

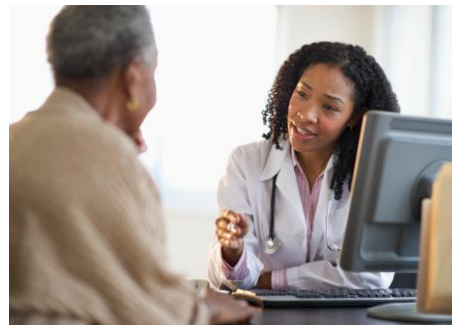


*Through grants to five organizations and a National Program Office, the Merck Foundation supports multi-faceted, community-based programs designed to improve health outcomes for people living with diabetes.*

## B A C K G R O U N D E R

### INTRODUCTION

Ask Americans to name an epidemic that's sweeping the nation and many will point to obesity. Some people will also mention diabetes – a related condition. Yet, of the two, diabetes may be the more urgent health priority.



Diabetes is a group of diseases defined by the body's inability to control levels of sugar in the blood. According to the Centers for Disease Control and Prevention (CDC), it affects some 29 million Americans, imposing a heavy burden on the nation's health and taking a dire economic toll.<sup>1</sup> Left untreated, it raises the risk of heart disease, stroke, kidney failure, blindness and other conditions. Interventions to treat the disease and its complications add as much as \$245 billion annually to the nation's health bill, including indirect costs.<sup>2</sup>

Perhaps most troubling, diabetes disproportionately affects socially and economically disadvantaged communities. African-Americans, Hispanics, American Indians and some Asians are especially at risk. Prevalence of diabetes in the US is expected to double in the next 25 years, with African-Americans experiencing the greatest increase.<sup>3,4</sup> In many cases, these groups have limited access to care and poor prospects for managing their illness.

How deep are these disparities between wealthy and poor, white and non-white? In terms of prevalence, 2012 CDC data shows that about 7.6 percent of non-Hispanic white adults have diabetes. The percentage among American Indians and Alaska Natives is more than double that rate, or nearly 16 percent. Non-Hispanic blacks, at 13.2 percent, also are more heavily affected than whites, as are Hispanics (12.8 percent) and Asian-Americans (9 percent). It's harder to document inequities in care and clinical outcomes among wealthy and disadvantaged communities. Yet these are widely recognized by clinicians and researchers working within affected communities.

## ALLIANCE TO REDUCE DISPARITIES IN DIABETES

These deep-rooted inequities in diabetes care and health outcomes were the subject of a five-year, community-based care initiative launched in 2009 called the [Alliance to Reduce Disparities in Diabetes](#) (Alliance). Backed by \$15 million in grant funding from the [Merck Foundation](#) (Foundation), the Alliance demonstrated that collaborative, multi-faceted strategies in disease education and management have a powerful, positive impact. Built upon strong ties between medical professionals and community organizations, the Alliance's coordinated approach is especially effective because it supports lifestyle changes and better diabetes self-management education that helps people with diabetes lead healthier, more comfortable lives.

### ALLIANCE SITES

#### **Camden, NJ**

Camden Citywide Diabetes Collaborative, Camden Coalition of Healthcare Providers

#### **Chicago, IL**

Improving Diabetes Care and Outcomes on the South Side of Chicago, University of Chicago

#### **Dallas, TX**

Diabetes Equity Project, Baylor Scott & White Health

#### **Wind River Reservation, WY**

Reducing Diabetes Disparities in American Indian Communities, Eastern Shoshone Tribe of the Wind River Indian Reservation and the Northern Arapaho Tribe

#### **Memphis, TN**

Diabetes for Life Program, Common Table Health Alliance

The Foundation provided grants to five diabetes programs in Camden, New Jersey; Chicago, Illinois; Dallas, Texas; Memphis, Tennessee; and the Wind River Reservation in Wyoming. To help coordinate the initiative, the Foundation funded a National Program Office at the University of Michigan's Center for Managing Chronic Disease, with ties to diabetes experts at the CDC and other public health organizations. The Foundation also provided funding to RTI International, a research institute in Research Triangle Park, North Carolina, to conduct an independent and rigorous cross-site evaluation.

While each of the five programs was unique, they shared a multi-level, multi-component strategy aimed at creating behavior change among program participants as well as changing the way physicians and health systems operate. Individually and in small groups, in clinics and in schools, people with diabetes

received instruction on the importance of maintaining a healthy diet, exercise, medication adherence and other aspects of diabetes self-management. Doctors and nurses received training focused on improving communication skills

and sharing techniques to overcome cultural barriers. Health systems at each of the program sites similarly embraced change. Hospitals, physician practices and insurers adopted more coordinated approaches to care. Many implemented special diabetes registries or electronic medical records and also integrated community health workers into their care teams.

The principles that inspired this strategy, known as the Chronic Care Model, have been described in academic papers and tested in other health care settings. After five years, RTI's evaluation showed that participants in the programs experienced improved health and a greater sense of well-being. In a series of studies, RTI showed that the five programs were successful in reducing disparities so that the care received by participants mirrored accepted standards of care.

#### CLINICAL OUTCOMES AND ANALYSIS

- Values for a standard blood test, called HbA1c, decreased significantly, and the change was more pronounced than in a comparison group of people whose care was not managed through the Alliance.
- Individuals who took greater advantage of resources and supports for self-management showed the greatest decreases in HbA1c, which measures average blood sugar levels over a period of weeks or months.
- People who attended required program sessions also experienced more benefits, measured by improvements in HbA1c.
- Program participants showed significant decreases in blood pressure, as measured against the comparison group.
- Triglyceride values for program participants decreased significantly. Triglycerides are fats that travel through the blood and respond quickly to changes in diet. They provide a window into heart health and dietary choices.

#### INNOVATIONS ON THE GROUND



At each of the five Alliance sites, innovation was the consistent response to obstacles communities faced when trying to promote lifestyle changes. It's difficult to improve diet or increase exercise levels, for example, if people have limited access to fresh produce and if local parks aren't safe.

When the program team in Chicago encountered barriers of this sort, they enlisted the aid of local businesses. The program, called "Improving Diabetes Care and Outcomes on the South Side of Chicago," worked with Walgreens and the 61<sup>st</sup> Street Farmers Market to create a novel "Food Rx" for fresh fruits

and vegetables. Organizers selected nine Walgreens stores in neighborhoods deemed to be food deserts – all of them in the catchment areas of Chicago's six participating health centers. Physicians would then sign food prescriptions and distribute them to interested participants.<sup>5</sup>

In New Jersey, the Camden Coalition of Healthcare Providers also channeled innovative thinking. Camden is the poorest city in the US. Like many urban centers, it's a place where small numbers of chronically ill people, many of them lacking health insurance, account for a large portion of emergency department care. Indeed, just 1 percent of participants at this site were responsible for 29 percent of all medical charges in Camden, and the top 20 percent of participants made up a stunning 84 percent.



Costs are concentrated because these “high utilizers” of emergency care are constantly receiving duplicative and unproductive attention, seeking treatment from multiple emergency sites as problems arise. With no single provider or practice coordinating care, the program sought to identify these high-utilizers through electronic medical records. It also resolved to gather these individuals into a coordinated care model, aided by an electronic Health Information Exchange (HIE) that would share data across hospitals and medical sites.<sup>6</sup>

The objective is easy to appreciate. With patient data at their fingertips, doctors seeing an individual for the first time can access the case history, avoid redundant tests or treatments, make wiser choices for the individual and save money for the system. Savings then can be distributed to providers as compensation, or as bonus rewards, in return for keeping participants healthy and out of the hospital. Camden launched its HIE in 2010. The site was so effective that New Jersey legislators used it as a model in 2011 when they set up

#### **WHAT PROGRAM REPRESENTATIVES SAY**

*"I think there's a lot more awareness...about how [participants] themselves can make a difference."*

—Principle Investigator

*"We go to their house...we encourage family members to come to the education and fitness classes with them...we recognize it has to be a team effort."*

—Case Manager

*"The practices are hungry for guidance and support... they've come to learn and want to make changes."*

—Nursing Partner

New Jersey's – and the nation's – first Medicaid Accountable Care Organization Demonstration Project in several communities statewide.

Similar creative juices flowed in Dallas. Baylor Scott & White Health created the Diabetes Equity Project to work with low-income, minority, uninsured and underserved people with diabetes. In addition to running cross-cultural education programs for physicians and setting up an electronic diabetes registry, the program got two new job codes approved by Baylor to cover reimbursement for the services of trained, bilingual community health workers (CHWs). These individuals now serve as members of the primary care team in five community clinics, helping Hispanic participants in the program master diabetes self-management. In one published study, Dallas participants assisted by CHWs showed statistically significant improvement in tests measuring blood sugar.<sup>7,8</sup>

## ACHIEVING RESULTS



Between 2009 and 2013, RTI International collected information to assess the impact of the programs across all the sites. This involved obtaining clinical measures important to diabetes functioning and separate assessments of the participant experience. RTI also collected testimony from program implementers to understand the strategies used to enhance participant health. Analyzing these strategies could help other programs tackling diabetes in their communities.

What did the RTI assessments show? Across the board, a key clinical measure was a blood test called HbA1c, which measures average blood sugar levels over a period of three months. These test results improved significantly, while a selected comparison group showed less or no progress. RTI found similar improvements in blood pressure in the program group, which were not matched in the comparison group. Patient-reported outcomes data indicated an elevated sense of well-being, greater confidence in managing diabetes, better self-care behaviors, and more resources and support from the health care team.

In short, across the programs, participants experienced improvement in clinical outcomes and quality of life. This suggests that programs implementing the Chronic Care Model, as adapted by the Alliance, can improve health care for



underserved populations with high rates of diabetes and reduce the health care quality gap that divides disadvantaged communities and prosperous ones.

Participation in Alliance programs also appeared to trigger more positive attitudes toward local health care

systems. One patient advocate who spoke with RTI evaluators said that many participants entered the programs mistrustful of the health care system and concerned about how they would pay for the new services. After learning that the programs were working in partnership with community organizations they trusted, they became more willing to participate. They'd learn about their illness and start to explore free nutrition classes, finding out that local farms would come in the summer and distribute free bags of fruits and vegetables.<sup>9</sup> After trust was established, the patients were able to benefit fully from the Alliance programs' efforts to provide quality care.

#### WHAT PROGRAM PARTICIPANTS SAY

*"Knowledge is power and the information that I've been given through the diabetic ten-week class made the difference for me between life and death."*

—Male Patient, 64

*"You feel like you're somebody, you know, you just feel so proud of yourself."*

—Female Patient, 54

## LESSONS AND INSIGHTS

Flexibility was one great virtue of the Alliance approach, according to RTI. The Chronic Care Model provided a framework, but no attempt was made to impose a fixed implementation strategy. While each program was customized to local needs, researchers were able to crystalize some broad recommendations:

- To spread the word about healthy behavior, identify energetic, well-connected individuals in the community – including care providers – and train them as leaders and program “champions.”
- Doctors, nurses, insurers, and other members of an extended community care team must be able to share program participants' medical data with other care providers.
- Teaching “self-management” techniques to people with diabetes can't be left to doctors alone. The care team must draw on talent and resources of local organizations.

RTI further identified lessons for program leaders that can improve communication with members of the community. For example, there should be

consistency and coordination in the contacts and communication for a project. Leaders must be open and receptive to suggestions and honor diverse viewpoints. Roles and responsibilities should be clearly defined, and program timelines should be spelled out. Stakeholders, including community representatives, should see how their work contributes to the larger goal.

The Alliance programs proved that it's possible to empower people with diabetes so that they take charge of their illness. The greater their personal engagement, the likelier it is that health outcomes will mirror those in economically successful communities. As community support increases and medical care becomes more coordinated, innovations spring from experiences on the ground. These are translated into policies that can potentially be adopted within health care organizations, communities and by entire states. The Alliance programs proved that evidence-based approaches, crafted for local communities, create changes that resonate across the United States. ■



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  - <sup>2</sup> American Diabetes Association. Economic costs of diabetes in the U.S. in 2012. 2013. *Diabetes Care*. 2013 Apr;36(4):1033-46.
  - <sup>3</sup> Huang ES, Basu A, O'Grady M, Capretta JC. Projecting the future diabetes population size and related costs for the U.S. *Diabetes Care*. 2009 Dec;32(12):2225-9.
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  - <sup>5</sup> Peek ME, et al. Putting Theory into Practice: A Case Study of Diabetes-Related Behavioral Change Interventions on Chicago's South Side. *Health Promotion Practice*. Nov 2014; 15(2S), 40S-50S.
  - <sup>6</sup> Kaufman, S. et al. Early Efforts to Target and Enroll High Risk Diabetic Patients into Urban Community Based Programs. *Health Promotion Practice*. Nov 2014; 15(2S), 62S-70S.
  - <sup>7</sup> Collinsworth AW, et al. Effectiveness of a community health worker-led diabetes self-management education program and implications for CHW involvement in care coordination strategies. *Diabetes Educ*. 2013 Nov-Dec;39(6):792-9.
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  - <sup>9</sup> Lewis M, et al. Improving the Implementation of Diabetes Self-Management: Findings from the Alliance to Reduce Disparities in Diabetes. *Health Promotion Practice*. Nov 2014; 15(2S), 83S-91S.