

Public Health Initiatives to Prevent and Detect Chronic Kidney Disease in North Carolina

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Chronic kidney disease (CKD) is a significant and increasing public health problem. It is the tenth most common cause of death in North Carolina, and almost 1 million North Carolinians have an early stage of the disease.¹ As with many chronic diseases, CKD takes its greatest toll on minority communities, people who live in poverty, and the uninsured and underinsured. Racial and ethnic health disparities among the incidence of CKD and its complications, especially end-stage renal disease (ESRD), have been well documented. Compared to Whites, African Americans are 3 to 4 times more likely to have CKD that has progressed to end-stage renal disease, the most ominous complication, and they are twice as likely to die from this condition.¹

Much of the public health approach to CKD is focused on the underlying risk factors for CKD, especially high blood pressure, diabetes, and obesity. These conditions can be prevented, in large part, through protective health behaviors (primary prevention). Affected individuals can avoid medical complications, like CKD, through early detection and control of high blood pressure and diabetes with health behavior change and medication use (secondary prevention). Outreach to underserved communities is particularly important to control these conditions. This requires community-based participatory approaches focused on public awareness, education, screening, and access to care. This article highlights some of the state's community-based efforts to increase education, outreach, screening, and care management for people with different types of chronic illnesses. While many of these initiatives do not focus on management of people with CKD, these initiatives should nonetheless help reduce the incidence of CKD by reducing some of the common risk factors.

North Carolina has many primary prevention programs aimed at reducing risk factors that lead to obesity, diabetes, and

hypertension. Some of these programs operate statewide while others are focused in particular counties. Eat Smart, Move More is a statewide social marketing campaign to help North Carolina residents eat healthier and exercise more by changing social norms and practices in schools, worksites, communities, and health care settings. Another statewide health promotion program provides funding to local health departments to focus on barriers to physical activity and good nutrition at the community level. In addition, the Office of Healthy Carolinians within the Division of Public Health supports local coalitions that assess and address community health priorities for a wide range of health issues. Most local coalitions address obesity, diabetes, and hypertension.

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Another community-based program that focuses on diabetes prevention and control is the Division of Public Health Diabetes Today program. Diabetes Today is based in 4 local health departments that serve as lead agencies and collaborate with surrounding health departments to increase the availability of community-based programs that promote diabetes awareness, education, and prevention strategies. Local health department staff work with community members, health professionals, and community institutions to understand and respond to the burden of diabetes. Through the Diabetes Today training initiatives,

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the Diabetes Prevention and Control Program in the Division of Public Health reaches the populations who are at greatest risk for diabetes. Diabetes Today has been implemented in 29 counties in North Carolina.

Primary prevention is not sufficient to reduce the burden of diabetes. Individuals who already have diabetes must be taught self-management skills. Indeed, self-management education is such a critical part of diabetes care that medical treatment of diabetes without self-management education is considered inadequate. Yet a 2006 report from the State Center for Health Statistics shows that 46% of adult North Carolinians with diabetes have never taken a class on how to manage their diabetes.² In addition, a 2005 survey of all 85 local health departments in North Carolina demonstrated that only 58% of these departments report the capacity to provide health education services for persons with diabetes.³ Health departments currently lack the staff and funding to support further expansion of diabetes self-management education.

The Division of Public Health (DPH) has taken steps to address this problem. The division created the North Carolina Diabetes Education Program to expand the availability of diabetes self-management education in local health departments for at-risk populations. In addition, DPH applied to the American Diabetes Association to become an umbrella program recognized to provide diabetes self-management education. Once recognized as an umbrella organization, DPH will partner with local health departments to train and certify diabetes educators. The purpose is to increase access in all areas of the state for people with diabetes to get needed self-management training while providing reimbursement to local health departments. The additional reimbursement will build capacity at the local level to provide self-management education for the uninsured and underinsured as well. Although this reimbursement is limited to people with diabetes, it is a source of funding to support CKD education as diabetes educators must include information about kidney disease as a potential complication of diabetes.

The Division of Public Health has developed similar education, outreach, and screening programs for heart diseases and other chronic conditions. The Well-Integrated Screening and Evaluation for Women Across the Nation (WISEWOMAN) program is a federal program that helps underserved women gain access to screening and lifestyle interventions to reduce their risk for heart disease and other chronic diseases. The program targets women who are receiving screening services through the Breast and Cervical Cancer Prevention program. Eligible women are between 40 and 64 years of age and have little or no health insurance. Special emphasis is placed on reaching racial and ethnic minority populations. WISEWOMAN is active in 33 counties in the state and includes screening for hypertension, obesity, and poor dietary habits as well as specially developed nutrition, exercise, and smoking cessation counseling. The national program has demonstrated improvements in blood pressure control and dietary habits.

In addition to the primary and secondary prevention efforts offered through local health departments, new strategies are needed to reach underserved populations. Many uninsured,

low-income racial and ethnic minorities do not routinely seek medical care services. Partnering with community groups and local leaders offers the advantage of being able to reach people in a non-health care setting. The Office of Minority Health and Health Disparities (OMHHD) provides grants to a network of local organizations to address health disparities. The OMHHD grant program, Community Focused Eliminating Health Disparities Initiative, works to build the capacity of community-based organizations, faith-based organizations, American Indian Tribes, and local health departments to improve the health of racial and ethnic minority populations. These community-based strategies extend existing public health services by providing awareness, prevention, screening, and health care services after regular business hours in the evenings and on weekends. The University of North Carolina Kidney Center adopted a similar approach in its outreach efforts described elsewhere in this issue.

The use of lay health advisors has emerged as a focus of many interventions, particularly those in racial and ethnic communities. Lay health advisor projects seek to identify and recruit "natural helpers" in a community and provide training and support for them to advise and assist their neighbors and peers with a variety of health issues. Lay health advisor models enhance empowerment and capacity building by promoting and supporting individuals who assume responsibility for community improvement, seek new knowledge and skills, and actively engage and recruit others. Lay health advisor programs have demonstrated changes in the attitudes of community members about their control over health issues and in their willingness to consider behavioral changes.⁴

The Office of Minority Health and Health Disparities Community Health Ambassador Program (CHAP) trains trusted community leaders in the African American, American Indian, and Hispanic/Latino communities to serve as lay health advisors in their communities. CHAP began in the spring of 2006. OMHHD partners with the North Carolina Community College System, Community Care of North Carolina, the Old North State Medical Society, the University of North Carolina at Greensboro Nursing Program, and community- and faith-based organizations to help identify and train community health ambassadors (CHAs). CHAs must successfully complete 20 hours of classroom education and pass a competency examination. The program has trained more than 300 CHAs from 14 counties with goals to expand the program statewide as funding becomes available. These volunteers help bridge the gap between community members, their health concerns, and health service providers. CHAs educate community members about ways to prevent illnesses, recognize early warning signs, and access services. Currently, CHAP focuses on diabetes and cancer education. However, there are plans to develop modules to address other health disparity issues including CKD, cardiovascular disease, and HIV/AIDS. The goal of the program is to help community members prevent chronic diseases and decrease morbidity and mortality.

Screening for hypertension is an established, evidence-based practice in the medical setting. Most clinical practice settings

measure blood pressure as routine vital signs for all patients at every visit. Screening for diabetes is generally targeted to patients at risk because of family history or comorbidities. Screening in the community setting is more controversial. There is concern that individuals identified in community-based hypertension or diabetes screening seek and receive appropriate medical follow-up particularly if they are uninsured or underinsured. For this reason, federal policy precludes use of federal funds for community-based screening. There are no state funds to support these activities.

In addition to the preventive components described above, the state diabetes program also includes a state kidney program. This program provides funds to reimburse transportation, medication, and emergency-related expenses for persons meeting the eligibility requirements for the State Kidney Program when there is no other source of reimbursement. The purpose of the State Kidney Program is to enable greater access to kidney dialysis for a significant number of North Carolinians. The program provides secondary and tertiary preventive services to persons at risk for end-stage renal disease, and helps to reduce the further risk and consequences of persons with end-stage renal disease by paying for some of their expenses for dialysis, medications,

incidental supplies, and transportation.

Community-based and community-led strategies play a significant role in public health efforts to prevent chronic diseases and conditions. Nontraditional groups including community-based organizations, faith-based organizations, and American Indian tribes are very effective partners. When armed with key health information and resources, these partners are able to reach individuals where they live, play, work, and pray. As illustrated, there are numerous public health programs and initiatives working to prevent and/or control the chronic diseases and conditions that may lead to chronic kidney disease and ultimately to end-stage renal disease. Unfortunately, while many of these programs implement evidenced-based strategies, the current level of resources invested in these programs is not adequate to demonstrate the desired outcomes of chronic kidney disease prevention and/or control. Additional resources are needed to fully implement these evidence-based primary and secondary prevention strategies among at-risk populations. Early investment in these community-based participation strategies hold great promise to lead to improved health, greater productivity, and reduced health spending. **NCMJ**

REFERENCES

- 1 Vupputuri S, Jennette CE. *The Burden of Kidney Disease in North Carolina, 2007*. Chapel Hill, NC: University of North Carolina Kidney Center; 2007.
- 2 North Carolina State Center for Health Statistics. Health risks among North Carolina adults, 2005. <http://www.schs.state.nc.us/SCHS/pdf/BRFSSReport2005.pdf>. Published October 2006. Accessed March 24, 2008.
- 3 Cannon MM, Davis MV, Lord E, Porterfield D. *Assessing Local Health Department Activity in Diabetes Prevention and Control: Case Study Evaluation Report*. Chapel Hill, NC: North Carolina Institute for Public Health; 2008.
- 4 Eng E, Parker E. Natural helper models to enhance a community's health and competence. In: DiClemente RJ, Crosby RA, Kegler MC, eds. *Emerging Theories in Health Promotion Practice and Research: Strategies for Improving Public Health*. San Francisco, CA: Jossey-Bass; 2002:101-126.