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Women's death rate from cardiovascular disease is greater than the death rate from all cancers. Awareness and knowledge of a disease are key in dealing with it, yet many women are still unaware of their CVD risk. The purpose of this study is to identify the barriers to knowledge about cardiovascular disease risk in women in Tarrant County. Interviews with administrative personnel in 10 community organizations confirmed the lack of awareness of CVD. Barriers included: women in caregiver roles advocate effectively for their family members, but less effectively for themselves; physician communication with women regarding CVD is often suboptimal; women fear breast cancer far more than CVD; a program deficiency exists in Tarrant County; lack of a visible woman champion and heart disease is still seen as a man's disease.

BARRIERS TO WOMEN'S CARDIOVASCULAR RISK KNOWLEDGE:
A TARRANT COUNTY STUDY

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INTRODUCTION

Problem and Significance

Cardiovascular Disease (CVD) is the top killer of women. Most women think that breast cancer is a greater threat than CVD. In particular, CVD has been considered a man's disease, while breast cancer has been considered a woman's disease. Many do not know the gender specific risks, symptoms, testing and progression of the disease, often assuming that they are the same for both sexes, with male being held as the norm (cpmcnet.columbia.edu).

Imagine a patient in the ER with chest pain. Most likely the picture of a man comes to mind. Women may delay getting care because they may not have classic heart attack symptoms (chest pain or pressure that radiates to the left arm). Women's symptoms are more vague and often are under recognized, under diagnosed and under treated (www.heart.ucdmc.ucdavis).

Marian Legato, M.D, in the introduction of her book " The Female Heart" tells the story of a man and a woman experiencing the same symptoms, yet responding in entirely different ways. Both 48, the woman woke up with searing chest pain, and while hiking, the man complained of chest pain. They both dismissed hers as indigestion, and with his, went to the emergency room. Testing revealed a viral inflammation of the covering of the heart for both of them. Of interest, the man was a physician, and both he

and his wife dismissed her chest pain, but responded immediately to his (Legato, p. xi). Often when a woman's health is mentioned, it is reproductive health, or mental health, bone health, or health related to an abusive environment that is the focus. Rarely does cardiovascular health enter the picture. When asking a woman about visits to her doctor she will respond by being proud of yearly visits to her OBGYN physician, and getting her PAP Smear and Mammogram. It is not often that she responds with knowledge of her CVD risks, symptoms, testing, disease progression, or the gender differences inherent in all four.

In her book "Women are not Small Men" Nieca Goldberg, MD cites a survey taken by the AHA of 1,000 women, between 25 and 45. Only 8 percent of the women thought they were at risk for heart attack, and only 1 percent felt at risk for stroke (Goldberg, 2002, p. 206). Dr. Goldberg then did her own study of patients enrolled in the Women's Heart Program at Lennox Hill Hospital in New York City, some of whom had already had heart attacks. The shocking results revealed that 61% of her patients who had already diagnosed heart disease had a low perception of their risk. Only 39 % had a high perception of the reality of the situation before admission. Basically, the majority had denied that they had heart disease (Goldberg, 2002, p. 207)!

January 22, 2000, a TV program sponsored by ivillage.com and hosted by Lynn Redgrave announced that CVD kills more women than all the cancers combined. A radio program on KERA Monday, February 7, 2000, with guest speakers from UTSouthwestern, including Karen Bradshaw M.D and Nina Radford M.D., revealed

several more facts regarding CVD: 45% of women die of CVD, 4% of women die of Breast Cancer, and twice as many women die of CVD than all cancers combined.

In a survey of 1,000 women in the Washington metropolitan region, women rated CVD as third when ranking health concerns, with breast cancer and stress ranked ahead. Additionally, a Gallup poll revealed that 70 percent of women stated the symptoms of heart disease are the same for both women and men. Another survey found nearly two-thirds of the nation's primary care physicians inaccurately reported "no difference in the symptoms warning signs and diagnosis of heart disease in women, compared to men" (Heart Information Network, www.heartinfo.com).

Risks, Symptoms, Testing and Disease Process

Women tend to be older, have more diabetes and hypertension than men when they experience CVD symptoms. Often there is only a feeling of "unease" or "being sick" that is difficult to describe. They also have a higher number of silent episodes of angina, and silent heart attacks where the symptoms are not recognized. Many women who aren't physically active will not have the early warning symptoms that may appear with physical activity. They may however complain of symptoms at rest or at night, and often with emotional upset. "While often belittled by physicians, this discomfort with emotional stress or at rest may actually represent more severe disease than that seen with increased physical activity" (www.womensheartinstitute.com).

It is also being recognized that women need to be tested differently for CVD than men. UT-Houston has been screening women differently than men for heart disease since February of 1996. The new protocols were developed as a result of scientific

findings from the previous five years, showing that men and women have significantly different risk factors for heart disease. Most women are not specifically tested for these factors. When the risk factors are found, they can be modified in most cases by diet and exercise. "I believe we could eliminate 80% of all heart disease in women by recognizing these factors and treating them" (Uthouston online newspaper 1996 February). In addition to being tested for cholesterol levels - High Density Lipoprotein (HDL), Low Density Lipoprotein (LDL), triglycerides - women are tested for lipoprotein (a), homocysteine and serum magnesium.

The problem remains that while there is a plethora of information regarding CVD, women do not perceive it as the health risk that it is. Many women have asked their families about cancer history, but few ask about heart disease and the early onset in women. Many know if their cholesterol is "ok" but few know if the individual values of the lipid profile put her at risk (www.womensheartinstitute.com). New information regarding inflammation and its contribution to heart disease has been published. C - reactive protein level measurement may soon become an important indicator along with cholesterol in the prediction of CVD risk (Haney, D.Q., p. A11).

Younger women do not have heart attacks nearly as often as younger men do. However, women under 50 who have heart attacks die at twice the rate of their male counterparts (US News and World Report, 1999). A recent study showed that women, having had their first heart attack, have a much higher mortality rate than men; 44% vs. 27% respectively (cpmcnet.columbia.edu).

Awareness and programs

Internationally, women's heart health is being recognized. The "First International Conference on Women, Heart Disease and Stroke" was held in Victoria, British Columbia, Canada May 7-10, 2000. Three main themes were focused upon in the conference: science and research as applied to the prevention of heart disease and stroke in women, development of policy supportive of women's heart health, and approaches to community health (www.heartfoundation.com).

The North Karelia Project in Finland (1972-1982) published results for morbidity and mortality, reporting a favorable effect of intervention on ischemic heart disease mortality (Leupker et al., 1996, p. 351). The Coeur en santé St-Henri program in Montreal, Quebec Canada (1992-1995), in one of the most disadvantaged urban communities in Canada, had objectives to promote heart healthy behaviors including diet, nonsmoking, increased physical activity and blood pressure and cholesterol control. The results showed no substantial decrease in smoking, physical inactivity, or consumption of high fat foods. The level of physical activity actually decreased (O'Laughlin et al., 1999, p. 1821). Neither of these programs specifically mentioned a focus on women's particular symptom and testing differences.

The Centers for Disease Control and Prevention (CDC) offered its "First National CDC Prevention Conference on Heart Disease and Stroke" in Atlanta Georgia, August 22-24, 2001. The conference theme was "Building and Expanding Comprehensive Cardiovascular Health State Programs" (www.cdc.gov). While women were not the main focus, the fact that "First" is in the title, shows that Cardiovascular Disease is

beginning to get the attention it needs. The CDC also has a State Cardiovascular Health Program and has funded 30 states to help with cardiovascular health promotion, disease prevention, and control (www.cdc.gov).

The American Heart Association web site has a "Community Prevention Programs section" program designed to increase patients' awareness of CVD and stroke. The site has multiple other examples of healthy lifestyle education geared to various age groups with various audiovisual enhancements (Community Prevention Programs, www.americanheart.org). Many programs are geared toward the Hispanic and African American populations.

The West Virginia Women's Health Study focused on the Health Belief Model and addressed several behaviors related to disease risk. Results showed that perceived susceptibility to CVD was not significantly associated with susceptibility to high blood cholesterol, and 25% of the women felt susceptible to CVD, but not to high blood cholesterol. An additional 13% felt susceptible to high blood cholesterol, but not to CVD, making it appear that some of the participants did not understand the connection between susceptibility to CVD and high blood cholesterol (Humphries, Krummel, 1999, p. 250).

In another study in West Virginia, focus groups were used to determine rural women's perceptions regarding CVD prevention and behavior changes to improve cardiovascular health status. The results showed that the women were unaware of their own CVD risk, with themes of family influence and cultural food preference and lack of

support limiting their adoption of a heart healthy diet. Self-efficacy for change ranged from low in younger women to very high in older women (Krummel et al., 2002, p. 38).

Four programs sponsored by the National Heart, Lung and Blood Institute (NHLBI) included: The Stanford Five City Project (1979-1986), designed to test if a comprehensive community program could reduce CVD risk factor prevalence. The results for men and women were combined since the hypotheses were not gender specific "(and there was no reason to expect the intervention to affect event rates in men and women differently)" (Fortman, Varady, 2000, p. 319). The Pawtucket Heart Health Program in Rhode Island (1981-1993) was designed to investigate CVD risk reduction knowledge. CVD prevention knowledge increased over time and adjusted knowledge scores were higher for people born in the US, women, more educated and those who spoke English at home (Gans et al., 1999, p. 230). The Minnesota Heart Health Program (1980-1990) had a hypothesis that the incidence of coronary heart disease and stroke would decrease in 30 - 74 year old men and women in the education communities. The results were that there was no significant effect on morbidity or mortality for coronary heart disease or stroke (Luepker et al., 1996, p. 351). A fourth program sponsored by the NHLBI was designed to address heart disease awareness, knowledge of prevention, and promotion of healthy lifestyles in Latino populations in the Washington, D.C. area. The Salud Para Su Corazón Program showed that increases in awareness of CV risk factors were roughly equivalent for women and men, but a change in peoples' behaviors was not demonstrated (Alcalay et al., 1999, p. 372). The programs did show a

modest effect on attitudes, behaviors, and risk factors, but no significant effect on health outcomes (Record et al., 2000, p. 30).

The Franklin Cardiovascular Health Program in Rural Maine (1974-1994), reported results (similar to North Karelia, Finland) suggesting an association between a community cardiovascular health program and decreased mortality (Record et al., 2000, pg 34). The program used primary care physicians and nurse mediation for assessment, counseling, referral and follow-up (Record et al., 2000, pg 37).

The Take it to Heart Program (1997) sponsored jointly by the National Medical Association and Bayer Corporation, was designed to increase awareness of the prevalence of hypertension and risks of coronary heart disease in the African American communities. The screening and awareness project was conducted in Washington, D.C., Detroit, Michigan, Atlanta, Georgia, Greensboro, North Carolina, Los Angeles, California and Houston, Texas. Results demonstrated a need for community programs to increase awareness of the importance of regular checkups and hypertension information (Keyes, 1999, p. 651).

The *Lighten Up* program was a church based study and intervention designed to reach medically underserved very high-risk groups in North and South Carolina. The study participants were 83% African American, the focus was obesity and related risks (high blood pressure, high cholesterol, diabetes), and church based activities of lifestyle intervention seemed to be more effective among African American women than a traditional approach. (Kumanyika S.K., as cited in Oexmann et al., 2001, p. 817).

The above mentioned programs had no indication of the program content being gender specific. Communities, low SES, rural, Latino and African American populations were addressed, but not women's different risks, symptoms, testing and disease process. Of note is the fact that many of the programs were conducted in the 70's and 80's, before the information regarding women was readily available. The Stanford Five City Program even mentioned that there was no reason to expect the intervention to affect men and women differently. "The varying degree of success of the programs leads to many questions - not only why the variation in effectiveness, but what features of the community interventions are effective with which populations and under what conditions" (Altman, 1986; Fisher, 1995; Fortmann et al., 1995; Patrick and Wickizer, 1995; Puska, 1985; Susser, 1995, as cited in Sellers et al., 1997, p. 1326).

The Uniontown Community Health Project was a five - year study funded by the National Institutes of Health's Women's Health Initiative and the Centers for Disease Control and Prevention and performed by the University of Alabama at Birmingham Center for Health Promotion. The goal was to develop a Community Health Advisor (CHA) to reduce the risk of CVD in African American women age 40 and above. It involved training the "trainers" - who would help with the health concerns of the community. Another goal was that to sustain change, communities needed to take control and the CHA model encouraged grassroots participation (Littleton et al., 2002, p. 36).

Community level indicators for evaluating cardiovascular health-promotion programs were developed by the CDC and included: policy and regulation, information,

environmental change and behavioral outcome. The indicators, based on community aspects, rather than individual, could supplement individual indicators, or provide a less expensive measurement than the individual indicators (Cheadle et al., 2000, p. 109).

Local Awareness and Programs

Seminars are being offered on "Women's Health" and cover a wide variety of topics. An example is the "Conference on Women's Health" February 19, 2000 at the Fairmont Hotel in Dallas. Breakout sessions featured speakers on the topics: Cardiovascular, Breast Cancer, Plastic Surgery, Dermatology, Nutrition, Mental Health, Exercise and Fitness. Over 1000 participants (a sell - out crowd) of all ages attended. Geri Mitchell M.D., a last minute replacement for Peter Snell M.D., gave the exercise lecture. General information regarding the benefits of exercise was presented, as well as slides regarding research on men. He apologized, saying research on women is not prevalent.

At the same conference, Nina Radford M.D., a Cardiologist at UT Southwestern Medical Center, reiterated the paucity of research on women. The impact of CVD pertaining to women was made brutally clear by the exercise we were instructed to do. We paired up and the speaker said, "Look at the woman next to you, one of you will die of CVD or Stroke." That's the bad news; the good news is that we have the power to prevent it by the choices we make. Even before the Dr. Bradford had concluded her presentation, women in the audience were asking questions and expressing dissatisfaction with their doctor's listening capabilities. Women time and again relayed feeling "brushed off" by their physicians.

The previously mentioned Salud para su Corazon, created by the NHBLI of the National Institutes of Health, has named the University of North Texas Health Science Center in Fort Worth as an Enhanced Dissemination and Utilization Center (EDUC) to help Latinos make lifestyle changes to live a healthy lifestyle. Again, no mention is made of gender specific risks, symptoms and treatment (www.hsc.unt.edu).

Local Tarrant County hospitals have education in their Cardiac Rehabilitation programs, but it is after a CV event and is not gender specific. Some individual counseling is offered as needed, but there is no formal educational program designed specifically for women and CVD. Some of the hospitals offered one-day seminars on Women's Health, but not on a regular basis, and covered a wide range of topics related to health - not just CV health.

The Tarrant County Public Health Department has a "Healthy Dining Guide," and a brochure on topics addressed by its speaker's bureau, but it also has no formal educational program designed specifically for women and CVD. Heart Disease Prevention is listed, but nothing pertaining to gender specific heart disease issues (Tarrant County Public Health Department Speaks Out brochure).

The City of Fort Worth Public Health Department offers "On the Road," a Self-Management Program designed to enable participants to cope with chronic conditions. The program was designed at Stanford University and is supported by AHCPR Grant HSO6680 and California State Tobacco - Related Disease Research Program Award IRT 156. Upon completion of the six week program, participants have been exposed to the tools for Self Management of Heart Disease, Arthritis, Diabetes, Asthma, Bronchitis,

Emphysema and others. Its focus is to deal with the common problems caused by many chronic conditions (Lorig et al., 2000).

Another City of Fort Worth Public Health Department program that was provided in the past was *Heart Power!* The program from the American Heart Association combined an educational program with physical activity sessions in an eight - week course for children. An evaluation of the program provided in the summer of 2001 found that children had good baseline heart health knowledge. A pre and posttest was administered and scores increased significantly. There was a statistically significant improvement in diastolic BP, and the program participants and community center staff rated the program positively (*Heartpower* Program Evaluation, Summer 2001).

The "Church Connection" is a program in Fort Worth, affiliated with the American Cancer Society that conducts educational programs on cancer to audiences at various religious institutions. While they address cancers that have greater presence in one gender or the other, they do not address CVD risks, but do address healthy life styles in relation to cancer. Many of the programs are held in churches with predominantly African American populations.

Two books used in the Fort Worth Independent School District (FWISD) to teach health to High School students contained healthy living topics including reduction of risk factors, but do not address gender specific heart health issues. Chapter five of one book is devoted to cardiovascular fitness and discusses how to attain fitness and is not gender specific, but rather a general guide to developing fitness (Rainey, Murray, 1997, pp. 157-187). Chapter sixteen of the second book is devoted to CV health and development of

fitness; again has nothing gender specific, but is rather a general guide (Pruitt et al., 1994, pp. 262-284).

The First Annual Women's Health Conference Series, Cardiovascular Disease Among Women was held in April of 2001, sponsored by Texas Woman's University and Pfizer, Inc. A review of current literature was presented including the disease symptoms, testing, and treatment differences for women. More research into the pathophysiology of CVD in women is needed and is ongoing. Most of the attendees were health care professionals from nursing and academia.

Economic Aspects of Heart Disease

Economic facts presented by the Dallas-Fort Worth Business Group on Health (DFWBGH) at their conference "Summit on Cardiovascular Disease DFWBGH Declares War on CVD" March 22, 2001 included that: For every 1,000 men with heart disease, the illness results in 269 lost workdays a year. For every 1,000 women with heart disease, 169 workdays are lost every year. Additionally, workers 18-54 with heart disease are eight times more likely to be limited in their work than workers without the condition (DFWBGH handout at conference).

Barriers to CVD risk knowledge were explored in focus groups conducted with 51 low-economic African American, Hispanic and White women from two urban and two agricultural areas in California. They shared many similar experiences and barriers to a healthy lifestyle. The barriers to participation in programs were identified as lack of time, transportation, and childcare a well as family and cultural pressures, and low education and literacy levels. They suggested that program contents address: the risk

factors of smoking, exercise and diet; how risk factors predispose women to heart disease; how to develop the skills to make behavioral changes; how to separate health "myths" from "facts" and how to prepare low - fat, low - cholesterol foods (Gettleman, Winkleby, 2000, p. 444). They also suggested that program format include: presenting the program as a choice, not being told what to do; group or workshop format - not a "Class," which was often associated with the education many of them lacked; visual rather than written components; outside programs, as homes were too chaotic; and held at job sites. They also wanted to have regular people with regular struggles providing health information, not celebrities. Most women agreed that motivation must come from the woman herself, but incentives such as free meals and an all - women's group (social) as well as cash and food vouchers (financial) would increase participation. (Gettleman, Winkleby, 2000, p. 448).

The First National Asian American & Pacific Islander (AAPI) Cardiovascular Health Strategy Workshop outlined a National Action Plan. It included the importance of a Community - Based Research Agenda, Outreach Strategies and Mobilization. The community's ability to provide adequate services focused on the presence of sound policy, services, infrastructure/training, public information and research (www.apiahf.org).

Attention to Cardiovascular Disease is increasing in the world, but myths regarding women's cardiovascular disease remain. One - day seminars that are offered may address women's issues, but Cardiac Rehab Programs that address CVD risk are not gender specific, and are "after the fact." Aware women will hopefully recognize their

risks and symptoms, seek early interventions, have better outcomes, and become involved in the education of women who remain unaware of their cardiovascular risks. The research question for the study will be: What are the barriers to knowledge regarding cardiovascular disease risk in women in Tarrant County?

CHAPTER II

RESEARCH DESIGN AND METHODOLOGY

The Thesis Committee and the Internal Review Board of the University of Texas Health Science Center approved the research project. A 10 question Key Informant Questionnaire asking about barriers to knowledge of women's cardiovascular disease risk was designed by the investigators, (Appendix A) and the interviews were conducted with administrative personnel at 10 community organizations in Tarrant County involved in health education.

Personal anonymity and confidentiality was assured. Administrative officials from each organization were contacted and their participation requested for a 30 - 45 minute interview. I identified myself as a student in the Masters of Public Health (MPH) program at the University of North Texas Health Science Center (UNTHSC), and gave a brief outline of the project. An informed consent document was offered and faxed in advance if requested. Each subject signed an informed consent at the time of the interview. Subjects at the locations were informed that their participation would be kept confidential and their comments would be part of a summary report for a Thesis, and would be submitted for publication in a peer - reviewed journal. They were also informed that the interview would be tape - recorded, and that notes would be taken throughout the interview.

The audio taped interviews were transcribed and imported into the NVIVO Quantitative Analysis Software for analysis of phrases and predominant themes. The emerging themes explained personal barriers in Tarrant County, the content of current programs and the county's capacity to deliver programs.

Interviews, Documents, Document Memos

NVIVO was used to organize and analyze the data. It is a Windows - based software product that is used for the analysis of text, interviews, archival documents, and structured and unstructured data. Use of this package allowed documents and nodes to be created with the organizations and answers to the interview questions. Each interview was imported in text format and became a document. Memo documents were created identifying the main concern, or most emphasized concern of each interviewee, for a total of 10 documents and 10 memo documents.

Organizational Types and Questions

The 10 agencies interviewed included four cardiac rehabilitation, one community advocacy, two ethnic heart health, one general heart health organization and two public health organizations (Table 1).

Table 1

Interview Organization Types

Interview Organizations/NVIVO Documents	Number
Cardiac Rehabilitation	4
Community Advocacy	1
Ethnic Heart Health	2
General Heart Health	1
Public Health	2

In NVIVO, each question became a node, (Table 2) and recurrent topics which were identified within the nodes became children nodes. The table below (Table 3) depicts the question node at the left with the children nodes following for each, and the numbers represent how many times that topic or passage was mentioned in answer to the question. Each will be discussed in more detail in the results section.

Table 2

Question Nodes

Question	Node
1	Programs
2	Delivery Issues
3	Importance of Issues
4	Perception
5	Barriers
6	Community Capacity
7	Personal Barriers
8	Key Issues Addressed
9	Program Contents
10	Suggestions for Improvement

Table 3

Question Nodes and Children Nodes

Question Node	Children Nodes	Number
Programs	Ladies	17
	Children	4
	Rehabilitation	4
	Ethnic	6
	OB-Infant	1
	General Population	12
Delivery Issues	Education	13
	Caregiver	17
	Cultural Relevance	4
	Access	5
	Champion	6
	Support	2
	Participatory Approach	1
Importance of Issues	Important	16
	Very Important	3
	Somewhat Important 0	0
Perception	Clueless-Number 1 Killer	15
	Man's Disease	7
	Breast Cancer	8
	Media	13
Barriers	Right Message/Right Audience	3
	Media Message	4
	Education	13
	Health Care–Physicians	19
	Denial	8
Community Capacity	Policy	10
	Services	12
	Infrastructure/Training	13
	Public Information	10
	Research	14
Personal Barriers	Awareness Deficit	12
	Financial	11
	Cultural Relevance	12
	Logistical	12
	Accessible Programs	11
	Responsibility	1

Table 3 Continued

Question Node	Children Nodes	Number
Key Issues addressed	Risks	9
	Signs and Symptoms	13
	Testing	12
	Disease Process	8
	Yes/No	11
Program Contents	Adequate	4
	Deficient	18
Suggestions for Improvement	Advertising	6
	Hit Home	3
	Family Approach	3
	Education	8

Main themes identified from each of the interview question responses were formed into question sets. These sets represent the order in which the questions are discussed in the results section of the paper. For a review of the full questions, see Appendix A.

Table 4

Question Sets

Sets	Questions
Programs and Delivery Issues	questions 1, 2 and 3
General perception and barriers to the message getting across	questions 4 ,5 and 7
Community Capacity to deliver programs	question 6
Disease Components, program contents and suggestions for the future	questions 8, 9 and 10

Spearman Rho tests were performed for rank order questions (Questions 6 and 7) regarding personal barriers and community capacity. SPSS Quantitative Software was used to ascertain any statistically significant correlations in the ranking of the barriers and capacities.

CHAPTER III

RESULTS AND DISCUSSION

Programs and Delivery Issues - Questions 1, 2 and 3

Question 1 - Programs

Table 5

Question 1 - Children Nodes

Question Node	Children Nodes	Number
Programs	Ladies	17
	Children	4
	Rehabilitation	4
	Ethnic	6
	OB-Infant	1
	General Population	12

Many of the agencies provide women's programs dealing with reproductive health, and concentrate on women and infants. Several of the agencies have women's centers that deal exclusively with obstetric services, but only one organization had any programs specifically aimed toward women's cardiovascular disease issues. One interviewee was very concerned with the rise of obesity in the United States population, and mentioned the children's programs in the school system directed at diet and nutrition in relation to obesity. The Cardiac Rehabilitation programs were directed at the general population and in three out of four situations the men in attendance outnumbered the women. Ethnic populations, and programs for them, regarding general healthy living are

addressed by the public health organizations. Currently there is a cooperative program among many of the hospitals, the public health organizations, and the UNTHSC regarding hypertension. There is also a program directed at the Hispanic population called Salud Para Su Corazón which uses lay educators or promatoras from the community to spread the word about cardiovascular disease. The American Heart Association (AHA) offered several general programs including: "Just have a heart to heart talk with yourself" which lets a person know what should be addressed with the doctor, and how to do that. "Search your Heart," for African American populations, which is a faith based stroke and heart disease prevention program. "Take Wellness to Heart," letting people know what their risk factors are, and including brochures on both stroke and heart disease, and targeted toward women as they are the caregivers.

The AHA also had programs specifically for women and included: "Choose to Move," that shows women how they can incorporate exercise, thirty minutes of exercise into their daily plan. "Simple Solutions," an educational program to educate women about how to incorporate simple steps into their lives and reduce their risk for heart disease and stroke. Many of the programs are outlined on the web site, with areas to register and track progress.

Question 2 - Delivery Issues

Table 6

Question 2 - Children Nodes

Question Node	Children Nodes	Number
Delivery Issues	Education	13
	Caregiver	17
	Cultural Relevance	4
	Access	5
	Champion	6
	Support	2
	Participatory Approach	1

Women lead very busy lives and are caregivers advocating for their families, not themselves. Time and again the respondents mentioned women as caregivers and the toll that it takes on them. Everyone in the family benefits, except the caregiver. Getting the right education to the right audience in a culturally sensitive manner was mentioned, noting that the message needs to be tailored to the audience and its approach to learning. Access was stressed by one of the public health organizations, saying programs must be given at alternative times to accommodate multiple schedules. With our diverse population it is not a case of "One size fits all" in the heart health message. The need for a woman champion for heart disease was of particular concern for one of the ethnic health organizations, and her comment: "We need more women talking about heart disease. Whenever I invite anyone out, no one can remember the name of a lady physician that has been clamoring about heart disease, about diabetes or that sort of thing, it is always a male physician."

Comments from several of the organizations include:

- Ethnic Heart Health

  "So many cultures interpret things differently and conceptualize things differently, so if I'm on my wavelength of how I conceptualize things, and they are over on another, the connection doesn't get made." Additionally, "We want to give poor people all the high tech screenings, and all the highest, and they deserve it just like the people that have money, and there is some truth in that, but I feel that they could stay healthy with very little resources, and we really haven't tapped into that."

- General Heart Health

  "Unfortunately, I don't think that most women are going to realize that it is the number one killer until something happens to someone close to them. They're going to say 'Oh I wasn't aware or it.' Or just educating them that they need to know their family history, they need to know what those risk factors are that you can change. The barrier is the women, in my opinion, because they are just too busy to listen."

- Public Health

  "One of the main issues would be cultural relevance, especially in a city like Fort Worth where you have a pretty diverse population. The program delivery needs to be done in a way that it is culturally sensitive but not offending any of the population groups and that you are taking into account issues that may be important to Hispanics for example, since they

are approximately 25% of our population. Especially when you are talking about disease reduction, there is a greater burden of disease in minority populations, so this is even more crucial." And "Physicians aren't really talking to women about their risk. They are more likely to talk to a man about his high cholesterol, lack of physical activity, or weight problem and saying these are increasing your risk of coronary heart disease, and women aren't as likely to speak up and advocate for themselves. A lot of women substitute seeing an OBGYN yearly, rather than having a preventative visit with a PCP."

Question 3 - Importance of Delivery Issues

Table 7

Question 3 - Children Nodes

Question Node	Children Nodes	Number
Importance of Issues	Important	16
	Very Important	3
	Somewhat Important 0	0

Issues labeled as Very Important included the above mentioned women as caregivers, education reaching the right audience, and the need for a woman champion with additional comments:

- Cardiac Rehabilitation

"We need a champion, we need somebody to step up to the plate, a woman, and I don't know who that person is to help this whole process along. Oprah Winfrey is a prime candidate. She has done stuff on women

and heart disease. Katie Couric, she has done work for cancer. But we have never had anyone specific for heart disease." and "Reaching the right audience is very important, both the low socioeconomic as well as the ones in the work force who may have had more education, but not necessarily more health education."

- Ethnic Heart Health

  "I think that education is very, very important, and educating them in what's happening. I think sometimes as a society or as individuals we just sort of tend to live our lives and we are not really aware of what's happening to us, and I think that's what's happened to these folks, and the changes are so subtle that before we know it we have this big issue or this big elephant in front of us, and it is overwhelming and then its well now its here and what are we going to do about it, and we don't know how to attack it. And we don't have the information, I don't see that these people really have the information that they need or the tools to conquer this by themselves, and I don't think it's going to be a totally individual solution, it's going to need a community. It's a community issue." This spokesperson also had a very grave concern for the rise in overweight students of all ages in her community, and the impact that would have on society in the future.

- Public Health

"I think number one the person has to value things, and they are not going to value it if it's a one size fits all kind of message, so it's extremely important to make sure things are tailored."

General perception and barriers to the message getting across - questions 4, 5 and 7

Question 4 - Perception

Overwhelmingly the response was that the general population is unaware of the woman's risk for cardiovascular disease and the perception remains that it is a man's disease, that breast cancer is the number 1 killer of women and that women don't realize their risk – at any age. Women fear breast cancer and know more about their breast cancer risk and the media coverage for breast cancer far outweighs the coverage for women's cardiovascular risk. The topic of women as caregiver was again mentioned.

Table 8

Question 4 - Children Nodes

Question Node	Children Nodes	Number
Perception	Clueless - Number 1 Killer	15
	Man's Disease	7
	Breast Cancer	8
	Media	13

Comments from the various organizations included:

- Community Advocacy

"I really don't think that they think that women get heart attacks."

- Cardiac Rehabilitation

  "I still see it as being very low. And unfortunately, in our program alone, it is 60% men and 40% women, even though more women die from CVD than men, once they are diagnosed. Which is a sad statistic that I don't think a lot of women realize either, that we have smaller arteries, we don't have the same amount of survival rates that men do, and I don't know if that has to do with that we are not diagnosed soon enough, early enough, or because of the anatomy, physiology, or treatment." and "Again I think it's that whole perception that cardiovascular disease is a man's disease, especially in women who are pre-menopausal, the fact that symptoms that they are having which are not the typical symptoms of heart disease, and physicians tend to not key in on, on those kind of things."

- Ethnic Heart Health

  "I think it is much lower than it should be and I think that in general women simply don't realize that CVD kills as many women as it does men and that it kills far far more women than breast cancer or other diseases that have more name recognition."

- General Heart Health

  "General population, they have no clue."

- Public Health

  "I think it's almost non-existent." And "I just think that people hear that men are expiring from heart attacks and having strokes, and you just don't

hear a lot about it. And once again the women always seem to be in that caretaker role. A lot of times you'll see women start eating right and getting exercise, but they're not doing it for themselves, they're doing it because their spouse is having a problem, and they're trying to help their spouse. In the end they benefit too, but once again, that caretaker role is just a big issue."

Question 5 - Barriers

Table 9

Question 5 - Children Nodes

Question Node	Children Nodes	Number
Barriers	Right Message/Right	3
	Audience Media Message	4
	Education	13
	Health Care - Physicians	19
	Denial	8

Barriers to the message regarding CVD included: physicians don't talk to women like they talk to men, and women often have an OBGYN physician as their PCP, or as the only physician they have. Women also don't know how to talk to their doctors: they are great advocates for their families, but tend to be in denial about themselves. Many women downplay their symptoms, and lack of knowledge regarding symptoms doesn't allow women to question that indeed they may have cardiovascular disease. Hispanic populations are very private and often mistrustful of physicians. Education again was mentioned repeatedly.

Comments included:

- Cardiac Rehabilitation

  "Women don't have the typical symptoms that men have, and so then they tend to get overlooked, even by physicians, who tend to downplay those kind of symptoms in a woman that is not menopausal." and "It really depends on women to push the issue, and that is a hard thing for a lot of women to do, especially if they are not feeling well. They think, 'oh, well the doctor is right, I'm probably just overworked, or I need to take time off or whatever, the doctor is probably right' vs. 'I'm still not feeling good, I need to get a second opinion, or I need to push this a little bit further with the physician,' just being proactive."

- Community Advocacy

  "Really even if you do have a good doctor, or someone that's not a quack, they say it's not serious, just go home, and take the stress out of your life, and you'll be ok, and that's it. Or the depression out of your life, and you'll be ok."

- Ethnic Heart Health

  "I think one of the barriers is that we are not only more linear, but we are also very independent as a society in the U.S., and many of the Hispanic community that we serve come from other societal ways. That puts us at a very team approach, so we have this tendency for everything to go up and down, and they tend to go this way (horizontal). They tend to be a

unit, and that is a barrier, because we are in two worlds, two social worlds."

- General Heart Health

"A woman needs to be educated so that when she goes into the doctor, to ask them questions, to ask more than 'How is my blood pressure?' They need to say 'What is my blood pressure?' 'What is my cholesterol? What is my HDL? What is my LDL?' They have got to get educated so they know how to ask the questions."

Question 7 - Personal Barriers

Lack of Awareness received 70% of the vote for 1st place in order of importance. Financial received 40% of the vote as 2nd, Cultural received 50% of the vote as 3rd, Lack of Accessible Programs received 40% as 4th, and Logistics received 40% as 5th place.

Figure 1

Personal Barrier Rank

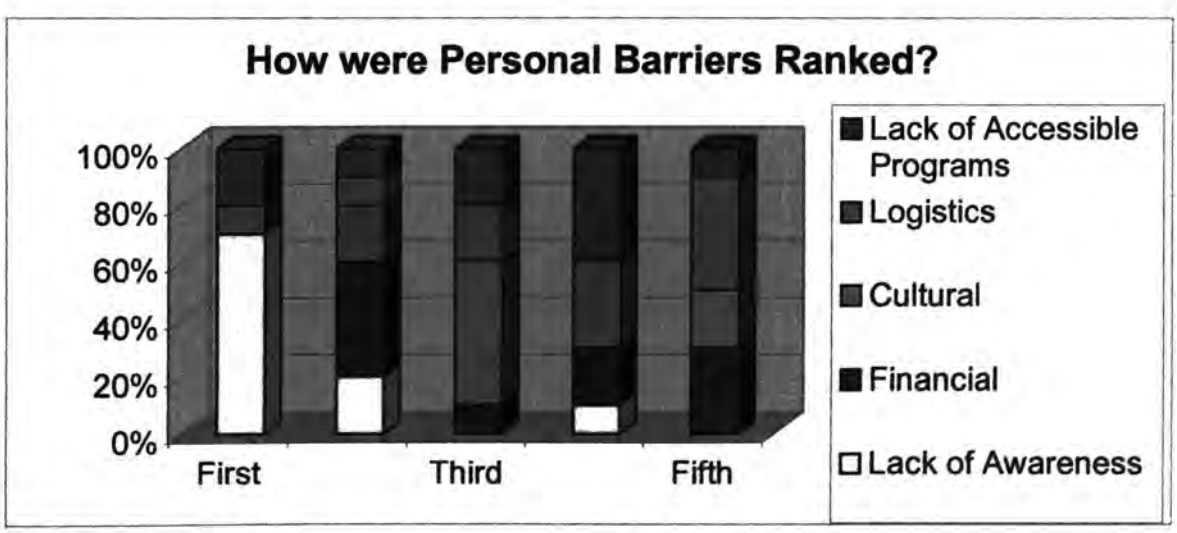


Table 10

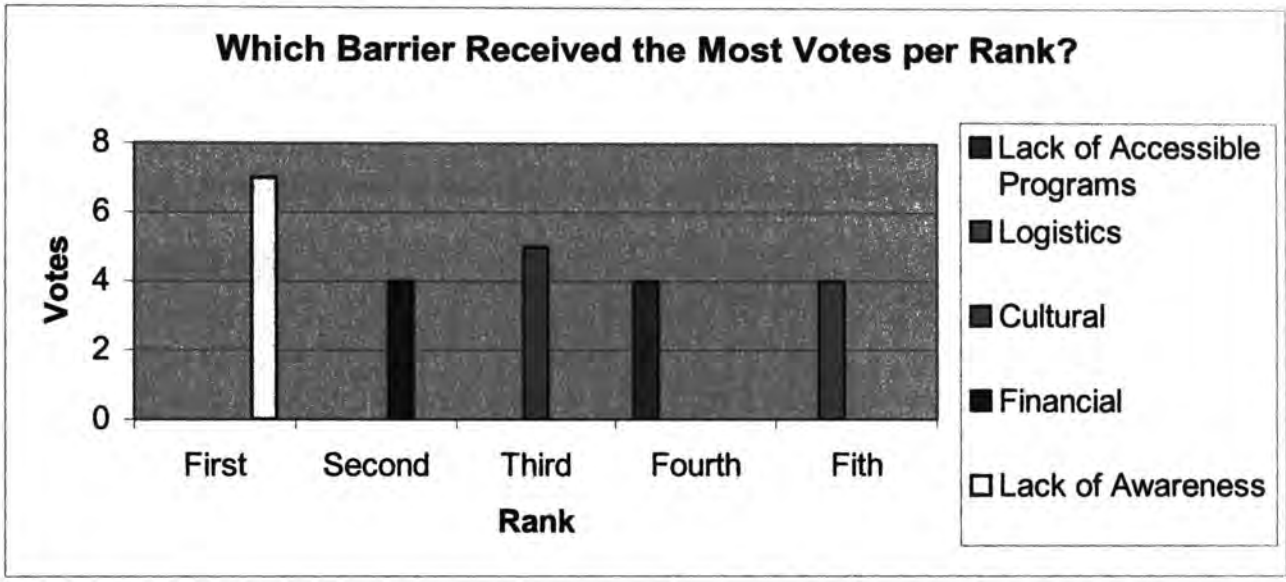
Question 7 - Children Nodes

Question Node	Children Nodes	Number
Personal Barriers	Awareness Deficit	12
	Financial	11
	Cultural Relevance	12
	Logistical	12
	Accessible Programs	11
	Responsibility	1

While the rank order clearly showed Lack of Awareness in first place, comments were almost evenly distributed among the personal barriers of question 7, with the notable exception of Responsibility. One of the ethnic program interviewees, was especially concerned with personal responsibility for health, saying; "Maybe we are not taught, maybe it goes down into the home where we are not taught enough to be responsible. You are responsible for your behavior, it also needs to be said that you are responsible for your health, and I think we need to start saying that instead of you are responsible for your behavior, well you are responsible for your health behaviors too."

Figure 2

Most Votes per Rank - Personal Barriers



To illustrate the significant correlations, one may start with the Null Hypothesis that there is no relationship or correlation among the barriers, e.g:

H_o: No correlation

H_a: Correlation

The Spearman Rank Order applied to the personal barrier rank did show statistically significant relationships in 3 pairs of barriers denoted by those marked with an asterisk (*) in Table 11. (Appendix B)

The Spearman Rank Order Correlation test was applied to the Barriers, and there was a statistically significant relationship at the .05 level for several of the barriers: Cultural - Financial, Lack of Awareness - Financial, and Lack of Easily Accessible Programs - Lack of Awareness (Table 12). While the Spearman Rho pointed out several

relationships, allowing a rejection of the Null Hyptohesis in those instances, it is a low power test, and the sample size is small.

To explain the relationships more completely, the table below shows the negative and positive correlations, for instance, in the negative correlation, as one barrier was ranked high, a correlating barrier was ranked low, and in the positive correlation, the pair were both ranked high.

Table 12

Barrier correlations

Criteria and rank	Criteria and rank	Rho Correlation	Relationship
Cultural Several ranked high	Financial Several ranked low	-.669	As Cultural ranked high, Financial ranked low
Lack of Awareness Several ranked high	Financial Several ranked high	.648	As Lack or Awareness and Financial both ranked high
Lack of Easily Accessible Programs Several ranked low	Lack of Awareness Several ranked high	-.723	As Lack of Easily Accessible Programs ranked low, Lack of awareness ranked high.

Comments regarding Lack of Awareness included those from:

- Cardiac Rehabilitation

> "I put lack of awareness of cardiovascular disease as number one. The reason is we just need to get more women aware of the fact that we are going to die, more women die of heart disease than any other disease. I

think if you combine all diseases, it still doesn't add up to the amount that women die from coronary artery disease or cardiovascular disease. So I put that as number one as being the greatest barrier to why we don't treat women for heart disease." and "Number one I would say lack of awareness of cardiovascular disease. Again I just go back to women being uneducated in that area along with men and physicians treating them, so to me that would be the most important."

- Ethnic Heart Health

  "I think the biggest barrier is that we are not aware of what's going on, what is occurring. We are just so unaware of our surroundings, of our own bodies, we really are ignorant, and not just do I find that true of the outward community population, but the school population as well. I'm just floored by what they don't know, their lack of information." And "They are not aware of all the great information in terms of how they could blend their cultural very healthy traditions that they have to prevent CVD. They are unaware that all these things are happening to them medically, or health wise."

Comments regarding Financial included:

- Cardiac Rehabilitation

  "We do see that in cardiac rehab that sometimes it is the financial part of, if people have a 25 dollar copay per visit, then that becomes 75 dollars per week, and sometimes that becomes prohibitive to some people."

- Ethnic Heart Health

  "It is really interesting when you've been to other countries where so much can be done with so little money, and yes we need a little bit, but a little bit can go a long way, so that is why I have it as four. But it is amazing how communities survive on very little, and they are happy and they produce."

- Public Health

  "The health care system for the indigent in Texas just isn't very good, so if you don't have enough money, its hard to get on insurance, and if you are making slightly more than enough money to get on Medicaid, but you still don't have enough money for private insurance, then there really is no safety net, and additionally a lot of our residents aren't citizens, and that makes it even more tough." and "There's too many things you can do, if you have the motivation, that don't cost too much money."

Comments regarding Cultural included:

- Cardiac Rehabilitation

  "Cultural barriers, one of the largest leading cultural groups that are growing in this country is Hispanics. I definitely see that in their culture, as far as women especially denying any type of health problems that would be related to anything other than normal women's services activities, OB."

- Ethnic Heart Health

  "We are finding that, a good example is where you may have a Hispanic person and their deeper dimensions are not at all able to connect with that community. On the other hand you may have a Hispanic researcher that doesn't speak the language, but their cultural depth is right there. The same with maybe why different cultures can really work with other cultures, because we haven't gone deeper into what are those conceptual frameworks of those people, so culture is important; it's that we haven't gone beyond these first surface areas."

- General Heart Health

  "The cultural, that is a problem. The language, the denial. 'Well if I don't go have it checked; nothing is wrong.' The cultural is an issue, especially in the Hispanic community, they are a very guarded culture, they are not real trusting of doctors. I used to be in the banking business, and we found there it was very difficult to work with that community because they are very private. They don't want to share much information with you. So there is a cultural problem."

- Public Health

  "Cultural (language, fear, denial of health problems). I think this is something we run into whether we are dealing with cardiovascular disease, infant mortality or any other health issue because we have such a large Hispanic population, and such a large African American population.

In both of those cultures for different reasons, there is a great deal of either distrust of the health profession or not wanting to use physicians as the primary source of health care."

Comments regarding Logistics included:

- Ethnic Heart Health

"Logistics, transportation and child care are all part of those social stressors that they have to cope with, but they have developed very intelligent coping skills. Again those are all great points, they are all important, but I think that was toward the end is just to day that 'que eres poder' which means 'to want is to do.' They always say that in the Hispanic community. Where there is a will there is a way, that kind of thing. So they go through trials and tribulations, but when there is that will to move ahead, then they do it."

- Public Health

"We can chat over, under the children; we provide some of the health education materials while they are with us, crayons, and maybe they'll show us what work they've done, maybe they'll paint a health poster together, so there's a lot of ways you can do it without getting into the financial bind of; 'Oh no, it's too difficult to have children,' let's say that you cannot have children in this session. Well then you've created another barrier because the mom then has to go find childcare. So then you make that barrier, and then again you've split the family, which in the

Hispanic community the family is so critical, and we're finding it's great for passing on good health behaviors." and "We have no public transportation in Arlington at this time, and if you don't have the resources for your own car or someone to take care of your children it's not going to be a high priority to get in to a doctor's appointment at 3 o'clock in the afternoon, and it's certainly not going to be a high priority to discuss something that might happen 5 or 10 years in the future, such as CVD or a heart attack."

Comments regarding Lack of Accessible programs included:

- Cardiac Rehabilitation

  "Lack of easily accessible programs I ranked as number four, simply because Tarrant County encompasses more than the metropolitan area, it also encompasses a lot of smaller areas, and we get a lot of patients that have to come all the way in from as far as 50 and 60 miles out, to get the type of Cardiovascular help they need. If they have to come this far to get the actual medical help, then the education part of the process is not going to be out their either."

- Public Health

  "I put first lack of easily accessible programs because as I said earlier we need to improve services in the county, and I don't think that there has been a great deal of well publicized and easily accessible programs in Tarrant County."

Community Capacity to deliver programs - question 6

Table 13

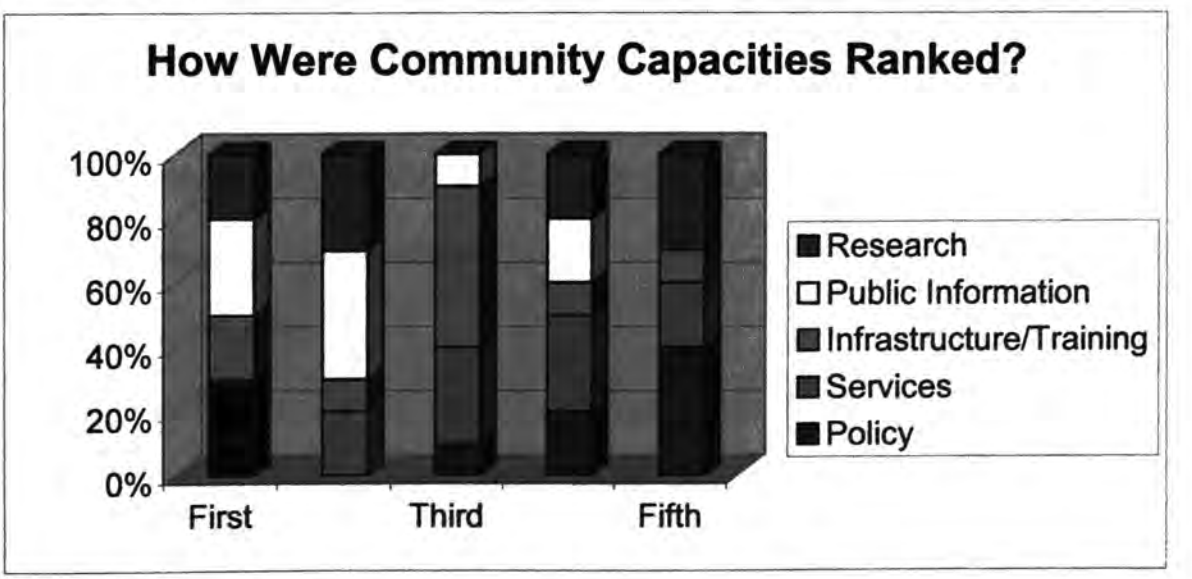
Question - 6 Children nodes

Question Node	Children Nodes	Number
Community Capacity	Policy	10
	Services	12
	Infrastructure/Training	13
	Public Information	10
	Research	14

When asked to rank community capacity to provide programs, per rank, Policy and Public Information received 30% of the votes, and tied in ranking 1st place in order of importance, Public Information received 40% of the vote for 2nd, Infrastructure received 50% of the votes for 3rd, Services received 30% of the votes for 4th, and Policy received 40% of the votes for 5th place.

Figure 3

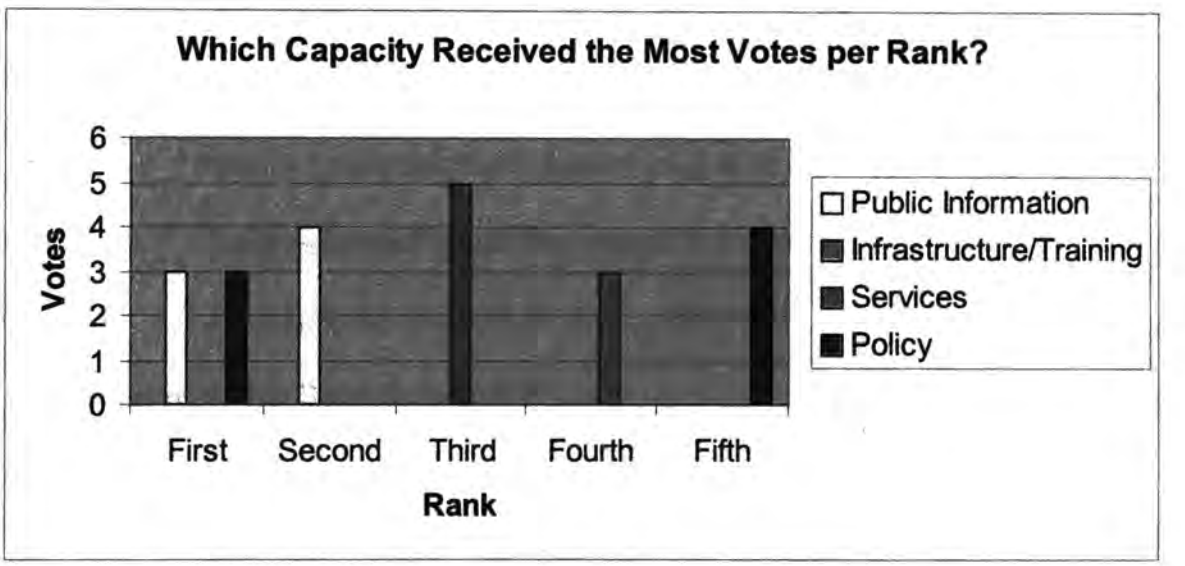
Community Capacity Rank



Public Information received the majority of the first two ranks, and respondents felt we needed much more. Research received votes in the first two or last two ranks. Respondents relayed that either we already had enough, or we need more and specifically more geared to women. The NVIVO analysis showed 14 statements regarding Research, but it did not receive the majority of votes for any of the rankings.

Figure 4

Most Votes per Rank - Community Capacity



The Spearman Rank Order Correlation test was applied to the Capacities, and there was no statistically significant relationship for any of the Community Capacities. Comments regarding Policy included:

- Ethnic Heart Health;

  "Last one, again, and it's hard to say it was the least important, they're sort of all happening at different levels and really that is actually really how you are looking at the pyramid because policy is what drives change,

so we are constantly pursuing how we are going to have enough to back us up, to be forceful enough to make that policy happen."

- General Heart Health

  "Policy, since 911, the health arena, even before that, the health arena is hard hit. I know that the Texas Department of Health (TDH) has been hit very much with cuts. They don't have the funding they once had. We used to have a cardiovascular person in the Dallas Fort Worth area, we no longer have that person."

- Public Health

  "Policy I have last; there doesn't seem to be a cohesive Policy regarding Cardiovascular Disease and women in Tarrant County. I think this is something that needs to be improved as well."

Comments regarding Services included:

- Cardiac Rehabilitation

  "Service would then develop after that, in regards to what we need to do to intervene, how can we improve the programs that we currently are offering."

- Ethnic Heart Health

  "Second choice in terms of importance is services, that we identify high risk behaviors and age appropriate interventions, and to involve target communities. And that takes the next step which is that you have to

constantly have that community involvement in all aspects of your planning and services, identification, that's another one."

- Public Health

  "Services are an area where I think the County is lacking and it is something that needs to be addressed, and need to be increased. Work is being done in that area now, and everyone is trying to increase services, but at this time with the budget cuts at the statewide and countywide level, this has been a big problem and I think will continue to be a problem, and I have it ranked low because I think we are not doing well and I think it is something that needs to be improved."

Comments regarding Infrastructure and Training were those from:

- Ethnic Heart Health

  "You really, really have to have that in place in order for the community to respond. I've noticed that with the experience, with the current promatora model that we are using. Not only do you have to prepare the community, and have them understand who you are and why you are coming in to the area, you also have to have the time. It's a very involved kind of concept that we are so used to saying we'll recruit one day, and we'll move on to the next thing. It's that time that it takes to establish rapport, and we always use that term, to gain trust."

- General Heart Health

  "There has been a campaign in Fort Worth over the past year that is called 'Healthy Tarrant County Collaboration' that I work with UNTHSC on. Our focus has been on hypertension, and it has been across the board. We've done it in English, we've had billboards and all, and we've now done it in Spanish. We've got it translated into Vietnamese. This group represents Harris Hospital, John Peter Smith, Baylor All Saints, UNT, Heart Association, Harris HEB, Harris Southwest, and Tarrant County Public Health Department, and the City Health Department."

- Public Health

  "Having value and being credible and believable is real important, and I think that is what it's about when you are taking the message out into the community leaders. The church is very important is some ethnicities and in some other places they want a doctor to tell them something. It just depends on people's needs."

Comments regarding Public Information included:

- Cardiac Rehabilitation

  "I ranked public information as number one, and the reason I did that is because I think that is where we are lacking the most in regards to women and heart disease. Again, if you don't get the information out to the public, they're not going to know that there is an issue there, so you can't move forward with anything unless the public or whosever 'actor' is

backing the information that you are trying to give them, so I think if you get the public information out there which is starting, we're starting to see more in the media and the research, then the rest will hopefully come along." and "Second ranking, public information, that is where the number one funding should go into. Into developing avenues to educate people from a primary preventive standpoint. I know we're talking about women here, but I don't want to leave men behind either. I don't think there is any reason to. As long as you are educating the public, you need to educate the community as a whole. You need to emphasize in that part that, 'hey gals, you really are just as susceptible to coronary artery disease now as men your same age.'"

- Community Advocacy

  "I still feel that public information, as I said in my previous answer I think that if people are not aware of what is going on, they really have to be bombarded at the local level, state level, national level, TV, magazines, whatever; that is the way they are going to become aware of this."

- Public Health

  "Public information I put as second in importance, because as we were saying earlier women simply aren't perceiving their risks appropriately. There needs to be a way to get the message out to women that yes, they are in fact, at risk for Cardiovascular Disease, and that then need to be

speaking with their physicians about reducing their risk or making lifestyle changes"

Comments on Research included:

- Ethnic Heart Health

  "All too often we either devalue the qualitative work, and in research you have to have the quantitative to move forward with funds, but now I'm so excited that there is the combination of qualitative and quantitative so that we can really find those dimensions that make that difference, so we discover what it was that really was the barrier, what was really the cause for not having healthy communities."

- General Heart Health

  "I think the research is the most important one, is to get the baseline qualitative and quantitative data of your ethnic groups because it has changed in Tarrant County so much over the past 10 years much less the past 30 years as to what our mix is in Tarrant County. We have this data, the Tarrant County Public Health Department and the City Health Department have done Community Needs Assessments, plus they have other data that they can tell you about, so this we have. They are both working right now on the culturally appropriate issues on how we reach these populations because you do have to address it differently with the group you are trying to do."

- Public Health

"The reason I put research last is because I think there is already research out there. We have enough information already to start doing stuff. We have enough research to start. We can research things forever and never get anything done. I think we should act on what we already have, and then from those successes, because there are a lot of creative people out in the community already, take action with that."

Disease Components, program contents and suggestions for the future - questions 8, 9 and 10

Question 8

When asked if key issues were being addressed, listing risks, signs and symptoms, testing and disease process, there were a variety of answers. The majority felt that the issues were not being addressed completely.

Table 15

Question 8 - Children Nodes

Question Node	Children Nodes	Number
Key Issues Addressed	Risks	9
	Signs and Symptoms	13
	Testing	12
	Disease Process	8
	Yes/No	11

Table 16

Responses to Question 8

Are issues being addressed?	Yes	No	Partially
Respondents	2	5	3

Of those that said yes, the affirmation was for the controllable and the non-controllable risk factors being addressed, with the caveat that much of the information was still targeted toward men first and then age. The Cardiac Rehabilitation programs specifically mentioned that women fear breast cancer more than CVD, and the majority of times the women coming into their programs had not heard about their CVD risks.

The consensus regarding the signs and symptoms was that they had been spread in the medical community to greater detail, and the gender differences are just now becoming public.

Opinions for testing of women revealed that testing was not done as readily for women, and women don't know how to push the issue, or advocate for themselves. It was also noted that while cardiologists have become more knowledgeable of the testing process for women, PCP's need improvement in their knowledge of testing.

The disease process was felt to be covered minimally, and that it needs a great deal of improvement. Most women do not know that the disease process is harder on them and that they have smaller vessels and worse outcomes than men. Overall the respondents felt that improvement was needed in all the areas, with more women advocating for women, or a woman champion to get the message out needed - just as there is a champion for breast cancer with the Komen Foundation.

Question 9 - Program contents

NVIVO software noted 4 passages that were adequate and 18 that were deficient in terms of question 8 - coverage of the key issues of risks, signs and symptoms, testing, and disease process.

Table 17

Question 9 - Children Nodes

Question Node	Children Nodes	Number
Program Contents	Adequate Deficient	4 18

Adequate

The General Heart Health and the Cardiac Rehabilitation Programs felt that their programs were adequate in the coverage of heart disease, adding that Heart Disease does incorporate high blood pressure, cholesterol, stroke, what that is, what smoking does to everything, and that there are multiple areas that need to be focused on. One of the Cardiac Rehabilitation programs made a special point of saying that programs are becoming much more adequate, and we are reaching more women and even the internet has been a great source.

Deficient

The Public Health Agencies pointed out that we need to specifically speak to CVD as a risk factor for women, and that that has not been done in Tarrant County, or has not been adequately publicized. They also stated that things are very fragmented,

and that is the problem. "There are bits and pieces, but never anybody who is able to tie everything together." The majority of the four Cardiac Rehabilitation programs mentioned that the men in their programs far outnumber the women, and inpatient education for heart disease is deficient, especially women who are having an angioplasty, or even had an MI, that they need to get that risk factor education before they leave the hospital. "Part of the problem is that hospitals don't get reimbursed for that, so that's a big deterrent to provide that kind of service when there is no reimbursement for it." One of the Ethnic Heart Health informants mentioned that even training films are made primarily with men; rarely do you see a woman having a heart attack in educational materials. The other Ethnic Heart Health informant said that "the state of the art information is not given to those underserved communities where we are trying to reach them and it seems it's been that way a long time." and "Many of the Ethnic groups are just getting the basic information that those in the medical community have been exposed to for the last 20 - 30 years. The General Heart Health informant feels that the greatest deficiency is that the message is not out there enough.

Question 10 - Suggestions for Improvement

Table 18

Question 10 - Children Nodes

Question Node	Children Nodes	Number
Suggestions for Improvement	Advertising	6
	Hit Home	3
	Family Approach	3
	Education	8

Suggestions for improvement ranged from more "advertising" targeting women, a family approach, a woman champion, and a simple, clear repetitive message regarding CVD and women.

One of the Ethnic Heart Health informants feels we need "some women out there who have actually had a heart attack and that talk to them and tell them about their experience; how different it is in comparison to a male having a heart attack and stroke. They need to hear that, and they need to see someone, and they need to see a role model that is a female doing this." The General Heart Health informant suggests that the message regarding CVD should be from the National level, then the State level, and then down to the medical community and local presentations and a local presence. "Anytime there is a women's event they should incorporate a health component into it. Have materials there, or little cards that said 'Do you know that one in three women will die from Cardiovascular Disease?'" One of the Public Health informants urged that "physicians need to be aware of heart disease in women and they need to discuss that with women." The interviewee for the Community advocacy agency mentioned "a traveling van, and a group of people that can speak on a program, and go and present a program at these different businesses, or to churches, meetings or other gatherings to try to spread the word on cardiovascular disease. They could get all the women in a group at these big corporations, and have a breakfast meeting or something like that."

Discussion

In conclusion, the lack of awareness of CVD risk is certainly present in Tarrant County. This coincides with the Gallup Poll results from the survey in Boston mentioned earlier (Heart Information Network, www.heartinfo.com).

Question 1 pertaining to local programs revealed that there are several educational programs in Tarrant County, but few that truly address the Cardiovascular Disease risk in women. This coincides with the programs that have been offered in other parts of the country such as those sponsored by the National Heart Lung and Blood Institute, and located in California, Rhode Island, Minnesota and Washington, D. C. The American Heart Association has several programs designed to reach women and this year had a new campaign to reach even more women. Many of the programs on the web site are directed toward women and ethnic women of African American and Hispanic cultures. Those without access to the internet could call or visit the AHA for more information.

Question 2 regarding the important issues in delivery of women's programs discovered multiple issues, but those mentioned the most frequently were education and women's caregiver roles, advocating for family but not selves. Many comments from the interviewees noted the need for women to learn to be able to advocate for themselves, not only by learning their signs and symptoms, but by asking the right questions and being persistent in communication with the health care professional of their choice. Learning the tests available and their family cardiac history, as well as the essentials of healthful living, including nutrition and exercise are also critical items to address.

The third question in which the interviewees ranked the delivery issues was redundant as most respondents mentioned what they felt was most important first, or mentioned them more frequently in answer to question 2. If the questions were to be used again, question 3 could be deleted.

The fourth question regarding perceptions confirmed the research performed in West Virginia regarding the lack of awareness of cardiovascular risk. (Krummel et al., 2002, p. 38). Terms used were "clueless, still seen as a man's disease, the media covers breast cancer more than it does cardiovascular disease."

The fifth question regarding the barriers strongly implicated the physician as health care provider and the importance of them in the education of their women patients. It becomes even more important that our primary care physicians are educated in women's issues, for we cannot continue in the vein of the survey citing that nearly two-thirds of the nation's primary care physicians inaccurately reported "no difference in the symptoms, warning signs and diagnosis of heart disease in women, compared to men" (Heart Information Network, www.heartinfo.com). Possibly we could learn from the Franklin Cardiovascular Health Program in Maine which showed similar results to North Karelia Finland. (The only two programs that reported an association between a community cardiovascular health program and decreased mortality). The Franklin, Maine program used primary care physicians and nurse mediation for assessment, counseling, referral and follow-up (Record et al., 2000, p. 37).

Education was mentioned next in number, and is also mentioned in questions 2 and 10. Denial of disease was the third most frequently mentioned barrier, and this

would coincide with the study done by Necia Goldberg in her book "Women are not Small Men." Education at an early age was also mentioned by several of the respondents. However time and again the programs providing education may have increased knowledge, but had little if any impact on behaviors.

The personal barriers noted in question 7 noted lack of awareness first in rank order, but the software showed the five barriers mentioned 11 or 12 times each in the respondents' discussion. Accessible programs and targeting to the appropriate audience and adding value to the participants coincides with the study in which participants wanted the programs to be presented as a choice, with a selection of options to choose from (Gettleman, Winkleby, 2000, p. 448). The community capacities of question 6 showed policy and public information tied for 1st place in number of votes, and the software noted each of the capacities to be mentioned 10 - 14 times, with research receiving the most comments. They ranged from: we need more, we have enough to start with, to the statement that we need to be more specific toward women, and that thus far research on breast cancer has had more attention than research on cardiovascular disease in women. The Spearman Rho test of the rank order questions, while not a high power test, did give further information regarding the answers to those questions. The Spearman Rho results of three statistically significant Correlations for personal barriers: cultural - financial, (negative correlation, ↑↓) lack of awareness - financial, (positive correlation, ↑↑) and lack of easily accessible programs - lack of awareness, (negative correlation, ↓↑) must be used cautiously. A small sample size (10) was used and rejecting the Null of no relationship for those three, as well as failing to reject the Null for the others must be done very

carefully, e.g. the Rho of lack of awareness - cultural is .579. A small sample size can preclude significance.

Question 8 regarding the key issues of risks, signs and symptoms, testing and disease process being addressed in our current programs revealed that for the most part controllable and not controllable risks are being addressed, but mostly for men, and then for older women. The other three are being covered in a minimal fashion, with signs and symptoms just now being revealed as different in men and women, and being more well known in the medical community than the general public; testing is more readily done for men than women; and the disease process is not covered and needs vast improvement in dissemination.

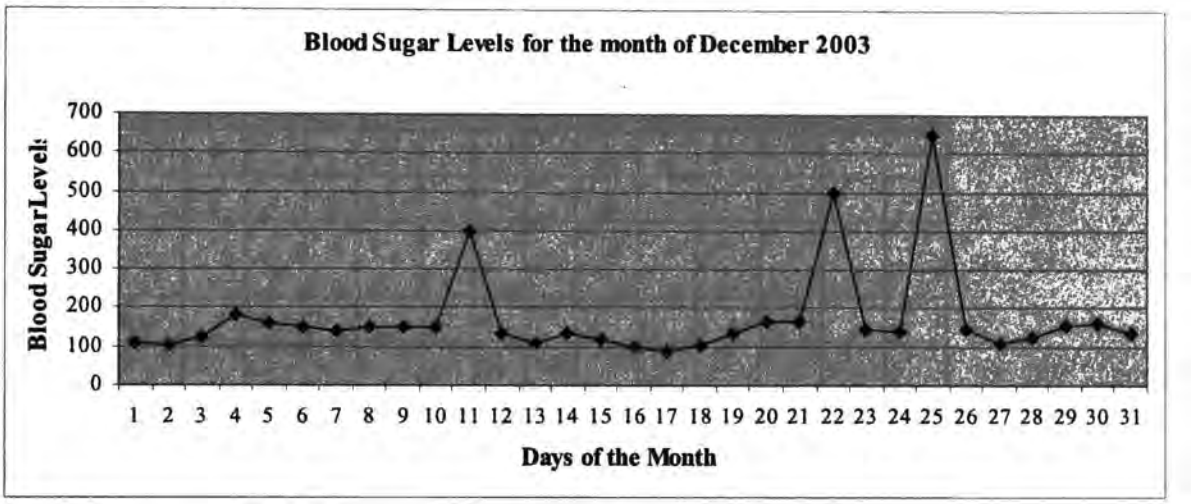
Question 9 regarding program content and the adequacy of coverage of the issues addressed in question 8 is a redundant question and was already answered. This question could be deleted from the set.

Question 10 regarding suggestions for improvement included more comprehensive educational programs, more "advertising or public announcement" coverage of the topic by the media, a family approach, a woman champion who has had a cardiovascular event, and a simple, clear repetitive message regarding CVD and women. I would also like to suggest that the content of the education includes tools to help people engage in their own health care. One of those tools could be a run chart. This is a chart that is simple, is used to track a process over time, and could be started at an earlier age - grade school. Below is an example of a run chart keeping

track of blood sugar levels. The person could choose to track whatever behavior or habit or level they wanted to track over time.

Figure 5

Blood Sugar levels



On the 11th, 22nd, and 25th we see peaks and can ask "What Happened?" Often there is an explanation. For instance, the 11th was the office Christmas Party, the 22nd was spent celebrating with one set of in-laws, and Christmas Day was spent with the other set of in-laws. In each case the person allowed themselves to imbibe in foods and drinks not normally a part of their everyday life. They can look and say "Wow, 90% of the time I was pretty good; my blood sugars were at the levels that are ok."

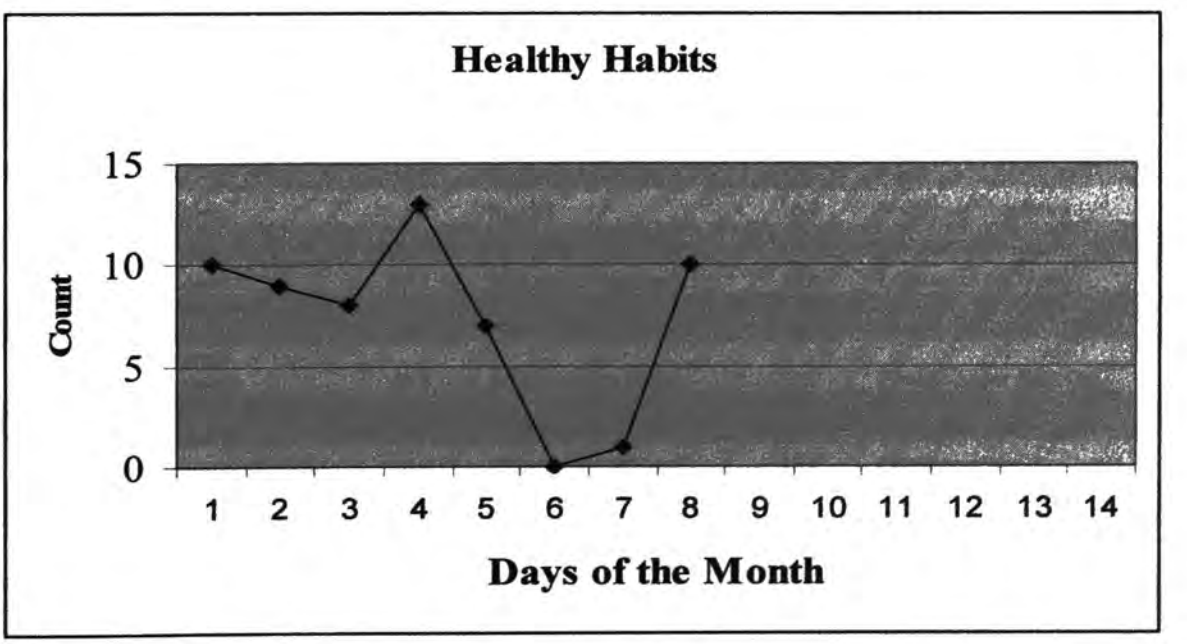
When children learn numbers they can be asked as a group for ideas of something to track, and make it a class project. This could be done from first grade on and eventually be used to apply to healthy living habits. Each year another level of complexity could be introduced, until they reach high school, and then run charts would be a good foundation to move on to control charts and statistical analysis of the process.

Certainly control charts are beyond the scope of this paper, but below is an example of the run chart as it applies to healthy living habits

Figure 6.

Healthy Habits

	S	M	T	W	T	F	S	S	M	T	W	T	F
	1	2	3	4	5	6	7	8	9	10	11	12	13
Exercise													
walk	1			1				1					
run	1			1				1					
arm weights		1			1								
jump rope													
balance ball													
cycle		1			1								
Nutrition													
fruits	1	2	4	3	3		1	2					
vegetables	5	1	2	5	1			3					
dairy	2	4	2	3	1			3					
Total Count	10	9	8	13	7	0	1	10					



So what is the explanation for the low numbers on the 6th and 7th? The 6th of February was a Friday, and the person elected to party and there was no time for exercise! Saturday was a sleep in day, but Sunday was the start of the new week, and a new resolve, and the person started again. Graphic illustrations tell a story, and any age can learn from them. Children do very well on computers, and adults who are not computer literate could choose their activity and track by hand on graph paper.

Another concern regarding women's fear of breast cancer can be addressed by looking at the report by age group of the leading causes of death. Many of the interviewees expressed concern that the fear of cancer far outweighed the fear of heart disease, and felt that the media was sending the wrong message. Maybe the fear is not all that unfounded, if we look at the table below.

Table 19.

Causes of Death

TOP Three Causes of Death, all Races, Female, all Ages 2001

Ages	#1 cause	Percentage	#2 cause	Percentage	#3 cause	Percentage
1-4	Accidents	30.3	Congenital Malformations	12.5	Malignant Neoplasms	8.7
5-9	Accidents	36.4	Malignant Neoplasms	17.6	Congenital Malformations	5.9
10-14	Accidents	34.3	Malignant Neoplasms	15.1	Congenital Malformations	5.4
15-19	Accidents	50.8	Malignant Neoplasms	7.5	Assault	7.0
20-24	Accidents	36.8	Assault	10.9	Malignant Neoplasms	8.8
25-34	Accidents	21.3	Malignant Neoplasms	16.5	Diseases of the Heart	8.4
35-44	Accidents	27.7	Malignant Neoplasms	12.9	Diseases of the Heart	11.9
45-54	Malignant Neoplasms	38.7	Diseases of the Heart	16.0	Accidents	5.7
55-64	Malignant Neoplasms	41.3	Diseases of the Heart	20.1	Chronic Lower Resp Dis	5.5
65-74	Malignant Neoplasms	34.5	Diseases of the Heart	24.1	Chronic Lower Resp Dis	7.9
75-84	Diseases of the Heart	30.0	Malignant Neoplasms	22.0	Cerebrovascular	9.0
85 and above	Diseases of the Heart	38.2	Cerebrovascular	10.7	Malignant Neoplasms	9.8
65 and above	Diseases of the Heart	32.6	Malignant Neoplasms	18.9	Cerebrovascular	9.2

Source: www.cdc.gov

2001 is the year with the most complete data, and if we look at the #1 cause of death for ages 1 - 74, Accidents and Malignant Neoplasm head the list. Granted that the #2 and #3 causes of Diseases of the heart begin at earlier ages; the Neoplasm ranking of #1 would scare the lay person who might not know to separate Breast Cancer out from that. Disease of the Heart are the third cause of death for ages 25 through 44. This is especially frightening when it is now known that younger women have a higher mortality rate than younger men once they have their first heart attack. When ages 65 and over are looked at, disease of the heart do show as 1st Cause, but again at a later stage of life. One needs to then ask, is this due to lack of knowledge on the part of the woman? The doctor? A combination? And will the rates change with the increase in knowledge regarding women's risks, symptoms, testing and disease process?

The impact for public health falls in the realm of having a cohesive approach to women's cardiovascular risk education. The current program of "Healthy Tarrant County Collaboration" that has addressed hypertension could be expanded to cover heart disease. It is a multi organizational co-operative with a common goal regarding hypertension. Or rather than heart disease, the focus could be leading healthy lives, and the choices available to make that happen would help the community become healthy. The public health professional could support public policy that would make it easier for people to exercise. The trinity trails along the river are good, but neighborhood parks that can be made safe to use would be beneficial for those without transportation.

The Hispanic population in Tarrant County is being addressed by the Salud Para Su Corazón Program, and Hispanic wellness fairs. The African American population

responds well to Church based programs. Hopefully the continuation of these programs will help with the mistrust of the medical community, and the denial of medical problems mentioned by the interviewees.

Budget cuts have had an impact, but overall the future is bright for imparting the message regarding cardiovascular disease and women. Friday February 6 was designated as "Red Dress Day" by the American Heart Association. First Lady Laura Bush became aware just last year that CVD is the Number 1 Killer of women, and hopefully she will become the spokesperson that so many of the interviewees mentioned that we needed. Certainly on the National Level she will be able to command the attention for women and CVD that is overdue.

Suggestions for future research would be to investigate further regarding the Primary Care Physician role vs. the Cardiologists role in teaching. Another would be to learn from the programs teaching women to advocate for themselves, and to study the effectiveness of the programs on their ability to do so. The third would be to begin the use of run charts to track progress over time. Start at an early age and carry the practice through a lifetime. Cement the practice of healthy living and help prevent the rise in obesity that is claiming victims in diabetes and cardiovascular disease.

APPENDIX A

Key Informant Interview Questions

1. Please tell me a brief description of your agency and its Women's Programs.

2. As a Community leader - what do you consider to be important issues in delivery of women's programs?

3. How would you rank the issues? i.e., Very Important, Important, Somewhat Important.

4. 1 in 3 women will die of Cardiovascular Disease, 1 in 28 will die of Breast Cancer, yet most think of CVD as man's disease and Breast cancer as women's disease. What do you think of the general populations' perception of Women's Cardiovascular Disease risk?

5. What barriers do you see that prevent the message from getting across? Which do you consider the most important?

6. Some researchers have noted community capacity to include:

Policy

- For funding guidelines to support local, state and federal CVD health programs
- For use of culturally appropriate channels of communication

Services

- To identify high risk behaviors and age appropriate interventions
- To involve target communities in program planning

Infrastructure/training

- To collaborate with community advisory board, leaders, researchers
- To increase community sustainability to include leadership training and provider education

Public Information

- To develop a culturally appropriate information network re: CVD research developments
- To develop community linkages to inform researchers, private sector, community leaders and educators re: community cultural developments

Research

- To collect baseline qualitative/quantitative data of ethnic groups – to assess community health and measure program effectiveness
- To provide analysis of culturally appropriate prevention/intervention

(www.apiahf.org)

Please rank the above capacities in order of Tarrant County ability, 1 being the most important.

7. Some researchers have noted personal barriers to include:
   - Lack of awareness of CVD (other factors, such as stress considered more important)
   - Financial
   - Cultural (language, fear, denial of health problems)
   - Logistical (transportation, child care)
   - Lack of easily accessible programs

   Please rank the above barriers in order of importance in Tarrant County, 1 being the most important.

8. Have you thought that the key issues for women are being addressed? e.g.:
   - The risks themselves (controllable and non-controllable)
   - Signs and symptoms that are different than men's
   - Testing
   - Disease process

9. Do you think the current program contents are adequate? Deficient? In what way?

10. What would you suggest that would help get the message across?

APPENDIX B

Table 11

Spearman Rho Rank Order Personal Barriers

Correlations							
			Cultural	Financial	Lack of Awareness	Lack of Easily Accessible Programs	Logistical
Spearman's Rho	Cultural	Correlation Coefficient	1.000	*-0.669	-0.579	0.210	-0.133
		Sig. (2-tailed)		0.034	0.079	0.561	0.714
		N	10	10	10	10	10
	Financial	Correlation Coefficient	*-0.669	1.000	*0.648	-0.535	-0.273
		Sig. (2-tailed)	0.034		0.043	0.111	0.445
		N	10	10	10	10	10
	Lack of Awareness	Correlation Coefficient	-0.579	*0.648	1.000	*-0.723	-0.106
		Sig. (2-tailed)	0.079	0.043		0.018	0.771
		N	10	10	10	10	10
	Lack of Easily Accessible Programs	Correlation Coefficient	0.210	-0.535	*-0.723	1.000	-0.155
		Sig. (2-tailed)	0.561	0.111	0.018		0.669
		N	10	10	10	10	10
	Logistical	Correlation Coefficient	-0.133	-0.273	-0.106	-0.155	1.000
		Sig. (2-tailed)	0.714	0.445	0.771	0.669	
		N	10	10	10	10	10

* Correlation is significant at the 0.05 level (2-tailed).

Table 14

Spearman Rho Rank Order Community Capacities

			Infrastructure/ Training	Policy	Public Information	Research	Services
Spearman's Rho	Infrastructure/Training	Correlation Coefficient	1.000	-0.476	-0.242	-0.402	0.472
		Sig. (2-tailed)		0.164	0.501	0.250	0.169
		N	10	10	10	10	10
	Policy	Correlation Coefficient	-0.476	1.000	-0.203	-0.459	-0.108
		Sig. (2-tailed)	0.164		0.573	0.182	0.766
		N	10	10	10	10	10
	Public Information	Correlation Coefficient	-0.242	-0.203	1.000	0.115	-0.472
		Sig. (2-tailed)	0.501	0.573		0.752	0.168
		N	10	10	10	10	10
	Research	Correlation Coefficient	-0.402	-0.459	0.115	1.000	-0.532
		Sig. (2-tailed)	0.250	0.182	0.752		0.113
		N	10	10	10	10	10
	Services	Correlation Coefficient	0.472	-0.108	-0.472	-0.532	1.000
		Sig. (2-tailed)	0.169	0.766	0.168	0.113	
		N	10	10	10	10	10

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