02. Building partnerships and trust for community-engaged research: Exploring the unique community academic relationship

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BUILDING PARTNERSHIPS & TRUST FOR COMMUNITY-ENGAGED RESEARCH: EXPLORING THE UNIQUE COMMUNITY ACADEMIC RELATIONSHIP

ST. LOUIS NIH/OHRP NATIONAL RESEARCH FORUM

WASHINGTON UNIVERSITY SCHOOL OF MEDICINE
MONDAY, SEPTEMBER 26, 2011

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Conflict of Interest Disclosure

- Director, Vertex Pharmaceuticals
  - Director Fees
  - Stock Options
Objectives

• A brief overview of Meharry Medical College

• Fundamentals of Community Based Participatory Research

• Historical events that have affected the public’s trust in medicine and research

• Suggested steps to build trust and partnerships
Two Families and An Act of Philanthropy

“Salt Wagon Story”

- 1826 a young Ohio farmer, Samuel Meharry’s wagon broke down in Kentucky

- Freed slaves offered food and lodging

- vowed to repay that kindness …

- “When I can I shall do something for your race”.
1876 – Meharry Medical College

• 12 years after the Civil War ended
  5 Meharry brothers donated $30,000.00
  start up fee
  Meharry Medical Department of Central
  Tennessee College
  11 students
  2 Faculty – Dr. George W. Hubbard; Dr.
  William J. Snead

• Long journey
  Classes held in the basement of Clark
  Memorial United Methodist Church

• Meharry becomes the medical education
  institution where people of color –
  particularly, African Americans – could go
  and become doctors, nurses and dentists
The Carnegie Foundation for the Advancement of Teaching

The “Flexner Report”
Table 6.1  Black Medical Colleges, 1865-1923

<table>
<thead>
<tr>
<th>Institution</th>
<th>City</th>
<th>Year Organized</th>
<th>Year Discontinued</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Howard University</td>
<td>Washington, D.C.</td>
<td>1869</td>
<td></td>
<td>Presbyterian (local)</td>
</tr>
<tr>
<td>Lincoln University</td>
<td>Oxford, Pennsylvania</td>
<td>1870</td>
<td>1874</td>
<td>Congregational</td>
</tr>
<tr>
<td>Straight University</td>
<td>New Orleans</td>
<td>1873</td>
<td>1874</td>
<td>Methodist, Episcopal</td>
</tr>
<tr>
<td>Meharry Medical College</td>
<td>Nashville</td>
<td>1876</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leonard Medical School of Shaw University</td>
<td>Raleigh</td>
<td>1882</td>
<td>1918</td>
<td>Baptist</td>
</tr>
<tr>
<td>Louisville National Medical College</td>
<td>Louisville</td>
<td>1888</td>
<td>1912</td>
<td>Proprietary</td>
</tr>
<tr>
<td>Hannibal Medical College</td>
<td>Memphis</td>
<td>1889</td>
<td>1896</td>
<td>Proprietary</td>
</tr>
<tr>
<td>Flint Medical College of New Orleans University</td>
<td>New Orleans</td>
<td>1889</td>
<td>1911</td>
<td>Methodist, Episcopal</td>
</tr>
<tr>
<td>Knoxvile College Medical Department</td>
<td>Knoxville</td>
<td>1895</td>
<td>1900</td>
<td>Presbyterian</td>
</tr>
<tr>
<td>Chattanooga National Medical College</td>
<td>Chattanooga</td>
<td>1899</td>
<td>1908</td>
<td>Proprietary</td>
</tr>
<tr>
<td>State University Medical Department</td>
<td>Louisville</td>
<td>1899</td>
<td>1903 (Merged with LNMC)</td>
<td>Baptist (Ky.)</td>
</tr>
<tr>
<td>University of West Tennessee College of Medicine and Surgery</td>
<td>Jackson (1st location)</td>
<td>1900</td>
<td>1907</td>
<td>Proprietary</td>
</tr>
<tr>
<td>Medico-Chirurgical and Theological College of Christ's Institution</td>
<td>Memphis (2nd location)</td>
<td>1907</td>
<td>1923</td>
<td></td>
</tr>
</tbody>
</table>

At least fourteen Black medical schools existed between 1865 and 1910. Between 1910 and 1970 Meharry Medical College and Howard Medical school were virtually the sole sources of Black physicians and dentists.
Meharry Today: Leaders in Education

- Graduate 8% of all AA physicians in country; 22% of all AA dentists
- 52% of MMC 4th year students matched to primary care residency programs
- 5,002 applications for 105 slots in SOM
- 1,835 applications for 55 slots in SOD
- 32% of current senior dental students accepted in advanced education/training programs
  - represents 69% of senior class
  - 24% plan to enter private practice
  - 7% undecided
- Top 10 supplier of African-American Ph.D.s in Biomedical Sciences
- Dental, Medical and Scientific Research programs and Master of Science Public Health
- Fully accredited by SACS, LCME, ADA and CEPH
Meharry Medical College Alumni
Physicians and Dentists Practicing In U.S.
As of 2009 (N = 6,171)
“Social Mission” Rankings

Top 10

1. Morehouse College
2. Meharry Medical College
3. Howard University
4. Wright State University Boonshoft School of Medicine
5. University of Kansas
6. Michigan State University
7. East Carolina University Brody School of Medicine
8. University of South Alabama, Ponce Medical College
9. University of Iowa Carver College of Medicine
10. Oregon Health & Sciences University

Source: Annals of Internal Medicine
Meharry Today: 
Healthcare for the Underserved

- **76%** of alumni return to underserved communities to provide healthcare service
- 130+ years of providing quality care
- Clinical services provided at Nashville General Hospital
  - Index public hospital for Metropolitan Nashville/Davidson County
  - All patients are seen by Meharry or Vanderbilt physicians
- Home of the Journal of Healthcare for the Poor and Underserved
Meharry Today: A Nashville Resource

• Key economic contributor to Nashville
  - #64 on the list of Top 100 Employers
  - $156 million budget
  - $500 million economic impact
  - $118 million endowment
  - $26 million of uncompensated medical and dental care provided to uninsured and indigent patients

• High volunteerism among our employees – churches, schools, neighborhoods, sororities, fraternities, missionary work

• Leading supplier of a culturally competent healthcare workforce
  - Diverse student body
    - 8% Caucasian; 7% Asian; 5% Hispanic; 80% African-American
  - Diverse faculty and staff
    - 60% African-American; 40% other
**Meharry Today: Leaders in Research**

- Focused on diseases that disproportionately affect people of color and the economically disadvantaged
- Key research programs include:
  - Center for Women’s Health Research
  - Center for HIV/AIDS Disparities Research
  - Meharry Translational Research Center (MeTRC):
    - $4.2M/year, $21M over five years
  - Research Centers in Minority Intuitions (RCMI):
    - $2.2M/year, $11M over five years
  - Clinical and Translational Science Award (CSTA) with Vanderbilt University Medical Center:
    - $9M/year, $45M over five years
COMMUNITY-BASED PARTICIPATORY RESEARCH
Community Based Participatory Research (CBPR)

- Relatively *new* research methodology
- Focuses on *collaboration* between academic and community partners
- Incorporates community knowledge, participation, and practices into research efforts

**Definition:** CBPR defined by Minkler & Wallerstein, 2003

- “collaborative approach to research [that] equitably involves all partners in the research process and recognizes the unique strengths that each brings. CBPR begins a research topic of importance to the community with the aim of combining knowledge and action for social change to improve community health and eliminate health disparities.”

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1. Genuine partnerships are co-learning opportunities—academic and community partners learning from each other

2. Research efforts include capacity building—making a commitment to training community members in research

3. Findings and knowledge should benefit all parties involved

4. Establishing the ultimate goal—making the long-term commitment to effectively reducing disparities.²

Challenges to effective CBPR

• Identifying the research design and methodology questions of how to evaluate its effectiveness
• Poses ethical questions of how to expand IRB patient protection to a community protection model
• Presents implementation questions for the researcher-community relationship—levels of participation, power, privilege, ethnic-racial disparity, etc.
• Transitioning from theory to practice—the Institute of Medicine (IOM) has called for CBPR to be taught as a core competency to all incoming health professional students
  - IOM, along with other research organizations, believe that many of today’s complex health problems may profitably be studied and addressed through approaches that emphasize collaboration with communities in exploring and acting on locally identified concerns.
Challenges to effective CBPR

- May take a long time to achieve significant results; changes in institute/agency funding appropriations problematic

- Relies, at least in part, on soft data (# vegetable portions per day) based on participants’ self-reports

- Loss of interest on part of staff, community leaders, and participants. Therefore an intervention that worked well for a period of time, no longer as effective

- Cultural or language barriers

- Participant drop-outs and incomplete data
HISTORICAL EVENTS CREATING DISTRUST IN PUBLIC HEALTH
BUILDING PARTNERSHIPS & TRUST FOR COMMUNITY ENGAGED RESEARCH

~ 370 BC  “I will use those dietary regimens which will benefit my patients according to my greatest ability and judgment and I will do no harm or injustice to them”. NIH/NLM translation from Greek, Hippocratic Oath.

• **1932-1972.** Tuskegee. As part of a U.S. Public Health Service (PHS) experiment, the U.S. government left untreated ~ 400 poor, uneducated syphilis-infected black men in order to study the course of the disease. --The men thought they were getting free care for ‘bad blood’. They got free meals and a promise of money for burials if they allowed their bodies to be autopsied at death.

• **1947.** Penicillin became widely available.

• **1993.** John C. Cutler, MD, a white PHS physician involved in the Tuskegee studies was interviewed for a *Nova* documentary re: Tuskegee. Cutler said “...it would be undesirable to go ahead and use large amounts of penicillin to treat the disease, because you’d interfere with the study.”
Guatemala

• **1946-1948.** Guatemala. The same PHS physician involved in the Tuskegee experiments, Dr. John Cutler, oversaw the studies in Guatemala in which 700-1,500 highly vulnerable men and women (including soldiers, prisoners and mental health patients) were intentionally infected with syphilis without informed consent. About two-thirds were treated with a partial or full dose of penicillin.

• The purpose was to determine the effects of no, partial or full treatment with the drug. The results were never published.

• Done in Guatemala as the US Surgeon General said it couldn’t be done in US; details also hidden from officials in that country.

• **2005.** Study was uncovered by Prof. Susan Reverby (Wellesley) when she was researching Cutler’s papers and the Tuskegee studies.

Chemical Warfare & Mustard Gas Experiments

- **1939-1946.** Chemical warfare.
  --Mustard gas experiments on 60,000 Allied troops. Soldiers were encouraged or ordered to volunteer.
  --Veterans said they did it out of patriotism, boredom, promise of extra pay, not being shipped to front, etc.

- Not warned of suffering (including psychological, blindness, burns, blisters, sores) or that “there would be little immediate, and no follow-up care”.

- Either : a) small drop on skin, b) sprayed with the gas by low flying planes , or c) actually placed into a gas chamber into which mustard gas was released.

- Tested effects on African Americans, Japanese Americans, Puerto Ricans and as a control, whites, at a time when African and Japanese American troops were still each segregated from other enlisted personnel. Government thought that black skin would be more resistant.
Dachau & Auschwitz

- **1942-1943** Dachau hypothermia survival experiments. Male civilian prisoners and Russian prisoners of war. Participation usually forced; sometimes ‘voluntary’ with promise of release or commutation of death sentence. Immersed in ice water for various periods of time. A Dachau Report states that in 7 experiments, victims died within 53-106 min. Some were transferred to warmer or hot water to observe recovery.

- **1942-1944** Auschwitz sterilization experiments on non-Aryan (Jewish or gypsy) non-consenting female and male prisoners; less than 100 of 1,000 subjects survived. Death was due to experimental complications, lethal injections or the gas chamber.

- **1947**. Nuremberg Code drafted: Includes “*voluntary consent of the human subject is absolutely essential...should be so conducted as to avoid all unnecessary physical and mental suffering and injury*”.

In her critically acclaimed book *The Immortal Life of Henrietta Lacks*, journalist Rebecca Skloot tells the story of the amazing HeLa cells, Henrietta Lacks, and the cell line's impact on both modern medicine and the Lacks family.

In 1951, a scientist at Johns Hopkins Hospital in Baltimore, Maryland, created the first immortal human cell line with a tissue sample taken from a young black woman with cervical cancer. Neither the patient nor her family gave permission to harvest the cells. The cells, called HeLa cells, quickly became invaluable to medical research—though their donor remained a mystery for decades.
IMPORTANCE OF CBPR—THE HEALTH DISPARITY IMPERATIVE
THE 1985 MALONE-HECKLER REPORT
ON BLACK AND MINORITY HEALTH

“Landmark Report”
The 1985 Heckler Report on Black and Minority Health

- “Shock waves” were generated when in August 1985, Secretary of Health and Human Services Margaret Heckler reported on minority health when it averred “there was a continuing disparity in the burden of death and illness experienced by blacks and other minority Americans as compared with our nation’s population as a whole”
- The black experience of poor health status, poor health outcomes, and limited access for 366 years before 1985 – well known to African-American, a small group of governmental officials, and tiny cadre of academics was not appreciated by the general public until 1985

Source: An American Health Dilemma, Race, Medicine, and Health Care in the United States (2002)
The 1985 Heckler Report on Black and Minority Health

- **THE HECKLER REPORT** highlighted the fact that there was a **continuing disparity in the burden of death and illness experienced by blacks and other minority Americans as compared with the nation’s population as a whole**

- The report noted the health disparity has existed “ever since accurate federal record keeping began”

- Malone-Heckler report highlighted “excess mortality” in **6 medical conditions** between whites and blacks
  - Accounted for nearly **86%** of the excess Black mortality when compared to the White population

- **42.5%** of Black deaths up to age 70 were “**excess deaths**”

Source: An American Health Dilemma, Race, Medicine, and Health Care in the United States (2002)
Heckler further stated that “although our health charts do itemize steady gains in the health status of minority Americans, the stubborn disparity remained – an affront both to our ideals and to the ongoing genius of American medicine... I felt – passionately – that it was time to decipher the message inherent in that disparity.”

It was the first time... a common effort... to carry out a comprehensive and coordinated study to investigate the longstanding disparity in the health status of blacks, Hispanics, Asian/Pacific Islanders, and Native Americans compared to the non-minority population had been done.

Source: An American Health Dilemma, Race, Medicine, and Health Care in the United States (2002)
Disparities in Health Conditions and Diseases

- Conditions and Diseases with significant racial/ethnic/socioeconomic disparities in morbidity and mortality:
  - Cardiovascular disease
  - Diabetes
  - Asthma
  - Cancer; breast, prostate, colon
  - HIV/AIDS
  - Mental health
  - Chronic kidney disease
The Economic Burden of Health Inequalities in the U.S.

- Study by the Joint Center for Political and Economic Studies and carried out by Johns Hopkins University and the University of Maryland
- Financial burden of racial disparities on our health care system and society
  - **Direct costs** of health inequalities → prescription drugs, home health services, ambulance services, and medical equipment
  - **Indirect costs** of health inequalities → lost productivity, lost wages, absenteeism, family leave, and premature death
- > 30% of direct medical costs faced by African Americans, Hispanics and Asian Americans were excess costs due to health inequalities → **>$230 billion over a three year period**
- Indirect costs of these inequalities over the same period → **$1.24 trillion**
Eliminating health disparities for minorities would have reduced direct medical care expenditures by $229.4 billion for the years 2003-2006.

2003 – 2006, 30.6% of direct medical care expenditures for African Americans, Asians, and Hispanics were excess costs due to health inequalities.

Eliminating health inequalities for minorities would have reduced indirect costs associated with illness and premature death by more than one trillion dollars between 2003 and 2006.

In the case of health inequalities, doing nothing has a cost we should not continue to bear.
## Disparity “Belt” — Southern State US Census Data

<table>
<thead>
<tr>
<th>MEASURE</th>
<th>TN</th>
<th>MS</th>
<th>AL</th>
<th>GA</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population, 2010, in millions</td>
<td>6.3</td>
<td>3.0</td>
<td>4.8</td>
<td>9.7</td>
<td>4.6</td>
</tr>
<tr>
<td>% White</td>
<td>77.6</td>
<td>59.1</td>
<td>68.5</td>
<td>59.7</td>
<td>66.2</td>
</tr>
<tr>
<td>% AA/Black</td>
<td>16.7</td>
<td>37.0</td>
<td>26.2</td>
<td>27.9</td>
<td>27.9</td>
</tr>
<tr>
<td>% Hispanic/Latino</td>
<td>4.6</td>
<td>2.7</td>
<td>3.9</td>
<td>5.1</td>
<td>3.9</td>
</tr>
<tr>
<td>% Below Poverty Line, 2009</td>
<td>17.2</td>
<td>21.8</td>
<td>17.5</td>
<td>16.6</td>
<td>17.1</td>
</tr>
<tr>
<td>Federal Spending, 2008, in billions</td>
<td>58.7</td>
<td>30.1</td>
<td>48.0</td>
<td>74.2*</td>
<td>38.8</td>
</tr>
</tbody>
</table>

* The high Federal Spending in GA * reportedly largely due to funds to improve information technology
## Disparity “Belt”-- what is Georgia doing right?

<table>
<thead>
<tr>
<th>Health Measure</th>
<th>TN</th>
<th>MS</th>
<th>AL</th>
<th>GA</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiac Heart Disease, % adults (told by MD)</td>
<td>39</td>
<td>32</td>
<td>41</td>
<td><strong>13</strong></td>
<td>39</td>
</tr>
<tr>
<td>Heart Attack, % adults</td>
<td>41</td>
<td>42</td>
<td>48</td>
<td><strong>19</strong></td>
<td>39</td>
</tr>
<tr>
<td>Stroke, % adults</td>
<td>39</td>
<td>47</td>
<td>49</td>
<td><strong>16</strong></td>
<td>42</td>
</tr>
<tr>
<td>Physical Activity, % adults, any activity last month (1 = best)</td>
<td><strong>46</strong></td>
<td>49</td>
<td>47</td>
<td>28</td>
<td>34</td>
</tr>
<tr>
<td>Obesity, population prevalence</td>
<td>48</td>
<td>50</td>
<td>44</td>
<td><strong>28</strong></td>
<td>38</td>
</tr>
<tr>
<td>Hypertension, % adults</td>
<td>42</td>
<td>49</td>
<td>48</td>
<td>37</td>
<td>42</td>
</tr>
<tr>
<td>Diabetes, % adults</td>
<td>43</td>
<td>48</td>
<td>49</td>
<td>38</td>
<td>44</td>
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</tbody>
</table>
### Disparity “Belt”—what are we doing wrong?

<table>
<thead>
<tr>
<th></th>
<th>TN</th>
<th>MS</th>
<th>AL</th>
<th>GA</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teen Birth Rate, 15-19 yrs</td>
<td>44</td>
<td>50</td>
<td>39</td>
<td>40</td>
<td>38</td>
</tr>
<tr>
<td>Early Prenatal Care, % pregnant moms</td>
<td>47</td>
<td>15</td>
<td>24</td>
<td>14</td>
<td>48</td>
</tr>
<tr>
<td>Preterm Births, %</td>
<td>43</td>
<td>50</td>
<td>48</td>
<td>40</td>
<td>47</td>
</tr>
<tr>
<td>Low Birthweight, %</td>
<td>49</td>
<td>50</td>
<td>48</td>
<td>45</td>
<td>47</td>
</tr>
<tr>
<td>Infant Mortality, deaths/100K (prior to 1 yr)</td>
<td>46</td>
<td>50</td>
<td>48</td>
<td>41</td>
<td>46</td>
</tr>
<tr>
<td>Children in Poverty, % &lt;18 yrs</td>
<td>39</td>
<td>50</td>
<td>46</td>
<td>40</td>
<td>18</td>
</tr>
</tbody>
</table>
## Disparity “Belt”. Outcomes and healthcare resources.

<table>
<thead>
<tr>
<th></th>
<th>TN</th>
<th>MS</th>
<th>AL</th>
<th>GA</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>CV Deaths, #/100K, including heart disease &amp; stroke</td>
<td>41</td>
<td>46</td>
<td>48</td>
<td>7</td>
<td>29</td>
</tr>
<tr>
<td>Cancer Deaths, #/100K.</td>
<td>46</td>
<td>47</td>
<td>44</td>
<td>24</td>
<td>36</td>
</tr>
<tr>
<td>Smoking, % adults</td>
<td>41</td>
<td>47</td>
<td>44</td>
<td>21</td>
<td>36</td>
</tr>
<tr>
<td>Lacks health insurance, %</td>
<td>31</td>
<td>40</td>
<td>26</td>
<td>44</td>
<td>37</td>
</tr>
<tr>
<td>Primary Care Physicians, #/100K</td>
<td>18</td>
<td>39</td>
<td>40</td>
<td>34</td>
<td>23</td>
</tr>
<tr>
<td>Income, per capita</td>
<td>45</td>
<td>50</td>
<td>48</td>
<td>41</td>
<td>44</td>
</tr>
<tr>
<td>Preventable Hospitalizations, Medicare population</td>
<td>45</td>
<td>48</td>
<td>44</td>
<td>30</td>
<td>22</td>
</tr>
</tbody>
</table>
STEPS TO BUILD TRUST & PARTNERSHIPS—THE MEHARRY STORY
Step 1: Providing a Service to the Community

Community engagement through increasing healthcare access.
During segregation, medical facilities for African-Americans were almost non-existent & only a small group of hospitals cared for blacks in the South. Most were owned by, or served by black colleges and/or fraternal organizations. These included the legendary Homer G. Phillips Hospital and the 90 bed Hubbard Hospital in Nashville.

- **1910.** Staffed by Meharry faculty & students, Hubbard Hospital opened in Nashville. After decades of use, this facility morphed into a newer facility, Nashville General Hospital (NGH) at Meharry Medical College (MMC), a county hospital that now largely serves indigent patients; NGH was launched based on a **1998** agreement between Meharry, Vanderbilt and Davidson County Government.

- **1968.** Matthew Walker Health Center, a family-oriented ambulatory site in North Nashville, opened to serve as an extension of Meharry and Hubbard Hospital. It now is an independent federally qualified health center. Named after Matthew Walker Sr, M.D., a highly respective surgeon who worked at Hubbard.
Step 2. Creating a Foundation for Research/Partnerships

1958-1965. Meharry cardiologist, John Thomas, MD, established a cohort of 435 black medical students who attended Meharry from 1958-1965, to prospectively study their risk of hypertension and CV disease (Meharry Cohort Study or MCS). He was prompted by concerns about the prevalence and CV outcomes in his patients, and the lack of data on blacks, particularly those without a low SES. In 1988, MMC started to collaborate with Johns Hopkins (Michael Klag, M.D.), which had begun a similar cohort of white medical students. Follow up= 22-35 yrs.

<table>
<thead>
<tr>
<th>Measure</th>
<th>MCS (original = 435 students)</th>
<th>JHCS (original = 530 students)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline BMI, kg/m</td>
<td>24</td>
<td>23</td>
</tr>
<tr>
<td>Baseline smokers</td>
<td>72%</td>
<td>43%</td>
</tr>
<tr>
<td>Baseline ‘drinkers’</td>
<td>95%</td>
<td>88%</td>
</tr>
<tr>
<td>Baseline systolic BP, mm Hg</td>
<td>120</td>
<td>116</td>
</tr>
<tr>
<td>Follow-up, case fatalities</td>
<td>51.5%</td>
<td>9.4%</td>
</tr>
<tr>
<td>Follow-up, incidence hypertension</td>
<td>40.3%</td>
<td>18.5%</td>
</tr>
<tr>
<td>Follow-up, incidence diabetes</td>
<td>11.7%</td>
<td>3.8%</td>
</tr>
<tr>
<td>Follow-up, aspirin for prevention</td>
<td>31%</td>
<td>62%</td>
</tr>
<tr>
<td>Follow-up, risk of CAD</td>
<td>1.4</td>
<td>1.0</td>
</tr>
<tr>
<td>Follow-up, increase in resting BP</td>
<td>12%</td>
<td>4%</td>
</tr>
<tr>
<td>Best predictors of CV disease</td>
<td>BP</td>
<td>smoking, cholesterol, parental history</td>
</tr>
</tbody>
</table>
Step 2. Creating a Foundation for Research/Partnerships

MCS: 2\textsuperscript{nd}/3\textsuperscript{rd} generation risk of low birth weight/pre-term infants 1958-1965. Meharry cohort follow-up study on children and grandchildren of medical students. Collaborators included Henry W. Foster, M.D. (1995 nominee, US Surgeon General) and Dr. John Thomas from Meharry, and Michael Bracken, PhD from Yale. Studied female children and grandchildren of those in the MCS to determine their risk of low birth weight or a pre-term infant compared to subjects in a Yale cohort of white women.

<table>
<thead>
<tr>
<th>Infants</th>
<th>Yale mothers</th>
<th>Pregnant children of MCS students-outcomes</th>
<th>Pregnant grandchildren of MCS students-outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low BW</td>
<td>3.3%</td>
<td>11.4%</td>
<td>6.9%</td>
</tr>
<tr>
<td>Pre-term &lt;37wks</td>
<td>2.9%</td>
<td>11.2%</td>
<td>8.2%</td>
</tr>
</tbody>
</table>

Step 3: Establishment of a Formal Academic Partnership

1999. Meharry (MMC) and Vanderbilt (VU) were both established post-Civil War (1876 vs 1873). Only a few miles apart, they slowly but persistently sought to bridge cultural and philosophical differences, such that in the Fall of 1998 they drafted plans to establish the **Meharry-Vanderbilt Alliance (MVA)**.

The Alliance soon realized that they had certain common research and educational goals as well. Each institution agreed to maintain their own identity and strategic goals. Each also continued to work with other partner agencies and institutions.
Step 4: Establishment of Community-Based Consortia

Expanded Safety Net Consortium of Middle TN

<table>
<thead>
<tr>
<th>FQHC/CHCs</th>
<th>Hospitals</th>
<th>Primary Care Clinics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matthew Walker Comprehensive Care Ctr</td>
<td>Baptist</td>
<td>Baptist/UT Med Ctr</td>
</tr>
<tr>
<td>United Neighborhood</td>
<td>Centennial</td>
<td>Comprehensive Care Clinic</td>
</tr>
<tr>
<td>Metro Health Downtown Clinic</td>
<td>Children’s Hospital at VU</td>
<td>Faith Family Clinic</td>
</tr>
<tr>
<td>Vinehill Clinics</td>
<td>NGH at MMC</td>
<td>First Response Clinic</td>
</tr>
<tr>
<td></td>
<td>Skyline Med Ctr</td>
<td>Hermitage Med Assoc.</td>
</tr>
<tr>
<td></td>
<td>Summit Med Ctr</td>
<td>MMC Clinic</td>
</tr>
<tr>
<td></td>
<td>Southern Hills Med Ctr</td>
<td>NGH Ambulatory Care Ctr</td>
</tr>
<tr>
<td></td>
<td>St Thomas Med Ctr</td>
<td>Prohealth Nashville</td>
</tr>
<tr>
<td></td>
<td>VU Med Ctr</td>
<td>St Thomas Family Health Ctrs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Siloam Family Health Clinic</td>
</tr>
</tbody>
</table>

Originally convened by the Alliance. The original core group included Metro Health Dept, the FQHCs, primary care clinics, & the MVA. They were successful in getting two HRSA grants.

2001. Bridges to Care (BTC). Allowed Metro Health to find a primary care home for the uninsured in Davidson County, using Consortium collaborators.

2005. BTC Plus. Linked BTC-referred pts to free services by a pool of 600 specialists ($10/visit cost): organized by Nashville Academy of Medicine.
Step 5: Development of Studies to Address Health Disparities

Consortium of Safety Net Providers of Middle TN and the Diabetes Improvement Project

The first phase started in 2009 with 7 community clinic systems: Faith Family, Matthew Walker, NGH at MMC, St. Thomas Community Clinics, Siloam, United Neighborhood and University Community Health Services

- Enrolled over 7,400 diabetic patients
- Demographics: 33% AA, 31% Caucasian, 23% Hispanic, 13% Other; roughly 40% male, 60% female.
- Payer mix: 64% uninsured, 22% TennCare, 5% Medicare, 11% Other

Intent: to bring HbA1c, LDL cholesterol and BP to range defined by the American Diabetes Association.

--Only 9% of these patients were within the acceptable range for all three measures, while 20% were abnormal for all three measures. The majority were out of clinical control.

--Interventions will be made to improve care and self-management practices. Successful practices observed in one clinic will be adopted by the others to improve care for all; outcomes are measured by run charts. The group will also look at the use of non-emergency ED visits.
Concluding Remarks

- Community based participatory research is a valuable and necessary tool in today’s medical/public health research industry.

- Establishing trust and collaboration will facilitate health statistics and research findings in order to provide evidenced-based translational healthcare.

- CBPR can influence policy measures and increase awareness about risk factors leading to health disparities.