Translation for All: Equity-focused Interventions and Research Engagement in Underserved Populations

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- Alzheimer’s Association, US POINTER

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Translation for All: Equity-focused Interventions and Research Engagement in Underserved Populations

Starting the Conversation !

- How do we broaden our scope to include all that are in underserved populations?
- How do we engage underserved populations in research?
- What could equity focused interventions looks like?
- What are the challenges and resources needed?
Translation for All: Goals for Today

ADRC Network has the potential to be a leader in uncovering new risk and resilience factors to ADRD for Underserved Populations

“Underserved” is a broad term and captures people who are not already part of ADRC research

Inequities in brain health occur over a lifetime and start at birth or before

Challenges in research engagement are not trivial and need to be solved
Inequality Versus Inequity
Health disparities

The unequal distribution of health and illness due to unfair economic arrangements, poor social policies and bad politics.

- WHO Commission on the Social Determinants of Health, 2008

● Health disparities are NOT caused by differences in genetics or individual variation in health/illness.
Health equity

“The absence of systematic disparities in health (or in the major social determinants of health) between groups with different levels of underlying social advantage/disadvantage—that is, wealth, power, or prestige.”

- Braverman & Gruskin, 2003

“Health equity is achieved when every person has the opportunity to ‘attain his or her full health potential’ and no one is ‘disadvantaged from achieving this potential because of social position or other socially determined circumstances.’”

- Centers for Disease Control and Prevention
NIH Health Disparities Priority Populations

- Hispanics/Latinos
- American Indians/Alaskan Natives
- Blacks/African Americans
- Asian Americans
- Native Hawaiians and Other Pacific Islanders
- Socioeconomically Disadvantaged Populations
- Rural Populations
- Disability Populations
- Sexual and Gender Minorities
- Others (low literacy, low levels of formal education)

Age-standardized dementia incidence rates by race/ethnicity, from 2000-2013 in 274,000 Kaiser members aged 65+

First Analysis in Asians!

# National Institute on Minority Health and Health Disparities Research Framework

<table>
<thead>
<tr>
<th>Domains of Influence (Over the Lifespan)</th>
<th>Levels of Influence*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biological</strong></td>
<td>Individual</td>
</tr>
<tr>
<td>Biological Vulnerability and Mechanisms</td>
<td>Family Microbiome</td>
</tr>
<tr>
<td><strong>Behavioral</strong></td>
<td>Interpersonal</td>
</tr>
<tr>
<td>Health Behaviors</td>
<td>Caregiver-Child</td>
</tr>
<tr>
<td>Coping Strategies</td>
<td>Interaction</td>
</tr>
<tr>
<td><strong>Physical/Built Environment</strong></td>
<td>Community</td>
</tr>
<tr>
<td>Personal Environment</td>
<td>Community Illness</td>
</tr>
<tr>
<td><strong>Sociocultural Environment</strong></td>
<td>Societal</td>
</tr>
<tr>
<td>Sociodemographics</td>
<td>Exposure</td>
</tr>
<tr>
<td>Limited English</td>
<td>Population Health</td>
</tr>
<tr>
<td>Cultural Identity Response to Discrimination</td>
<td>Health Care Policies</td>
</tr>
<tr>
<td><strong>Health Care System</strong></td>
<td>Health Outcomes</td>
</tr>
<tr>
<td>Insurance Coverage</td>
<td>Individual Health</td>
</tr>
<tr>
<td>Health Literacy</td>
<td>Family/</td>
</tr>
<tr>
<td>Treatment Preferences</td>
<td>Organizational</td>
</tr>
</tbody>
</table>

*Health Disparity Populations: Race/Ethnicity, Low SES, Rural, Sexual and Gender Minority Other Fundamental Characteristics: Sex and Gender, Disability, Geographic Region
Underserved Populations have higher exposure to risk factors for poorer brain health over a LIFETIME
Low birth weight associated with increased dementia risk

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
<th></th>
<th>Model 3</th>
<th></th>
<th>Model 4</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HR (95% CI)</td>
<td>p-Value</td>
<td>HR (95% CI)</td>
<td>p-Value</td>
<td>HR (95% CI)</td>
<td>p-Value</td>
<td>HR (95% CI)</td>
<td>p-Value</td>
</tr>
<tr>
<td>BW (100g)</td>
<td>0.98 (0.97–1.00)</td>
<td>0.016</td>
<td>0.98 (0.97–0.99)</td>
<td>0.004</td>
<td>0.98 (0.97–0.99)</td>
<td>0.004</td>
<td>0.98 (0.97–0.99)</td>
<td>0.004</td>
</tr>
<tr>
<td>LBW</td>
<td>1.19 (1.04–1.36)</td>
<td>0.011</td>
<td>1.23 (1.07–1.41)</td>
<td>0.003</td>
<td>1.23 (1.07–1.41)</td>
<td>0.004</td>
<td>1.22 (1.07–1.40)</td>
<td>0.004</td>
</tr>
<tr>
<td>BWGA</td>
<td>0.92 (0.86–0.99)</td>
<td>0.017</td>
<td>0.91 (0.85–0.98)</td>
<td>0.008</td>
<td>0.91 (0.85–0.98)</td>
<td>0.008</td>
<td>0.91 (0.85–0.98)</td>
<td>0.008</td>
</tr>
</tbody>
</table>

Table 3. Hazard ratios for dementia diagnosis based on survival analyses in relation to birth characteristics.

Associations between birth characteristics and age-related cognitive impairment and dementia: A registry-based cohort study

Miriam A. Mosing1,2*, Cecilia Lundholm1, Sven Cnattingius3, Margaret Gatz4, Nancy L. Pedersen1,2
**Place of birth has enduring consequences on risk of dementia in Kaiser Members**

<table>
<thead>
<tr>
<th></th>
<th>Born outside a high stroke mortality state</th>
<th>Born in a high stroke mortality state</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Born outside a high stroke mortality state</td>
<td>Born in a high stroke mortality state</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td></td>
<td>Ref</td>
<td>HR (95% CI)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.32 (1.13-1.54)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.43 (1.20-1.70)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.48 (1.31-1.68)</td>
</tr>
</tbody>
</table>

Midlife vascular risk factors are body mass index, smoking duration, and hypertension status. Late life cardiovascular risk includes diabetes, hypertension, heart failure, acute myocardial infarction, and stroke.

STAR: Cardiovascular risk factors: by birth region

Kristen George, PhD UC Davis

- **OVERWEIGHT/OBESE**
  - Overall: 33%
  - Born Outside Stroke Belt: 30%
  - Born in Stroke Belt: 39%

- **HYPERTENSION**
  - Overall: 21%
  - Born Outside Stroke Belt: 19%
  - Born in Stroke Belt: 24%

- **HYPERLIPIDEMIA**
  - Overall: 36%
  - Born Outside Stroke Belt: 30%
  - Born in Stroke Belt: 30%

- **DIABETES**
  - Overall: 48%
  - Born Outside Stroke Belt: 2%
  - Born in Stroke Belt: 2%
## Disparities in Midlife Cardiovascular Risk Factors in Life After 90

<table>
<thead>
<tr>
<th>Midlife Characteristic (Avg Age=44y)</th>
<th>All</th>
<th>Asian</th>
<th>Black</th>
<th>Latino</th>
<th>Multi/Other</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension (%)</td>
<td>20.3</td>
<td>23.4</td>
<td>26.7</td>
<td>12.5</td>
<td>42.4</td>
<td>11.9</td>
</tr>
<tr>
<td>Hyperlipidemia (%)</td>
<td>26.5</td>
<td>29.7</td>
<td>28.9</td>
<td>34.4</td>
<td>21.1</td>
<td>23.2</td>
</tr>
<tr>
<td>Overweight/Obese (%)</td>
<td>35.4</td>
<td>18.6</td>
<td>49.4</td>
<td>66.7</td>
<td>30.0</td>
<td>29.5</td>
</tr>
<tr>
<td>Ever smoker (%)</td>
<td>36.0</td>
<td>20.3</td>
<td>31.1</td>
<td>37.5</td>
<td>42.4</td>
<td>43.7</td>
</tr>
</tbody>
</table>
How can the ADRC Network Contribute?

- Most studies get a snapshot look at exposures that affect ADRD risk
Primary and Secondary Data Collection

- Leveraging residential address to link to data sources
ADRC Network: Opportunities

- Air pollution
- Toxic chemicals
- Weather Patterns
- Crime Data
- Segregation
- Redlining
- Green Space
- Food Density
- Area Deprivation index
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**Hill, Perez-Stable, Anderson and Bernard, Ethnicity and Disease, 2015; https://www.nia.nih.gov/research/osp/framework**
Challenges

- TRUST
Challenges

- HISTORY

![Image of History Refocused](image-url)
Challenges

- TIME
Challenges

- MONEY
Challenges

- TRANSPORTATION
Challenges

• LOCATION – Academic medical centers
Why did you decide to donate your brain to research?
If I can do anything to help someone why not? I want to help longevity and for those that are going to become 90. Your team asked me if I wanted to donate my brain, so I did a worthy call to help longevity.

-DM Age: 102 LA90 participant
IRB

- Discussing benefits versus coercion?
Where to next?

Science of Inclusion
Is it enough to increase inclusion? No

- Contextualize the research
- Demonstrates return to the community
- Engagement
- Appropriate compensation
- Access
- RESOURCES
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