Evidence Report on Recruitment of Underrepresented Populations to Cancer Clinical Trials

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Objectives

■ Describe results of a systematic review of evidence on recruitment of under-represented populations into cancer clinical trials

■ Present recommendations based on report findings
Background

- 1993 NIH Revitalization Act called for inclusion of women & minorities in all human subjects research
- NCI budget nearly doubled from 1993 to 2002
  - Trial accrual increased
  - Not clear if all populations benefited
- Some populations remain under-represented in NCI-funded clinical trials
Background (II)

- Numerous recruitment barriers
- Increased attention to recruitment promoters
- Questions about effectiveness of strategies to increase trial participation
Key Questions

- What are **barriers & promoters** for participation of under-represented populations in cancer trials?
- What effects do healthcare **providers** have on recruitment of under-represented populations?
- What **recruitment strategies** are efficacious?
- What **measures** of recruitment success have been used?
- What **methods** have been used to study recruitment strategies?
Steps Toward Participation

- Awareness
- Acceptance/Entering
- Retention

Examples of Factors Influencing Each Step

- Race/ethnicity
- Socioeconomic
- Perceived harms
- Perceived benefits
- Health status
- Past exposure
- Trust
- Altruism
- Religiosity
- Continued interest
- Actual benefits
- Time

Powe & Gary, 2004
Conceptual Framework

Study Design → Interventions

Moderators/Sociodemographic Factors

Awareness Barriers/Promoters

Opportunity Barriers/Promoters

Acceptance/Refusal Barriers/Promoters

Opportunity

Awareness

Acceptance/Refusal

Measures of Success
Summary of Search

Electronic Databases
- Retrieved 4436
  - Title Review 4110
    - Abstract Review 1089
      - Article Review 218
  - Duplicates 341
    - Excluded 3021
      - Excluded 871
      - Excluded 151
- Hand Searching 107
  - 67 Articles Eligible
Barriers to & Promoters of Enrollment

Key Findings from 45 studies
Study Characteristics

- Dates published
  - < 1996: 10
  - 1996 – 2000: 14
  - 2001 – 2004: 21

- Study Design:
  - Observational/Experimental: 9
  - Descriptive (registry reviews, surveys): 15
  - Qualitative (focus groups, semi-structured interviews): 21

- Setting:
  - Hospital inpatient or outpatient: 29
  - Community: 25
  - Other: 7
Study Characteristics (II)

- **Target group**
  - Patients / Participants: 38
  - Physicians: 11
  - Researchers: 3

- **Type of trial**
  - Therapeutic: 34
  - Prevention: 16

- **Actual accrual vs. behavioral intention**
  - Accrual: 21
  - Intention: 16
Study Characteristics (III)

- **Type of population:**
  - African-American: 27
  - Older adults: 14
  - Latino/Hispanic: 6
  - Asian/Pacific Islander: 2
  - Native American / Alaskan Native: 4
  - Adolescent: 3
  - Rural: 2

- **US-based:** 40
## Levels of Barriers & Promoters

<table>
<thead>
<tr>
<th>Level</th>
<th># of Barriers</th>
<th># of Promoters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient</td>
<td>70</td>
<td>39</td>
</tr>
<tr>
<td>Provider</td>
<td>31</td>
<td>12</td>
</tr>
<tr>
<td>Healthcare system</td>
<td>7</td>
<td>2</td>
</tr>
</tbody>
</table>
Most Frequently Reported Barriers

- Mistrust of research & medical system (n = 17)
- Perceived harms (n = 11)
- Lack of education about clinical trials (n = 10)
- Availability of transportation (n = 9)
- Time commitment required (n = 8)
- Mistrust of researchers (n = 6)
Barriers to Awareness
(N = 15 studies)
Barriers to Opportunity
(N = 35 studies)
Barriers to Acceptance
(N = 23 studies)
Most Frequently Reported Promoters

- Perceived benefits of trial participation (n = 7)
- Patient incentives (n = 6)
- Altruism (n = 6)
- Culturally relevant education about trials (n = 4)
- Provider incentives (n = 3)
Other Key Findings on Barriers & Promoters

- Available evidence mostly about accrual to therapeutic trials
- Barriers to opportunity frequently reported for both prevention & treatment trials
- Limited data on Latinos/Hispanics, Asian/Pacific Islanders, American Indians/Alaska Natives, older adults, & adolescents
- Barriers differed across populations
Relation of Barriers & Promoters to Conceptual Framework

- **Awareness:**
  - 8 barriers, 6 promoters

- **Opportunity to participate:**
  - 81 barriers, 29 promoters

- **Acceptance/refusal of participation:**
  - 25 barriers, 25 promoters
Healthcare Provider Effects

Key Findings from 10 studies
Healthcare Professional Barriers

- Insufficient resources / cost to patient (n=4)
- Healthcare professional attitudes (n=4)
- Patient age (n=3)
- Communication/method of presentation (n=2)
- Time (n=2)
- Disease stage (n=2)
- Co-morbidity (n=2)
- Treatment risk (n=2)
- Mistrust of researchers (n=2)
- Potential for non-compliance (n=2)
Study Design Barriers

- Eligibility (n=7)
  - Age exclusion (n=2)
  - Co-morbidity exclusion (n=2)
  - Disease stage or location (n=1)
  - Medication exclusion (n=1)

- Length of study/visit structure (n=2)

- Protocols too complex (n=2)
Healthcare System Barriers

- Lack of minority investigators/personnel (n=1)
- Lack of dissemination of study opportunities to providers (n=1)
- Lack of cultural competence among providers and/or staff (n=1)
- Lack of access to institutions conducting cancer trial (n=1)
Efficacy of Recruitment Strategies

Key findings from 5 studies
## Recruitment Strategies/Interventions

<table>
<thead>
<tr>
<th>Author, Year</th>
<th>Target Population</th>
<th>Recruitment Intervention</th>
</tr>
</thead>
</table>
| Ford, 2004   | African Americans | 4 increasingly intensive strategies  
  ■ Enhanced mailings  
  ■ Minority interviewers  
  ■ Letter & phone reminders  
  ■ Church-based project sessions |
| Linnan, 2002 | Workers in a manufacturing company | ■ Active recruitment arm  
  – Employees signed up to participate  
  ■ Passive at worksites  
  – Company provided list of employee names & home phone #s |
<p>| Brewster, 2002 | Latina/Hispanic women | Clinic registry vs. media campaign |</p>
<table>
<thead>
<tr>
<th>Author, Year</th>
<th>Target Population</th>
<th>Recruitment Intervention</th>
</tr>
</thead>
</table>
| Paskett, 2002 | Rural physicians in North Carolina & South Carolina | ■ Tumor-reporting system  
■ Nurse facilitator  
■ Quarterly newspapers  
■ Health educator |
| Moinpour, 2000 | African Americans (Sites A-D); Latino/Hispanic (Site E) | ■ Minority recruiter |
## Results

<table>
<thead>
<tr>
<th>Author</th>
<th>Descriptor of Point Estimate</th>
<th>Point Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ford, 2004</td>
<td>Difference in enrollment (Arm C vs. Arm D)</td>
<td>1.0% (p&lt;0.01)</td>
</tr>
<tr>
<td>Linnan, 2002</td>
<td>Difference in enrollment</td>
<td>36.6% (p&lt;0.0001)</td>
</tr>
<tr>
<td>Brewster, 2002</td>
<td>Odds ratio of women presenting in clinic</td>
<td>3.00 (2.38, 3.78)</td>
</tr>
<tr>
<td></td>
<td>Odds ratio of women screened by telephone</td>
<td>2.97 (2.52, 3.51)</td>
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## Results (II)

<table>
<thead>
<tr>
<th>Author</th>
<th>Descriptor</th>
<th>Point Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paskett, 2002</td>
<td>Enrollment change of breast cancer patients, 1991-1996 (NC)</td>
<td>-9%</td>
</tr>
<tr>
<td></td>
<td>Enrollment change of colorectal cancer patients, 1991-1996 (NC)</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td>Enrollment change of breast cancer patients, 1991-1996 (SC)</td>
<td>44%</td>
</tr>
<tr>
<td></td>
<td>Enrollment change of colorectal cancer patients, 1991-1996 (SC)</td>
<td>-5%</td>
</tr>
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</table>
## Results (III)

<table>
<thead>
<tr>
<th>Author</th>
<th>Descriptor</th>
<th>Point Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moinpour, 2000</td>
<td>Change in Site A enrollment, 1995-1996</td>
<td>-0.3%</td>
</tr>
<tr>
<td></td>
<td>Change in Site B enrollment, 1995-1996</td>
<td>-0.5%</td>
</tr>
<tr>
<td></td>
<td>Change in Site C enrollment, 1995-1996</td>
<td>-1.8%</td>
</tr>
<tr>
<td></td>
<td>Change in Site D enrollment, 1995-1996</td>
<td>-0.6%</td>
</tr>
<tr>
<td></td>
<td>Change in Site E enrollment, 1995-1996</td>
<td>0.5%</td>
</tr>
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Limitations of Studies of Efficacy of Recruitment Interventions

- Very few evaluations reported
- Limited generalizability
- Varying quality of study methods
Measures of Recruitment Success

Key findings from 23 studies
Recruitment Goals

■ “Recruitment” = actual participation in all studies

■ 2 studies reported *a priori* recruitment goal:
  – Maurer et al, 2001
    • At least 22% of rural study population eligible for trial
    • Met recruitment goal
  – Moinpour et al, 2000 (Prostate Cancer Prevention Trial)
    • At least 8% of study population to be African American, based on % of U.S. men > age 54 who are African American
    • Recruitment yielded 4% instead of 8%
Recruitment Success

- 10 articles discussed recruitment success, but did not report *a priori* recruitment goal
- 1 article suggested an *a priori* recruitment goal (M. Ford, 2004)
  - Tested “a priori” recruitment hypotheses
  - Reported need to look at absolute differences in recruitment vs. statistically significant differences
Challenges in Defining “a priori” Recruitment Goals

- Increased study costs
- Competing priorities
  - Disease-specific requirements
  - Participant retention concerns
  - Institutional Review Board requirements
  - Timeline requirements
Methods to study recruitment

Key findings from 13 studies
Study Designs

- Descriptive studies (n=5)
- Randomized controlled trials (RCT) (n=4)
- Concurrent controlled trial (CCT) (n=1)
- Quasi-experimental (n=1)
- Case series (n=1)
- Qualitative (n=1)
Overall Summary

- More barriers to opportunity than to awareness or acceptance
  - More evidence on barriers than on promoters
  - Mistrust a common theme
- Provider barriers at level of professionals, study design & healthcare system
- Sparse evidence on efficacy of recruitment strategies
- Recruitment goals rarely reported *a priori*
- Variety of methods used to study recruitment
Limitations of Evidence Report

- Heterogeneity
  - study design
  - data quality
- Relation between barriers & promoters unclear
- Overlap between underrepresented populations
- More evidence from therapeutic trials than prevention trials
- Excluded studies other than clinical trials
- Recruitment experience not always reported
Recommendations

- **Report**
  - *a priori* recruitment goals & results

- **Consider**
  - conceptual framework in design & evaluation of recruitment strategies

- **Train investigators**
Recommendations (cont’d)

- Evaluate
  - Role of underrepresented healthcare professionals & community health workers
  - Cost-effectiveness of interventions
  - Tailored & targeted recruitment interventions
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