Community Health Ambassadors: A Model for Engaging Community Leaders to Promote Better Health in North Carolina

Barbara Pullen-Smith, Lori Carter-Edwards, and Kimberly H. Leathers

Despite public health efforts to address burden of diseases within communities such as diabetes, health disparities remain. Traditional lay health advisor models help address these issues. Yet, few, if any, have a statewide focus that includes education credit and involves broad-based partnerships. The Community Health Ambassadors Program (CHAP) is a training and education demonstration program designed to engage leaders from diverse communities to help eliminate health disparities in North Carolina. The program's current focus is on improving diabetes awareness, management, and prevention. CHAP involves multiple state and local community and healthcare professional partnerships, the community college system, and tribal, community-, and faith-based organizations. CHAP components include recruitment, training (classroom and interactive instruction, fieldwork, and continuing education credits), monitoring/evaluation, and support/education. Since CHAP's inception in June 2006, 146 community health ambassadors (CHAs) from 17 counties have been trained. Preliminary evaluation of the CHA community activities include one-on-one diabetes self-management tips, diabetes talks, and recruitment of citizens to sign healthy living pledges. CHAP may be a comprehensive and cost-effective model for promoting multilevel involvement of community leaders and diverse organizations to concentrate on diabetes health disparities within the state. CHAP will be implemented in the future to address the state's other prevailing health problems.

KEY WORDS: community networks, health status disparities, minority health, type 2 diabetes

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North Carolina, like many other states in the United States, is challenged with persistent and significant health disparities for many chronic diseases, including type 2 diabetes, cardiovascular disease, kidney disease, human immunodeficiency virus/acquired immunodeficiency virus (HIV/AIDS), cancer, and stroke.[1,2] According to published reports in 2005, chronic diseases are responsible for approximately two thirds of all deaths in North Carolina or an estimated 50 000 deaths each year.[3]

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Some of the state's greatest health burdens exist for type 2 diabetes. In 2006, approximately 612 000 North Carolinians were diagnosed with diabetes.[4] Results from the 2005 NC Behavioral Risk Factor Surveillance System Survey indicate an 89 percent increased prevalence of diagnosed diabetes in adults, from 4.5 percent in 1995 to 8.5 percent in 2005.[5] The actual prevalence is predicted to be twice as high as reported, given the high proportion of undiagnosed cases.[6] Diabetes prevalence and the likelihood of mortality are disproportionately higher among African Americans and American Indians than among Whites.[2]

Diabetes is the leading cause of nontraumatic lower limb amputation, kidney disease, and blindness in North Carolina. Residents with diabetes are also two to four times more likely to have cardiovascular disease.[4] Proper diabetes management, prevention, and awareness may help eliminate these disparities and prevent complications.[7] Improved lifestyle can lead to improved diabetes self-management[8,9] and prevention among those at risk.[10,11] Barriers to diabetes care are associated with self-management (such as blood glucose monitoring),[12] and support such as provider feedback and patient-specific recommendations can lead to improved glycemic control. Given the complexity of diabetes and diabetes management, effective public health strategies to address these interactions require a broad perspective, innovative models, partnerships, and accountability to all stakeholders.[13]

Community-based interventions represent one public health approach to managing and preventing chronic diseases such as diabetes in high-risk populations. Community-level strategies are particularly important because many residents may not actively seek and/or be able to access healthcare through traditional settings.[14] These strategies may also be effective because they can uniquely reach those with the information and resources needed to prevent the onset of chronic diseases and provide support for individuals to successfully manage their conditions.

Lay health advisor models have been successful, cost-effective community-level strategies for modifying lifestyle behaviors and promoting better health through prevention and referral services.[15–17] By training volunteers from the general community, community-based organizations (CBOs), and/or faith-based organizations (FBOs), residents can receive culturally sensitive health education messages from individuals who are part of the community. The interventions of the lay health advisors build on the strengths of a community and create behavioral and social changes through natural social ties.[18] Literature on lay health advisor programs implemented for diabetes management and prevention is limited.[15,19] Although they present promising results, these programs did not focus on community leaders, who may have a broader influence than traditional volunteers. It also is not clear whether incentives, such as education credits, have an impact not only on lay participation but also on program sustainability. In addition, none of the projects were initiated as statewide efforts, which may have a more generalizable impact than traditional, local lay health education diabetes programs. Although strong partnerships may be cultivated for locally implemented lay health models, statewide efforts may be an effective strategy for utilizing and developing broader partnerships for even greater impact on diabetes management and prevention. The purpose of this article is to describe the Community Health Ambassador Program (CHAP), a statewide training and education project designed to engage leaders from diverse populations and communities to help eliminate health disparities in North Carolina. The process of program development and implementation for the project's initial focus, diabetes awareness, management, and prevention is reported.

The Community Health Ambassador Program

North Carolina Office of Minority Health and Health Disparities

The North Carolina Office of Minority Health and Health Disparities (NC OMHHD), which has been in existence for more than 15 years, provides a range of capacity-building services to local partner agencies and individuals, including training, consultation and technical assistance, leadership and skills development, resource development, infrastructure development, and financial support. This approach has helped FBOs and CBOs to implement sound business practices, ensure fiscal accountability, sustain programs and services, influence policies and legislation, and mobilize coalitions to address health disparities.

The NC OMHHD developed CHAP to engage community leaders around health to identify local perspectives, priorities, and solutions on common, challenging public health issues disproportionately affecting racial/ethnic minority populations, such as type 2 diabetes; enhance knowledge about the community's health concerns; increase the community's ability to access existing health and human services, programs, and resources; and develop a network of healthcare advocates throughout the state. The office provides leadership, guidance, and coordination and financial support to the program and its partners and works with community leaders to implement the training and increase access to resources that will ultimately sustain CHAP's effort in the community. CHAP's grant funds, provided

by the NC OMHHD, were used to cover the stipends, incentives, and course registration for the community health ambassadors (CHAs).

State and local community partnerships for implementing CHAP

The NC OMHHD collaborated with multiple local and state partners prior to the development and implementation of CHAP (Figure 1).

Success Dynamics

Success Dynamics Community Development Corporation (SDCDC) is a faith-based, 501(c)3, nonprofit organization that serves as a leading agency for several local and extended programs. It provides prevention education and access to medical care for minority residents so as to close the healthcare gap. The SDCDC executive director, who served as the statewide coordinator for CHAP, worked with the OMHHD to identify areas of the state for the training. Once a location was identified, the coordinator contacted the local community college to set up the training. In addition, the coordinator identified area faith- and community-based leaders to recruit potential CHAs.

North Carolina Community College System

The North Carolina Community College System (NCCCS) covers 58 campuses throughout North Carolina. It provides high-quality, accessible educational opportunities that minimize barriers to post–secondary education, maximizes student success, and develops a globally and multiculturally competent workforce to improve the lives and well-being of individuals. The NCCCS supports CHAP training by awarding 2.0 continuing education units (CEUs) to all CHA students who successfully complete the course requirements. An NCCCS certificate is presented upon graduation. Local community colleges registered each student and provided classroom facilities for the training free of charge.

Old North State Medical Society

Old North State Medical Society is one of the oldest associations of African American physicians in the country. It was founded in 1886 to promote equity in healthcare, equal opportunity for Black professionals, and equal care for Blacks, other minorities, and underserved patients. The society recruited local physicians to train the student CHAs on the clinical aspects of diabetes.

Nursing Program, University of North Carolina at Greensboro

The Nursing Program, which has been in existence since 1966, is dedicated to teaching, research, and service that contribute to the maintenance and improvement of health for individuals, families, and communities. For CHAP, the program donated resources, such as diabetes testing equipment, sphygmomanometers and cuffs, medical supplies (gloves, alcohol swabs, sterilized strips for wound care, etc), and other resources used in the CHA training.

American Indian tribes

The American Indian tribes are central to North Carolina's population. There are eight state-recognized tribes throughout the state, with one having federal recognition. The tribal leaders helped recruit CHA students to participate in the training.

FBOs

Pastors from African American, Latino, and White FBOs (or churches) actively supported the CHAP both by completing CHA training and by recruiting members from FBOs or networks to serve as CHAs. Some pastors recruited from their regional network of FBOs. FBOs also served as an important base of operation for the CHAs by hosting meetings for workshops, training sessions, and screening activities.

CBOs

The nonprofit organizations participating in CHAP worked to address health issues in their communities. Although the majority of the CBOs reach local communities, some have a regional focus, serving individuals in multiple counties. The CBOs recruited individuals for the training and, like the FBOs, supported CHAs working in communities by providing meeting space for workshops, training sessions, and screening activities.

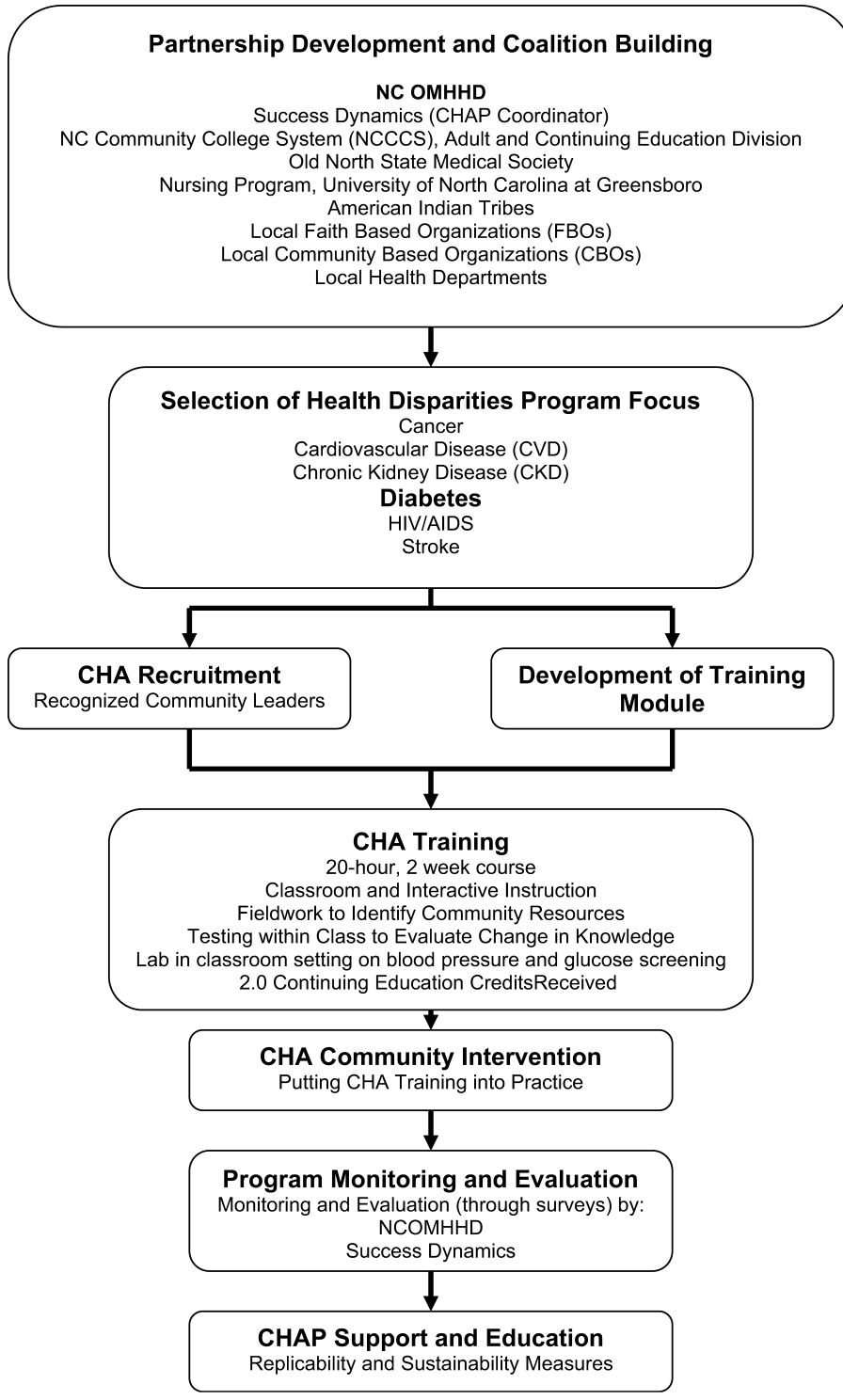
Local health departments

Local health departments served as a referral agency for health concerns identified by the CHA(s) working in communities. In addition, health educational materials and resources are available through the health departments.

Recruitment of CHAs

The coordinator (Success Dynamics) and NC OMHHD staff contacted key partners (FBO leaders, CBO leaders, and local healthcare agency administrators) to identify and recruit trusted community leaders who were

FIGURE 1 North Carolina Office of Minority Health and Health Disparities Community Health Ambassador Program (CHAP)



willing and able to volunteer to be trained as CHAs and promote health with respect to diabetes management and prevention.[20] For example, during the initial recruitment phase, the coordinator and NC OMHHD staff presented the CHAP to the Community Empowerment Network, a multicounty collaborative of FBOs whose purpose is to advance communities through partnerships that thrive on economic developments, superior

education, and the elimination of health disparities. The network enthusiastically endorsed the project and had pastors preregister to be trained as CHAs. On an ongoing basis, pastors and ministers assisted in promoting and advertising the program to others.

To participate in CHAP, residents needed to be available in the evenings (after traditional business hours) and on weekends, and they were flexible enough to interact with other residents in multiple settings where they live, work, play, or pray. Recruitment included an overview of the CHAP, the role of a CHA, and a profile of the qualities and skills needed, including (1) an expressed interest in learning more about health issues; (2) willingness to volunteer; and (3) demonstration of leadership qualities (ie, dependability, comfort with diverse populations, interpersonal skills). Volunteers demonstrated agreement to participate by registering for the CHA training course. Approval from an institutional review board was not deemed necessary because there was minimal or no risk to participating, and visibility of CHAs was welcomed to help promote community awareness and available healthcare resources.

TABLE 1 Components of the community health ambassador training manual

Modules	Focus
1. Introduction to Public Health	History, mission, services
2. Community Health Ambassadors	Role, expectations
3. Human Body	Overview of major organs, interactive Web site
4. Diabetes	Signs and symptoms
5. Diabetes	Disease prevention, risk reduction
6. Diabetes	Management, interventions
7. Prevention	Importance of exercise
8. Diabetes	Effects on body
9. Diabetes	Medications, laboratory assignment on testing blood glucose level
10. Blood Pressure	Understanding the numbers, laboratory on testing blood pressure
11. Group Project	Development of resource directory
12. Resources	Networking, accessing local resources
13. Referrals	Referral process and resource agencies
14. Glucose Checks	Proper use of glucose monitoring equipment

CHA training and certification

Development of CHA training materials

A representative team of CHAP partners collaborated to assemble the materials needed for the training. The course syllabus was developed by the NC OMHHD to meet the continuing education requirements of the NCCCS. Within 4 weeks, the Success Dynamics staff and the lead instructor for CHAP's training program compiled the training manual using materials from various existing sources, including those from the National Diabetes Clearinghouse and Centers for Disease Control and Prevention.[21,22] Materials were screened by the coordinator and the NC OMHHD for a middle-school reading comprehension level. The training manual was reviewed and approved by the Success Dynamics staff team, the NC OMHHD, and the Adult and Continuing Education Division of the NCCCS.

Training components focused on awareness and health promotion and disease prevention strategies, including strategies for identifying and accessing existing healthcare services and resources. The CHA core training program was delivered as a 20-hour course over a 2-week period. The majority of the modules in the training manual were presented as 50-minute segments. However, three modules—The Human Body, The Group Project Introduction, and Wound Evaluation—were presented in 30-minute segments. Table 1 displays a list of the training modules.

Training

CHA training consisted of classroom instruction by NCCCS instructors, interactive sessions, and field practice. Within a 4-week period, the statewide coordinator scheduled the training dates with the local community college and recruited student ambassadors from each target area. Training courses, using uniform instruction for the curriculum, were offered in two weekend sessions: Friday evenings from 6:30 PM to 9:30 PM and Saturdays from 8:30 AM to 4:30 PM. Training, offered in small groups of 12 to 30 students, was designed to positively impact dietary, physical activity, and health-seeking behaviors. For example, students were trained on reading food labels during the session "Intervention, Prevention and Control Strategies." Samples of food labels were included in the training manual for student review and discussion.

Week 1 included 3-hour classroom instruction on a Friday evening and 7 hours on the following Saturday. Students were provided the training manual and access to appropriate medical equipment to complete the laboratory portions of the course. Students received a pretest on diabetes; reviewed the role of a CHA; learned about the principles and practices of public health, signs and symptoms of diabetes, and prevention/intervention techniques; and completed a laboratory assignment on using medical equipment to measure blood glucose and blood pressure.

The 5 days following week 1, 2-day instruction was set aside for students to complete a group field project. Each was responsible for collecting information on existing health and human resources and programs that can be included in a local resource directory.

During week 2, classroom instruction resumed the 2-day instruction format. Students reviewed week 1, updated collected resource information, and conducted a classroom lab assignment on wound evaluation and information on client confidentiality.

Education credit

Session attendance, recorded by the lead instructor, was necessary to receive education credit. Rosters were submitted to the NCCCS Department of Adult and Continuing Education. Once the lead instructor verified that students completed all requirements, they received 2.0 CEUs from their local community college. To receive a graduation certificate from CHAP, students were required to attend at least 95 percent of the 20 hours offered, complete the field project, score at least 80 percent correctly on the final test, and sign a CHA pledge, indicating their commitment to (1) engage in healthier lifestyles to improve their own health; (2) participate in at least one Success Dynamics–sponsored CE session; (3) complete their local resource directory; and (4) translate health information to at least 100 people within the first year after graduation. The NC OMHHD presented each graduate with a vest that identifies them as an NC CHA. Success Dynamics awarded a $50 stipend to each student for successfully completing the course requirements.

CHA intervention

Once the CHAs received certification, they were approved to go to their communities, using their own, unique communication styles, and translate diabetes-related health information to residents. This included group talks, one-on-one visits with residents on diabetes self-management tips (ie, how to use glucose monitoring kits, check feet, access a physician [referral], etc), and a signed healthy pledge agreement. They reported their activities to the CHAP coordinator 1 year after completing the CHA training.

CHA support/education

As the CHAs engaged in the intervention and to help sustain their activities, they had access to local health departments for referrals, additional health information, or questions posed to them by community residents. To replicate the CHAP model, CHAs also had the opportunity to provide support to other CHAs through recruitment of new CHAP candidates.

CHAP evaluation

The CHAP coordinator and the NC OMHHD assessed the CHAs' characteristics (county, gender, race, and education), participation (total number of certified CHAs, total number of courses taught), change in CHA knowledge, and CHA posttraining outreach activities. Three knowledge tests were administered by the instructor during the CHA training period: a 10-item pretest, assessing knowledge from week 1 instruction on signs of diabetes, types of diabetes, blood glucose, types of wounds, and local resources; a 20-item test, assessing knowledge of concepts taught during week 1; and an eight-question posttest, administered on the last day of the course, that included questions on how the CHAP manual should be used. The tests were graded by the instructor during the session. Grades were recorded and sent to the administration of the respective community colleges for CEU credits. Also, as part of the evaluation of CHAP, the NC OMHHD developed and mailed a 15-item assessment tool to 100 CHAs to record their outreach activities, successes, challenges, and testimonials. The purpose of the tool was to

1. identify additional training needs of the CHAs involving diabetes education;
2. document the interventions of the CHAs;
3. determine the interventions that are most often provided by the CHAs;
4. identify CHA successes and challenges of implementing and maintaining diabetes management, awareness, and prevention among community residents; and
5. identify the support systems needed by the CHAs to provide ongoing services to community residents.

A $25 incentive was provided to those who returned the assessment.

Results

CHAP began in June 2006. Since then, a total of 146 CHAs have been trained across 17 counties, each receiving 2.0 CEUs through the NCCCS.

More than two thirds of the participating CHA students were older than 40 years (Table 2). Most were female and African American, and for the majority, a high school diploma was the highest education attained. A total of 100 assessment tools were mailed to CHAs and 40 were returned by the requested date. Of those who did, some documented the need for ongoing training, support, and resources.

When asked questions on the assessment tool about their activities in the community, more than 90 percent

TABLE 2 ● Community health ambassador characteristics ($n = 146$)

Characteristic	%
Age, y	
18–29	13
30–39	19
40–70	68
Gender	
Female	71
Male	29
Race/ethnicity	
African American	84
American Indian	1
White	8
Latino	7
Educational attainment	
GED or high school diploma	55
Community college/2-y degree	12
4-y college degree	26
Did not report educational level	7

of the CHAs reported that they were clear about their role in the community. Results also indicate that 72 percent reported providing one-on-one information on diabetes self-management tips, 23 percent reported providing at least one talk on diabetes management and prevention to a church group or community organization, and 31 percent reported they successfully recruited residents to sign a healthy living pledge. Moreover, 90 percent were interested in continuing their work as a CHA. Many are linked to an FBO and have defined their outreach work to include churches, family members, community groups, and workplaces. Regarding personal changes, most CHAs indicated a change in their food-related health choices, reporting that the program made them more conscious of their health and encouraged them to make positive lifestyle changes.

The assessment of CHAs identified some of the successes and challenges in their outreach activities. Preliminary evidence indicates that the reported challenges for the CHAs included the perceived attitudes of some of the community residents regarding health behavior changes and healthcare needs:

> Many people don't think they can give up bad choices. They say, "I have to die of something." People complain that they can't afford to buy healthy food.

> Some people screened for diabetes went into denial and would not follow-up with their doctor.

However, the majority of the comments from the CHAs revealed their enthusiasm for the program and the community residents' enthusiasm for the program:

> I have purchased blood pressure and glucose monitoring machines and taught my family how to use them.

> My boss was diagnosed with sugar. I talked to him about his diet and exercise, he joined the gym and lost 29 pounds.

> I had the opportunity to train other church leaders assisting them in establishing a wellness center and motivating them to become engaged in their communities.

Those trained as CHAs were most likely motivated individuals with the intent and ability to improve diabetes-related health conditions within their communities. For example, one of the Latino pastors who became a CHA was able to recruit not only other pastors from a 76-church network, but also other recognized community leaders who may be church members. This CHA was able to successfully communicate the importance of diabetes management in a culturally appropriate and relevant manner. The CHAP model, through the CHAs, may help promote indigenous qualities in racial/ethnic subcultures such as verbal and nonverbal language skills, social/environmental familiarity, and a unique understanding of the community's health belief, health behaviors, and barriers to health services.[23]

● Discussion

Preliminary results indicate that CHAP, an innovative, statewide lay health advisor model, is an effective approach for communicating important health information to community members. The lay health advisor approach is used both nationally and internationally and is particularly effective in minority populations such as African Americans, American Indians, and Latinos. In the United States, lay health advisors have been used in the American Indian culture to prevent lead poisoning in Native American children.[18] The approach is used extensively in the African American and Latino populations, and it has addressed such areas as heart disease, breast cancer, HIV/AIDS prevention, prenatal care, migrant farm working, general health advocacy, nutrition, and environmental and oral health.[24]

Initial findings from the assessment tool indicate that community leaders can be successfully recruited and mobilized to serve as CHAs within their communities to promote diabetes awareness, management, and prevention. Reasons for success may be the involvement of broad-based local and statewide partnerships, community college education credits, and the use of recognized and respected community leaders as ambassadors.

Most of the partnerships were based on relationships the NC OMHHD had built over time to address health

disparities within communities. These partnerships include the Old North State Medical Society, the Nursing Program at the University of North Carolina at Greensboro, the tribal, community-, and faith-based organizations, and the local health departments. These levels of engagement help foster strong coalitions around shared interests.[25,26] This multilevel collaboration was necessary to successfully recruit and train 146 CHAs in an 18-month period. This translates to approximately 8 new CHAs per month or about 96 per year. One partnership of note was that with the NCCCS. The NCCCS' provision of 2.0 CEUs required coordination at the state level for successful implementation.

The training components of a lay health education program are extremely important when implementing a lay health education initiative. However, an effective lay health education model also includes various incentives and other components that keep lay health advisors/CHAs involved over the long haul. Lessons learned from the assessment have equipped the NC OMHHD to better implement and sustain a network of CHAs. For example, the NC OMHHD learned that CHAs needed continuous support and resources. Thus, to maintain sustainability, the CHAs will be linked to CBOs/FBOs, tribes, or local health departments with whom the NC OMHHD has an ongoing relationship. These organizations, tribes, and health departments, in concert with NC OMHHD, will provide these CHAs with educational materials, ongoing training, awards, CEUs, referrals and support to attend health education conferences, and other incentives for maintaining the CHA involvement in community outreach activities. Likewise, additional training for the CHAs will include training on motivating individuals for effective healthcare management.

Lessons from the assessment also allowed the NC OMHHD to distinguish which roles of prevention the CHAs were most commonly engaged in with community residents in their outreach areas. Of those who returned assessments by the requested date, 72 percent reported providing one-on-one information on diabetes, whereas only 23 percent reported providing talks to organized groups. Therefore, the NC OMHHD is developing a tool that allows the CHAs to continue one-on-one interventions with community residents addressing diabetes awareness, prevention, and self-management. This tool will also allow the NC OMHHD to measure program effectiveness. CHAs will administer the tool to community residents to assess health behaviors and risk factors for which they cannot intervene, including such constructs as race/ethnicity and family history. The tool will be administered to diabetic patients as a means of diabetes self-management and to nondiabetic patients as a means of prevention. For example, the tool will measure how often community residents engage in physical activity, eat fruits and vegetables, schedule checkups with their physician, etc It will also measure weight, height, blood pressure, and glucose levels. Based on the information obtained from the tool, CHAs may refer the community resident to healthcare professionals for treatment or to community agencies to access needed resources. CHAs will then begin intervening for 6 months by providing the community resident regular support and motivation, nutrition education, and diabetes management tips. After a 6-month period, CHAs will readminister the tool to see whether there has been any measurable impact of the intervention with the resident. Impact measurements may include changes in food choices and preparation, level of physical activity, weight loss, and reduced blood pressure and glucose levels. CHAs will then report information collected to the NC OMHHD who will be responsible for program evaluation/program effectiveness.

Plans are under way to expand the program statewide to all 100 counties. Currently, CHAP has focused on diabetes on the basis of the high prevalence rates among racial/ethnic minority populations in North Carolina. Additional health modules will be added through continuing education sessions provided by the NC OMHHD and Success Dynamics. They will cover other health disparity issues, including cancer, cardiovascular disease, chronic kidney disease, and HIV/AIDS. As the NC OMHHD expands these health modules to focus on other diseases and conditions, plans are under way to obtain additional CEUs through the community college system. This ongoing training will be offered to existing as well as new CHAs, thereby creating a sustainable network for community involvement in the healthcare process. The long-term vision is that the CHAP will become a recognized and established career path for community leaders seeking a degree in public health or a related field of study. The NC OMHHD is committed to maintaining CHAP as a community-led, community-based, and community-owned model. The office will continue to support community leaders to sustain the program and provide guidance, financial resources, evaluation measures, linkages to needed resources, and services for diabetes and the state's other prevailing health disparity issues.

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