Unequal Burden and Unparalleled Opportunities: Minorities in Alzheimer’s Disease Research

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Executive Director
National Hartford Centers of Gerontological Nursing Excellence
Agenda

1. Global Population Aging
2. Overview of Alzheimer’s Disease (AD)
3. Unequal Burden/Signs of AD
4. Unequal Burden/Risk Factors
5. Unparalleled Research Opportunities
6. Unparalleled Training Opportunities
YOUNG CHILDREN AND OLDER PEOPLE AS A PERCENTAGE OF GLOBAL POPULATION

PROJECTED INCREASE IN GLOBAL POPULATION BETWEEN 2005 and 2030, BY AGE

Prevalence of Probable Alzheimer’s Disease

Number of Persons with AD in Millions


Percent of Persons with AD by Age

Neurofibrillary Tangles  Senile Plaques
Unequal Burden

Early Signs

• Hard to remember things
• Telling same story over and over
• Trouble paying bills or making change
• Losing things or putting in odd places
• Getting lost
Unequal Burden

Later Signs

• Forgetting how to do routine tasks – bathing
• Forgetting names of things
• Confused about time, place, people
• Wandering away from home
Factors Affecting Alzheimer’s Disease

- Age
- Head Injury
- High Blood Pressure
- Cholesterol
- Diet
- Education/Brain Reserve/Occupation
- Exercise
- Social Contacts
Risk of dementia by body mass index (BMI) at late life (age 65 years or older)

Educational Attainment of the Population Aged 65 and Over, by Race and Hispanic Origin: 2003

Source: U.S. Census Bureau.
# READING LEVEL AND YEARS OF EDUCATION

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<td>1</td>
<td>3</td>
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J. J. Manly, Ph.D.
Columbia University Medical Center
Unequal Burdens - Barriers

- Lack of Human Dignity
- Fear
- Cost (time & travel)
- Comorbidities
- Discrimination (race, racism, social inequality)
Memory & Aging Project
Washington University

MAP – http://alzheimer.wustl.edu
Importance of Brain Imaging in Alzheimer’s Disease

1) Identifying markers for detection of early brain changes in pathogenesis of AD

2) Assessing brain markers of disease progression

3) Potential surrogate markers for assessment of interventions
AD Progression: ADNI Model

Mean Cortical Thickness Change over 12 Months MRI

Diagnosed as AD

Diagnosed as NC

Lateral View

Medial View

Holland et al. (2009)
AD Progression: ADNI Model

Normal Aging vs. Alzheimer’s Disease
FDG PET

Normal

AD
AD Progression: ADNI Model

HRS Gender Differences in Receipt of Informal Caregiving

Marital Status

Reach
Resources For Enhancing Alzheimer’s Caregiver Health

Supported by
National Institute on Aging
National Institute of Nursing Research
REACH: Reduces Clinical Depression in Caregivers, Nursing Home Placements

Clin. Depression

P < .01

REACH Improves Caregiver, Patient Well-being
(Combined measure of depression, support, self-care, burden, patient problem behaviors)

NIA Funded Clinical Trials

- Currently supports over 30 active clinical trials, including both pilot and large scale trials, of a wide range of interventions to prevent, slow, or treat AD and/or MCI.

- Primary Prevention: of the 7 primary prevention trials, 2 are NIA-funded cognitive/AD measure add-ons to large NIH primary prevention trials addressing a variety of other primary outcomes.
NIA Clinical Trial Results

- Donepezil (Aricept) delays development of AD for a limited time in persons with Mild Cognitive Impairment
- Selective estrogen receptor modulators (SERMs) delay likelihood of developing AD in women
- Aerobic exercise is associated with improvement in executive function in previously sedentary older individuals
- Cognitive training can have long-lasting improvements in specific cognitive abilities in older persons without AD
Large-scale RCT
Experience Corp: Baltimore

- Evaluation funded through a Program Project from NIA and initiated in Fall 2006
- Randomizing:
  - 700+ people 60 yrs. and older to EC or low-activity control
  - 40+ public elementary schools to EC or matched control
- Outcomes:
  - Physical: Disability, mobility, frailty, fall risk
  - Cognitive: Memory, IADLs
- Nested Brain Health Substudy in 80+
  - to examine intermediate neurocognitive changes in EF and in CNS integrity
“YOU ARE A FRIEND IN THE CLASSROOM.”

AUDREY WEEMS, 70, READING A STORY TO STUDENTS IN A THIRD-GRADE CLASS AT WAVERLY. A MOTHER OF EIGHT, SHE WORKED AT THE SOCIAL SECURITY ADMINISTRATION FOR 35 YEARS, RETIRING IN 2002. WEEMS LEARNED ABOUT THE BALTIMORE EXPERIENCE CORPS PROGRAM THROUGH HER CHURCH.
Experience Corps: Pilot Results -- Adults

- **Better overall health:** Physical activity, strength, and cognitive ability increased significantly.

- **Higher activity levels:** 63 percent of Experience Corps members reported being more active, compared to 43 percent of controls.

- **Bigger social network:** Experience Corps volunteers reported a significant increase, compared to a decline in the control group, in the number of people they felt they could turn to for help.

- **Television time:** Experience Corps members reported an average 2 hrs per day drop in television watching; controls reported an 18 percent increase.

- **RETENTION:** 98 percent of Experience Corps members were satisfied with their school experience, and 80 percent returned the following year.
Role of the Secretary. Oversee the creation and updating of the national plan and carry out an annual assessment of the Nation’s progress in preparing for the escalating burden of Alzheimer’s, including both implementation steps and recommendations for priority actions based on the annual assessment. Use discretionary authority to evaluate all Federal programs around Alzheimer's, including budget requests and approvals.

Advisory Council. An advisory council will be established to meet quarterly and advise the Secretary of HHS, or the Secretary’s designee. Mayo Clinic Alzheimer’s Disease Center Director, Dr. Ron Petersen, named Chair.

Annual Report. The Secretary of HHS, or the Secretary’s designee, shall submit to Congress an annual report that includes an evaluation of all nationally and federally funded efforts in Alzheimer's research, clinical care, institutional, and home- and community-based programs and their outcomes.

http://aspe.hhs.gov/daltcp/napa/index.shtm
NIH Funding: Awards for selected mechanisms, FY 2002, by race/ethnic group

<table>
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<tr>
<th>Race/Ethnic Group</th>
<th>Research Program, Grants</th>
<th>NIH Training Awards</th>
<th>NIH Awards</th>
<th>NIH Research Career Program</th>
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<td></td>
<td>N (%)</td>
<td>N (%)</td>
<td>N (%)</td>
<td>N (%)</td>
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<tr>
<td>American Indian -Alaska Native</td>
<td>53 (0.1%)</td>
<td>4 (0.2%)</td>
<td>11 (0.4%)</td>
<td>10 (0.3%)</td>
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<tr>
<td>Asian -Pacific Islander</td>
<td>3,891 (10.6%)</td>
<td>95 (4.3%)</td>
<td>243 (8.7%)</td>
<td>335 (9.4%)</td>
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<td>Black</td>
<td>298 (0.8%)</td>
<td>52 (2.3%)</td>
<td>123 (4.4%)</td>
<td>90 (2.5%)</td>
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<td>Hispanic</td>
<td>844 (2.3%)</td>
<td>66 (3.0%)</td>
<td>164 (5.9%)</td>
<td>122 (3.4%)</td>
</tr>
<tr>
<td>White</td>
<td>29,094 (79.3%)</td>
<td>1,942 (87.4%)</td>
<td>1,529 (54.9%)</td>
<td>2,218 (62.3%)</td>
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<tr>
<td>Unknown race/ethnicity</td>
<td>2,495 (6.8%)</td>
<td>62 (2.8%)</td>
<td>713 (25.6%)</td>
<td>784 (22.0%)</td>
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<tr>
<td>Total</td>
<td>35,575 (100%)</td>
<td>2,221 (100%)</td>
<td>2,783 (100%)</td>
<td>3,559 (100%)</td>
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Adapted from data from NIH IMPAC II database, courtesy of Dr. Belinda Seto, OER, JNMA, 2005
NIA Programs to Enhance Diversity and Research on Health Disparities

TRAINING OPPORTUNITIES

PREF-BAC
College

GRADUATE/
MEDICAL
STUDENT

POST-
DOCTORAL

TRAINING INITIATIVES

NIA MSTEM ADAR (R25)

DIVERSITY PREDOC FELLOWSHIP AWARD (F31)

DIVERSITY AGING DISSERTATION AWARD (R36)

T32 ADD-ON SLOTS TO ENHANCE DIVERSITY

T32 ADD-ON SLOTS TO ENHANCE DIVERSITY

K AWARD HD FUNDING INITIATIVE

DIVERSITY SUPPLEMENTS (S1)

MERIT ADD-ON SLOTS

TECHNICAL ASSISTANCE WORKSHOP

SUMMER INSTITUTE ON AGING RESEARCH

RCMAR

ADCS

THE GERONTOLOGICAL SOCIETY OF AMERICA
Diversity / Disability/ Re-entry Supplement Program

• **Application Receipt**
  – Three **Funding Opportunity Announcements**
  – Supplements to Center, **R, SBIR/ STTR Phase II** mechanisms
  – e-Submission through Grants.gov beginning FY 2012

• **NIA Administrative Review**
  – Monthly meeting
  – Reviewer template
  – Written Summary

• **Funding**
  – Average award is for two years
  – Expedited funding
Public Outreach: ADEAR Center

- Toll-free information line, Web site (English & Spanish)
- Alzheimer’s disease information, publications development and distribution, clearinghouse
- Support for clinical trials & studies recruitment
Information on Alzheimer’s Disease

NIA Alzheimer’s Disease Education and Referral (ADEAR) Center

1-800-438-4380

http://www.NIA/alzheimers.org/

NIA Website

http://www.nih.gov/nia/

New Alzheimer's Website

http://www.alzheimers.gov/
Unparalleled Opportunities

- Change future for children, grandchildren & friends
- Presidential Initiative - National Alzheimer’s Project Act
- Alzheimer’s Disease Research Centers - WUSTL
- Alzheimer’s Disease Cooperative Study - 35 ADCS member sites
- Alzheimer’s Disease Neuroimaging Initiative
- 35 NIA-supported Clinical Trials
- NIH Neuroscience Blueprint - 40 Compounds in Pre-clinical Development
Questions?
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