Why Diversity in Research is Important and How to Overcome Subject Barriers to Participation

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Is the Research Relevant?

“Clinical research is a critical resource for the development of new prevention, diagnosis, and treatment techniques for a number of diseases....The ability to trust and apply the results of a clinical trial, as well as transfer them into clinical practice, is related to the type and number of patients enrolled in that trial. If trials do not include minorities, then there is a question of whether or not the results of the studies are relevant to everyone across the board.”

http://www.cancer.gov/newscenter/benchmarks-vol6-issue4/page1
Inclusion of Women and Minorities

• 1986 inclusion of women encouraged
• 1987 inclusion of minorities encouraged
• 1993 NIH Revitalization Act
• 1994 NIH revised inclusion policy to mandate that women & minorities MUST be included in all clinical research studies
Race and Ethnicity

Race, as a social construct, divides people into populations or groups on the basis of various sets of physical characteristics

- Black or African American
- White
- Asian
- Native Hawaiian or other Pacific Islander
- American Indian or Alaska native

Ethnicity is a broader construct based on cultural tradition, common history, religion, and often a shared genetic heritage

- Hispanic or Latino
- Not Hispanic or Latino
US Population by Race and Ethnicity, 2010

Total U.S. Population = 308.7 million

- White, Non-Hispanic: 64%
- Hispanic: 16%
- Black, Non-Hispanic: 12%
- American Indian/Alaska Native: 1%
- Asian: 5%
- Native Hawaiian and Other Pacific Islander: 0.2%
- Some Other Race: 0.2%
- Two or More Races: 2%

SOURCE: 2010 U.S. Census
General Population Distribution by Race and Ethnicity, 2010

*2010 Census

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>City of Rochester</th>
<th>Monroe County</th>
<th>Rochester Metro</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>44%</td>
<td>76%</td>
<td>81%</td>
</tr>
<tr>
<td>Black</td>
<td>15%</td>
<td>42%</td>
<td>12%</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>16%</td>
<td>7%</td>
<td>6%</td>
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</tbody>
</table>
U.S. Population Becoming More Diverse

What’s Killing Americans?

Figure 3. Contribution of the leading causes of death to the difference in life expectancy between black and white persons: United States, 2010

- Heart disease: -1.007
- Cancer: -0.634
- Homicide: -0.500
- Diabetes: -0.332
- Perinatal conditions: -0.306
- Chronic liver disease: 0.058
- Alzheimer’s disease: 0.060
- Chronic lower respiratory diseases: 0.178
- Unintentional injuries: 0.182
- Suicide: 0.199

Loss or gain in life expectancy in years

Years of Potential Life Lost by Monroe County Zip Code, 5 year Average (2006 – 2010)

Years of Potential Life Lost based on deaths before age 75
Data Source: NYS Vital Statistics

Finger Lakes Health Systems Agency
Diversity in Clinical Trials

• Greater diversity offers an opportunity to recruit more volunteers into clinical trials

• Demographics are changing – minority populations will become the majority in the future

• Safety and efficacy of drugs and devices should be evaluated in stratified populations

• Address the concerns of the public and policymakers
Diversity in Clinical Trials

African Americans 13% of population – 5% of CT participants

Hispanics 17% of population – 1% of CT participants
Clopidogrel

Ineffective in the 50 percent of Asians who lack the enzyme to activate it.

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**Lancet 1996; 348: 1329–39**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>All patients</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Clopidogrel (n=9599)</td>
</tr>
<tr>
<td>Mean (SD) age in years</td>
<td>62.5 (11.1)</td>
</tr>
<tr>
<td>% male</td>
<td>72</td>
</tr>
<tr>
<td>% white</td>
<td>95</td>
</tr>
<tr>
<td>Percentage of patients with a history of:</td>
<td></td>
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<tr>
<td>Ischaemic stroke*</td>
<td>9</td>
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<tr>
<td>TIA/RIND</td>
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<tr>
<td>Diabetes mellitus</td>
<td>20</td>
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<tr>
<td>Hypertension</td>
<td>52</td>
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<tr>
<td>Hypercholesterolaemia</td>
<td>41</td>
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<tr>
<td>Angina (stable)</td>
<td>22</td>
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<tr>
<td>Angina (unstable)</td>
<td>9</td>
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<tr>
<td>Myocardial infarction*</td>
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<tr>
<td>Congestive heart failure</td>
<td>6</td>
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<tr>
<td>Cardiomegaly</td>
<td>5</td>
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<tr>
<td>Atrial fibrillation</td>
<td>4</td>
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<tr>
<td>Intermittent claudication*</td>
<td>5</td>
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<tr>
<td>Current cigarette smoker</td>
<td>29</td>
</tr>
<tr>
<td>Ex cigarette smoker</td>
<td>49</td>
</tr>
</tbody>
</table>

*Not including the qualifying event; MI=myocardial infarction; PAD=per Table 4: Baseline characteristics
Albuterol

Absolute improvement in percentage of predicted FEV\textsubscript{1} was 16.6% in AA patients vs 26.7% in white patients
Carbamazepine

Risk of Stevens–Johnson syndrome:
White: 1-6 per 10,000
Asian: 10-60 per 10,000
Genetic Differences in Disease Among Racial and Ethnic Groups

- CCR5 – receptor used by HIV to enter cells. 25% of white people are heterozygous for the CCR5delta32 variant – protective against HIV infection and progression. This variant virtually absent in other groups – racial and ethnic differences in protection against HIV
Enrollment in RCTs for Cardiovascular Guidelines

Race/Ethnicity in RCTs for Cardiovascular Guidelines

General Barriers to Participation in Clinical Trials

- Many do not know what a CT is
- Fear of research – historical abuses
- Fear treatment will be withheld
- Poor access to CTs
- Personal and practical obstacles (language)
- Cultural influences
- Study design eligibility criteria (i.e. co-morbidities)
- Low health literacy
- Not a top priority
Distrust as a Barrier to Participation

• Distrust of scientific investigators and of academic institutions are often major barriers among African Americans

• Signing consent forms was reported as relinquishing rather than protecting rights

• Research volunteer is considered a “guinea pig”

• Knowledge of the Tuskegee Syphilis Study was not necessarily negatively associated with willingness to participate
Tuskegee Syphilis Study

- Longest running study in the U.S. PHS; ran from 1932 to 1972
- Studied the natural history of syphilis in 400 African American males
- Participants were promised free treatments for “bad blood.” Participants were not told they had syphilis
- Syphilis untreated, even when penicillin became available in the late 1940s
Healthcare Provider Barriers

• Unaware of clinical trials
• Fear of “losing control” of patient’s care
• Administrative responsibility
• Believe that current treatment is the best
• Insufficient time to discuss option with patients
• Assume that patient would not be interested
Barriers to Recruiting Underrepresented Populations in Trials

Barriers to:

• trial awareness

• opportunity to participate (research design, provider attitudes)

• acceptance of enrollment (perceived harms, mistrust)

• additional barriers related to cultural factors
Recruitment Strategy: Community Involvement

• Use lay outreach workers from the targeted population (cultural insider)

• Community-based organizations

• Places of Worship: Although some investigators have identified religiosity as a barrier due to a fatalistic view of disease – others have found religiosity to be positively associated with willingness to participate
Recruitment Strategy: Friendly Informed Consent

• Health literacy - not just about reading and writing, but also the ways health information is communicated eg. speaking, drawing pictures and using technology.

• Majority of consent forms are on a 12th grade reading level

• Provide consent in different languages, use “comfort” words, pictures, diagrams

• Voice-enhanced ICF

• Yates, 2009 developed a 23 page ppt flip chart for an IC-study comparing traditional cardiac rehab vs home-based cardiac rehab- improved participation rate from 22%-54%
Recruitment Strategy: General

• Characterize the target population
• Involve members of the target population in planning efforts
• Give something back to the community
• Use a community spokesperson to enhance credibility
• Identify and remove barriers to participation
• Cultural relevance of materials
• Improve staff sensitivity
• Stress importance of prevention and early detection
Recruitment Strategy: Research Team

• Incorporate diversity in the Subject Enrollment Plan

• Understand the patient

• Researchers from underrepresented populations
  • More likely to conduct research in underrepresented populations
  • Gain trust of underrepresented communities
Recruitment Strategy: AMP Study

- Antibody Mediated Prevention (AMP) Study
- 19 NIH-sponsored HIV Vaccine Trials Network (HVTN) sites
- Enroll and follow about 3,900 participants
- Young Black MSM and transgender individuals
Recruitment Strategy: Criteria

• 18 to 50 years old
• HIV negative
• Men who have sex with men
• Transgender men and women who have sex with men
Recruitment Strategy: Text4Strength

• Automated text messaging system

• Keyword responses

• Commercial SMS service that meets evolving healthcare industry standards

• Data, while not highly sensitive, is stored and backed up on secure, encrypted, dedicated servers and hard drives
TEXT AMP to (585) 496-0020 for more info

Turn up the volume on HIV prevention!

We're researching a new way to fight HIV

We're looking for:
- Men, including transgender men
- Transgender women
- 18-50 years old

Volunteers are paid an average of $2,500 over the length of the study

50 cards for 12 weeks $1,875
Recruitment Strategy: Social Determinants of Health

Source: Dahlgren and Whitehead, 1991
Recruitment Strategy: Promote Health

- Promote Health, asks about the presence of basic needs (shelter, food, health insurance, etc.) as well as trauma (adverse childhood experiences/intimate partner violence)

- Screen, assess, refer and link high-risk individuals to needed services

- Personalized list of free, local resources to help them address their needs
HVTN Award

“Exploring the Use of an eScreen Tool to Meet the Needs of Potential HVTN Study Participants”

Why eScreen?

• Low resource option
• Real time data
• Similar or greater rates of disclosure vs. interviews
• Client preferred due to anonymity
• Provides health information and referrals
This RCT will study Promote’s efficacy to improve the recruitment process for high-risk individuals, allowing a potential participant to engage in client-centered care and prioritize their service needs, over traditional screening.
Outcome

This study has the potential to identify innovative community engagement approaches and outcomes, and potentially improving participation and retention rates in HIV prevention studies.