Minority Participation in Cancer Clinical Trials

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WEXNER MEDICAL CENTER

Creating a cancer-free world. One person, one discovery at a time.
Objectives:

- Overview of Clinical Trials
- Review barriers to minority participation in clinical trials
- Explain the importance of minority participation in clinical trials
- Opportunities for improvement
- Conclusion and Take Home Message
Cancer Disparities

- Overall racial disparities related to cancer mortality has decreased over the last several decades. However, minority groups continue to carry the greatest burden of Cancer.

- For most cancers African Americans have the highest incidence, mortality and lowest survival than any other ethnic/racial group.

US Trends in Cancer Death 1975 to 2009

- African American men have a 31% higher mortality rate compared to non-Hispanic white men

US Trends in Cancer Death
1975 to 2009

- African American women have a **15%** higher mortality rate compared to Non-Hispanic white women.
“The issue of DISPARITIES in health is serious—it is a matter of life and death. Disparities in health among different racial, ethnic, and socioeconomic groups in the United States are real and represent a serious threat to our future as a nation”

- David Satcher, MD.Ph.D
An important way to decrease cancer disparities is by enrolling more minorities into cancer clinical trials!
Brief History of Clinical Research

- Hippocrates 460-370 BC
  - Father of Modern Medicine
  - Recorded clinical observation of disease

- Ancient Greek
- Middle Ages and Renaissance
- James Lind 1700s
- Scottish physician in Royal Navy
- Treatment for Scurvy
What is a Clinical Trial?

- A medical research study where people participate as volunteers to test new:
  - Methods of screening/detecting cancer
  - Ways to Prevent cancer
  - Ways to Diagnose and Find cancer
  - Treatment for cancer
  - Ways to manage symptoms of cancer or related to the side effects of treatment

- A study to test how well new medical approaches work.

www.nci.org
What a Clinical Trial is not!

- A way to deprive appropriate treatment/compromise care
- A way to do unethical experiments and testing
- Completed without your knowledge or consent
- “A way to test on minority groups before given to others”
Clinical trials are essential for moving new methods of preventing, diagnosing, and treating cancer from the laboratory to the patient.
Clinical Trial Phases:

Phase 0: Effect on body
- Effect on body
- weeks
tens

Phase I: Safety in humans
- months
hundreds

Phase II: Effectiveness at treating diseases
- years
thousands

Phase III: Larger scale safety and effectiveness
- ongoing

Phase IV: Long term safety

The James is one of only four comprehensive cancer centers funded by the National Cancer Institute (NCI) that conducts phase I and II clinical trials.
Types of Cancer Clinical Trials

- Treatment trials
- Prevention trials
- Screening trials
- Supportive trials
- Palliative care trials
- Precision Medicine trials
Increasing number of Clinical Trials

Source: http://ClinicalTrials.gov
Minority Participation in Clinical Trials

- Murthy et. al. 2004

- Data from the NCI Clinical Trial Cooperative Group

- Over 75K participants

- Despite high disease burden minorities are less likely to enroll in clinical trials.

- Enrollment varied by disease type with Black patients with breast, colorectal, or lung cancers significantly less likely to participate in trials than white patients.
From: **Participation in Cancer Clinical Trials: Race-, Sex-, and Age-Based Disparities**


<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Trial Participants, No. (%)</th>
<th>Proportion of Incident Cancer Patients, %†</th>
<th>Proportion of US Population, %†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race/ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White non-Hispanic</td>
<td>64,355 (85.6)</td>
<td>83.1</td>
<td>75.7</td>
</tr>
<tr>
<td>Hispanic</td>
<td>2,292 (3.1)</td>
<td>3.8</td>
<td>9.1</td>
</tr>
<tr>
<td>Black</td>
<td>6,882 (9.2)</td>
<td>10.9</td>
<td>10.8</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>1,446 (1.9)</td>
<td>2.0</td>
<td>3.8</td>
</tr>
<tr>
<td>American Indian/Alaskan Native</td>
<td>240 (0.3)</td>
<td>0.2</td>
<td>0.7</td>
</tr>
<tr>
<td>Type of cancer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast</td>
<td>40,788 (54.2)</td>
<td>27.9</td>
<td></td>
</tr>
<tr>
<td>Colorectal</td>
<td>15,406 (20.5)</td>
<td>20.3</td>
<td></td>
</tr>
<tr>
<td>Lung</td>
<td>9,416 (12.5)</td>
<td>24.6</td>
<td></td>
</tr>
<tr>
<td>Prostate</td>
<td>9,605 (12.8)</td>
<td>27.1</td>
<td></td>
</tr>
<tr>
<td>Age, y</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-64</td>
<td>51,145 (68.0)</td>
<td>37.5</td>
<td>78.5</td>
</tr>
<tr>
<td>65-74</td>
<td>17,851 (23.7)</td>
<td>31.4</td>
<td>11.3</td>
</tr>
<tr>
<td>≥75</td>
<td>6,219 (8.3)</td>
<td>31.2</td>
<td>10.2</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>24,104 (32.1)</td>
<td>51.0</td>
<td>47.6</td>
</tr>
<tr>
<td>Female</td>
<td>51,111 (67.9)</td>
<td>49.0</td>
<td>52.4</td>
</tr>
</tbody>
</table>

*Racial and ethnic groups are mutually exclusive.†Estimated for the year 2000 among adults 30 years of age and older.
• 1996 to 2002 the overall number of clinical trials enrollment increased but the number of minority and Hispanics participants decreased
Federal Mandate

- National Institutes of Health (NIH) Revitalization Act-1994

- Ensure that women and members of minorities are included in all human subject research

- Ensure that women and minorities are included in phase III clinical trials so that valid analysis of differences in intervention effects can be performed

- Cost is not a reason to exclude these groups

- Initiate programs and support for outreach efforts to recruit these groups into clinical studies.
Between 2010 and 2030 the projected increase in cancer incidence for minorities is 99% compared to 45% for the general population.

Less than 2% of NCI—sponsored clinical trials have a primary focus on racial/ethnic minorities.
“Minorities are disproportionately burdened with cancer. The need for adequate participation in clinical research is greater than ever.”

- Dr. Moon Chen-UC Davis
Barriers to Minority Participation in Clinical Trials

Decrease Minority Enrollment in Clinical Trials

- Institutional
- Patient
- Investigator
Institutional Barriers

- Provider time constrains
- Competing Demands
- Cumbersome study design/complexity of study protocol
- Site selection
- Funding limitations that limits recruitment strategies/limits support staff

Ford, et. al Barriers to recruiting underrepresented populations in cancer clinical trial: The James
A systemic Review. Cancer. 2008
Hudson et al, Cancer Control. November 2005
Investigator Barriers

- Clinician bias
  - Minority patients are noncompliant, difficult to reach, lack of cultural competency
- Lack of Knowledge regarding trials (community physicians)
- Lack of Provider Referral
- Lack of minority physicians to recruit minority patients
- Assumption of lack of interest or ineligibility
- Time Constraints (busy practice)

Participant Barriers

- Distrust of medical establishment
- Exploitation of economically disadvantage ("guinea pig" ("being tested upon")
- Lack of awareness of trials
- Not given the opportunity to participate/Not asked to enrolled
- Fear of Safety/unknown

Participant Barriers

- Cost/monetary incentive
- Lack of Knowledge of the benefit
- Time Restraints/commitment
- Confidentiality concerns
- Lack of control with randomization (being randomized to ‘placebo’)

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Participants Barriers

Mistrust

- Tuskegee Study of Untreated Syphilis in the Negro Male (1932-1972)
  - 400 black men with syphilis
  - Study natural progression of untreated syphilis
  - Participants uninformed of their condition
  - Failure to provide treatment with Penicillin which became drug of choice since 1947
  - Participants received free medical exams, meals and burial insurance
  - Went on for 40 years!
  - President Clinton formally apologized in 1997
Mistrust

- Mississippi appendectomy (1920s and 1930s)
  - Involuntary sterilization of black women in the South with hysterectomies and tubal ligations against their will.

- Medical Apartheid: The Dark History of Medical Experimentation on Black Americans from Colonial Times to the Present:
  By: Harriet A. Washington
Is there an Impact of these past experiences on today’s minority recruitment into clinical research?
Debated, inconsistent data

Tuskegee Legacy Project

Overall lack of detailed knowledge about the TSS within both blacks and whites

Researchers concluded that being aware of the TSS did not directly affect study participants willingness to participate in biomedical studies for either Blacks or Whites.

Are Racial and Ethnic Minorities Less Willing to Participate in Health Research?

David Wendler¹, Raynard Kington², Jennifer Madans³, Gretchen Van Wye⁴, Heidi Christ-Schmidt⁵, Laura A. Pratt³, Otis W. Brawley⁶, Cary P. Gross⁷, Ezekiel Emanuel¹

- 20 studies with 70K individuals enrolled in clinical trials where consent data by race/ethnicity was available.

- Racial and Ethnic minorities are as willing to participate in health research than on Hispanic Whites when eligible and invited to participate.
Examples of Clinical Impact
American Cancer Society recommendations for prostate cancer early detection

• Age 50 for men who are at average risk of prostate cancer and are expected to live at least 10 more years.
• Age 45 for men at high risk of developing prostate cancer. This includes African Americans and men who have a first-degree relative (father, brother, or son) diagnosed with prostate cancer at an early age (younger than age 65).
• Age 40 for men at even higher risk (those with more than one first-degree relative who had prostate cancer at an early age).
Prostate Cancer Screening in the Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Screening Trial: Findings From the Initial Screening Round of a Randomized Trial

Table 1. Distribution of baseline demographic and urologic history variables among men in the intervention arm of the Prostate, Lung, Colorectal and Ovarian Cancer Screening Trial

<table>
<thead>
<tr>
<th>Baseline variable</th>
<th>% of category (N = 38350)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race/ethnicity</td>
<td></td>
</tr>
<tr>
<td>White, Non-Hispanic</td>
<td>86.2</td>
</tr>
<tr>
<td>Black, Non-Hispanic</td>
<td>4.5</td>
</tr>
<tr>
<td>Hispanic</td>
<td>2.1</td>
</tr>
<tr>
<td>Asian</td>
<td>4.0</td>
</tr>
<tr>
<td>Pacific Islander or American Indian</td>
<td>0.8</td>
</tr>
<tr>
<td>Missing</td>
<td>2.4</td>
</tr>
</tbody>
</table>

Screening and Prostate-Cancer Mortality in a Randomized European Study

PLCO.JNCI.97,6.2005
Era of Personalized Medicine or Precision Medicine where studies are being designed based on individual variability in genes

It is even more critical to increase minority participation in clinical trials as the consequences of omitting these groups could be greater.

If the genetic makeup of only one group is represented in research, there’s no way of knowing if the same therapy will work in different groups.
EGFR in Lung Cancer

- Identification of targetable mutations like EGFR and ALK led to a major change in the treatment of lung cancer
- EGFR mutations are found in up to 40% of East Asians compared to 10% of NSCLC in the US
- Asians, Females and non-smokers had the highest mutation frequency
Drug Pharmacoethnicity:

Erlotinib in African Americans With Advanced Non–Small Cell Lung Cancer: A Prospective Randomized Study With Genetic and Pharmacokinetic Analyses

MA Phelps1,2, TE Stinchcombe3, JS Blachly2, W Zhao2, LJ Schaaf1,2, SL Starrett1, L Wei5, M Poi2, D Wang2, A Papp2, J Aimiwu1, Y Gao1, J Li6, GA Otterson2, WJ Hicks2, MA Socinski3 and MA Villalona-Calero2


Cancer Pharmacoethnicity: Ethnic Differences in Susceptibility to the Effects of Chemotherapy

Peter H. O’Donnell1 and M. Eileen Dolan1,2

The Role of Pharmacoethnicity in the Development of Cytotoxic and Molecular Targeted Drugs in Oncology

Nagahiro Saijo

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- The James
  - Over 500 clinical trials
- James CareEast
  - A great opportunity to increase minority recruitment in clinical trials

![Bar chart showing enrollment and population for women, minorities, and Hispanic groups.](chart.png)
Strategies for Improving Minority Recruitment in Cancer Clinical Trials:

- Awareness
- Ask
- Accessibility
Awareness

- Cancer Awareness
- Community Awareness
- Disparities Awareness
- Community Engagement between physicians, health care workers, team and patients
- Marketing of all type print, media, churches, etc
- Race/ethnicity, cultural sensitive information
Community Engagement
- Minorities Patients are not asked as frequently to participate in trials
  - Data supported

- Recruitment of more minority physicians
  - Enrollment are likely to be higher when race are concordance
Accessibility

- Locations of trials
  - Accessibility to Comprehensive Cancer Medical Center
  - Minority Based Community Clinical Oncology Programs
    - Community Clinical Oncology Program (CCOP) is a network for conducting cancer prevention and treatment clinical trials by community medical practitioners
    - Where patient received the most care

- Make trials less complex and cumbersome
  - Multiple visits
  - Hard to understand, complex protocol
Minority Recruitment in cancer clinical trials remains low due to multiple barriers

A conscious effort to recruit minorities into trials should be made by all institutions

Community engagement is imperative to developing trust and relationships with healthcare providers

Awareness of clinical trials and asking to participate in clinical trials are some of the limitations identified.
“Failure to adequately enroll minorities into clinical trials that can help to customized therapeutic and prevention interventions for racial/ethnic minorities subgroups will mean even greater economic and social burden for the nation from increased morbidity and mortality from cancer.”

- Dr. Moon Chen-UC Davis
Thank You

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To learn more about Ohio State’s cancer program, please visit cancer.osu.edu or follow us in social media: