindness among older adults and limited knowledge about age-related vision loss.[17]

Aging baby boomers bring different expectations, experiences, and preferences to aging than did previous generations. Their needs vary from their parents' generation. People between the ages of 50 and 64, for example, are more likely than are those over the age of 65 to want to participate actively in health care treatments and decisions, use complementary or alternative medicine, and search the Internet for health information.

HISPANIC/LATINO POPULATIONS

In a study that employed focus groups, Hispanics/Latinos identified several cultural factors that affect the quality of the medical care they receive. Patients' perceptions of the quality of medical encounters are influenced by physicians' acceptance of holistic, mind-body prevention techniques (such as yoga and meditation). Some younger Hispanics/Latinos stated that they have been taught to seek God's help for minor health problems and seek out a physician only for serious medical concerns.[14]

The concepts of "fatalismo" (fatalism) and "resignación" (acceptance) are part of the culture, as well as religious beliefs.[18]   Some Hispanics/Latinos think that diabetes is hereditary and determined by God. Therefore, they believe that the disease must be accepted and endured as a possible "castigo divino" (punishment) for personal sin or sins of family members. Hispanics/Latinos with these beliefs are likely to be reluctant to seek health care for diabetic complications. These concepts and attitudes result in lack of trust and hope in treatments or preventive measures such as eye examinations to prevent blindness from diabetic eye disease.

When compared with non-Hispanic/Latino individuals, Hispanics/Latinos usually express more caution about the degree to which they should trust others and about how helpful people are. A study on attitudes revealed that 94.1 percent of the Puerto Ricans, 86 percent of the Cuban Americans, and 84.1 percent of the Mexican Americans interviewed, compared with 63 percent of the non-Hispanic/Latino Whites, felt that they must be very cautious with most people. Compared with 37 percent of the non-Hispanic/Latino Whites, only 5.9 percent of Puerto Ricans, 14 percent of Cuban Americans, and 15.9 percent of Mexican Americans felt that they could trust most people.[19]

Many times, this concept of mistrust or distrust is extended to the relationship that Hispanics/Latinos have with their doctors or other health care professionals. The concept of "personalismo" (personal touch) in the doctor-patient relationship is crucial. Hispanics/Latinos need to share with their doctors and feel that the doctors care and listen before they can trust them. On many occasions, Hispanics/Latinos view non-Hispanic/Latino doctors as too impersonal and distant. They feel they do not really care about them and may refuse to go back to them. This situation also affects compliance. When Hispanics/Latinos distrust a doctor, they are less likely to comply with the recommended treatments or medications.

Some Hispanics/Latinos feel that they are victims of discrimination. Many of them, particularly the older adults, feel unwanted. Many times, health care workers, knowingly or not, fail to demonstrate an interest in helping them. This violates their central cultural value of "respecto" (respect), and to keep their "dignidad" (dignity), they respond by not returning to the health care professional. The concept of "orgullo" (pride) is also very strong among the older adults, who often refuse to accept government help for health care because they perceive a welfare stigma attached to it. In a national survey, most Hispanics/Latinos responded that they had not felt direct discrimination against them. However, when asked about the level of discrimination experienced by Hispanic/Latino subgroups, most respondents felt that, as groups, Mexican Americans, Puerto Ricans, and Cuban Americans experience "a lot" of discrimination. Mexican Americans felt the highest level of discrimination (38.8 percent), followed by Puerto Ricans (30 percent). The percentage of Cuban Americans who perceived discrimination was only 17.8 percent.

Hispanics/Latinos often experience language discrimination[14] and immigrants and non-native English speakers may need a medical translator. Interpreters are seen among Hispanics/Latinos as an enhancement to medical encounters. Although interpreters are seen as helpful, Spanish-speaking patients feel they receive better care when seeing a Spanish-speaking physician.[14] In fact, in a study that evaluated a breastfeeding education program taught in Spanish in a semi-rural part of Utah, it was found that even Hispanic/Latino women who speak fluent English are more likely to receive care from a Spanish-speaking provider.[20]

The role of family in medical decisionmaking is seen as necessary but is often dismissed by physicians. In fact, some health concerns are considered private family matters. Sometimes families become disjointed in the face of a health crisis. However, because family is so important to this culture, families can come together as a cohesive unit of support. Outreach workers who are able to deeply connect with Hispanic/Latino individuals may be seen almost as a member of the family, as well. Developing surrogate family relationships with the

Hispanic/Latino community tends to be more effective in providing health and social services as compared with using organizational approaches.[21]

Older Hispanic/Latino adults see aches and pains as part of the natural aging process and prefer to rely on folk or home remedies instead of seeking professional health care. These informal health care systems could be counterproductive in delivering appropriate health care to older Hispanic/Latinos when health care professionals are not aware of such activities. It is important that public health education be directed toward older Hispanics/Latinos, as well as to the age group of 40- to 60-year-olds, with an emphasis on the value of family. This population will grow over time and resources must be increased to address their needs.

AFRICAN AMERICAN POPULATIONS

The African American population is a genetically, culturally, and socioeconomically diverse group.[15,22] Health outreach programs must address ethnic differences and subcultures within this community.[22] Researchers have found that African Americans provide more favorable ratings of their care and of their doctors' efforts to include them in decisionmaking when seeing African American physicians.[15] In focus groups, some African American women stated they see African American women physicians to avoid ethnic differences and to allow for better communication.

In a separate focus group study, African Americans with diabetes were asked to evaluate a new diabetes self-care empowerment program. Participants in this study stated that matching sociodemographic characteristics of group members and facilitators is not important as long as the group facilitators are culturally sensitive.[23]

The role of family in medical decisionmaking is important to older African Americans. African Americans tend to have large extended families and strong family ties. A study of gender differences in the use of community services among older African Americans suggests that these individuals rely on family to take care of them. Even when older adults are aware of available community services, they are less likely to take advantage of them than Whites. Involving extended families in outreach efforts may encourage participation.[24]

The role of spirituality and faith is important to African Americans in making medical decisions, and it can sometimes be overlooked by physicians. Evidence also exists for the importance of faith among African Americans when dealing with emotional issues. In a study of mothers of adults with developmental disabilities, it was found that, when compared with Whites, African Americans are more likely to use religion as a coping mechanism. The study authors concluded that outreach strategies "should not ignore the importance of faith ... in the lives of blacks."[25]

AMERICAN INDIAN AND ALASKA NATIVE POPULATIONS

American Indian and Alaska Native populations are very diverse. Many aspects of daily life are different among these populations, including language, housing, transportation, culture, outlook, and perceptions of Western health care, and tribes should not be considered homogeneous. Many tribal members are still suspicious of outsiders, including those from other tribes, because of historical experiences. But protocols have been developed to facilitate entry into tribal

communities. Consistent, long-term involvement and commitment are crucial factors in acceptance of an outside agency's overtures.[26]

Getting patients to take preventive action can be a challenge. The tribal experience is often crisis oriented, and there may be a disconnect between health programs and patients. Some traditional values in American Indian and Alaska Native populations can also create a dilemma for health education efforts. On the one hand, people in American Indian and Alaska Native communities are very close to each other and know when a person is experiencing health problems. On the other hand, the cultural value of noninterference can mean that a person might join someone with diabetes in eating cake rather than remind him or her of the importance of avoiding sweets and controlling blood sugar.

The cultural values and traditional practices of American Indians and Alaska Natives present important considerations for health communication efforts. Of critical importance is the primacy of the tribe and its collective nature. Education programs must be conducted in a way that respects the authority, autonomy, and identity of the tribal community; otherwise, opportunities for confusion, mistrust, and noncompliance will abound. Furthermore, tribal primacy is reinforced by the traditions, beliefs, and sensibilities imparted by kin, even in urban settings where tribal influence appears to be weaker. Many fundamental aspects of health are shaped by traditional beliefs. For example, diet involves far more than nutrition or taste preferences for most American Indians and Alaska Natives because traditional beliefs invest many foods with spiritual and social significance.[27]

In American Indian and Alaska Native populations, health is closely associated with religion and is often explained from a holistic point of view.[28] Traditional health practices are often spiritual in nature, focusing on underlying causes rather than on the relief of acute symptoms.[28,29] For many American Indians, medicine and religion are virtually identical.[30]

Although not all American Indians and Alaska Natives practice traditional medicine, a considerable population does. For years, American Indians and Alaska Natives have responded to the personal, family, and community issues surrounding illness by relying on traditional medicine practitioners (e.g., medicine men, medicine women, herbalists, shamans, spiritual healers, Native American Church "roadmen"; diagnosticians including hand-tremblers, crystal-gazers, star-gazers, and "listeners") and traditional health practices (e.g., purification ceremonies such as sweat lodges, healing ceremonies such as the Sun Dance, teas, herbs, balms, ointments, salves, purgatives, smudging, special foods, therapeutic songs, chants, protective prayers, dancing, sand-painting, pipe, drum, and naming ceremonies).[29,30,31,32,33,34,35]

Some American Indians who have attended missionary schools have integrated the Christian religion into their traditional ceremonies.[34,35] The simultaneous use of different health care options, combining principles of traditional and Western medicine, characterizes much of the help-seeking behavior among American Indians and Alaska Natives.[28,29,30]

IV. CHANNELS OF COMMUNICATION

OLDER ADULTS

Growing numbers of older adults are using the Internet to obtain information. To address vision concerns, text should be readable, using an uncondensed sans serif typeface (e.g., Helvetica, Arial, Univers), a type size of at least 14 point, and a type weight of medium or bold. Left justified text is best for older adults. Color is also a factor to consider; yellow, blue, and green, when used in close proximity, can be difficult for some seniors to read.[36] It is important to present information clearly, using simple words. An online glossary should be provided for describing technical terms. Websites should be organized simply with a standardized layout. Icons and buttons should be large so that precise mouse movement is not necessary, while pull-down menus should be used sparingly.

PEOPLE WITH DIABETES

Health care professionals are very credible sources of information for their patients, and they provide direct access to people with diabetes who are in the medical care system.[37] Physicians who care for people with diabetes are in the best position to counsel these patients about the need for eye examinations and to refer them for eye care. These physicians are also perceived by their patients as very credible information and referral sources. People with diabetes who participated in NEHEP focus groups expressed the belief that their physicians would "take care of them."[38] Following a review of scientific literature, Rowe and colleagues[39] concluded that "primary care clinicians can play a vital role in preserving vision in their patients by managing systemic diseases that impact eye health and by ensuring that patients undergo periodic evaluations by eye care professionals and receive needed eye care."

Other health care professionals (e.g., diabetes educators, pharmacists, nutrition educators, nurses, social workers) are also in an excellent position to provide diabetes management advice.[37] Pharmacists offer a logical access point, especially for insulin-taking diabetes patients, who are at higher risk for diabetic eye disease. They are in a position to suggest that all people with diabetes should have their eyes examined through dilated pupils at least once a year.

Using as many channels of communication as possible will provide repetition of messages, an important factor in raising awareness and knowledge and in motivating people to take action. Organizations within the community can offer direct access to people with diabetes, can distribute information, and can help provide referral to services. Together with interpersonal delivery, community channels can form a strong support network, with each channel reinforcing the message, encouraging those at risk to seek more information and eye examinations.

Community outlets for information about diabetic eye disease include community health centers, health maintenance organizations, hospital outpatient clinics and emergency rooms, churches, supermarkets, and eye health care chains, among others.

HISPANIC/LATINO POPULATIONS

Suggested modes of communicating with Hispanic/Latino populations include broadcast and print media.[40] Television was the most frequently cited source of news and information by Hispanic/Latino participants of a national survey. Radio, video, and audio news releases; information commercials; printed PSAs; Spanish-language or bilingual brochures; and special exhibits also were effective. Spokespersons who Hispanics/Latinos trust and who are appropriate for eye health messages can be used to announce and promote the eye health programs. If television, radio, and print PSAs are produced, the spokesperson(s) could be featured to get the attention of Hispanics/Latinos. The spokesperson(s) could also be encouraged to participate in promotion activities such as video news releases, information commercials, exhibits, interviews, and/or special media or community events.

Several media channels can be used for the distribution and dissemination of television and radio PSAs, including the Spanish-language national networks "Univisión" and "Telemundo." Spanish-language and bilingual radio networks, Spanish-language and bilingual television and radio stations in cities with high Hispanic/Latino populations, and mainstream television and radio stations that broadcast Spanish-language public affairs shows are all possible channels of communication.

Spanish-language or bilingual brochures can be distributed through Hispanic/Latino health care professionals or others who work in Hispanic/Latino communities, including pharmacists, public and nonprofit health care facilities, and clinic and health center educators and volunteers. Other channels of communication include churches and religious organizations; Hispanic/Latino community clubs and centers; grassroots Hispanic/Latino organizations (national and local); and Hispanic/Latino businesses such as pharmacies, beauty parlors, barber shops, and grocery stores. "Botánicas" (herbal medicine shops) where Hispanics/Latinos buy their folk or home remedies would also be a good channel for health care information. Exhibitors at Hispanic/Latino festivals and special events could also provide brochures to individuals.

AFRICAN AMERICAN POPULATIONS

The setting in which information is communicated to African American patients is an important factor to consider when structuring education efforts. Focus group research has shown that African Americans benefit more from patient-centered, practical approaches to learning as opposed to lecture-based teaching. African Americans may also experience more support and, thus, learn better in community-based settings, such as within family and religious groups, rather than in clinical situations.[41]

It has also been suggested that community-based outreach is effective in making initial contact with African Americans. When compared with Whites, African Americans are more likely to seek help in an informal setting (e.g., church). To provide appropriate care to poor urban African Americans, education efforts should focus on community-based mobile interventions.[42]

Mass media channels (e.g., television, radio, print) are also effective in reaching the African American population. However, while mass media channels are effective in improving initial awareness of health problems, health professionals (e.g., pharmacists, general physicians, nurses,

health educators) are the most credible sources of information for African Americans and anyone over age 60.[43] Because of the importance put on person-to-person communication in the African American community, interpersonal, community-based education can also be used effectively for health education to encourage appropriate action from African Americans.[44,45]

Using several channels of communication will provide repetition of the messages, an important factor in increasing awareness and knowledge. The mainstream mass media can be used to reach the greatest number of African Americans over age 40. Older adults are heavier television viewers during daytime and early evening—when PSA time is more likely to be available—than African Americans in other age groups.[46] Opportunities to convey messages through the media go beyond PSAs to include news, health features, talk shows, and coverage through entertainment programming. In addition to using television PSAs, which have broad reach and generate the most public inquiry response, radio PSAs can be tailored for stations reaching target audiences. Print ads for selected magazines and newspapers, editorial coverage, and public relations can also be effective.

Organizations within the community can offer direct access to the target audience, reinforce and expand upon media messages, and provide referral to services. Together with the media, community channels can form a strong support network. Suggested community outlets for information include barber shops, beauty parlors, community health centers, senior centers, hospital outpatient clinics and emergency rooms, churches, civic and professional associations, supermarkets, pharmacies, eye health care providers, and sororities and fraternities.

AMERICAN INDIAN AND ALASKA NATIVE POPULATIONS

NEI conducted stakeholder interviews with members of American Indian and Alaska Native associations and organizations that provide vision-related programs and/or services to their members. The majority of respondents said the most effective approach they used to communicate health information to American Indians and Alaska Natives is one-on-one personal contact. Other suggestions included translation into Native languages, emphasis on the cultural appropriateness of the information shared, concern for the literacy level of printed materials, and community involvement. Stakeholders use a variety of methods to disseminate information to American Indians and Alaska Natives, including radio spots, posters, articles in tribal newsletters, mass mailings, Websites, health educators, and community health fairs. One stakeholder noted that the American Indian population communicates orally so this type of communication also needs to be considered.[47]

Written messages should be presented in a believable, personal, and non-threatening way and validated by credible American Indian and Alaska Native sources and by scientific information. Materials should be written in adaptable formats and aimed at American Indians and Alaska Natives of varying literacy skills.

Storytelling is a key approach to educating American Indians and Alaska Natives. Messages need to use words and analogies that will resonate with American Indians and Alaska Natives. It is more important that metaphors be simple and enhance understanding of why certain actions are necessary than that they be scientifically accurate. Indians talk about the eye as the window

of the heart through which you can see what is going on inside of people. A message that uses this image (e.g., "Protect your eyes so that you can see who you are.") might be helpful.

Some elders only speak their tribal languages, which often have no words to describe conditions such as retinopathy. Elders who do speak English may not understand many of the technical terms and acronyms used in health messages.

Focus groups conducted by the Koahnic Broadcast Corporation in Anchorage, AK, and Albuquerque, NM, found that, among American Indians and Alaska Natives, most news and information comes from television or print media. On the other hand, radio was not generally considered a news source, but many participants felt differently after hearing newscasts and feature programming specifically targeted to American Indians and Alaska Natives. Radio programs have also been effectively marketed through the use of billboards, posters at tribal offices, local magazines, village meetings, schools, and arts and crafts fairs. These same channels may be useful in marketing eye health messages and materials. Research by Nielsen Media Research and CommerceNet also shows that American Indians and Alaska Natives are the fastest-growing groups of Internet users among minority audiences.

V. FINDINGS FROM NEI/NEHEP IN-HOUSE RESEARCH FOCUSING ON TARGET POPULATIONS

This section summarizes the relevant findings from past NEHEP focus group research. The full reports from this research are available on the NEI Website at www.nei.nih.gov/nehep.

OLDER ADULTS

Qualitative Research Among People With Low Vision

Several focus groups and interviews were conducted in 1997 among people with low vision ranging in age from 45 to 75 and older.[48] When asked about effective channels of communication, almost all respondents said that the ophthalmologist's office would be the most logical and efficient place to receive information about low vision. Low vision clinics were also seen as appropriate. Other channels included optometrists, pharmacies, the clergy, nonprofit vision organizations, AARP, senior centers, television, and state governments.

Respondents said that large-print brochures that described their vision problems would be useful for providing them with information about low vision. Many liked the idea of a packet of information that could be provided by the eye care professional. The packet could contain information about specific vision problems, provide resources for medical care and coping assistance, and suggest questions that patients could ask the doctor. Those with severe vision problems said that they could no longer read large-print brochures.[48]

Some respondents were also interested in watching a video that could tell them about their specific problems so they could see what was happening to their eyes. They want the video to show what types of complications could arise and how to respond. This video would help them to alleviate their fear of not knowing what will happen to them. Most said they would rather

watch a video at home because they would be able to concentrate better and watch it several times.

Several respondents said they would like to have a list of questions they should ask their doctor, because they often forget questions that occur to them between appointments. They also often do not know enough about their problems to know what to ask.

Many liked the idea of a toll-free number that people could call for more information. Some liked the idea of getting information through transit advertising. Many wanted information on low vision via television. Others liked the idea of using special newsletters and publications of organizations to place stories and advertising about low vision. However, accessing information by the computer was not an appropriate tool for respondents. Many said they "missed the computer age."

When asked if they would like to receive the information or if they would prefer their caregivers to receive it and then relay it to them, the vast majority of respondents said they would like to get the information themselves. They want information directly because they want to keep their independence, do not think their children would find the right information, believe their children are too busy, do not think their children would pass the information on, or have no family left who really care.

PEOPLE WITH DIABETES

Diabetes Focus Groups

A series of focus groups was conducted in Sarasota, FL, with people with diabetes and their family and friends.[49] Participants reported that they relied on their personal physicians or eye care professionals most heavily for information and recommendations regarding their eye health care. The American Diabetes Association (ADA) was named as another important source of information. In particular, the ADA monthly publication Diabetes Forecast was familiar to all participants. Local hospitals, education programs, support groups, word-of-mouth, drugstore newsletters or pamphlets, news programs, and the general media also were considered to be helpful resources. Another suggestion for dissemination of information was a telethon held during National Diabetes Month (November) or in March on Diabetes Alert Day. Pharmacists were not considered as good information sources because "They are trying to sell you something" or "They are too busy." Family physicians were not seen as credible sources for diabetes-related information because "They don't know enough about the disease."

Participants believed that more education is needed for diabetes patients, the general public, and health care professionals. All expressed the need for more detailed information specifically concerning diabetic retinopathy. They also recommended that information such as where to go, names of doctors who provide laser surgery, and names of the types of examinations be included

in messages. An experience with a significant health problem such as diabetes or hearing of someone they know having a health problem was considered a significant motivating factor for people to begin actively seeking information.

HISPANIC/LATINO POPULATIONS

Diabetic Eye Disease Message Testing Focus Group

In 2003, focus groups were conducted with Hispanics/Latinos with diabetes, as well as with family and friends of Hispanics/Latinos with diabetes, in Los Angeles, CA; Orlando, FL; and Miami, FL.[50]   In Los Angeles, an additional two focus groups were conducted with Hispanic/Latino migrant farm workers with diabetes. The qualitative research effort tested two television PSAs for Hispanics/Latinos with diabetes and their families and friends. The two PSAs were presented to native Spanish-speaking focus group participants for their reactions regarding message content and presentation, audience appeal, cultural appropriateness, message clarity, and calls to action.

Participants said that PSAs should be developed in a variety of formats such as print, television and, radio. A few participants explicitly suggested that television PSAs developed by NEI should air between the hours of 6:00 p.m. and 8:00 p.m. to ensure that the targeted population would have a chance to see the information contained in the announcement. Many participants reported watching television regularly, primarily in the evening during the week.

Participants also suggested the implementation of a toll-free number where callers can talk to someone who speaks fluent Spanish. This toll-free number should be displayed continuously during the PSA. Participants also recommended that the PSA mention that the call and the information are free.

Spanish Low Vision Booklet Focus Groups

Eight Spanish-language focus groups were conducted nationally during November and December 2000 to test the usage of various key terms, photographs, and colors in the Spanish Low Vision Booklet.[51]   The booklet was also tested to ensure that it was culturally and linguistically appropriate to relay vision-related concepts and practices. Additionally, the focus groups reviewed general information on knowledge of eye health and low vision issues and examined the best possible methods to distribute health-related information to Hispanic/Latino populations.

Some participants said that they have seen brochures and other information in their doctors' offices, but very few said that they had been given information by their eye care professional. A few of the participants said that they do not engage in detailed discussions with their eye care professional concerning their respective eye conditions and diseases. A few of the participants in the Los Angeles, Miami, and New York focus groups said that their doctors told them there was nothing that could be done for their eye conditions.

Participants in various groups said that if they were told they were losing their eyesight, they would want information on how to stop the disease from advancing and how to cope with their impending vision loss. To receive this information, participants in various groups said that postal mail and videos would be the best ways. Other means of distribution that were mentioned included churches, television, and radio. Participants stressed that they would not like to receive information of this type in supermarkets and drug stores. They said that many times people rush through these types of establishments, and would not take the time to read it.

Hispanic Eye Health Campaign Focus Group Report

In May 2002, seven focus groups were conducted for the Hispanic eye health campaign.[52] Two focus groups were held in Washington, DC, and five were held in Milwaukee, WI. These focus groups comprised 71 participants, ranging in age from 21 to 65 or older, and included several subpopulations such as Central American, South American, Mexican, Puerto Rican, Cuban, and other Spanish-speaking nationalities.

Each focus group was presented with four messages and visual images to increase awareness of getting a comprehensive dilated eye exam. Several factors were assessed, including overall eye health awareness, the impact of messages and images, and where participants received most of their health information. A number of trends and overarching themes consistently emerged across these groups: the understanding that eye health is important and poor vision can drastically impede their lives, the importance of getting eye exams, and confirmation that television is the most popular venue for receiving health-related information. Although the majority of participants knew about eye exams, very few knew how often they should have their eyes examined, regardless of age.

Participants indicated that simple, straightforward messages are the most effective and informative. Results also showed a strong need for a general eye health awareness message. Participants expressed a strong interest in eye health and eye exam information, regardless of whether they had already developed any type of eye disease. The study also found that the majority of participants were motivated to get their eyes examined after viewing messages and concepts.

"Ojo con su Visión" Test Market Sites

Through *Ojo con su Visión,* a national program targeting Hispanic/Latino adults, NEHEP hopes to increase awareness about the importance of dilated eye exams and to tailor vision loss prevention messages. To test the effectiveness of their messages and materials and to identify dissemination strategies, NEHEP selected three test market sites.[53] This local outreach effort also tested the efficacy of working with various contacts in health care facilities and community-based organizations to reach the target audience.

Lessons learned from the *Ojo con su Visión* Test Market Sites include the following:

- Coordinate events that help community members identify their health needs whereby messages can be delivered directly to the target audience

- Identify and support community fairs or health fairs

- Work with university-based health center educators and volunteers

- Collaborate with community-based organizations linked to other community-based organizations and media

- Continue to develop positive and educational messages

- Develop messages and materials in both English and Spanish

- Promote media products to media with collaborative efforts.

AFRICAN AMERICAN POPULATIONS

Focus Groups With African Americans at Risk for Glaucoma

Focus groups were conducted in Chicago, IL, and Bethesda, MD, with African Americans aged 50 and older who are at risk for glaucoma. Participants were asked various questions regarding their health status, sources of medical/health information, reasons and barriers to seeking medical care, familiarity with eye diseases and blindness, frequency of eye exams, and general knowledge of glaucoma. Participants were also asked for suggestions and/or recommendations for programs, messages, and channels of communication that would be effective in the African American community. Participants felt that the most effective way to educate members of the community would be through churches, schools, and family members. Suggested sources for information about glaucoma were eye care professionals, pamphlets in the eye care professional's office, pharmacies, magazine articles, hospital clinics, Lions Clubs, senior citizen retirement clubs, and churches. Participants also recommended that messages be disseminated through a variety of channels, including media, churches, pharmacies, laundromats, supermarkets, and buses. A toll-free number was also considered as a possible channel for information, although some members recognized that they would not seek information from this source because they had to make an extra effort. Participants thought that a non-celebrity with glaucoma would be a more credible source for messages than a celebrity that "can afford treatment" and that messages should not stress that glaucoma is primarily a problem that affects African Americans because "other groups may think they don't need to be concerned about it."

Glaucoma Message Testing Focus Groups

In March 2003, focus groups were conducted in the Washington, DC, suburbs; Columbia, SC; and Jackson, MS, to test the radio PSAs currently in development for African Americans aged 50 and older and their family and friends.[54] Five separate radio PSAs were presented to focus group participants for their reaction regarding message content, audience appeal and relevancy, cultural appropriateness, and clarity. As part of these focus groups, radio preferences among participants were examined.

Participants said that they listen to the radio when riding in the car. As such, the majority of participants said that they listen to the radio at some point during a day. Only one or two participants said that they do not listen to the radio daily. However, responses concerning the amount of time spent listening to the radio on a daily basis varied greatly. Most participants said that they listen to the radio for a total of 1 hour during the course of a day. Other participants said that they listen to the radio 3 to 7 hours a day.

When asked the time that they prefer to listen to the radio, morning was the most popular choice among participants. Specific times typically mentioned include 7:00 a.m. to 4:00 p.m., 7:00 a.m. to 8:00 a.m., and 6:00 a.m. to 8:00 a.m. Several participants also mentioned that they listen to the radio around 5:00 p.m. during their afternoon commute, as well.

The most popular types of radio stations listened to included gospel, jazz, oldies-but-goodies, talk radio, reggae, rhythm and blues, sports, and urban. Only a few people said that they listen to

the AM frequency. Those persons who said that they do listen to the AM frequency typically preferred gospel, talk radio, and sports radio.

Focus Groups and Key Informant Interviews

A series of focus groups and interviews was conducted with members of American Indian and Alaska Native populations with diabetes to gain an understanding of what education strategies would be most successful in this population. Participants strongly emphasized the need for active participation of community members in the design and implementation of educational activities and materials. The development of collaborative relationships with tribal leaders, organizations, and health care providers was considered another essential element for effective health education. Additional recommended strategies included the following:

- Use testimonials from people young and old in the community who have diabetes.

- Use storytelling—the stories of ancestors can provide inspiration and strength to younger generations.

- Create new health message-oriented stories to be shared in the community.

- Work with elders to develop and create programs. Elders can help identify the key messages and messengers who will motivate members of their community to take action.

- Work with youth to develop and create programs. Youth can be messengers who help motivate members of their community to take action.

- Present information to American Indian and Alaska Native elders in a visual, simple, step-by-step way using culturally relevant symbols and icons. Use community forums involving tribal leaders, elders, and youth to create a template of basic questions to get feedback about key issues that will reflect local values, beliefs, and preferences.

- Provide compelling information to tribal leaders based on what community members need and would like when soliciting their help.

- Conduct health education programs using mobile eye examination equipment to create rapport with communities.

- Create flexible models that can be adapted for use in the many diverse tribal communities.

- Establish the relevance of eye health in the context of diabetes and complement existing programs.

- Enlist support from carefully screened American Indian and Alaska Native celebrities such as artists, actors, and athletes.

- Participate in major intertribal events such as the Gathering of Nations, Crow Fair, and rodeos.

- Involve traditional healers in outreach activities.

VI. RELEVANT FINDINGS PUBLISHED IN RESEARCH PERIODICALS

A literature review was conducted with the following objectives: 1) to review the results of recent studies related to annual eye screenings or exams with an emphasis on identifying strengths or barriers for compliance with eye exam guidelines, 2) to identify outreach and education strategies successful in diabetes management and general health prevention practices, and 3) to identify outreach strategies successful in attracting individuals to screenings of any kind that might be applied to NEHEP national education efforts to encourage eye screenings. The strategies used in these education and screening programs may inform NEHEP about effective methods of reaching and educating different populations about the importance of annual dilated eye exams.

RESEARCH RELATED TO USE OF EYE SCREENINGS AND EXAMS

A study of low-income women with diabetes revealed significant gaps in knowledge about diabetes-related eye complications.[55] More than half of the subjects did not know that eye complications may be asymptomatic and that there are ways to lower the risk of eye problems. One-fifth of participants did not know that annual eye exams are recommended or what type of health provider should perform an eye exam. More than three-quarters did not mention having drops put in their eyes as part of an eye exam. Subjects were concerned about eye complications associated with diabetes, were aware of the benefits of eye exams, and reported high levels of self-efficacy for receiving an annual eye exam.

A study designed to determine factors affecting compliance with guidelines for annual eye examinations for persons diagnosed with diabetes or age-related macular degeneration found that the probability of having an exam reflected perceived benefits and factors associated with the ease of a visit.[56]

Another study conducted among a multiethnic, predominately minority sample of residents from low-income public housing found no relationship between the presence of diabetes and the timing of an eye examination.[57] Sixty-one percent of participants reported having vision care coverage. Yet, one out of four respondents claimed that no health care provider had ever told them that they needed an eye examination. Affordability, continuity, and regular sources of care, as well as receiving physician advice, were the core factors significantly associated with receiving vision care. These findings point toward the urgent need for educational and motivational interventions that encourage health care providers serving underserved communities to promote eye examinations, particularly among patients with diabetes, patients with hypertension, and other people at risk for eye-related diseases and complications.

The results of a study conducted among African Americans with diabetes demonstrated that a community-based, culturally specific intervention will attract African Americans with diabetes to eye disease screening clinics.[58] In this program, successful techniques were those that developed

trust through personal relationships. Community-based organizations and clinic volunteers were instrumental in providing needed resources to the community, and eye screening clinics were held in easily accessible locations. PSAs were delivered through local media and materials were distributed at community health fairs and other events. Program staff established personal relationships with patients through phone communication before and after clinic visits.

In an evaluation of the eye care received by people who participated in the Hoffberger community-based eye-screening program, failure of screenees to come for examinations and lack of followup were identified as serious problems. Reasons given for failing to come for definitive examination were as follows: no appointment given (26 percent), forgot (20 percent), lack of transportation (9 percent), and lack of insurance coverage (6 percent). Of those who accepted a second visit date after defaulting, only 25 percent (41/167) appeared.[59]

In a study designed to examine the effectiveness of personal telephone contact in improving return rates for annual diabetic eye evaluations in eye disease screening clinics for African Americans with diabetes, researchers found that personal telephone contact improves return rates for annual eye exams in urban African American communities.[60]

Among Navajo Indians, the major patient characteristic associated with failure to obtain recommended followup ophthalmologic evaluation and care is lack of transportation. A study of Navajo Indians with diabetic retinopathy concluded "Interventions to increase the proportion of Navajo Indians with diabetic retinopathy who receive appropriate ophthalmologic care must address the issue of transportation."[61]

EFFECTIVE HEALTH EDUCATION AND OUTREACH STRATEGIES RELATED TO DIABETES

Frequent communication with patients with diabetes is essential to assisting patients in managing their disease. However, many of the interventions directed toward patients with diabetes are conducted over a brief period of time. To sustain the positive effects of short-term diabetes interventions, patients require ongoing support over the long term.

In a research trial of an educational intervention for patients with type 2 diabetes, the intervention was found to be clinically effective over the short term, but limitations to maintaining effects were evident. In particular, the study found that while patients can be educated toward greater autonomy, not all health professionals are ready to work in partnership with them. It highlighted the importance of clinical staff not only gaining a better understanding of diabetes management, but also of the theoretical principles underlying patient empowerment.

Ingram et al. identify elements that are essential to an outreach program mainly targeting Hispanics/Latinos with diabetes. The elements considered essential to the success of the program included provider partnerships, community classes, health workers who provided outreach and support, and a connection between education and clinical care.[62]

An aggressive diabetes education program was evaluated for its effectiveness in reducing blood glucose levels in a Medicaid population. Study directors attributed program success to the one-on-one and group support components of the program.[63]

OTHER EFFECTIVE OUTREACH STRATEGIES

Choi and Smith analyzed minority involvement in an older adults nutrition program and identified outreach strategies that succeeded in getting racial and ethnic minority elders to participate. These strategies included involving family members in disseminating information, establishing relationships with community leaders, increasing cultural programs and activities, adding intergenerational programs, recruiting volunteer drivers, and locating centers in key locations.[64] Several barriers to participation were identified; these included lack of information, reluctance to ask for help, fear or distrust, culturally driven discomfort, and lack of transportation.

A study designed to explore the influences on older adults for influenza vaccine uptake found that the decision whether to accept or refuse the influenza vaccination was influenced by trust or mistrust of modern medicine, prior experience of vaccination, and perceived risk from influenza.[65]

The use of "promatoras" (health educators) is an outreach model that has been internationally recognized for providing effective information dissemination to Hispanic/Latino communities. The goal of the model is to create awareness about the importance of preventive health care through the use of Spanish-speaking lay people and community leaders who provide culturally and linguistically appropriate information. Spanish-speaking volunteers can overcome language barriers that sometimes hamper outreach efforts.[66]

It has been shown that mobile units are an effective method of outreach to Mexican immigrants in rural northern Colorado. The units provided services in health care screening, education, and primary care for acute problems.[67] Similar programs have been implemented for eye health care. For example, the Pennsylvania Diabetes Academy, with funding from the Centers for Disease Control and Prevention (CDC), supports local ophthalmologists taking diabetic eye care in vans to underserved populations.[26]

Older African Americans in rural South Carolina benefit from an outreach program that employs paid, trained outreach workers. Through this community/academic partnership, outreach workers assist patients in connecting with needed medical services. The outreach workers may arrange for transportation, schedule appointments, or make referrals for public benefits and drug programs. Results demonstrate that the outreach program increased the quality of life for older African Americans. Most importantly, eligible patients who were not previously receiving public benefits signed on for various programs.[68]

EDUCATION STRATEGIES TO ENCOURAGE SCREENING PARTICIPATION

Several studies have examined the role of outreach in screening older women for breast and cervical cancer.[69,70,71,72,73] In late 2002, Reuben et al., concluded that "on-site mammography at community-based sites where older women gather" is effective in increasing screening rates.[71]

Vogt, et al. also found that mammography and cervical cancer screenings took place more frequently following a letter and a phone call. Specifically, mammography and cervical cancer screening occurred at rates of 10 and 17 percent, respectively, for patients receiving usual care,

24 and 22 percent for patients receiving two letters, 51 and 54 percent for patients receiving a letter and a phone call, and 50 percent (for both tests) for patients receiving two phone calls.[72]

Tailored outreach is also effective at increasing screening rates, compared with usual care, and screens significantly more women for breast and cervical cancer.[73,74] Valanis, et al. reported that a tailored letter–telephone intervention is more effective than a tailored in-office intervention at screening women aged 52 to 64. This increase was attributed to the fact that the in-office intervention could only take place if the patient visited the clinic for another reason.

The American Cancer Society introduced the "Tell a Friend" program to encourage women to tell their friends about the need for early detection of cancers. The program recruits women and trains them to encourage at least five of their friends or acquaintances to get their annual Pap test and mammogram. An expansion of the model was implemented by a Los Angeles clinic focusing on African American women. The expansion, which provided incentive gifts, included additional outreach by the volunteers such as assisting with workshops and distributing educational materials and flyers. This expanded outreach effort resulted in a doubling of African American women screened at the clinic.[67]

In a study of Southwestern American Indian women, access to care, knowledge of the examinations, and health beliefs were positively associated with breast cancer screening.[74]

CHARACTERISTICS OF EXEMPLARY OUTREACH PROGRAMS

NEI recently granted an Express Award to conduct a series of interviews with representatives of government agencies and nongovernmental organizations with mission statements that sought to do the following: 1) improve and expand access to quality health care, 2) protect the health of racial and ethnic minority populations and eliminate health disparities, and 3) sponsor and conduct research that provides evidence-based information on health care outcomes, quality, cost, use, and access.[75] When asked about characteristics of programs or materials to increase the receipt of eye and/or health care services that would be considered "exemplary," the following characteristics were considered to be the most important:

- Health-literate materials

- Cultural appropriateness

- Increased cultural competency

- Performance feedback

- Online basic health information

- Community-based outreach

- Community-based input

- Buy-in from community members

- Collaborative in nature

- Rigorous collection and analysis of data

- Current clinical, diagnostic, and treatment technique use.

VII. CONCLUSIONS

General principles, which include addressing cultural and socioeconomic differences, health literacy, and mistrust or distrust, can be applied in the development of outreach strategies and programs for any population. There are many unique challenges posed by each of the select populations described that must be taken into account for effective outreach strategies to be developed. Health literacy levels and limited knowledge about eye health and disease must be addressed, along with the cultural and communication issues specific to each target audience. Public health education programs that address issues specific to each target audience have been found to be the most effective.

The in-house focus group research has provided valuable information with respect to differences in general understanding of eye health issues, perceptions, communication preferences, and best practices for reaching each of the target populations. Health care professionals, broadcast and print media, and the Internet are preferred channels of receiving health information for the select populations described in this paper. The literature review has provided additional information with respect to recent practices that have been successful in attracting people to screenings and identification of barriers that may prevent them from receiving appropriate eye health care. The use of this information will help to enrich and strengthen NEHEP as it moves forward in the development of future materials and programs for these populations.

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Appendix E
Target Population Profiles/Communication Channels/Media Usage Profile

I.   EXECUTIVE SUMMARY

This section includes a demographic profile and media usage analysis among the five NEHEP target populations: 1) adults who have diabetes, 2) African Americans, 3) Hispanics/Latinos, 4) adults aged 60 and older, and 5) American Indians and Alaska Natives. The objective of this demographic profile and media usage analysis is to provide information about segments or subgroups that exist within NEHEP target populations and to ascertain the media that are most effective for reaching each group.

This demographic profile analysis based on 2004 data from Mediamark Research, Inc., a leading U.S. supplier of national syndicated multimedia audience research reports and data, describes various population characteristics such as demographics, media habits of user/purchaser groups for various products, product categories, and brands. The profile includes several variables including gender, marital status, race, age, household size, education, household income, employment status, occupation, and county residence. The county residence information is based on Nielsen county size definitions[1]:

- "A" counties—all counties belonging, as of June 30, 1990, to the 21 largest metropolitan areas based on household counts from the 1990 Census.

- "B" counties—all counties not included in "A" that are in metropolitan areas with more than 85,000 households according to the 1990 Census.

- "C" counties—all counties not included in "A" or "B" that either have more than 20,000 households or are in metropolitan areas with more than 20,000 households according to the 1990 Census.

- "D" counties—all remaining counties.

Today's fragmented media environment is characterized by an increasing number of media alternatives vying for consumer time. Consumers are simultaneously engaged in using various media formats—such as television, radio, newspapers, and the Internet—to get information and programming. The media usage analysis included in this addendum identifies media choices made by each target population. The analysis demonstrates the target populations' heavy use of television, radio, newspapers, the Internet, and the Yellow Pages, which highlights the importance of using various communication channels to effectively reach NEHEP target audiences.

II.   DEMOGRAPHIC PROFILE OF ADULTS WHO HAVE DIABETES

A demographic profile of the NEHEP target audience—adults 18 and older who have diabetes—demonstrates the following within this target population:

- Sixty-one percent are married.

- Twenty-three percent are parents (representative of parents who have children under age 18 at home).

- African Americans represent 11.4 percent of the total population and account for 16.1 percent of adults who have diabetes, indicating that African Americans are 41 percent more likely to have diabetes than the average adult in the United States.

- American Indians and Alaska Natives represent 1.1 percent of the total population and represent 1.6 percent of adults who have diabetes, indicating that this target group is 35 percent more likely to have diabetes than the average adult in the United States.

- Seventy-three percent are aged 45 and older.

- Sixty percent reside in small households with one to two people.

- Sixty percent have graduated high school and attended college.

- Forty-one percent are employed (full-time or part-time).

- Forty-six percent have a household income of $40,000 or more.

- Forty-three percent reside in the south Census regions: Alabama, Arkansas, Delaware, the District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

- Sixty-nine percent reside in "A" and "B" counties.

	Total Adults %	Adults Who Have Diabetes Aged 18 and Older	
		%	Index
Gender			
Male	48.04	48.90	102
Female	51.96	51.10	98
Status			
Single	24.46	14.41	59
Married	56.57	61.23	108
Engaged	4.69	1.57	33
Other	18.97	24.36	128
Parents	34.02	22.67	67

	Total Adults %	Adults Who Have Diabetes Aged 18 and Older	
		%	Index
Race			
White	78.13	75.93	97
Black/African American	11.44	16.14	141
American Indian/Alaska Native	1.17	1.58	135
Hispanic origin or descent	12.31	8.92	72
Asian	2.23	1.80	81
Other	7.71	5.37	70
Age			
18-24	12.91	4.79	37
25-34	18.45	9.31	50
35-44	20.72	12.63	61
45-54	18.92	20.74	110
55-64	12.89	21.21	164
65 and older	16.11	31.32	194
Household Size/Children in Household			
One-person households	13.89	17.99	129
Two-person households	33.53	41.67	124
Three- to four-person households	37.08	27.79	75
Five-person or more households	15.50	12.55	81
Have any children in households	41.32	29.63	72
Education			
Post-graduate	8.27	5.49	66
Graduated college	24.75	17.14	69
Attended college	27.09	23.10	85
Did not attend college	48.16	59.77	124
High school graduate	31.75	36.93	116
Household Income			
$60,000 or more	42.23	27.75	66
$50,000 or more	51.16	36.31	71
$40,000 or more	61.06	45.84	75
$30,000 or more	72.07	57.48	80
$20,000 or more	16.52	26.80	162
Employment Status			
Employed full-time	53.16	34.44	65
Employed part time	10.85	6.77	62
Not employed	35.99	58.79	163
Occupation			
Professional and related occupation	12.66	7.20	57
Management/business/financial	9.88	6.65	67
Sales and office	15.97	12.02	75
Census Region Residence			
Northeast region	19.11	18.14	95
South	36.20	42.77	118
North central	22.60	19.46	86
West	22.08	19.64	89
County Size			
"A" counties	41.24	36.10	88
"B" counties	29.80	32.49	109
"C" counties	14.53	16.27	112
"D" counties	14.43	15.14	105

III. DEMOGRAPHIC PROFILE OF THE AFRICAN AMERICAN POPULATION

A demographic profile of the NEHEP target audience—African Americans—indicates the following within this target population:

- Thirty-six percent are married.

- Thirty-five percent are parents.

- Forty-three percent are aged 45 and older.

- Fifty-five percent reside in larger households with three or more people.

- Forty-seven percent have children in their households.

- Sixty-five percent have graduated high school and attended college.

- Forty-one percent have a household income of $40,000 or more.

- Fifty-two percent are employed (full-time and part-time).

- Fifty-five percent reside in the south Census regions: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

- Seventy-nine percent reside in "A" and "B" counties.

	Total Adults %	African American Adults Aged 18 and Older	
		%	Index
Gender			
Male	48.04	44.59	93
Female	51.96	55.41	107
Status			
Single	24.46	39.30	161
Married	56.57	36.51	65
Engaged	4.69	6.96	148
Other	18.97	24.19	128
Parents	34.02	35.37	104
Age			
18-24	12.91	16.40	127
25-34	18.45	19.79	107
35-44	20.72	21.16	102
45-54	18.92	19.74	104
55-64	12.89	11.47	89
65 and older	16.11	11.44	71
Household Size			
One-person household	13.89	18.89	136
Two-person household	33.53	26.03	78
Three-person household	37.08	37.74	102
Five-person household	15.50	17.34	112
Have any children in household	41.32	46.70	113
Education			
Post-graduate	8.27	4.64	56
Graduate college	24.75	14.28	58
Attended college	27.09	29.56	109
Did not attend college	48.16	21.21	129
High school graduate	31.75	34.96	110
Household Income			
$60,000 or more	42.23	25.14	60
$50,000 or more	51.16	32.20	63
$40,000 or more	61.06	41.36	68
$30,000 or more	72.07	53.02	74
$20,000 or less	16.52	33.68	204
Employment Status			
Employed full-time	53.16	52.01	98
Employed part-time	10.85	9.68	89
Not employed	35.99	38.31	106

| | Total Adults | African American Adults Aged 18 and Older | |
	%	%	Index
Occupation			
Professional and related occupation	12.66	8.25	65
Management/business/financial	9.88	6.37	64
Sales and office	15.97	15.96	100
Office	18.94	26.78	141
Census Region Residence			
Northeast region	19.11	17.76	93
South	36.20	54.90	152
North central	22.60	18.12	80
West	22.08	9.23	42
County Size			
"A" counties	41.24	51.85	126
"B" counties	29.80	27.08	91
"C" counties	14.53	11.64	80
"D" counties	14.43	9.43	65

IV. DEMOGRAPHIC PROFILE OF THE HISPANIC/LATINO POPULATION

A demographic profile of the NEHEP target audience—Hispanics/Latinos—indicates the following within this target population:

- Fifty-four percent are married.

- Seventy-one percent are between ages 18 and 44; this is a relatively young population.

- Many reside in large households: 73 percent live in households with three or more people.

- Sixty percent have children in the households.

- Fifty-one percent have graduated high school and attended college.

- Fifty percent have a household income of $40,000 or more.

- Fifty-eight percent are employed (full-time and part-time).

- Forty-one percent reside in the west Census regions: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Guam, Puerto Rico, and the U.S. Virgin Islands.

- Eighty-two percent reside in "A" and "B" counties.

	Total Adults	Hispanic/Latino Aged 18 and Older	
	%	%	Index
Gender			
Male	48.4	51.30	107
Female	51.96	48.70	94
Status			
Single	24.46	31.09	127
Married	56.57	56.14	99
Engaged	4.69	5.08	108
Other	18.97	12.77	67
Parents	34.02	45.14	133
Age			
18-24	12.91	19.87	154
25-34	18.45	27.08	147
35-44	20.72	24.09	116
45-54	18.92	14.06	77
55-64	12.89	7.55	59
65 and older	16.11	6.81	42
Household Size/Children in Household			
One-person households	13.89	6.98	50
Two-person households	33.53	20.20	60
Three- to four-person households	37.08	39.89	108
Five-person or more households	15.50	32.94	212
Have any children in households	41.32	59.60	144
Education			
Post-graduate	8.27	3.05	37
Graduated college	24.75	11.12	45
Attended college	27.09	22.57	83
Did not attend college	48.16	66.31	138
High school graduate	31.75	38.78	236
Household Income			
$60,000 or more	42.23	30.36	72
$50,000 or more	51.16	38.75	76
$40,000 or more	61.06	50.25	82
$30,000 or more	72.07	63.79	89
$20,000 or more	16.52	20.42	124
Employment Status			
Employed full-time	53.16	57.94	109
Employed part time	10.85	10.68	98
Not employed	35.99	31.38	87
Occupation			
Professional and related occupation	12.66	8.24	65
Management/business/financial	9.88	5.51	56
Sales and office	15.97	14.89	93
Other	18.94	29.06	153
Census Region Residence			
Northeast region	19.11	14.40	75
South	36.20	35.95	99
North central	22.60	8.46	37
West	22.08	41.20	187
County Size			
"A" counties	41.24	58.44	142
"B" counties	29.80	24.81	83
"C" counties	14.53	7.35	51
"D" counties	14.43	9.41	65

V. DEMOGRAPHIC PROFILE OF THE ADULTS AGED 60 AND OLDER POPULATION

A demographic profile of the NEHEP target audience—adults aged 60 and older—indicates the following within this target population:

- Sixty percent are married.

- Many reside in small households; 86 percent live in households with one to two people.

- Seven percent have children in their households.

- Fifty-six percent have graduated high school and attended college.

- Thirty-nine percent have a household income of $40,000 or more.

- Seventy-eight percent are not employed.

- Thirty-seven percent reside in the south Census regions: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

- Sixty-three percent reside in "A" and "B" counties.

	Total Adults %	Adults Aged 60and Older %	Index
Gender			
Male	48.04	43.48	91
Female	51.96	56.52	109
Status			
Single	24.46	31.09	127
Married	56.57	56.14	99
Engaged	4.69	5.08	108
Other	18.97	12.77	67
Parents	34.02	45.14	133
Household Size			
One-person households	13.89	27.53	198
Two-person households	33.53	58.14	173
Three- to four-person households	37.08	10.94	30
Five-person or more households	15.50	3.39	22
Have any children in households	41.32	6.67	16
Education			
Post-graduate	8.27	7.73	93
Graduated college	24.75	18.60	75
Attended college	27.09	17.97	66
Did not attend college	48.16	63.43	132
High school graduate	31.75	38.37	121
Household Income			
$60,000 or more	42.23	21.93	52
$50,000 or more	51.16	29.63	58
$40,000 or more	61.06	39.41	65
$30,000 or more	72.07	53.39	74
$20,000 or less	16.52	28.38	172
Employment Status			
Employed full-time	53.16	14.19	27
Employed part-time	10.85	7.32	67
Not employed	35.99	78.49	218
Occupation			
Professional and related occupation	12.66	4.11	32
Management/business/financial	9.88	4.28	43
Sales and office	15.97	5.60	35
Other	18.94	6.22	33
Census Region Residence			
Northeast region	19.11	19.35	101
South	36.20	36.83	102
North Central	22.60	23.16	102
West	22.08	20.66	94
County Size			
"A" counties	41.24	35.00	85
"B" counties	29.80	28.48	96
"C" counties	14.53	16.07	111
"D" counties	14.43	20.44	142

VI. DEMOGRAPHIC CHARACTERISTICS OF THE AMERICAN INDIAN AND ALASKA NATIVE POPULATION

The terms American Indian and Alaska Native refer to descendants of any of the original people of North America, Central America, or South America who maintain tribal affiliation or community attachment. On the 2000 Census, the classification American Indian and Alaska Native includes Hispanic people who identify themselves as being of American Indian and Alaska Native descent, either alone or in combination with another race.

The 2000 Census calculated the population of the Nation to be 281.4 million. Of the total population, 4.1 million (1.5 percent) identified themselves as being of American Indian and Alaska Native descent. Of the 4.1 million American Indians and Alaska Natives, 2.5 million (0.9 percent of the total U.S. population) identified themselves as being solely American Indian or Alaska Native. The 11 states with the largest American Indian and Alaska Native populations were California, Oklahoma, Arizona, Texas, New Mexico, New York, Washington, North Carolina, Michigan, Alaska, and Florida. Florida alone had more than 100,000 American Indians and Alaska Natives, accounting for 62 percent of the population.

The 2000 Census reported that approximately 66 percent of American Indians and Alaska Natives live in urban areas; 944,317 live on federally recognized American Indian reservations or off-reservation trust lands. The median age of American Indians and Alaska Natives living on reservation land is 30.3 years.

American Indians and Alaska Natives

Demographic	Percentage of the Population
Reside in the West	43% (1.8 million)
Reside in the South	31% (1.3 million)
Reside in the Midwest	17% (0.7 million)
Reside in the Northeast	9% (0.4 million)
Younger than 18 years old	34.5%
Age 18–24	9.3%
Age 25–44	26.6%
Age 45–64	19.8%
Age 65 and older	9.9%

AMERICAN INDIAN AND ALASKA NATIVE ELDER DEMOGRAPHICS

- The 2000 Census reported approximately 259,000 American Indians and Alaska

- Natives aged 55 and older. Many believe that this count—and other estimates for the American Indian and Alaska Native population—is not accurate because of undercounting and misclassification of race.

- Eighty percent of elders live west of the Mississippi, and approximately half live in rural areas.

- Twenty-seven percent of American Indians and Alaska Natives aged 65 to 74 live below the poverty level.

VII. COMMUNICATION CHANNELS/MEDIA USAGE VEHICLES

Different lifestyles require different marketing communication methods. Some will be used during the week, others during the weekend and different times of the day. Consumers have various preferences for both inbound and outbound communications and marketing promotions versus product usage information.

Traditional media channels—such as television, radio, magazines, and newspapers—allow control over many communication elements including time of delivery and message content. However, marketing programs that employ many of the new media channels such as the Internet will be able to control content in a reactive manner. Access channel preference and time of delivery will be determined by the customer in many instances.

Using a mix of both traditional and new media communication channels enables NEHEP to achieve its objectives by conveying consistent messages across key marketing communication channels instantly and simultaneously throughout the United States. These channels have the potential to build awareness, influence attitudes, and encourage the target audiences to take the actions necessary to prevent the loss of vision.

The communication channels must work independently, as well as interdependently, to deliver the message in a culturally relevant and credible environment. The proposed communication channels for reaching NEHEP target audiences are as follows:

- National and local community outreach promotions and events

- News releases

- Television PSAs

- Radio PSAs

- Outdoor PSAs

- Magazine PSAs

- Newspaper PSAs

- Drop-in articles in newspapers

- Conference and meeting promotion

- Interactive media

- Direct mail

- E-mail marketing

- Brochures

- Posters and flyers

- Eye and other health care professionals

- Partnership alliances.

VIII. MEDIA USAGE

Several studies show an increase in media multitasking, or simultaneous media usage. The following is according to a study of simultaneous media consumption conducted by the Media Center and the American Press Institute[2]:

- Three-quarters of U.S. television viewers read the newspaper while they watch TV.

- Two-thirds are online while they watch TV.

- Seventy percent of media users try to absorb two or more forms of media at once.

- Fifty-seven percent of radio listeners simultaneously go online.

- More than 46 percent read newspapers.

- More than 17 percent watch TV.

- Seventy-four percent of people who watch TV regularly occasionally read the newspapers and 66.2 percent go online.

- Fifty-two percent of people who are online simultaneously listen to the radio and 61.8 percent watch TV.

A media usage analysis of NEHEP target populations, conducted by Mediamark Research, Inc., further demonstrates the importance of using various media vehicles to reach target audiences effectively.

Adults Aged 18 and Older Who Have Diabetes

Demographic	Percentage of the Population
Heavy newspaper readers	46%
Heavy television viewers	57%
Heavy magazine readers	36%
Heavy Internet users	28%
Heavy radio listeners	32%
Heavy Yellow Pages users	26%

African American Adults Aged 18 and Older

Demographic	Percentage of the Population
Heavy newspaper readers	35%
Heavy television viewers	53%
Heavy magazine readers	47%
Heavy Internet users	25%
Heavy radio listeners	48%
Heavy Yellow Pages users	25%

AFRICAN AMERICAN CIVIC ORGANIZATIONS

- African American fraternities and sororities

- Congressional Black Caucus

- Congress of National Black Churches, Inc.

- National Association for the Advancement of Colored People

- National Association of Black Nurses

- National Baptist Convention of America

- National Caucus and Center of Black Aged, Inc.

- National Medical Association

- Southern Christian Leadership Conference.

AFRICAN AMERICAN MEDIA

- Black Enterprise magazine

- Black Entertainment Television

- Ebony/Jet magazines

- Essence magazine

- Source magazine

- TV One

- VIBE magazine.

Hispanic/Latino Adults Aged 18 Years and Older

Demographic	Percentage of the Population
Heavy newspaper readers	22%
Heavy television viewers	40%
Heavy magazine readers	34%
Heavy Internet users	26%
Heavy radio listeners	44%
Heavy Yellow Pages users	19%

HISPANIC/LATINO CIVIC ORGANIZATIONS

- Hispanic Association of Colleges and Universities

- Hispanic Association of Corporate Responsibility

- Institute for Latin Studies

- Interamerican Press Association

- League of United Latin American Citizens

- National Alliance for Hispanic Health

- National Association of Hispanic Nurses

- National Council of La Raza

- National Hispanic Medical Association

- National Puerto Rican Coalition.

HISPANIC/LATINO MEDIA

- Hispanic Newspaper Network

- Hispanic Radio Network

- Hispanic Television Network

- La Fuente-Hispanic Media and Clipping Service

- Latina magazine

- SiTV

- Telemundo

- Univision

- Vanidades magazine.

Adults Aged 60 and Older

Demographic	Percentage of the Population
Heavy newspaper readers	58%
Heavy television viewers	57%
Heavy magazine readers	29%
Heavy Internet users	19%
Heavy radio listeners	27%
Heavy Yellow Pages users	21%

RADIO PROGRAMS TARGETED TO REACH THE OLDER ADULT MARKET

- American Senior Side

- Been There, Done That

- The Bright Side of Aging

- Care For the Chronically Ill and Aging

- Disability and Senior News Report

- The Family Caregiver Hour

- Going for the Gold

- Growing Older: A New Perspective

- Healthy, Wealthy, and Wise

- The Karen Ross Show

- Living for Today

- Mature Focus

- Maturity Broadcast News

- Remember When

- Senior Citizen Report.

AMERICAN INDIANS AND ALASKA NATIVES

Limited data on media use among American Indians and Alaska Natives are available. Targeted television, key radio stations, community newspapers, newsletters, bulletins, and magazines in key markets are recommended for use in creating awareness about the risk of diabetic eye disease and the importance of comprehensive dilated eye examinations for early detection and the prevention of vision loss.[3]

According to Nielsen Media Research and Commerce Net, American Indians and Alaska Natives are the fastest growing groups of Internet users among all minority audiences. Increased use in these populations has been attributed to greater access to computers in the home, businesses, and schools, as well as to a growing need to connect with consumers and heritage. Tribal Websites, listserves specific to a community, and reservation or organizational e-mail groups are good dissemination tools.

AMERICAN INDIAN OR ALASKA NATIVE CIVIC ORGANIZATION

- American Indian Community House

MEDIA

- American Indian and Alaska Natives Mental Health Research Journal

- American Indian News

- The Cherokee Advocate

- Elder Voices

- Indian Country Today

- Native Americas magazine

- Native Peoples

- Navajo Times

- News From Indian Country

- OCB Tracker

- Oklahoma Indian Times.

IX. OVERVIEW OF TRADITIONAL AND NEW MEDIA

Traditional and new media use differs among consumers. Therefore, media selection must be based on its ability to provide a culturally relevant environment.[4]

TELEVISION

Television has audiovisual impact, is the most intrusive, and provides quick reach because its coverage can vary by area, designated market, channel, or network. Television is viewed largely by all target groups, except American Indians and Alaska Natives.

RADIO

Radio is a heavy frequency medium. It provides good localized spot coverage for the city/metropolitan area. Radio has the ability to reach target audiences effectively in various formats and in different languages.

DROP-IN ARTICLES FOR NEWSPAPERS

Drop-in articles for local and national newspapers, Federal and private-sector agency newsletters, merchant circulars, and consumer magazines can be tailored to the target market.

NEWSPAPERS AND MAGAZINES

Newspapers provide immediate impact, have high targeted-reach potential, and are timely. National and local newspapers can effectively reach each target group in their respective communities. Consumer magazines offer in-depth product descriptions, pass-along readership, and can be highly targeted.

DIRECT MAIL

Direct mail is selective and easy to track and offers flexibility regarding the timeliness and content of each mailing.

INTERACTIVE MEDIA

Beginning in the 1990s, the spotlight focused on interactive media. What differentiates interactive media from more traditional forms of advertising is that it is more buyer-initiated. The communication process begins when the consumer requests specific information about a

product or service, playing a direct part in the communication process and choosing both when the message is delivered and, to some extent, the actual content of the message.

Advertisers are no longer limited to one page or a 30-second timeframe. Consumers can find potential answers to specific questions when they choose, and advertisers have the potential to be more effective because of the higher interest and attention levels. While research indicates that Internet use is relatively low among some target audiences, usage is increasing rapidly.

E-MAIL MARKETING

E-mail marketing is a form of direct marketing that uses electronic mail as a means of delivering marketing messages to an audience. In its broadest sense, every e-mail sent to a potential or current customer could be considered e-mail marketing. However, the term usually refers to sending e-mails with the purpose of driving traffic to a Website.

[1] Mediamark Research. National Syndicated Multimedia Audience Research Reports and Data. New York: Mediamark Research, 2004.

[2] The Media Center at the Press Institute. The Simultaneous Media Usage Survey BIGresearch. Dulles, VA: The Media Center at the Press Institute, 2003.

[3] National Eye Health Education Program. American Indian and Alaska Native Diabetic Eye Disease Communication Plan. Bethesda, MD: National Eye Institute, 2004.

[4] Sissors, J. Z., and R. B. Baron. Advertising Media Planning. Columbus, OH: McGraw-Hill, 2002.