

# Feeding America's Diabetes Initiative

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## *PROJECT OVERVIEW*

The mission of Feeding America, the nation's leading domestic hunger relief organization, is to feed America's hungry and engage the public in the fight to end hunger. Through its expansive network of more than 200 food banks, Feeding America provides food and grocery products to more than 46 million Americans, playing a critical role in meeting the nutritional needs of individuals by obtaining and distributing food to those in need.

Research increasingly demonstrates an important link between poor diet and chronic disease for those who struggle with food insecurity, defined as not having access to sufficient, safe, and nutritious food. Those living without sufficient access to healthy food face twice the risk of developing diabetes. In Feeding America's *Hunger in America 2014* survey more than one-third of households surveyed reported at least one member living with diabetes. The already existing infrastructure to reach low-income communities with emergency food and other resources, make Feeding America's food banks a natural point of connection for addressing type 2 diabetes. Type 2 diabetes is a key focus of Feeding America's expanding efforts because of its high incidence among low-income communities served by their network and the links between diabetes and poor dietary intake due to food insecurity.

Through its Diabetes Initiative, Feeding America and three local food banks sought to improve the health outcomes of individuals who are food insecure and are also affected by type 2 diabetes. Through collaborations with healthcare providers and community partners, this project strengthened the support system for individuals facing diabetes and food insecurity by: a) creating bi-directional partnerships between healthcare providers and local community services; b) providing increased access to diabetes and food insecurity screening; and c) identifying individuals struggling to access healthy food to manage their diabetes. Project participants received healthy food boxes, diabetes education, and other supports to assure that they had access to medical treatment, diabetes supplies, and medicine to manage their disease.

## *CONTEXT AND PARTNERS*

To implement the Diabetes Initiative, Feeding America identified food banks with the capacity to implement programs that could have a significant impact on the health of vulnerable populations affected by diabetes. After a thorough review process, Feeding America identified three food banks for project implementation, representing a mix of geography and client demographics. Those include: 1) Food Bank of Corpus Christi; 2) The Mid-Ohio Food Bank; and 3) The Redwood Empire Food Bank.

Each of the selected communities represented areas of significant need. The Food Bank of Corpus Christi is located in Nueces County, Texas, which has the highest rate of diabetes-related hospitalizations per 100,000 in the state. The Mid-Ohio Food Bank is in Columbus, Ohio where the diabetes mortality rate is one of the highest

in the state. The Redwood Empire Food Bank is situated in Sonoma County California, a rural community where more than 60% of county residents are overweight or obese.

Through collaborations with healthcare providers, Feeding America developed a bi-directional referral service where food bank clients with diabetes are referred to healthcare providers to assure that they have access to healthcare services; healthcare providers also refer diabetes patients with food insecurity to food banks to assure food access for diabetes self-management. Feeding America collaborated with multiple partners for the implementation and the evaluation of the Diabetes Initiative. The University of California at San Francisco’s Center for Vulnerable Populations served as the evaluation partner. Implementation partners included the three food banks and their respective local partners. Those include federally qualified health centers, community hospitals, free medical and dental clinics, universities, and local diabetes associations.

**ASSESSMENT AND PLANNING**

Through the Diabetes Initiative, Feeding America sought to reduce the diabetes burden among those experiencing food insecurity. Specific goals in the Diabetes Initiative included: 1) Increase access to healthy food; 2) Increase knowledge and understanding of diabetes and the elements of a healthy lifestyle; 3) Change attitudes and beliefs about their ability to manage the disease; 4) Improve skills to manage diabetes; and 5) Improve glycemic control.

Feeding America’s *Map the Meal Gap* study was used to assess hunger and food insecurity at the local level for the selection of communities as part of this project. Based on the results of this study, three communities were chosen for the Diabetes Initiative, representing diverse geographic regions of the country. Table 1 describes the selected communities, their respective food banks, rate of food insecurity, and the demographics of residents served.

**Table 1.** Food insecurity within the three selected communities.

<b>Community</b>	<b>Food Bank</b>	<b>Number of People Served by Food Bank (Direct Distribution &amp; Network of Partner Agencies)</b>	<b>Rate of Food Insecurity</b>	<b>Demographics</b>
Nueces County Corpus Christi, Texas	Food Bank of Corpus Christi	36,000 clients per month	17.2%	320,000 Residents Hispanic: 60%
Franklin County Columbus, Ohio	Mid-Ohio Food Bank	158,000 clients per month	16.6%	750,000 Residents White: 66% African Americans: 25%
Sonoma County Santa Rosa, California	Redwood Empire Food Bank	78,000 clients per month	14.2%	472,000 Residents White: 67.7% Hispanic: 23.6%

To assure consistent project implementation of the Diabetes Initiative across the three sites, Feeding America strived to create a learning community among project staff. An initial project kickoff meeting brought the teams together at the outset of the project. Feeding America’s project manager conducted annual site visits. During

project implementation Hungernet, Feeding America’s online learning community, Feeding America provided a space for sharing project updates, information, and communication among the three sites. And the group gathered at Feeding America’s annual learning conference to share project updates with the food bank network, providing an opportunity for face-to-face connection and ongoing learning.

The provision of diabetes-appropriate food boxes and the referrals between food banks and healthcare centers was similar among the three sites. However, each food bank had site-specific project elements to meet the needs of their community and clients, including the healthcare partners with which they worked (e.g., Federally Qualified Health Centers, free clinics, community hospitals), and the approaches to diabetes education to best suit the settings in which they were offered and the readiness of clients for change.

Feeding America also planned a project evaluation in partnership with the University of San Francisco’s Center for Vulnerable Populations. Each site collected common survey and clinical health outcome data (e.g., HbA1c, Diabetes-Specific Self-Efficacy, Diabetes Distress Scale, and Food-Medicine Tradeoffs). A pre-post study design was used at all three sites, with clinical and behavioral assessments at baseline and at approximately 6 months.

*INTERVENTION*

**Table 2:** Below is Feeding America’s table of intervention components, related elements, and modes of delivery.

INTERVENTION COMPONENTS	SPECIFIC ELEMENTS (what was done)	MODE OF DELIVERY (by whom and how)
Enhanced Access/Linkage to Care	<ul style="list-style-type: none"> <li>• Food bank staff identified clients with diabetes and referred clients without a primary care physician to a primary care physician</li> <li>• Primary care physicians referred patients with diabetes who were found to be food insecure to food banks</li> <li>• Patients were also referred to medications, supplies (e.g., blood monitoring kits), and sources of healthy foods</li> <li>• Provisioned healthy food (pre-packed), fresh produce, whole grain breads, dairy, and frozen meats</li> </ul>	<ul style="list-style-type: none"> <li>• Food bank staff including nurses and dietitians</li> <li>• Healthcare staff</li> <li>• Food boxes provided by the food banks</li> </ul>
Support for Managing Diabetes and Distress	<ul style="list-style-type: none"> <li>• Individualized social support through personal interactions</li> </ul>	<ul style="list-style-type: none"> <li>• Food bank project staff</li> </ul>
Diabetes Self-Management Education	<ul style="list-style-type: none"> <li>• Provided written diabetes and health education materials provided with food boxes offered in English or Spanish</li> <li>• Provided a nutrition and diabetes education information through one-time classes or a multi-class series (e.g., an 8-week Diabetes-Hands-On-Program)</li> </ul>	<ul style="list-style-type: none"> <li>• Educational classes offered by Nurses and Dietitians</li> <li>• Distributed through client food boxes</li> </ul>
Community Organization, Mobilization, and Advocacy	<ul style="list-style-type: none"> <li>• Created formal partnerships between healthcare organizations and food banks for bi-directional referrals</li> <li>• Developed MOU’s between food banks and health clinics</li> </ul>	<ul style="list-style-type: none"> <li>• Project staff in partnership with community health partners</li> </ul>

Health System and Community Transformation	<ul style="list-style-type: none"> <li>• Provided health screening at food pantries</li> <li>• Implemented A referral process by primary care providers to food banks to receive healthy food</li> <li>• Integration of food insecurity screening in Community Health centers and other healthcare organizations</li> <li>• Developed standards for “healthy” food boxes for food banks to adopt and replicate</li> </ul>	<ul style="list-style-type: none"> <li>• Food bank project staff</li> </ul>
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*STORY OF COMMUNITY TRANSFORMATION: Food is Medicine*

Many people with diabetes face food insecurity, an often-overlooked challenge to diabetes self-management. Without access to high-quality, nutritious food managing diabetes is challenging. Many are unable to make the food choices they need to manage their blood sugar, or may be faced with tradeoffs between purchasing food and purchasing their medication.

Through its Diabetes Initiative, Feeding America demonstrated the important role that food banks can play to address both food insecurity and diabetes self-management among their clients with the idea that food is medicine. Food bank staff used onsite screenings to identify clients with high blood glucose and provided those clients with diabetes appropriate foods and additional education to help them change their eating habits and manage their health. Food bank staff also engaged with healthcare providers to offer resources to screen patients for food insecurity, and to refer patients to the food banks for improved food access. Once healthcare providers had the tools they needed to address food insecurity with their patients, they became champions and were a key link between patients with diabetes and access to healthy foods. These referrals opened the door to supports including healthy food boxes, diabetes self-management education, and social support. The combination of food, education, and bi-directional linkage to care improved patients’ dietary habits, self-efficacy, reduced distress and depression, and helped them manage their disease.

*STORY OF PERSONAL TRANSFORMATION: Mrs. B*

Mrs. B, a 66-year-old woman who was recovering from the effects of a recent stroke, enrolled in the Diabetes Wellness Project at the Redwood Empire Food Bank in spring 2012. Mrs. B. participated in the program for a year and a half, and found the monthly food boxes and fresh fruits and vegetables, and education materials to be helpful for her in her daily self-care regimen and helped her achieve blood sugar control.

Mrs. B was an active participant in the pilot nutrition education classes. She came to each class in the series, asked questions during diabetes lessons, provided personal strategies for different aspects of diabetes self-care, and shared her personal experiences throughout the classes. She grew close to several of the other class participants and established an independent diabetes support group to maintain contact with the group after the end of the class series.

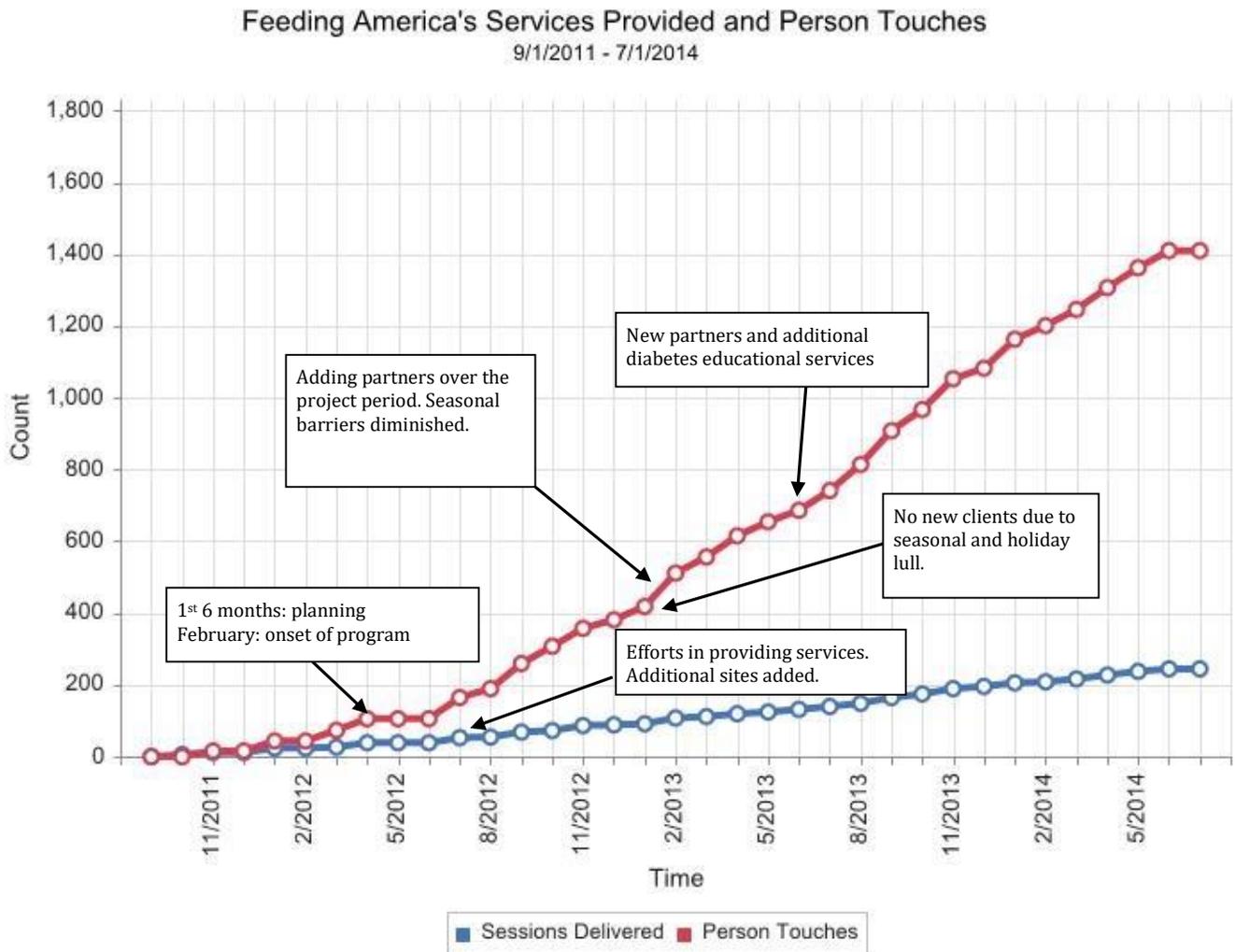
Since her involvement in the Diabetes Wellness Project Mrs. B has maintained an HbA1c level at her goal, recovered from her stroke, and shares a very positive attitude and perspective of what it means to live with type 2 diabetes.

## EVALUATION RESULTS AND FINDINGS

Feeding America documented and characterized activities (e.g., services provided) related to implementation of the Diabetes Initiative. Data were also collected on clinical health outcomes (i.e., HbA1c levels, BMI) for program participants.

### Data on Implementation of the Program:

Figure 1 displays the cumulative number of services provided by the Diabetes Initiative. Services provided included program onsite screenings, food boxes, and educational sessions related to nutrition.



The results show a steady delivery of services following the onset of the program (September 2011). [Note: In a cumulative graph, each new activity is added to all prior activities. The steeper the line, the higher the rate of services delivered.] Following the planning period of the project, (September 2011 through February, 2012), there was a marked increase in services provided and person touches. This was associated with the onset of program activities at food banks and local health centers, as a new approach to help overcome barriers to receiving nutritious food.

Data on Clinical Outcomes:

The primary outcome for the project evaluation was improved HbA1c among participants. Table 1 below summarizes patient clinical outcome data obtained during the BMS Foundation funded initiative (September 2011–August 2014). For all patients for whom pre and post-measures are available (N=768), mean HbA1c levels decreased from 8.11 to 7.96 ( $p < .01$ ) and for those with A1C levels above 9.0% (at higher risk) upon enrollment, (n=411) mean HbA1C decreased from 9.52% to 9.04% ( $p < .001$ ).

The project evaluation also included a series of secondary diabetes self-management behaviors to explore mediating factors that might influence changes in blood sugar control, such as fruit and vegetable consumption, diabetes distress, diabetes-specific self-efficacy, and medication non-adherence.

<b>Table 2: Changes In Primary And Secondary Outcomes For Study Participants From Baseline To Follow-Up, Food Bank Clients With Diabetes</b>				
OUTCOMES	RESULTS			
	Pre-assessment mean	Post-assessment mean	Mean Change	p-value
HbA1c (%) all participants (n=768)	8.11	7.96	0.15	$p < .01$
HbA1c >9.0% at baseline (n=411)	9.52	9.04	0.48	$p < .001$
Fruit and vegetable intake (servings per day) (n= 677)	2.8	3.1	0.3	$p < .01$
Self-efficacy (on a scale of 1 to 10) (n=650)	6.8	7.3	0.5	$p < .001$
Diabetes distress (on a scale of 1 to 6) (n=649)	3.1	2.7	0.4	$p < .001$
Medication non-adherence (on a scale of 0 to 4) (n=629)	1.2	1.1	0.1	$p < .01$

## WHAT WE LEARNED

Through the Diabetes Initiative, Feeding America experienced restraining and facilitating factors in program implementation and was able to distill those as key lessons learned.

Facilitating factors in the delivery of services included:

- Food banks have an existing infrastructure and reputation that provides easy access to healthy, nutritious food from a trusted source. This positions food banks as an effective partner for healthcare organizations to support individuals with diabetes who also struggle with food access.
- An online learning community of food bank staff was valuable to share ideas, give feedback, and work together to set some common program standards for health screening, food box planning, educational materials, and evaluation.
- Evaluation support from UCSF enabled Feeding America to understand the impact of the initiative on addressing diabetes.

Challenges or restraining factors in the delivery of services included:

- Working through the details of implementation, as this was a new type of community-based research for food banks.
- A lengthy client pre and post survey that took a significant amount of time to administer (20-30 minutes per client) and was sometimes a barrier to enrollment.
- Food bank staff were not always able to administer the survey onsite at the food distribution site, meaning that they spend more time/staff resources making calls to follow-up.
- Reporting requirements for the food banks to Feeding America were too frequent in the beginning of the project, resulting in staff time taken away from the project.

## MOVING FORWARD AND SUSTAINABILITY

As part of Feeding America’s sustainability plan, the food bank staff from the three sites will leverage their expertise and knowledge to become peer mentors for other food banks as this model is adapted nationwide. Mentors will outline the practices they have implemented and will work closely with mentees to develop potential solutions to the challenges faced by diabetes patients who are also food insecure. In addition to the peer mentor program, Feeding America developed a sustainability plan that aims to leverage funds for the continuation of this project. Table 4 summarizes Feeding America’s sustainability plan.

**Table 4:** Feeding America’s Plan for Sustainability

TACTICS OF SUSTAINABILITY	SPECIFIC EXAMPLES OF HOW TACTIC IS USED
Share positions and resources with organizations that have similar goals	For expansion, get health care partners or other community organizations (including schools) to provide nurse or dietitian support, particularly for the health screening & education
Become a line item in an existing budget of another organization	Originally, one of the food banks was providing a small amount of incentive funding for healthcare partners to participate. This offset of staff time is now incorporated into the healthcare partners’ budgets as they see the value of the project to the clients.
Apply for grants	The food banks involved in the pilot project are applying for local grants and Feeding America is seeking additional funders to provide continuation and expansion support.
Pursue third party funding	Investigating ways that “food as medicine” programs can be covered by healthcare payers.

## PROJECT PUBLICATIONS AND MATERIALS

Healthy Food Bank Hub <http://healthyfoodbankhub.feedingamerica.org/diabetes-project/>

- o Overview of Food Bank-HealthCare Partnerships
- o Food Insecurity Screening toolkit for healthcare partners
- o Food Bank-Healthcare organization sample MOU
- o Food Bank Sample Client Referral
- o Food Bank Sample Referral for Medical Care

## *FEEDING AMERICA CONTACT INFORMATION*

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## *EVALUATION CONTACT INFORMATION*

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