

Arab Community Center for Economic and Social Services
ACCESS Community Health Center

Cardiovascular Disease Risk Reduction Project

*An Arab Community-Based Approach
to Heart Disease Risk Reduction*

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1. Background

Between September 15, 1996 and October 1, 1997, the Arab Community Center for Economic and Social Services (ACCESS), through funding from the Michigan Public Health Institute, designed and implemented a comprehensive cardiovascular disease education campaign and risk reduction effort among the Arab American population of Southwestern Wayne County, Michigan.

The Arab population in the Metropolitan Detroit area is approximated at 250,000, 70% of whom reside in (mainly southwest) Wayne County. Within the state of Michigan, the Arab population is one of great disparity economically. One segment of the Arab American community is composed of second and third generation immigrants and recently arrived professionals, with health and economic status above that of the general population. In contrast is the recently arrived population of immigrants many of whom are essentially refugees, though they often lack government recognition as such. Coming primarily from Lebanon, Palestine, Iraq and Yemen a large proportion of the recently arrived immigrants are fleeing war and civil strife in their nation of origin. Persons fleeing such hardship are often unable to arrange for such a displacement or bring resources as they flee. The majority were rural agriculturists in their country of origin, unprepared for transition to an industrialized economy. The most recent trend in this immigration is that of the Iraqi refugees of the Gulf War. These immigrants were placed throughout the nation, but relocated to the Detroit area (for is Arabic language resources) at a rate of 1,000 per month, totaling 16,000 to date.

Within Wayne County, the Office of the State Registrar has estimated that about 20-27% of this population is below the poverty range, in comparison to roughly 5% of the general population. Similarly, estimates place the local unemployment rate as high as 30%. Of the almost 30,000 persons who benefited from ACCESS programs or services last year, 78% had incomes of less than \$10,000. The community is medically underserved and, in 1994, the Wayne County Health Risk Behavior Report reported that 37% of the Arab population lacked health or medical insurance. Level of education is low in comparison with the general population. A 1995 survey determined only 23% of the Arab Americans in our community completed high school. The mean number of years attending school was only 9.2 years.

Linguistic barriers to health care and health education are highly significant to the Southwest Wayne County Arab community. Literacy levels are low in both Arabic and English. Lack of insurance coverage, and financial and linguistic barriers to regular health check-ups is predictive of a lack of preventative screening. Among the Arab population in Wayne County, members of low socioeconomic status are at particular risk for heart disease morbidity and mortality since they tend to ignore preventative health care and only seek attention for serious health problems when they reach crisis proportions.

Currently, cardiovascular disease is the greatest cause of death for Arab Americans, both male and female. Arabs residents in the Southwest Wayne County region are in large part foreign-born immigrants, many recently arrived. These individuals are immigrating from a region in which cardiovascular risk factors are largely unrecognized and where health education and general knowledge of cardiovascular risk is limited. Low income and newly immigrated members of this community was the primary target group for our program.

From survey work conducted among the Arab American community of Southwestern Wayne County, a number of significant risk factors for cardiovascular disease and diabetes are pervasive the extent that the community may be considered high risk. Among the primary risk factors in the community are significant rates of smoking, sedentary lifestyle/obesity, stress, high blood pressure, high blood cholesterol and diabetes.

Arab Americans have immigrated from the Middle East where, as in other developing nations, smoking is a common and accepted part of daily life and there is little or no societal perception of smoking as a negative behavior and practically no smoking cessation resources. Consequently, smoking is a prevalent behavior in the Arab American community and is significantly higher than in the general population. In 1995, ACCESS conducted the Tobacco Prevention and Cessation Program in which a sample of 505 Arab Americans the Southwestern Wayne County area were surveyed about smoking behavior. 54% of the respondents reported that they were currently smokers. The majority had begun smoking in their teens. 83% reported a desire to quit smoking and 75% indicated one or more previous failures quitting smoking. The 1994 Wayne County Behavioral Risk Factor Survey found that overall the proportion of respondents who reported quitting smoking was 11.7% for Arab residents compared to 29.4% of the general population.

The Arab community of Wayne County is largely sedentary according to survey work conducted by ACCESS and other agencies. The Sahhat al-Jalia Survey determined that 71% of its respondents did not engage in any purposeful exercise activity, while 29% indicated that they did exercise on a regular basis from one to three times per week. The Wayne County Behavioral Risk Factor Survey calculated body mass index (BMI) and determined that 29.9% of Arab residents of Wayne County were overweight.

Stress is another significant factor among the Arab residents of Southwest Wayne County. The Wayne County Behavioral Risk Survey found that Arab reported mental health status was lower than that of either the White or African-American populations of Wayne County. This survey questioned how many days respondents felt their mental health was not good in the past month, and found that Arab respondents reported an average of 5.6 days per month in which their mental health was not good, compared to 4.1 days for African Americans and 4.2 days for White persons in Wayne County. Similarly, in the Sahhat al-Jalia Survey 70% of respondents indicated they were experiencing medium to high levels of stress. This may be explained by a variety of conditions including the difficulties in adjustment to a new society by recent immigrants, the difficult war situations in which many have been forced to leave family members, monetary difficulty in immigration, and linguistic barriers to employment and social services.

Diabetes is an a growing concern in the local Arab community of Southwest Wayne County. The Wayne County Behavioral Risk Survey found that, overall, 7.7% of respondents reported having been told by a physician that they had diabetes. Most striking, however, was the older male survey respondents (age 55-64), of whom 22.2% had been told that they had diabetes. In the Sahhat al-Jalia survey, 16% reported having been diagnosed with diabetes mellitus, 70% of whom had been diagnosed between the ages of 40 and 60. This is extremely high in comparison to the national average of diabetes diagnosis which is 2.4%. Moreover, during screening of 200 Arab individuals, 56 individuals (28%) had blood sugar levels over 120mg. 37.5% of these had not known of this condition prior to the screening.

Added to the cultural and socioeconomic variables that make for a population at high risk for disease is the poor quality of the ecological environment. The physical location of the

community has been described as a ghetto-like geographic concentration in the southeast corner of the city of Dearborn. The physical environment of the area, particularly the South End community where ACCESS is based, is a strong barrier to outdoor physical activities like sports, running, or walking. Located at the Dearborn-Detroit boundary, the community is surrounded on three sides by large manufacturing complexes including the mile-long Ford Motor Company River Rouge Plant. These sprawling industrial complexes emit large amounts of particulate matter into the air. In addition, numerous slag trucks regularly drive through the neighborhood, emitting hot slag vapors. Consequently, the air has a distinct, unpleasant odor. One aim of the CVD Project was to provide a clean indoor setting for exercise that still respected the cultural norms of modesty and sex separation.

Despite its numerous challenges, the Arab American community has a number of strengths that aided the project goals. The strong influence of Islamic values in Arab cultural norms plays a positive role in the reduced rates of alcohol and drug abuse among community members. Without the presence of these resilient negative behaviors, the target interventions could be designed much narrower, with primary focus on diet, exercise and reduction of nicotine use.

A common complaint of health sector professionals from outside of the community is that the community members are difficult to reach for outreach work. With an inside view of the community's dynamics, however, the close knit nature of the population was a great benefit to the project's goal. The local community is cohesively structured around cultural and religious institutions. These strong community structures enabled the project's health educators a direct means to community members that are otherwise difficult to reach. In the Metropolitan Detroit area, there are an estimated 80 Arab American and Islamic organizations, in addition to an

equally significant number of Chaldean organizations. These community cultural settings (mosques, associations, guild clubs, ethnic societies) are pivotal points for distribution of information into the community. The CVD Risk Reduction project was designed to disseminate information to community through these indigenous structures. The traditional form of verbal interaction was used to present health education messages about heart disease to community members in their own language and cultural context.

Interpersonal verbal communication characterizes the Arab cultural norm of information conveyance . Arab people immigrate from predominately rural settings in which the spoken word is *the* mode of transmission for all communication and information dissemination. Within the American context, Arabs continue to rely on verbal communication in preference print media or mainstream television. Locally, a number of Arabic language media organizations boast large viewerships among Arab Americans. Through this project, cardiovascular education programs were designed to utilize these bilingual venues.

2. Objectives

The above-described characteristics of the target population dictated the main components of the project. Low levels of health education among the targeted low-income Arab Americans is coupled with the fact that linguistic and cultural barriers block the population's exposure to mainstream American media, in which health education messages are much more prominent. The primary goal of the program, therefore, was to tailor an Arabic health education effort for cardiovascular disease designed to raise community awareness of the disease, its contributing risk factors and participatory methods of prevention. Cardiovascular awareness education was directed toward increasing community recognition of major CVD risk factors including high blood pressure, high cholesterol, smoking, diabetes, sedentary lifestyle and poor dietary practices.

Our first educational objective was conduct a media campaign to raise awareness of CVD risk factors. Despite the pervasive educational messages about low-fat diet, fiber, the necessity of exercise, etc. on mainstream American media, many community members are largely unaffected by this discourse due to language barriers. ACCESS, therefore, endeavored to reach the local community through its indigenous bilingual resources. The bilingual campaign was to be conducted through both bilingual radio and television targeting the Arab population of the local Arab community.

The CVD Project received permission from a local Arab ethnic access station (Strictly Live TV) to tape a series of educational sessions on heart disease risk to be aired to a viewer audience estimated at 30,000 individuals. ACCESS contacted local bilingual physicians and public health workers to participate in panel discussions that addressed major heart disease risk

issues including diet, exercise, screening for high blood pressure and cholesterol and recognition of the early warning signs of heart problems. Call-in interaction was encouraged. The presence of a concurrently running Arabic radio educational campaign on heart disease dictated a change in the project plan to add a second panel presentation on Arabic language cable, rather than an effort on Arabic radio.

A second educational objective was to produce and distribute bilingual health information on major issues related to heart disease. The stated objective was to produce a total of 4,000 bilingual Arabic/English brochures on three risk factors subjects: cholesterol, high blood pressure, and diet and exercise for CVD prevention. The brochures developed through ACCESS were to be subsequently distributed in Health Fairs, in health seminars conducted in the community, to clients of our Community Health Clinic, and to local Arab businesses, physicians, and cultural/religious organizations. Twice the stated number brochures on three topics were ultimately printed, out of demand for the additional brochures in the course of the project. The third topic was changed from diet and exercise to diabetes to avoid overlap with bilingual materials already available through another ACCESS project.

The third educational objective was to utilize indigenous community resources to disseminate health education services through the conducting of six health seminars on cardiovascular disease. This was to be achieved both through ACCESS' extensive present community ties and through efforts to further ACCESS' coalition with other community groups. Seminars were to be scheduled in local mosques and community clubs/organizations to better reach members of the community with educational material. A bilingual health educator was to be used to conduct the six seminars in order to reduce linguistic barriers to provision of health information. Furthermore, the seminars were to be conducted in accordance with cultural norms

in which men and women tend to gather for cultural and religious meetings in a sex-separated manner. Three health seminars were targeted toward local women and three toward local men. These seminars were to consist of a prepared informational presentation and the showing of visual materials including bilingual smoking cessation videos and discussing the culturally-specific Arabic food pyramid . Initially, attendants of the seminars were to be referred to free screening at the ACCESS Community Health Clinic and other participating health providers, but in the course of the project development free screenings were made available on-site during these seminars.

The second goal of the program related to the provision of clinical screenings and primary care access to the target population. As noted above, the target population lacks access to medical insurance and primary care to an exceedingly high degree. A prominent aspect of the community-based work was to bring screening services to the community in its indigenous meeting places and to raise awareness among those screened of free and low-cost sites for primary care follow-up and for consistent medical care. Direct services were be offered to local residents for the detection of cardiovascular early warning signs and the provision of preventative counseling and other services.

ACCESS was to facilitate clinical screenings for the detection of cardiovascular risk factors including high blood pressure, high cholesterol and diabetes. The stated objective was to reach 125 individuals for screening and follow-up if necessary at the ACCESS Community Health Clinic and local Health Departments. Non-insured poor patients were to be provided with accessible screening services. Our clinic is staffed with culturally competent and bilingual staff to better facilitate screening, education and consultation to our predominately non-English speaking community.

In addition, direct screening and other primary care services were to be provided through two health fairs. These health fairs were to provide a range of services, but include a prominent educational component related to cardiovascular risk factor screening and education. Ultimately, three health fairs were organized in the local community settings.

The final service objective was to establish a viable location for community members to participate in regular physical exercise. Because of the physical environment of our community (bounded on three sides by large industrial complexes) and socio-religious barriers to some exercise activity (due to preference for sex separation and modesty), outlets for physical exercise are highly limited in our community. The project was to develop two recreational leagues (for adult men and adult women) to create a regular opportunity for physical exercise. Participation in the recreational leagues was to be promoted through contact with the community clubs and organizations and through the project's other outreach components, including seminars, health fairs and the media campaign.

3. Description of Project Activities

The service provision portion of the project far exceeded the stated objectives. In total, 465 blood pressure screenings were administered in the course of the project outreach activities, in addition to 100 on-site cholesterol screening and equal number of referrals for free screening. 261 cardiovascular risk surveys were administered in the course of screening. All poor and uninsured individuals contacted in the seminars and health fairs received referral for free primary care at the ACCESS clinic.

In total, the project provided 9 educational seminars in local English Second Language classes and cultural organizations. The Islamic Center of America additionally received written materials and scheduled concurrent educational seminars with a volunteer health educator. All of the seminars provided by ACCESS included on-site screening and one-on-one bilingual consultation with a physician.

ACCESS completed three cardiovascular disease health fairs in the project period, reaching a total of 345 individuals. The first was conducted at the ACCESS Community Center in conjunction with Project Health-o-Rama and the project coordinator acted as site director. In this seminar, special cardiovascular disease consultation tables were added to the Health-o-Rama units. The first health fair was conducted on April 9, 1997 and total of 115 individuals were reached for screening and other services.

The second health fair was organized on April 25, 1997 in a local ESL and community education program at Littlefield Church. 165 individuals were serviced at this fair. The final health fair was conducted at the Lebanese Cultural Club on May 6, 1997 and reached an additional 65 individuals.

The media aspect of the project accomplished a total of two original media broadcasts with five total re-runs to date. Translation of a CPR video added to the second panel discussion. The estimated viewership of the cable broadcast was 30,000 subscribers.

A total of 3,000 brochures were produced for each of the educational topics: high blood pressure, high cholesterol and diabetes (above the stated goal of 1250 for each topic). These brochures were distributed widely in the community. The project coordinator assured their distribution monthly at over 10 mosques and churches, local grocers, doctor's offices, and other community gathering places.

4. Program Impact

A total of 890 individuals were reached through the direct service activities of the project, including the educational seminars, exercise leagues and health fairs. Over 400 individuals were provided with free on-site screenings through these contacts. The women's exercise reached an cohort of about six dedicated women. The total person-exercise hours provided in the project period was 230 person-hours. Two recorded media sessions resulted in a total of five cable broadcasts to a viewing audience of 30,000 Arab Americans. Finally, nearly 3,000 the 9,000 brochures printed through the project's funding have been distributed to over 30 community clubs, organizations, doctor's offices, union halls, churches and mosques in the Metro Detroit area.

Through English Second Language classes and two community Health Fairs, more than 400 heart disease risk assessments were conducted since October 1996. In this time, surveys were administered to 261 individuals. The survey component of the project verified many of the risk factors for heart disease among project participants. The outcome of this survey is tabulated in Appendix B. A summary of the key findings are as follows:

40% of the survey sample were men and 60% were women. 83.3% were Arab, with the remainder Latino, White, Asian, and Black.

31% of the sample were less than 30, 27% age 30-39, 17% age 40-49, 14% age 50-59, 11% older than 60.

A total of 41.1% of the surveyed population were smokers--69% of the men and 31% of the women. 72% smoked ten or more cigarettes per day.

53.3% of the survey respondents reported that a member of their household was uninsured. Among these individuals, 65.9% reported their entire household was uninsured, 25.3% were uninsured individually, and 8.8% lacked insurance for their children.

33.5% of the surveyed individuals reported never having their blood pressure checked in their lifetime. Of those who had had their blood pressure checked, 23.6% had been told they were hypertensive.

55.4% reported never having had their cholesterol checked. Among those who had checked their cholesterol, 48.1% had been told their cholesterol was high.

61.2% had never been screened for diabetes. Among the individuals who were screened for diabetes, 31.9% had been told they were diabetic (this includes women who were told they had gestational diabetes during pregnancy).

More than four hundred direct screening services were offered to the participants in the educational seminars and health fairs. A total of 252 blood pressure screening and 101 cholesterol screening were included in this study. The results of these objective measures of risk were as follows:

Blood cholesterol levels were defined as normal if found to be under 200 mg/dL, borderline high if measured between 200-239 mg/dL, and high if over 240 mg/dL. One site capillary pricks were used to measure blood cholesterol, in preference to the more detailed venous sampling in order to provide immediate results which were interpreted to the participants by volunteer physicians.

Among individuals who had their blood cholesterol checked on-site, 45.1% had cholesterol in normal range (≤ 199), 35.3% were borderline high (200-239 mg/dL), and 20% had high cholesterol (above 240mg/dl). 46% of the men screened had high or borderline high cholesterol levels, compared to 61% of the women.

Of the individuals screened, 48.8% of individuals less than 30 had cholesterol levels over 200. 37% of individuals age 30-39, 82% of individuals age 40-49, 73% of those age 50-59, and 50% of those aged 60+.

Hypertension was defined as systolic (the pressure exerted on the veins when heart is pumping) blood pressure over 140, with borderline high 135-139. A total of 252 blood pressure screenings were included in this study.

69% were found to have normal blood pressure, 4.8% were borderline high, and 26.1% were hypertensive.

66% of men had normal blood pressure, 4% were borderline high, and 31% were hypertensive. 74.8% of women were normal, 2% borderline, and 23.2% high.

By age, our population was higher than the national average for percentage of hypertensives in every age category except age 60 and above.

Age	Arab	National
less than 30	9.0%	4%
30-39	20.9%	11%
40-49	25.6%	21%
50-59	52.8%	44%
60-+	53.6%	54-65% (60-69,70-79, 80+)

(Source: National Institute of Health, 1997 WWW On-line Resource on Chronic Disease)

An important aspect of the program was the introduction of newly arrived immigrants to affordable health services through the community health clinic and local health departments. The clinic offers sliding fee health care from 0-\$10 for the uninsured poor. For over half of the surveyed participants, lack of health insurance was barrier to regular primary care. Every participant reached through the project's health fairs and seminars who lack regular primary care due to financial or non-insurance barriers were provided with referral for accessible primary care.

Impact of the seminars and educational presentations were evaluated in several ways. Following each of the seminars, participants responded to a satisfaction evaluation which

solicited comments on the utility of the information presented. A total of 63 attendants to the seminars responded to these evaluations. The usefulness of information, ability to understand the topics discussed, and satisfaction with the information included in the seminars was measured through a Likert-type scale (1=not satisfied at all through 5=very satisfied/strongly agree). The overall satisfaction with the seminar presentation was 4.8. Average satisfaction with the information presented and amount learned from the information was 4.6. 87.3% stated that they preferred the bilingual format of the seminar. The average satisfaction rating for the printed bilingual materials distributed as 4.8. Among the comments for improving the seminars was that the doctor discuss hypertension drugs, and that more time be spent discussing the different nutritional components of food.

In addition, a post-test cohort was recruited from the larger survey sample evaluate specific health behavior change impacts from those exposed to the program's health education. Thirty two individuals were followed in the project period based on initial determination of hypertension and hypercholesterolemia status. Project staff administered a bilingual survey tool adapted from the Michigan Public Health Institute (see attached) prior to educational seminars and then again the post-test period. Reported changes in behavior are tabulated in Appendix C. Among the evaluation cohort, the 19 responded that they were not taking any medication to control their high blood pressure or cholesterol in the pre-test, while those taking medication reported an average frequency taking medications of 2.6 (1=rarely and 4=very often). In the post-test period, 4 of these individuals had initiated a drug therapy for their condition, and the total number taking medications increased compliance with the drug regimen slightly with the average reported frequency increasing to 2.8. Participation in physical exercise apparently improved in the project period, though it is unclear how the respondents defined physical

activity. Respondents reported an average participation frequency in physical exercise to reduce the heart disease risk of 2.6 in the pre-test, which increased to 3.2 in the post-testing period. Of course, it is uncertain whether the program actually increased physical exercise among the cohort or whether it mainly improved their perception of the importance of physical activity in heart disease prevention.

In the pre-test period, cohort participants reported an average response of 2.9 when asked to rate their efforts to reduce weight or prevent weight gain. This increased slightly in the post-test to an average of 3.1. Similarly, increases were self-reported in limiting of cholesterol in the diet (2.7 to 3.1).

Overall, project impacts may be evaluated on a number of levels. By total enumeration of expected and actual service contacts, the project exceeded the majority of its goals. A more qualitative assessment of impacts is available through the individual responses to the project. Community receptivity to the screening services and seminars was very positive. A number of individuals serviced through this project had never had any such previous screening. One 59 year old woman attended one of the seminars because she had been feeling dizzy and wanted to speak to a doctor. When her blood pressure was measured, it exceeded 175 systolic and she sought immediate medical care, possibly averting a heart attack. Another 17 year old youth was diagnosed with a significant heart arrhythmia in a routine screening. Other less quantifiable impacts include the media educational exposures and printed health information that was distributed throughout the community, and the small improvement in the health of the small, dedicated exercise cohort.

5. Summary and Conclusions

In total, the Cardiovascular Risk Reduction Project was able to exceed most of its stated project goals. More than double the projected number of heart screenings were accomplished in the period. In addition, the project exceeded its goals in the number of written materials produced, the number of seminars provided and the number of health fairs organized.

The health education efforts were able to cover a significant cross-section of the large target population in a relatively limited time frame. Health education materials were distributed widely throughout the communities stores, office waiting rooms, churches and mosques. In addition, the media campaign successfully achieved five cable television airings concerning risk reduction and emergency management of heart problems. Response to these airing was strong and positive. Throughout the period, the project coordinator encountered individuals on the street who wanted to know about free screenings and other services after having seen the cable broadcasts. Feedback from these airings was also felt in the ACCESS clinic where viewers called to enroll in future screenings.

The project was, however, less successful in recruiting participants in the exercise leagues than was initially expected. This was due, in part, to time constraints that limited the project's ability to respond to feedback and tailor alternative interventions.

The one year project period allowed for a number of preliminary inroads towards the improvement of the cardiovascular health of the population. Direct screenings and exercise participation are among the more concrete aspects of the project that may be evaluated as discrete impacts. Other efforts like general improvement of the population's recognition of healthy diet, the importance of aerobic exercise and the dangers of smoking are more difficult to

measure and require longer implementation time frames. Continuation of the project efforts is necessary to truly affect long term changes in the health knowledge and attitudes of the population. Ultimately, the project should be evaluated by its ability to affect lasting changes in the population's health. The completed project stands as a substantial groundwork from which long-term efforts may continue to expand.

6. Reflection

Receptivity for services provided was a notable aspect of most of the components provided. Levels of participation in the health services aspects of the grant exceeded targets in most of the project areas, reflecting the large unmet needs for available and accessible health information and services.

On the part of local health providers and other professions, receptivity to the project was also quite exceptional. Once the project activities were announced in the community and services were initiated, a number of interested individuals and organizations found the ACCESS project an ideal outlet for volunteer interests and community-based inclinations. ACCESS served as a coordinating facilitator that was able to link physicians interested in community-based public health with community organizations interested providing health education to their constituency. In the course of the project, our staff encountered a significant number of health professionals unable to work in their field of specialty, but desiring medically-related community work.

When community members were approached for recruitment into some aspect of the project, individuals repeatedly expressed their concern for heart disease in the community or

related a personal anecdote about a friend, family member or neighbor who had had a heart attack without warning. The screening services was among the most important learning experiences for many participants. High cholesterol and blood pressure was detected in a number of individuals with no previous detection.

Among the services provided through the CVD Risk Reduction project, the small group seminars and direct services were probably the greatest success. Through these venues, one-on-one contacts were made in which a close repore could be established and in-depth questions could be discussed.

Exercise classes were the most difficult component of the project in which to recruit participation. Culturally there is no concept of group participation in exercise for its own sake, but physical exertion is generally related as task related. The very idea of exercise is viewed as foreign. In their countries of origin, many community members were involved in strenuous physical labor (in agriculture or in the home), and walking was a prominent part of everyday activity. Therefore, lack of intentional physical exercise was never viewed as a contributor to negative health. In addition to the perceived strangeness of exercise classes, concerns of modesty were, particularly for religiously observant women. The CVD Project attempted to provide a sex segregated space with a same-sex instructor to disarm this concern. Aerobic exercise classes in any form, however, were viewed as strange to many of the people we encountered.

Late in the project, attempts were made to shift focus to group walking and community gardening, but time constraints prevented their implementation within the project period. Community gardens is a idea that would be especially appealing for community members living in the more crowded housing near the industrial complexes. Another avenue that was explored

was swimming. In the Ann Arbor area, a Muslim group has organized women-only “sisters’ swimming”. Swimming is viewed by many as a novel and enjoyable activity (particularly in the summer heat), but few community women will swim because of modesty concerns when men are present. The Dearborn Recreation Department was approached with this idea, but were disappointingly unwilling to cooperate.

Smoking was a salient risk factor that requires public health programs to address. In the current survey, 41% of respondents were smokers. In the post-test cohort, smoking was the health behavior least affected by educational efforts. It remains a resilient behavior that is not viewed as a problem among many community members. In future efforts, further steps should be taken to stress that smoking is an addiction and that nicotine is a drug. The cultural framework of Islam strongly shuns drinking and the use of intoxicants. Smoking, however, is broadly viewed as a social nicety and is rarely associated with a stigma. Health educators should continue to utilize the positive aspects of Islam’s discouragement of addictions to link perceptions of smoking with the idea of nicotine as an addictive and self-destructive drug.

A final reflection concerns the nature of public health on a larger societal level. Work in this local Arab community is an excellent instructive case of the need for an accessible primary care system that universally assures health provision and primary disease prevention. This population is one of many such communities that are largely outside of interaction with regular preventative care. Instead, many community members interact with the health system for the first time when presenting with cardiac arrest and no insurance at local hospital emergency rooms. This \$25,000 project successfully provided screening and other educational efforts to large numbers of community members; this same cost is regularly consumed by a single hospitalized cardiac patient whose time for easy interventions (better diet, more exercise) has passed. The

barriers to public health and health care among this population do not simply disappear, but instead recur in societal costs of chronic disease, poor employment productivity, and other negative outflows that could have been directed toward other societal needs.

Appendix A:
Cardiovascular Risk Factor Survey Summary

Table 1. Demographic Characteristics of Surveyed Population

1A. Age		
	Number	Percentage Total
<20	10	3.8%
20-29	72	27.5%
30-39	69	26.4%
40-49	45	17.2%
50-59	36	13.7%
60>	29	11.1%
TOTAL:	261	100%

1B. Gender		
	Number	Percentage Total
Male	104	39.5%
Female	156	59.3%
Missing	1	
TOTAL:	260	100%

1C. Race/Ethnicity		
	Number	Percentage Total
Arab	215	83.3%
Latino	12	4.7%
Black	8	3.1%
White	19	7.3%
Asian	4	1.5%
Missing	5	
TOTAL:	261	100%

Table 1. Demographic Characteristics of Surveyed Population, Cont.

1D. Status of Medical Insurance Coverage		
	Number	Percentage Total
Uninsured	96	53.0%
Insured	85	47.0%
Missing	80	
TOTAL:	261	100%

1E. Among Uninsured, What Members of Family Lack Insurance		
	Number	Percentage Total
Whole Family	60	65.9%
Individual Only	23	25.3%
Children Only	8	9.8%
TOTAL:	81	100%

Table 2: Hypertension Among Surveyed Population

2A. Checked Blood Pressure in the Past		
	Number	Percentage Total
Never	62	33.5%
Past Year	103	55.6%
Two Years	10	5.4%
Three or More Years	10	5.4%
Missing	76	
TOTAL:	261	100%

2B. If Checked Blood Pressure in the Past, Told They Were Hypertensive		
	Number	Percentage Total
Yes	29	23.6%
No	94	76.4%
TOTAL:	261	100%

2C. On-Site Blood Pressure Screening Results		
	Number	Percentage Total
Normal (<135 Systole)	174	69.0%
Borderline High (135-139 Systole)	12	4.8%
Hypertensive (>140 Systole)	66	26.1%
TOTAL:	252	100%

2D. Percent Hypertensive by Gender		
	Male	Female
Normal	66.0%	74.8%
Borderline	4.0%	2.0%
Hypertensive	31.0%	23.2%

Table 3: Hypercholesterolemia Among Surveyed Population

3A. Checked Cholesterol in the Past		
	Number	Percentage Total
Never	103	55.4%
Past Year	66	35.5%
Past Two Years	13	7.0%
Three or More Years Ago	3	1.6%
Missing	77	
TOTAL:	261	100%

3B. If Checked Cholesterol in Past, Told They Had High Cholesterol		
	Number	Percentage Total
Yes	39	48.1%
No	42	51.9%
TOTAL:	81	100%

3C. On-Site Cholesterol Screening		
	Number	Percentage Total
Normal Range (<199mg/dL)	45	45.1%
Borderline High (200-239 mg/dL)	36	35.3%
High Cholesterol (>240 mg/dL)	20	20.0%
TOTAL:	101	100%

3D. %Hypercholesterol by Gender	
	Percent Borderline High/High
Male	46%
Female	61%

Table 4: Other Cardiovascular Risk Factors

4A. Ever Tested For Diabetes		
	Number	Percentage Total
Yes	73	38.8%
No	115	61.2%
Missing	75	
TOTAL:	261	100%

4B. If Tested For Diabetes, Ever Told Diabetic		
	Number	Percentage Total
Yes	23	31.9%
No	49	68.1%
TOTAL:	73	100%

4C. Currently Smoke		
	Number	Percentage Total
Yes	72	41.1%
No	103	58.9%
Missing	88	
TOTAL:	261	100%

4D. Number of Cigarettes Smoked Per Day		
	Number	Percentage Total
<5	5	6.9%
5-15	41	56.9%
>15	26	36.1%
TOTAL:	72	100%

Appendix B: Health Behavior Evaluation Cohort

1=Rarely/Strongly Disagree
 2=Not very often/Disagree
 3=Somewhat frequently/Agree
 4=Very frequently/Strongly Agree
 N/A=Not Applicable

<i>Table 1: Taking medication to control hypertension or hypercholesterol condition</i>						
Response Ranking	4	3	2	1	N/A	TOTAL
<u>Pre-Test</u>						
Number Responses	4	3	2	0	19	32
Average: 2.6						
<u>Post-Test</u>						
Number Responses	4	7	6	0	15	32
Average: 2.8						

<i>Table 2: Participating in physical activity to reduce heart disease risk</i>						
Response Ranking	4	3	2	1	N/A	TOTAL
<u>Pre-Test</u>						
Number Responses	8	18	4	3	0	32
Average: 2.4						
<u>Post-Test</u>						
Number Responses	11	17	5	1	0	32
Average: 3.3						

<i>Table 3: Losing or Controlling Weight to Reduce Risk</i>						
Response Ranking	4	3	2	1	N/A	TOTAL
<u>Pre-Test</u>						
Number Responses	7	10	10	0	5	32
Average: 3.0						
<u>Post-Test</u>						
Number Responses	10	11	7	0	4	32
Average: 3.1						

Table 4: Reducing Fat Intake to Control Disease Risk						
Response Ranking	4	3	2	1	N/A	TOTAL
<u>Pre-Test</u>						
Number Responses	8	10	10	4	0	32
Average: 2.7						
<u>Post-Test</u>						
Number Responses	11	12	8	1	0	32
Average: 3.1						

Table 5: Eating Three or More Servings of Fruit and Vegetable a Day						
Response Ranking	4	3	2	1	N/A	TOTAL
<u>Pre-Test</u>						
Number Responses	24	6	2	0	0	32
Average: 3.7						
<u>Post-Test</u>						
Number Responses	26	5	1	0	0	32
Average: 3.8						

Table 6: Reducing Dietary Cholesterol Intake						
Response Ranking	4	3	2	1	N/A	TOTAL
<u>Pre-Test</u>						
Number Responses	9	7	7	5	4	32
Average: 2.7						
<u>Post-Test</u>						
Number Responses	12	14	5	1		32
Average: 3.1						

Table 7: Quitting Smoking/Trying to Reduce Smoking (N=14)						

Response Ranking	4	3	2	1	N/A	TOTAL
<u>Pre-Test</u>						
Number Responses	3	3	2	5		14
Average: 1.8						
<u>Post-Test</u>						
Number Responses	3	4	2	4		14
Average: 2.1						

Appendix C: Survey Form

Name:

Age:

Sex: Male Female

Phone:

What is your height _____ What is your weight _____

Race/Ethnic Background: White Black Arab Latino Asian Other

1. Have you ever had your blood pressure checked? If yes, how recently?

- a. never
- b. in the past year
- c. in past two years
- d. in the past three or more years

2. Have you ever been told you have high blood pressure? Yes No

3. Have you ever had your cholesterol checked?

- a. never
- b. in the past year
- c. in past two years
- d. in the past three or more years

4. Have you ever been told you have high blood cholesterol? Yes No

5. Are you doing any of the following to control your blood cholesterol and hypertension?

1=Rarely, 4=Very Often, N/A=not applicable

a. Taking medications to lower blood cholesterol

1.....2.....3.....4.....N/A

b. Participating in a variety of physical activities

1.....2.....3.....4.....N/A

c. Reducing fat intake from my diet

1.....2.....3.....4.....N/A

d. Losing weight

1.....2.....3.....4.....N/A

e. Eating 3 or more servings of fruit and vegetables a day

1.....2.....3.....4.....N/A

f. Reducing my dietary cholesterol intake

1.....2.....3.....4.....N/A

6. Have you ever been told that you have diabetes?

- a. I have never been screened
- b. Yes
- c. No, I was screened but I am not diabetic

CONTINUED ON BACK>>>

7. Do you and the member of your household have medical insurance?

- a. Yes, my whole family is insured
- b. Yes, but only I am insured
- c. No, only my spouse is insured
- d. No, none of my family is insured

8. Through attending workshops on heart disease, have you learned how to reduce your risk by:

1=Strongly Disagree, 2=Disagree, 3=Agree, 4=Strongly Agree, N/A=Not Applicable

a. Participating in a variety of physical activities

1.....2.....3.....4.....N/A

b. Reducing fat intake from my diet

1.....2.....3.....4.....N/A

c. Losing weight

1.....2.....3.....4.....N/A

d. Eating 3 or more servings of fruit and vegetables a day

1.....2.....3.....4.....N/A

e. Quitting smoking (circle N/A if you don't smoke)

1.....2.....3.....4.....N/A

f. Reducing salt intake

1.....2.....3.....4.....N/A

9. Have you seen programs on TV or heard programs on the radio about preventing cardiovascular disease? Yes No

--If yes, have you learned about any of the following ways to reduce your risk of heart disease.

1=Strongly Disagree, 2=Disagree, 3=Agree, 4=Strongly Agree, N/A=Not Applicable

a. Participating in a variety of physical activities

1.....2.....3.....4.....N/A

b. Reducing fat intake from my diet

1.....2.....3.....4.....N/A

c. Losing weight

1.....2.....3.....4.....N/A

d. Eating 3 or more servings of fruit and vegetables a day

1.....2.....3.....4.....N/A

e. Quitting smoking (circle N/A if you don't smoke)

1.....2.....3.....4.....N/A

f. Reducing salt intake

1.....2.....3.....4.....N/A

ON SITE SCREENING INFORMATION

BLOOD PRESSURE

BLOOD CHOLESTEROL

Taken? No Yes, reading ____ / ____
Referred to: _____

Taken? No Yes, reading ____ / ____
Referred to: _____

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