THE COLORADO TRUST

A MODEL FOR IMPROVING

MINORITY HEALTH

The Adult Immunization & Health Screening and Education Project

EVALUATION REPORT

THE COLORADO TRUST

is dedicated to advancing the health and well-being of the people of Colorado.

THE COLORADO TRUST
1600 Sherman Street
Denver, Colorado 80203
303-837-1200
TOLL FREE 888-847-9140
FAX 303-839-9034

A MODEL FOR IMPROVING

MINORITY HEALTH

The Adult Immunization & Health Screening and Education Project

EVALUATION REPORT

EVALUATION CONDUCTED BY

Carla King & Associates, Inc.

Thank you also to Janet Jameson, RN,
for her contributions to this evaluation.

WRITTEN BY

Nancy B. Csuti, DrPH,
Director of Evaluation, The Colorado Trust

EDITED BY

Christie McElhinney,
Director of Communications, The Colorado Trust

INITIATIVE MANAGED BY

Ed Lucero,
Senior Program Officer, The Colorado Trust

TABLE OF CONTENTS

TO OUR READERS

The Colorado Trust has long been committed to supporting immunization efforts for both children and adults in Colorado. With our state's continuing struggle to improve immunization rates, each and every positive step – even small ones such as this study – is important.

Over the past three years, the Adult Immunization & Health Screening and Education Project was carried out by the Visiting Nurse Corporation of Colorado (commonly known as the VNA) with the goal of increasing immunizations of minority adults in the Denver Metro area. During that time, the VNA administered over 8,000 flu shots and over 100 hepatitis A & B series shots to high-risk minority adults at 36 locations within the African-American, Hispanic and Korean communities.

A second component of this project was the Health Screening and Education project, referred to as the Minority Health Project. The purpose of this effort was to screen high-risk adults for diabetes and high total cholesterol. Individuals with diabetes or an elevated risk for stroke were then offered a series of health education classes to help change behaviors that may lead to complications with diabetes and stroke.

Again, while this is a small study, with a total of 45 individuals included in the evaluation, the results are encouraging. The extensive relationship building the VNA undertook to lay the ground work for these tailored health education classes paid off handsomely – all class participants made dietary and life style changes that will enable them to take control of their health.

In sharing the results of this project and evaluation, it is our hope that the success of this unique effort can help lead to larger, long-term improvements in immunizing Colorado's most vulnerable residents.

Sincerely,

John R. Moran, Jr.
PRESIDENT AND CEO
THE COLORADO TRUST

BACKGROUND

The Colorado Trust has long been associated with efforts to increase the numbers of immunized children in Colorado. In 1996, The Trust convened and funded a group of leaders from across the state to identify ways in which immunization rates might be improved. This led to the formation of the Colorado Children's Immunization Coalition, and a three-year grant to implement the coalition's recommendations. At the same time that attention was focused on the state of childhood immunizations in Colorado, the Visiting Nurse Corporation of Colorado, commonly known as the VNA, was raising concerns about another under-immunized group – ethnic minority adults. A study on the uninsured, conducted by Medical Group Management Association (unpublished), found that fewer minorities get annual immunizations to protect against influenza and pneumonia than the majority Caucasian population. Findings show that this disparity resulted in increased risk for illness – and even death – for minorities.

UNDERLYING THESE RACIAL DIFFERENCES IN THE QUALITY OF HEALTH AMONG AMERICANS ARE VARIANCES IN BOTH NEED AND ACCESS.

As well as limited access to immunizations, ethnic minority groups have limited access to health screenings and education programs to improve their health status. Some ethnic minorities – African-Americans, Hispanics and Asians/Pacific Islanders – are at higher risk for diseases such as diabetes and heart disease. Higher risks have been associated with health care access issues such as language and cultural barriers, economic circumstances and limited information about healthy life-style habits such as diet and exercise.[1]

DESCRIPTION

To address this problem, in 2001 The Colorado Trust began funding the Adult Immunization & Health Screening and Education Project: A Model for Improving Minority Health (referred to here as the Minority Health Initiative), which was implemented by the VNA. While the VNA had traditionally provided immunization services to the populations served under this initiative, the need to add health screenings and education was apparent. This two-part initiative was designed to meet two goals: to improve immunization rates for minority adults in Denver, Adams, Arapahoe and Jefferson counties, and to improve access to health prevention and education services for minority clients residing in those counties.

African-American, Hispanic and Korean communities were targeted for this evaluation. These communities were part of the VNA's immunization and inoculation programs and were selected for screening and education because of the documented differences in health outcomes these ethnic minority groups experience. Differences in health outcomes are associated with disparities in health care services, which is defined by the Institute of Medicine (IOM) as: racial or ethnic differences in the quality of the health care that are not due to access-related factors, clinical needs, preferences or appropriateness of interventions.[1]

Underlying these racial differences in the quality of health among Americans are variances in both need and access — minorities are more likely to require health care but are less likely to receive health care services. Indeed, recent studies have shown that even when minorities gain access to

the health care system, they are less likely than Caucasians to receive adequate pain management, surgery or other therapies.[1] Prolonged disparities in health care contribute to differences in the incidence, prevalence, mortality and burden of diseases and other adverse health conditions that exist among specific population groups.

The *Colorado Public Health Improvement Plan*, produced by the Turning Point Initiative in 2001, was used to identify the groups in Colorado that experienced the greatest health disparities.[2] They reported the following information:

- Hispanics, when compared to other racial and ethnic groups in Colorado, have the highest rates of diabetes, teen pregnancy, cervical cancer and unintentional injuries.
- African-Americans have the shortest life expectancy of any ethnic group. African-Americans consistently experience the highest death rates from heart disease, stroke, Alzheimer's disease, HIV, infant mortality, homicide and cancer – particularly cancers of the lungs, breast and prostate. They also experience higher rates of diabetes than other ethnic groups.
- American Indians have the highest death rate from motor vehicles and chronic liver disease. They also have higher rates of HIV and other sexually transmitted diseases, homicide and diabetes than Caucasians.
- Asian/Pacific Islanders have higher rates than other ethnic groups for communicable diseases such as hepatitis-B and tuberculosis, especially for recent immigrants.

In addition to disparities in health outcomes, a review of the literature conducted for the evaluation pointed out a number of financial,

Logic Model. **The Adult Immunization & Health Screening and Education Project: A Model for Improving Minority Health**

Documentation of Community and Client Needs	Goals	Activities	Intermediate Outcomes	Long-Term Outcomes
Fewer minorities receive immunizations Minorities experience health disparities for diabetes and heart disease Minorities experience greater financial and non-financial barriers	Increase number of immunized minority adults Increase number of adults in minority communities who receive health screenings and education classes	Provide immunizations to minority groups Screen for high-risk conditions such as diabetes and cholesterol Provide health education in the community Ensure cultural competence of all content and materials Provide follow-up with Community Health Advisors (CHAs)	Increased knowledge of disease process and appropriate health behaviors Improved serum cholesterol and glucose levels Changes in health behaviors	Improved quality of life Decreased morbidity and mortality

situational, institutional and attitudinal barriers that impede minority access to health care. Factors cited most often include: lack of health insurance, problems with transportation, inability to take time off from work, inability to obtain child care, ignorance about the health care system and the availability of services and the distance traveled to health care providers. Personal and psychosocial barriers to accessing health care mentioned include: lower socio-economic status, perceived racism, inability to communicate with the health provider (language and cultural barriers), lack of social support, negative attitudes toward health professionals or the health services, and fear of illness. Additional concerns such as stress, physical problems, job demands and needing time and energy to deal with personal and family problems have been reported as detractors.

In creating the Minority Health Initiative, the VNA deliberately focused on addressing these issues through no cost health screening and education in the community. Placing the program in the respective communities minimized travel expenses for participants and reduced suspicions often associated with services provided in un-familiar environments. VNA staff networked with community and church leaders and collaborated with minority nurse organizations to gain access to local churches where the screening and education programs were held. In addition to being in an appropriate setting, the classes provided were tailored to be culturally appropriate.

Research has shown that for indigent and minority populations in particular, education alone is not sufficient to promote and sustain changes in health behavior.[3] The literature shows that in order to sustain a behavior change, efforts must be made to support the individual who is trying to make the change long beyond the length of the intervention. Thus, the VNA used the Community Health Advisor model to increase the likelihood of sustained changes. The Community Health Advisors (CHAs) were individuals selected from each community whose task was to provide a friendly voice for the health information and encourage participants to implement the new health behaviors they learned.

Over the last two decades, CHAs, also known as Lay Health Advisors, have gained recognition and have been successfully used in a variety of settings impacting a wide rage of community health and other issues. CHAs must be indigenous to the community they serve, familiar with the local environment and highly trusted by community residents and health agencies.[4] Because of their position within the community, CHAs are more approachable and understand the context within which community members react to health information better than health providers who are external to the community. In the Minority Health Initiative, CHAs worked with VNA staff and health educators to augment the intervention (e.g., classes, screening, etc.). They served as partners who were able to interface with the community, selected agencies, VNA staff and the evaluator.

The VNA project provided inoculations, immunizations and health screenings in minority communities at local churches and community agencies. VNA administered 8,323 flu shots and 127 three-series shots of hepatitis A & B at 36 locations within the African-American, Asian and Hispanic communities over the course of the two-year initiative. The health screens administered included blood pressures, blood analyses of total cholesterol (LDL, HDL, Triglycerides, risk ratio) and glucose to screen for diabetes. More than 1,300 participants received health screens from April 2002 through December 2004. Following

the health screens, the VNA provided health education classes focusing on diabetes, heart disease and stroke at the same sites where the screens were administered.

Following the screenings, higher-risk participants who had elevated blood levels were invited to attend health education classes. Three six-week diabetic education classes were held in conjunction with the Metro Denver Black Church Initiative for the African-American community and Anunciación Church for the Hispanic community. Three two-week classes addressing cholesterol education focusing on heart disease and stroke were held at Anunciación Church for the Hispanic population and at two Korean churches. In conjunction with representatives from the Asian communities, VNA also developed educational videos for the Filipino, Indian, Thai and Vietnamese communities.

MORE THAN 1,300 PARTICIPANTS RECEIVED HEALTH SCREENS FROM APRIL 2002 THROUGH DECEMBER 2004.

Technical assistance and training on cultural competence and successfully engaging minority communities, as well as the evaluation of the health screening and education component of the initiative, was conducted by Carla King & Associates, Inc. This evaluation focused on sustained positive health behavior change in an urban minority population. Since sustained behavioral change takes time to occur and measure, a small cohort of 45 participants that were screened and attended the VNA health education classes were included in the evaluation.[5]

INITIATIVE EVALUATION

The evaluation of the Minority Health Initiative was designed to answer four key questions:

1. What are the most effective interventions and teaching strategies for improving compliance with a recommended health behavior change or activity in each minority group served?
2. Are there differences in outcomes in the various settings (e.g., church, community center, etc.) used for screening and education classes?
3. Are health outcomes improved by using culturally-relevant interventions including language, materials and providers?
4. What kinds of reinforcements are most effective in sustaining changes in health behavior?

CULTURAL COMPETENCY

In order to create a framework for evaluating this initiative it was necessary to define certain terms to provide a context for the work. For this initiative, a working definition of culturally competent health care was adapted from the *National Standards for Culturally and Linguistically Appropriate Services in Health Care, Final Report* [6, 7]:

> Cultural and linguistic competence employs a set of congruent behaviors, attitudes and principles that come together in a process that enables providers to work effectively in a cross-cultural situation. "Culture" refers to integrated patterns of human behavior that include the language, thoughts, communications, actions, customs, beliefs, values and institutions of racial, ethnic, religious or social groups. "Competence" implies having the capacity to function effectively as an individual and an organization within the context of the cultural beliefs, behaviors and needs presented by consumers and their communities. This requires a willingness and ability to draw on community-based values, traditions

and customs, and to work with knowledgeable persons of and from the community in developing focused interventions, communications and other supports.

In order to adhere to these principles of cultural competence, the following guidelines were implemented throughout the evaluation and the provision of technical assistance:

1. Models and measurements were adapted for racially and ethnically diverse populations.
2. Materials, instructions and measures provided used simple, linguistically-appropriate language; the questionnaires, consent forms and other materials developed were translated into Korean and Spanish.
3. The evaluator answered questions and provided feedback to CHAs and participants in a format that was culturally appropriate.
4. Consultants indigenous to the targeted minority communities were hired to collect and interpret all data.
5. Data were analyzed and interpreted for use by the minority communities as well as the VNA.
6. Participant confidentiality was maintained at all times.

EVALUATION DESIGN AND METHODOLOGY

Three sources of data were used in the Minority Health Initiative evaluation: quantitative data collected via pre- and post-test questionnaires, qualitative data collected via focus groups and serologic data collected from blood samples.

The sample for this three-year initiative consisted of 45 adults (18 years and older) from the following groups: African-American community members who attended the Metro Denver Black Church Initiative, Hispanic community members who attended the Anunciación Church in northeast Denver and Korean community members who attended a Korean church in the Denver metro area. Each participant signed a consent form at the beginning of participation in the program. There were 20 African-American, seven Hispanic and 18 Korean participants. The consent forms and information about giving consent were provided in English, Korean and Spanish.

ALL OF THE SAMPLE PARTICIPANTS RECEIVED IMMUNIZATIONS, INOCULATIONS AND HEALTH EDUCATION CLASSES PROVIDED BY THE VNA.

All of the sample participants received immunizations, inoculations and health education classes provided by the VNA. Given the time necessary to make and sustain changes in health behaviors that would impact health outcomes, the evaluation measured the same groups of individuals over time. The groups were followed to assess the degree of change made in health behaviors and outcomes related to the VNA education classes.

DATA COLLECTION

A questionnaire was developed to collect demographic data, knowledge retention, satisfaction and the intent to change health behavior. The entire questionnaire was used as a pre-test measure prior to the beginning of the education classes and then appropriate sections were used again for the post-test measure. The items in the questionnaire were first developed in English and then translated into Spanish and Korean. Prior to translation, the items were reviewed for cultural

relevance and appropriateness by native-speakers and changed when deemed appropriate. After the instrument was translated, it was back-translated into English and modified to assure the most accurate translation. Participants completed the pre-test at the start of their first day of class and the post-test on the last day.

In addition to the questionnaire, focus groups of the participants were held at three- and 12-month intervals, following the health education classes, to determine the participants' perceptions of impact of the classes on behavior change, as well as to explore barriers and facilitators to behavior change. Additional qualitative data were collected from detailed reports submitted by the CHAs.

The African-American and Hispanic participants also submitted blood samples four- to six-months following the completion of the classes in order to provide evidence of diabetic management. The result of sustained diabetic management in long-term glycemic control was evident by a reduction in glycosolated hemoglobin (HbA1c) in blood. Including serologic data in this evaluation was particularly significant. Not only does this measure provide an unbiased report of how successful diet changes are, the literature review revealed only one published study that provided these data in a community-based setting — an evaluation of an outpatient clinic at the South Texas Veterans Health Care System.[5]

In addition to demographic data and program process data, the evaluation also examined outcome data to assess the impact of the health education sessions on:

1 Increased skills in managing risky health behavior associated with diabetes and elevated cholesterol.

2 Reported improvements in services delivered by the VNA.

Additional outcome measures combined Kirkpatrick's four levels of evaluation as well as Prochaska's five stages of change model.[8] All four of Kirkpatrick's levels of outcome data were collected. Each level had a specific purpose and provided information on effective interventions and changes in health care behavior. (Please see Appendix A for more details on this methodology, as well as a detailed description of Prochaska's model.)

FOCUS GROUPS

A total of five focus group discussions were held: two each for the Hispanic and African-American groups at three months and 12 months after the classes, and for the Korean group three months following their education classes. The focus groups were conducted by independent contractors who were of the same racial and ethnic group as the participants. The discussions were held in the participants' native language, as requested by the participants.

THE LITERATURE SHOWS THAT IN ORDER TO SUSTAIN A BEHAVIOR CHANGE, EFFORTS MUST BE MADE TO SUPPORT THE INDIVIDUAL LONG BEYOND THE LENGTH OF THE INTERVENTION.

The purpose of the focus groups was to provide qualitative information regarding knowledge gained in the classes as well as to explore barriers and facilitators to behavior change. In addition, the focus groups provided an opportunity for participants to give feedback to the VNA regarding the classes and to support each other.

EVALUATION RESULTS
Evaluation Participants

There were a total of 45 participants in the three-year education and screening evaluation. Two groups, the Hispanic group and the African-American group, remained active for the duration of the project and measurements for all four previously stated evaluation levels were obtained. These participants attended evening classes on diabetes self-management for six weeks at churches in their communities. The CHAs involved with the group reminded them of meetings and focus group discussions and attendance was excellent at these sessions. Ninety-six percent of the participants completed each session.

The Korean church group participated in two cholesterol education and self-management classes, completed the pre- and post-test questionnaire and one focus group discussion. However, the church administration ended participation in the project early and did not participate in the follow-up with the CHAs or the final focus group discussion. Thus, data for the Korean group are incomplete.

SURVEY RESULTS
Demographics of the Participants

The 45 participants who completed the questionnaire ranged in age from 20-79 years. The majority of the group were female (86%), compared to males (14%). The largest group of participants was African-American (45%), followed by Korean (40%) and Hispanics (16%). Most participants were born in the United States; however, 16 people were born in Korea and five were born in Mexico.

All participants resided in the greater-Denver area and 80% had lived at the same address for at least two years. Most had attended some college (74%), were employed (57%) or seeking employment (17%), and 34% had an income that ranged from $20,000-$49,999 annually. Eighty-four percent of the participants were single, divorced or separated and lived alone.

PARTICIPANTS' SOURCES OF HEALTH CARE

Access to health care varied within the groups. Sixty-five percent of the African-American group and 44% of the Korean group had full-coverage health care insurance. In the Hispanic group, 43% reported some health care benefits. Most of the group received health care through a private office, community-based clinic or hospital clinic. Seventy-one percent of the Hispanic group received care through community-based clinics. Transportation to health care, waiting for appointments and time off from work to go to the physician were not issues of concern to participants in this project. Seventy-seven percent of the Korean group and 67% of the Hispanic group reported no difficulty with translation during the doctor's visit. However, more than half of all groups reported that the doctors' directions were difficult to follow. Figure 1 to the right describes the demographic findings from each racial and ethnic group.

EVERYONE EITHER AGREED OR STRONGLY AGREED THAT THE CLASSES WERE IMPORTANT AND WOULD RECOMMEND THAT OTHERS TAKE THE CLASSES.

PARTICIPANTS' SATISFACTION WITH CLASSES AND CONTENT

Satisfaction with the classes was high among all participants. Everyone either agreed or strongly agreed that the classes were important and would recommend that others take the classes. Having

materials and content presented in their language was unanimously supported by the Hispanic group and by 77% of the Korean group. All of the participants believed that providing content that reflected their cultural beliefs was essential to making the classes relevant.

Knowledge of course content was measured by six questions on diabetes or cholesterol that were developed from the topics covered during the classes. Eighty percent of all participants answered the questions correctly.

PARTICIPANTS' STAGES OF CHANGE

Participants were asked about their health behavior prior to the start of the first class. In the post-test, administered on the last day of class, participants were asked the same questions to determine if they felt the classes had changed their intentions to initiate health activities. The results show that there was little change between the pre- and post-test. This is not surprising with such a small sample size. The pre-test and post-test alone were not expected to demonstrate much change. It was anticipated that behavior change will be monitored and assessed by the CHAs and from focus group discussions.

RESULTS FROM THE AFRICAN-AMERICAN AND HISPANIC FOCUS GROUPS

Results of the African-American and Hispanic focus groups were not significantly different and are presented together. While the Korean group did hold one focus group with seven participants from the two cholesterol classes, they did not

Figure 1. **Summary of Demographic Findings**

	African-American (n=20) pre/post	**Hispanic** (n=7) pre/post	**Korean** (n=18) pre only
Gender	Female 82%	Female 56%	Female 84%
	Male 18%	Male 44%	Male 16%
Place of birth	USA 100%	USA 28%	Korea 88%
		Mexico 72%	Vietnam 12%
Health insurance coverage	None 10%	None 29%	None 8%
	Some 25%	Some 29%	Some 23%
	Complete 65%	Complete 14%	Complete 44%
		No answer 28%	No answer 25 %
Translation issues	Yes 0%	Yes 14%	Yes 45%
	No 100%	No 86%	No 50%
			No response 5%
Employment	Employed 50%	Employed 71%	Employed 61%
	Unemployed or retired 40%	Unemployed or retired 29%	Unemployed or retired 39%
	No response 10%		
Annual income range	$6,000–60,000	$6,000–29,999	$6,000–60,000

remain part of the overall evaluation, thus the focus group results are not presented here. Twenty-seven African-American and Hispanic participants remained in the evaluation study for the entire two-year period.

The participants in these two ethnic groups attended classes related to their diabetes. Participants agreed the classes that they attended were productive and helped in their awareness of diabetes. In the beginning, fear was a common denominator due to lack of information about the disease and its implications. When participants began the classes they found that as their awareness increased they were empowered to take better care of themselves. Participants named the following specific knowledge they gained from the classes:

- The importance of a healthy diet
- The importance of exercise
- The importance of personal hygiene
- The importance of glucometers to monitor progress
- Understanding the causes, symptoms and control of diabetes as a disease.

BARRIERS AND FACILITATORS TO NEW KNOWLEDGE

Participants generally agreed that all of the support they received from class instructors (three instructors for the African-American group and two for the Hispanic group), the two Community Health Advisors, their families and physicians was a major influence in helping to change their habits. The follow-up phone calls from the CHAs were cited as very helpful. The phone calls reminded them that they should go for more walks and made them aware of what they were or were not doing to better manage their diabetes. Spouses/partners were also mentioned as having been very supportive and helpful in encouraging them to make changes. One participant expressed reluctance in trying the recipes given in class, but his spouse encouraged him by buying the ingredients for those recipes when they went grocery shopping. Children have also been a factor that facilitated the use of new knowledge. One participant stated that sharing this information has made his children more aware of diabetes and how to help control it, as well as the importance of healthy eating habits. They now remind their father to eat healthy meals and exercise more often. Learning that poor control of diabetes leads to many health complications has been another influence in making changes. As one participant expressed: "I take care of myself better now; I do not want to lose my vision."

RESEARCH SHOWS THAT CONTINUITY OF CARE WITH A PRIMARY CARE PROVIDER IS ASSOCIATED WITH BETTER GLUCOSE CONTROL AMONG PATIENTS WITH TYPE 2 DIABETES.

As the classes continued, barriers to participants dealing with diabetes decreased; however, there were still some areas that hindered success. Exercise was named as the biggest area of difficulty. Taking time for exercise, incorporating it into their daily schedules was most challenging. Eating out in restaurants and on social occasions, as well as vacations, presented participants with great temptations to eat unhealthy food. Participants talked about how to plan for such occasions and how they might become more proactive regarding food choices. Avoiding desserts was a huge challenge. Getting accustomed to taking their hemoglobin count and medication also was difficult for many of the participants.

BEHAVIOR CHANGE AS A RESULT OF NEW KNOWLEDGE

All of the participants made some behavioral changes in their lives as a result of the classes and meetings. The greatest area of change in diet was decreasing the use of fat in meals by substituting canola or olive oil instead of lard and other oils high in saturated fat. The use of a sugar substitute instead of regular sugar was a major change for many of the participants. Examples include participants changing from drinking more than 12 regular sodas per day to drinking only diet sodas and water. One participant noted that she used to buy half-and-half cream to make butter, but after learning in class how much fat it contains, she buys low fat margarine and uses it sparingly.

STAGES OF CHANGE

As a result of the classes and meetings, all participants made some changes in their lifestyles that will help them to better manage their diabetes and prevent further complications. Initially, the pre- and post-tests showed that most of the participants were in the pre-contemplation stage with regard to exercise and dietary changes. However, based on discussion in the focus groups and feedback from the CHAs, participants quickly moved from the *pre-contemplation stage* (see Prochaska's Stages of Change on page 17) to higher stages, and most of them moved quickly through the *contemplation stage*. Only one person remained in the *contemplation stage* regarding reduced sugar intake. The group suggested that instead of buying candies and pastries she might put that money aside for a month or two and use it to reward herself by buying some fashionable gift that pleased her and that she had long wanted.

By the end of the initiative, the majority of the participants were in the *action and maintenance stages* in the areas of diet and personal care. All of them had made changes, some more drastic than others, but in general their attitude, habits and behavior toward healthy eating and self-care (i.e., foot care and blood glucose monitoring) improved. As for exercise, all but one admitted improvement was needed in this area. Of the 27 participants remaining in the evaluation for two years, two were still in the *contemplation stage*, 20 had reached the *preparation stage*, four had reached the *action stage* and one was in the *maintenance stage*.

AS A RESULT OF THE CLASSES AND MEETINGS, ALL PARTICIPANTS MADE SOME CHANGES IN THEIR LIFESTYLES THAT WILL HELP THEM TO BETTER MANAGE THEIR DIABETES AND PREVENT FURTHER COMPLICATIONS.

SEROLOGIC RESULTS

The VNA collected blood samples at the start of the project for African-American and Hispanic diabetic participants. Four- to six-months following the completion of classes, blood was taken to measure for glycosolated hemoglobin (HbA1c). In diabetes mellitus, when the blood glucose level is optimally and carefully regulated over long periods — five- to six-weeks — the HbA1c level will be normal. If the blood glucose level is not controlled in the preceding five- to six-weeks, the HbA1c will increase.[9] The American Diabetes Association recommends a goal of 7% to 7.9% and action be taken if above 8%. In this study, the participants' mean HbA1c was 7.32% with a range of 6.26% to 8.4% after the intervention. The VNA staff referred all participants with scores of 8% or above to their primary care physicians or other providers. The majority of

the participants' blood test results indicated an improved blood sugar level, thus indicating they were successful in maintaining a healthier diet.

Research shows that continuity of care with a primary care provider is associated with better glucose control among patients with type 2 diabetes. In addition, this kind of control is associated with changes in patient behavior regarding diet.[5] In The Colorado Trust's Minority Health Initiative, continuity of care was provided by the nurse educators, CHAs and VNA staff in community churches. Although this is a small study and should not be generalized, these findings are encouraging for the following reasons:

- It is difficult to obtain evidence-based data in community-based evaluations. Many community-based evaluations rely on self-report surveys which are not augmented with scientifically sound data. The inclusion of these data in this project make the findings unique.
- There is much discussion in the literature about the need to utilize the kinds of culturally appropriate interventions used by VNA to reduce health disparities in ethnic minority populations. Providing serologic data adds further support for the interventions utilized, although without a comparison group change cannot be attributed to the program.
- Many of the illnesses that contribute to health disparities in ethnic minority groups, such as type 2 diabetes, can be reduced by sustained changes in health behaviors. The HbA1c was taken four- to six-months following the self-management classes, during the period the participants were supported by the CHAs. This may indicate the efficacy of continued community support in reducing health disparities.

DISCUSSION OF RESULTS AND RECOMMENDATIONS FROM THE EVALUATION

1 What are the most effective interventions and teaching strategies for improving compliance with a recommended health behavior change or activity in each minority group served?

No one intervention strategy stood out as more effective than others. It was the combination of the classes in the community, the use of culturally appropriate content and materials presented in a familiar language as well as the support provided by the program staff — teachers, CHAs and VNA staff — that made this project successful.

Traditionally, health education classes are held at health facilities during daytime hours and last about one day. It was significant that the VNA classes were held for as long as six weeks, and were well attended. Having the food prepared on site that fit participants' diabetic self-management and their cultural norms was considered by all to be a big success. It allowed the participants to taste the kind of changes that were recommended. It also enabled the participants and staff to have a meal together at each class, helping them to become a more cohesive group.

The addition of the CHAs proved to be an asset to the program. The CHAs provided a continual link to the staff and were able to reinforce the content learned. In both the Hispanic and African-American groups, the CHA provided their support to participants and were able to assist with areas not covered in class, such as the depression and adaptation that is often part of

adjusting to chronic illnesses. The participants reported "looking forward" to the phone calls and relying on their support. For example, in many instances, family crises would interfere with participants' self management, and the CHAs would listen and encourage them to continue with their regimen.

2 Are there differences in outcomes in the various settings, such as churches and community centers, used for screening and education classes?

There were no differences in outcomes related to class location for the African-American and Hispanic groups as both were held in a church setting. There was a significant difference in the amount of time needed to engage the African-American group. The Hispanic group became involved more quickly; in approximately three- to four-months from the start of the program. The African-American group took about 18 months to become involved in the project.

Distrust is a barrier which has been linked to the historical, political and economic experiences of many Colorado minority communities. While the VNA is a well-established organization, time was needed to establish rapport and assist communities in accepting the program. One reason given for this distrust was lack of cultural competence on the part of health providers. Many community members had previous bad experiences that left them wary of programs with stated good intentions. Only the program coordinator's openness to learning more about cultural sensitivity and differences eventually allowed the necessary trust to be secured.

3 Are health outcomes improved by using culturally relevant interventions including language, materials and providers?

When asked about the importance of having culturally relevant interventions, all of the participants, teachers and VNA staff agreed that it was a key factor in the program's success. The materials were easily comprehended and were used by the participants. Many asked for additional copies to share with family and friends. Participants could ask questions and appeared more comfortable in expressing concerns in their own language.

VNA program staff worked hard to meet the different communities on their own ground. Entry into a community was facilitated by a community leader – not necessarily a health care provider, but someone with credibility in the community – who was knowledgeable about the culture and endorsed the program. Persistence was necessary; many agencies were understaffed and multiple phone calls and contacts were necessary to make the connection.

4 What kinds of reinforcements are most effective in sustaining changes in health behavior?

The major reinforcement making this effort a success was the continued relationship building. Relationships were developed that enhanced program operations, the evaluation effort and had an impact on the participants' behavior changes.

The evaluator and her unique role as a consultant as well as evaluator was introduced at the beginning of this project. This allowed the project coordinator

and evaluator to review strategies, materials and interventions prior to participants' introduction into the program. Having a summative evaluation proved to be an important means to providing the type of feedback the program coordinator needed to continually improve the program.

SUCCESSFUL NETWORKING AND SUBSEQUENT RELATIONSHIP BUILDING BY THE VNA PROVIDED THE STRUCTURE THAT LED TO THE COMMUNITIES' COMMITMENT TO THE PROJECT.

Another significant relationship was formed when the CHAs were added to the project. Initially the CHAs were to be lay assistants to the teachers; however, in this initiative, the CHAs were former registered nurses who were part of the church community. This provided additional reinforcements as well as continual contact and support for the participants.

The most significant relationship was between the VNA program coordinator and the community agencies participating in the project. Successful networking and subsequent relationship building by the VNA provided the structure that led to the communities' commitment to the project.

To capture the steps taken in building relationships with minority communities the program coordinator was closely observed and interviewed during the first and second year of the initiative to validate the observations made. These observations can serve as a series of lessons learned for other programs interested in building successful working relationships in minority communities.

LESSONS LEARNED FOR SUCCESSFUL PROJECTS IN MINORITY COMMUNITIES

- Relationship building is key. Without trusting relationships between all parties, a program such as this would not be successful. It takes time and energy to build the necessary relationships, but without trusting relationships, the program will not work. Not all communities are equally assessable; flexibility is necessary to adjust to the schedule and time frame of community members.
- Not everyone shares the same health belief system. Preventive health is a new concept for many people. For recent immigrants in particular, fear of being perceived as "sick" can influence their willingness to participate in such programs. Certain diseases carry stigmas with them that are hard to overcome. Yet, at the same time, many people perceive preventable illnesses as a normal part of aging; in some cultures diabetes is considered just another "old-age disease."
- Higher socio-economic status does not always mean better health. While studies show that in Caucasian communities, higher economic status means better health, this is not always the case in ethnic minority communities. For some, despite improved economic conditions, old habits remain and individuals continue to engage in lifestyles and beliefs that may negatively impact their health. Understanding these subtleties is paramount to making such a program work.
- Collaboration is necessary. Some of the communities approached by the VNA already had health education services in place. It was essential to work with these existing efforts in order to enhance existing programs. Trying to replace existing programs in the community with a "better" program would not lead to necessary buy-in from the community.

- Utilizing feedback from participants is essential. Participants were able to provide feedback regarding the classes to the VNA, which in turn was able to make changes to better suit participants' needs. This openness on the part of both the participants and the VNA led to a mutually beneficial relationship.

CONCLUSIONS

Although this evaluation involved only a small number of participants, the information gained and lessons learned have proven invaluable in learning new ways to provide health care services in Colorado's minority communities. The use of culturally appropriate materials, staff and content was essential. Having programs in a familiar, easily accessible location was also important. However, the significance of the VNA's and the church communities' commitment and flexibility in working around issues and concerns cannot be overstated. The relationship-building process used created an environment that facilitated the implementation and success of this program.

APPENDIX A

Kirkpatrick's Levels of Evaluation

Level One

Evaluation Reactions

Level one evaluation measured how the participant reacted to the health education classes. This measure focused on participants' perceptions of the class, their satisfaction with the class and whether the material presented was relevant to their health. While this was a basic measure, it had important consequences for subsequent levels. Although a positive level one measure does not assure learning or behavior change, a negative level one measure certainly reduces its possibility. These data were collected using the post-test questionnaire.

Level Two

Learning

Evaluation at level two assessed knowledge gained as a result of the VNA health education classes. Measures included the extent to which the participants had acquired new facts, principles or techniques. These data were collected via pre- and post-tests, administered before and after the series of health education classes. While this information was important to make sure that the participant has really learned the content presented, recall does not assure a behavior change.

Level Three

Behavior Change

The transfer of content into the participants' activities of daily living was measured at level three, which assessed the extent to which the newly acquired knowledge and health behaviors were integrated into the participants' behavior and daily health management practices. Content learned at a health agency or education class is not always readily applied in an individual's home environment. Time and opportunity for participants to test the new knowledge in the real world and to make the necessary adaptations is needed.

Data were collected in a series of focus group discussions held three and 12 months following the completion of the health education classes. The focus group format allowed participants to discuss issues related to behavior change from their own perspective and also provided an assessment of what changes had been sustained.

Level Four

Results

Level four focused on behavior changes that resulted and their impact on participants' health outcomes. Sustained behavior change could be accurately assessed via monitoring of blood sugar levels (HbA1c) over time. This measure provided an indisputable measure of the impact of the behavior change on the individual's health.

A major concern in this project was measuring sustained change in health behavior while detecting an individual's progress. Too often health providers assume that knowledge alone is a sufficient change motivator. Research has shown that immediate change is often precipitated by an external event or crisis such as loss of a friend or relative or sudden illness. High-risk health behaviors are embedded within an individual's way of life and are difficult to change without repeated interventions.

When trying to detect change in high risk health behaviors, an assessment of the individual's readiness for change is important. All people will not be equally ready or able to change their high risk behavior. A determination of an individual's stage of change is essential in monitoring progress toward modifying risk behavior and has been used to guide nursing intervention models. The model used assessed the participants' readiness or intent to change their health behavior by placing each participant within a "stage of change," based on Prochaska's model.[10] There are five stages of change in this model: pre-contemplation, contemplation, preparation, action and maintenance. (See right for a detailed description of Prochaska's model.)

Participants' progress from one stage to another is significant when measuring progress toward change. This is particularly true with minority and low-income individuals. People who are overwhelmed with the amount of change necessary can become discouraged and fail to make the necessary change. Movement from stage to stage toward the reduction of high-risk behavior is important to measure and is an indicator of progress. This kind of indicator of behavioral change is often missed and participants not acknowledged for their progress. A measure of a person's movement along these stages can provide significant data on how to facilitate and maintain the desired change. In this evaluation, information on the participants' stage of change was monitored with the pre-test questionnaire and the focus group discussions.

Prochaska's Model of Stages of Change

Pre-Contemplation: A person in the pre-contemplation stage is best described as a person not now engaged in any activity nor considering any activity that might mitigate any of the several risk factors involved in the onset of cardiovascular disease. For example, an overweight, tense, smoker who does not know either her blood pressure or cholesterol level, does not exercise, eats whatever she pleases, does not know whether she is diabetic and has given no thought to addressing any of these risk factors that might lessen the onset of the disease.

Contemplation: Stage two, contemplation, describes a person who has begun to think about addressing the risk factors and who might take some kind of action in the next six months or so.

Preparation: A person in this stage is planning to begin taking action within the next 30 days. These three stages contrast markedly with the person who has made a commitment to improve the quality of her life and change her behavior accordingly.

Action: In this stage, the person has made a commitment to change their lives and plans to implement change within the next six months to reduce her risk of disease.

Maintenance: This stage describes the person who has taken action and has been able to maintain the behavior change that reduces or removes the health risk.

ENDNOTES

1 Smedley BD, Stith AY, Nelson AR, eds. *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*. Washington, DC: The National Academies Press; 2003.

2 Colorado Turning Point Initiative. *Strategic Planning Phase, Final Report: Colorado's public health improvement plan*. Denver: Colorado Department of Health and Environment; August 2001.

3 Centers for Disease Control and Prevention (US). Prevention Research Centers: investing in the nation's health. Atlanta: Department of Health and Human Services; 2001.

4 Nemeck MA, Sabatier R. State of evaluation: community health workers. *Pub Health Nursing*. Jul-Aug 2003;Vol 20(4):260-70.

5 Parchman ML, Pugh JA, Hitchcock-Noel P, Larme AC. Continuity of care, self-management behaviors and glucose control in patients with type 2 diabetes. *Med Care*. 2002;40(2):137-144.

6 U.S. Department of Health and Human Services, Office of Minority Health. National Standards for Cultural and Linguistically Appropriate Services in Health Care: Executive Summary, Washington, DC; March 2001.

7 *You Can Use Communications Principles to Create Culturally Sensitive and Effective Prevention Materials*. Rockville, MD: National Clearinghouse for Alcohol and Drug Information (NACDI);1994. Technical Assistance Bulletin MS494

8 Kirkpatrick D. Evaluating Training Programs: The Four Levels. San Francisco, CA: Berrett-Koehler; 1994.

9 Thomas CL ed. Taber's Cyclopedic Medical Dictionary. Philadelphia, PA: F.A. Davis Company; 1985.

10 Prochaska JO. A Trans-Theoretical Model of Behavior Change: Learning From Mistakes With Majority Populations. In: Becker DM, Hill DR, Jackson JS, Levine DM, Stillman FA, Weiss SM, eds. *Health Behavior Research in Minority Populations: Access, Design, and Implementation*. Washington, DC: U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, NIH Publication No. 92-2965; 1992:105.

THE COLORADO TRUST

1600 Sherman Street | Denver, Colorado 80203

303-837-1200 | 888-847-9140

www.coloradotrust.org