

Forging Links Between Nutrition and Healthcare Using Community-Based Partnerships

***Melissa Biel, DPA, RN; Susan H. Evans, PhD;
Peter Clarke, PhD***

This pilot project tested the feasibility of a community-based partnership between community clinics and food pantries as an approach to combat diet-related illnesses and engage low-income individuals in healthcare. Many communities possess both kinds of agencies, which serve similar clientele and are geographically near each other, but these types of agencies rarely have partnered. The “LINKS” program built partnerships between clinics and food pantries at 2 sites. For more than 6 months, the clinics conducted health screenings and provided referrals during scheduled pantry food distributions. Results indicate that clinics can effectively partner with food pantries, an overlooked resource for health promotion. **Key words:** *community clinics, diet-related illnesses, food pantries, fresh produce, nutrition*

LOW-INCOME PEOPLE have a higher incidence of nutrition-related, preventable ailments, including obesity, heart disease, hypertension, and diabetes, than the more economically advantaged. They also face a host of difficulties in gaining access to community clinics for screening and care: financial pressure, no time to leave work to attend to healthcare, and issues of fear and trust (for instance, concerns about inquiries on immigration status). Thus, low-income individuals often do

not seek medical attention until their health situation is dire.

A means of improving this situation might be literally right down the street. Many low-income communities have charitable food pantries, which families and individuals regularly visit to receive free food. Clients of pantries value these places as trusted, safe havens. Furthermore, for the past 16 years, increasing numbers of these locations have become “healthful” hubs, offering fresh produce and other nutritious and perishable foods, rather than merely calorie-dense food. A university-based project (“From the Wholesaler to the Hungry [FWH],” which will be described in more detail in the “Background” section below) has systematically worked with the nation’s charitable food distribution systems to enable many food pantries nationwide, to offer their clients fresh fruits and vegetables and to see themselves as providing nutrition, not “merely” food. These community-based pantries are potential partners for health promotion efforts. Clients’ visits to pantries to collect nutritious food might be turned into strategic occasions, teachable

Author Affiliations: *Chapman University College, Irvine (Dr Biel); and Institute for Prevention Research, Keck School of Medicine, and Annenberg School for Communication, University of Southern California, Los Angeles (Drs Evans and Clarke), California.*

The authors thank Kraft Foods for support of this project and Amina Dickerson, Nicole Robinson, and Patricia Garza for guidance. The authors also thank Michael Flood and Jeff Dronkers (Los Angeles Regional Food Bank) and Christy Porter (Hidden Harvest).

Corresponding Author: *Melissa Biel, DPA, RN, Chapman University College, 7545 Irvine Center Dr, Ste 150, Irvine, CA 92618, (melissabiel@yahoo.com).*

moments, to focus on personal and family health.¹

Unfortunately, these opportunities have been neglected. We could find few instances nationwide of collaborations between food distribution and medical services. “Food prescription” programs in Boston, Massachusetts, and Grand Rapids, Michigan, where medical centers write food needs that patients can redeem at a local pantry, are exceptions.* We undertook the pilot project reported here, called the LINKS program, to test potential collaborations between community pantries and nearby health clinics. We sought to gauge whether such partnerships would be successful in engaging at-risk, low-income people in medical care for diet-related conditions.

BACKGROUND: BREAKING THE LINK BETWEEN HUNGER AND DIET-RELATED ILLNESSES

It is a sad irony that people in poverty are often hungry *and* obese.² Poverty-level households experience food insecurity, where families or individuals must skip meals, be satisfied with small servings, or consume items they would not otherwise choose. Paradoxically, food insecurity is associated with overweight as low-income residents find that nutrient-dense foods are often priced beyond their reach.^{3,4} Fresh produce, lean meats, and low-fat dairy items cost significantly more per calorie than less healthful foods. In addition, many low-income people live where there are few shopping choices,^{5,6} and are exposed to higher concentrations of fast food restaurants.⁷ The affordable foods that are available in poorer neighborhoods and rural

areas tend to be calorie-dense but nutrition-poor.

It is no wonder then, that poverty is associated with obesity and its comorbidities. The nutritional patterns that contribute to overweight and obesity—diets that are dominated by processed and refined foods, high in fat and sugar and lacking appropriate nutrients—also are associated with other diet-related chronic conditions that plague the poor, most notably heart disease, hypertension, and diabetes. Underconsumption of nutrient-dense foods leads to and is associated with early death.⁸⁻¹¹

The people most affected by the hunger-obesity paradox and its associated health problems are concentrated among the 24 million low-income Americans served each year by food banks.[†] Food banks, often very large and centralized, provide perishable and non-perishable foods to 36 000 community-based agencies (senior centers, boys and girls clubs, residential homes for victims of domestic violence, and many more) that then distribute the food to individuals at the community level. Two-thirds of these community-based agencies are pantries, often based in places of religious worship, where clients visit to provide for their own households.

Food banks and their pantries have seen a steady decrease in commodities received through the United States Department of Agriculture Emergency Food Assistance Program and must, therefore, increase their reliance on food donations. The vast majority of such foods are donated by businesses, shedding surpluses they can no longer sell for commercial advantage. Traditionally, these donated foods have been highly processed items with large amounts of refined carbohydrates, sugar, and fats—the same foods that increase the risk of obesity and other conditions.¹²

*For accounts of these, see <http://www.aha.org/aha/press-release/2006/060316-pr-bmc-boone.html> and http://www.hhnmag.com/hhnmag_app/jsp/articledisplay.jsp?dcrpath=HHNMAG/Article/data/07JUL2007/0707HHN_FEA_NOVA&domain=HHNMAG#spectrum. Other exceptions can be found where pantries are located in multiservice agencies that include medical clinics.

†Most, though not all, food banks belong to the national association, Feeding America. See this organization's Web site for descriptions of the nation's charitable, supplemental feeding network and for statistics about the network's performance: <http://www.feedingamerica.org>.

However, the past 16 years have witnessed a gradual shift in food banking, away from reliance on customary supplies of snack items, carbonated beverages, and sugared cereals. Many food banks have moved steadily from a goal of simply alleviating hunger with any calories available, to a plan geared toward primary prevention of diet-related chronic conditions, providing more nutritious foods that include fruits and vegetables.

This shift has been propelled by 2 efforts: (1) a university-based project, FWH¹³⁻¹⁵; and (2) grants to food banks from the Community Nutrition Program funded by Kraft Foods. FWH, based at the University of Southern California, has been urging food banks to embrace the collection of fresh produce and has offered site-by-site technical assistance and small start-up grants to support the extra costs of handling perishable foods.* FWH has been recognized for its success by the US Secretary of Agriculture and the UPS Foundation. In 1991, when FWH was launched, only 1 food bank in the nation solicited and distributed large amounts of fresh produce donations from industry sources on a regular basis. By 2006, more than 150 food banks in nearly all states and the national association that serves most of them, Feeding America, had embraced fresh fruits and vegetables and had made fresh produce the largest single category of food in charitable supply.

Kraft Foods launched its Community Nutrition Program in 1997 and continued grant-making through 2008. In this time, the firm made nearly 700 awards totaling \$29 million to food banks, regional associations, and national networks, with the goal of building sustainable capacity to collect and distribute perishable and nutritious foods to as wide a share of recipients' community agencies as possible. Two coauthors of this article (Evans and Clarke) originated FWH and managed Kraft's

Community Nutrition Program during its lifetime.

The next step, we reasoned, was to see if advantages offered by these food distribution sites—the fact that clients visit them regularly, trust them, and now receive nutritious foods from them—could be linked with efforts by community health clinics to educate, screen, and serve these same clients. A planning grant from Kraft Foods provided funding to test 2 potential collaborations across a 6-month pilot project.

START OF THE LINKS PROGRAM

We identified 2 clusters of low-income people, mostly Hispanic, within Southern California, one in a rural setting and the other urban. Each was served by a community pantry that provided abundant supplies of fresh produce to its clients, in addition to processed and packaged foods. Each pantry was within a mile of a clinic that offered free and low-cost medical care. However, the pantries and clinics had never met face-to-face and had not collaborated.

In each setting, we began by convening 3 partners: the food bank that gathered donations of fresh produce and other surplus foods designated for the region, the food pantry serving as distribution mechanism to individual households, and the nearby medical clinic. This initial meeting, led by this article's senior author (Biel), determined the concrete steps that would link fresh produce distributions with medical screenings, and that would facilitate access to nearby care for those clients identified through the screenings as at-risk. Discussions included an overview of the project as well as clinic- and pantry-client demographics. Clients' most pressing medical needs were identified. The partners pointed out potential challenges and decided on project details, including the nature of health screenings and their frequency, staff required to conduct the screenings, protocols governing referral to care, tracking of clients in care, ways to overcome barriers to accessing care, incentives (from clinic and from

*Funding has been provided by the Samuel and Helene Soref Foundation.

pantry) to boost rates of participation among clients, outreach to existing pantry clients, roles of each of the partners, and budget.

After this in-person meeting, the researchers and LINKS partners communicated by phone calls and e-mail to continue implementing the program. The simplicity of this approach—requiring only 1 face-to-face meeting—demonstrates that this kind of collaboration can happen without delay, a definite advantage for resource-strapped agencies. That said, such “quick and dirty” planning also carries liabilities, as we learned.

The remainder of this report describes the 2 LINKS pilot programs, results in accrual to clinical care, challenges, lessons learned, and recommendations for replicating similar partnerships between food distribution organizations and community health clinics.

PROCESSES AND RESULTS: THE RURAL SITE

The Coachella Valley in Southern California is a center of farm labor. We selected one of the valley’s small towns as our test site. The town has a core population of 5 400, though that number triples or quadruples during peak harvest periods that draw migrant workers, when many individuals and families make their homes in vehicles, culverts, and other types of occasional shelter. Half of the town’s resident population lives below the federal poverty level. We selected this site because of its distance from both supermarkets and any food assistance programs, other than a single pantry. Of the clients served by the pantry, all were Hispanic, and more than 7 out of 10 beneficiaries of the free food were children.

The food pantry distributes both perishable and packaged foods every Friday morning, which accumulates 700 to 1 000 family visits per month. Hidden Harvest, the food bank serving the region, supports the pantry by providing fresh produce and other food.

The town’s community medical clinic is a member of a Federally Qualified Health Center network of comprehensive community clinics that has served the Imperial and South-

east Riverside Counties in California for nearly 40 years. The local clinic has operated in the town for more than a decade and, 2 years ago, added a second set of offices. The clinic is open Monday through Friday, 9 AM to 5 PM. Facilities include 5 examination rooms and x-ray and dental equipment. Together the 2 sites offer primary care, laboratory, family planning, human immunodeficiency virus testing, immunizations, gynecological care, and postpartum care; these services are delivered by 2 family practice physicians, a nurse practitioner, a pediatric nurse practitioner, a dentist, and a variety of administrative and support staff. The clinic’s service area has been designated as medically underserved and as suffering from a shortage of health professionals for primary care among low-income people.

For the LINKS pilot project in this rural location, the partners held 6 combined health screening and food giveaway events in the months of May, June, July, September, October, and November 2007. A typical event consisted of clients lining up at the front door of the church pantry. Each family unit was given a preprinted number to facilitate entry, 25 clients at a time. (This procedure also addressed a long-running problem at the site, where people saved places for others, allowing latecomers to get an earlier place in line. By month 2, families entered in groups of 10 to give the clinic staff more time to conduct screenings.)

On screening days, which were regular days for food distribution, Hidden Harvest staff set up demonstration tables in the front yard of the church where families waited to enter. Every screening day, a cooking demonstration showed how to prepare healthy recipes using the fresh produce being offered, and staff distributed the recipes in Spanish. Pantry clients who agreed to be screened could participate in raffles of small kitchen appliances (eg, toaster, food blender). Cooking-related items (such as colanders) and inexpensive toys were also distributed.

Once inside, families signed in and received food bags that included fresh produce. The clinic’s screening stations, staffed by

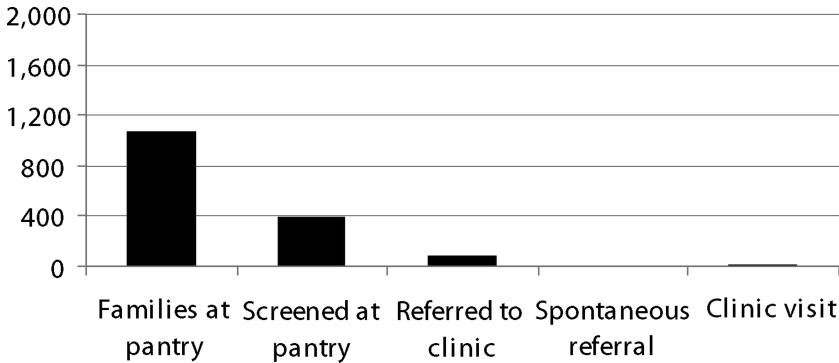


Figure 1. Numbers of individuals recorded at 5 points of contact, rural site.

4 bilingual nurses and medical assistants, were positioned at the end of a line of tables devoted to food distribution. Blood sugar and blood pressure readings were taken and clients' names and dates of birth were used as identification. Visitors with abnormal readings were referred to the clinic for care.

The LINKS outreach resulted in 5 categories of contacts with clients, 1 of them unanticipated and unnoticed by investigators until our project's conclusion. Figure 1 shows the cascade of contacts at the rural test site.

First, Figure 1 (on the left) shows that 1 064 families presented at the pantry for food during the 6 screening days when clinic staff were in attendance. Seldom did more than 1 adult per family appear. Slightly more than one-third agreed to be screened (383 individuals or 36%). Among persons screened, 83, or 22%, were referred for treatment at the clinic. There were no "spontaneous referrals," cases where pantry staff urged clients to go to the clinic during food distribution days when screenings were not scheduled. (We will have more to say about this phenomenon when discussing results from the urban site, below.) Twenty-one individuals, or 25% of those referred, kept their appointments for care.

On the surface, the raw figures from screening to appointment do not appear promising. In fact, they are not complete: the rush and confusion of food distributions and the newness of processes to both pantry and clinic staffs interfered with complete record keeping. In addition, an unknown number

of pantry clients repeated their screenings, thrilled to have monthly medical attention while they were waiting for food. They used the screenings as an opportunity to avoid a trip to the clinic for monitoring and caring attention. Future pantry-clinic partnerships might elect to ration screenings by imposing more stringent record keeping than used here. Or, other partnerships might tolerate the duplications we accepted, in favor of accommodating more clients per hour under harried circumstances and multiplying clients' exposure to medical surveillance and advice.

It is important to underscore that this pilot project was launched swiftly, with low transaction costs. We wanted to create a process that was simple and inexpensive and that could be replicated by agencies themselves. Despite the drawbacks of this approach, the project saw important successes, enough that have led us and the test sites to want to share processes and results.

PROCESSES AND RESULTS: THE URBAN SITE

Our urban site was an incorporated area located in Southeast Los Angeles County. The area's population is 14 779, three-quarters of it Hispanic. One out of 4 residents is below poverty level. Most of the area's nearby employment is based on casino gambling, but residents work throughout South Los Angeles and North Orange Counties. This area's pantry

receives much of its food from the Los Angeles Regional Food Bank and buys fresh produce to supplement these supplies. The pantry greets 2 600 to 3 000 family visits a month during twice-weekly distributions. Unlike our rural site for LINKS, people in the urban site can access many markets and other commercial sources of food.

The medical partner was a nonprofit community clinic that has been serving residents of eastern Los Angeles for nearly 80 years. It includes 2 facilities and last year provided more than 26 000 clinic visits. Our site's clinic is located in an area of severe health need, one that has also been federally designated as a medically underserved area and a health professional shortage area for primary care among low-income populations. In 2004, the clinic received a Federally Qualified Health Center Look-Alike designation by the Federal Bureau of Primary Health Care, which enables it to receive cost-based reimbursement for its services.

The clinic provides patients with a comprehensive range of health services that include primary care, women's healthcare, pediatrics, care for sexually transmitted diseases and human immunodeficiency virus testing and counseling, chronic disease management, cancer screenings, teen health, mental health counseling, and family planning. A dispensary, electrocardiography services, and radiology services are also available. The clinic's hours of operation are Monday to Thursday, 8 AM to 5 PM; Friday and Saturday, 8 AM to 12 noon.

Clients are mostly Latino with smaller numbers of African Americans and Asians. More than half of the adults in the area have less than a high school education and nearly one-third have not completed ninth grade. Residents are commonly the "working poor," employed in 1 or more places that do not provide health benefits.

The urban LINKS project held 6 monthly events from May to October 2007. On distribution days, clients lined up on the sidewalk in front of the facility in accordance with the pantry's routines; 10 to 15 families were admitted at a time, each taking a number from

a dispenser. Pantry staff summoned families to register them and to limit pantry visits to 2 times per family per month. Registered families were given vouchers to be used to purchase milk at a local grocery store and bags of fresh produce and other packaged foods. They were also given yogurt and juice and as many bread items as they wanted.

The clinic assigned 5 staff members for the screenings. One person served as a "greeter" and spoke about screenings to the families who were waiting to get their food; he or she explained that screenings were free and that they would receive token gifts (inexpensive toys and kitchen items) upon completing the screening. Once the families received their food, they would come to the corner of the pantry where the clinic was set up. The clinic distributed bottles of water to those waiting in line.

Across the 6 screenings, medical assistants measured blood pressure, cholesterol, and body mass index; they asked questions about lifestyle, such as favorite foods and physical mobility. If the readings or responses to questions were of concern, the client was referred to the clinic.

Figure 2 shows the cascade of contacts at the urban site. Starting on the left, the figure shows that members of 1 602 families appeared at the pantry during the 6 screening days. As at the rural site, a single adult usually represented the family, though often accompanied by children. Among these adults, 704, or 44%, agreed to be screened. This was 8% greater than the screening rate at the rural site, where 36% accepted screening. Among the urban-screened, 196, or 28%, were found to require referral for care (compared with 22% at the rural site). Thus, rural and urban catchment areas exhibited comparable levels of diet-related conditions meriting medical treatment, approximately 1 out of 4 persons who agreed to be screened.

The fourth contact (as shown in Fig. 2) was unexpected. Spontaneously, between screening days, pantry staff began urging some visitors to schedule appointments at the clinic. No systematic assessments of health

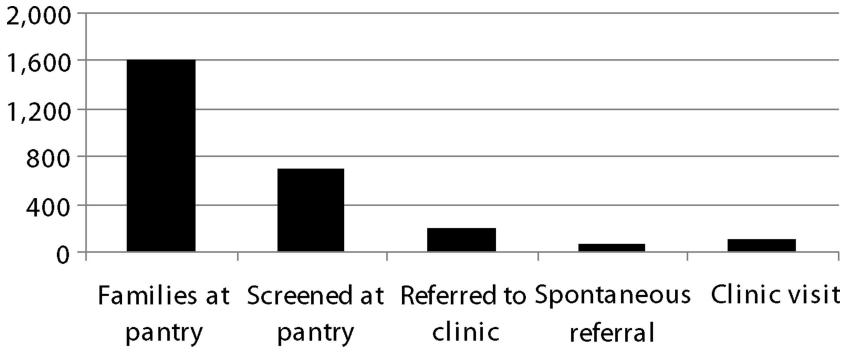


Figure 2. Numbers of individuals recorded at 5 points of contact, urban site.

status prompted these “spontaneous referrals,” though pantry staff kept track of the number of people they urged to seek care (68 persons). We have no way of judging the medical appropriateness of these encouragements. No such spontaneous referrals took place at the rural site. The 99 persons that Figure 2 shows as keeping their clinic appointments, however, were all referred during LINKS screening days. Thus, the capture rate at the urban site was 51%, twice the capture rate at the rural location. Again, however, such raw data disclose only part of the LINKS experience. Variations in procedures also included the following:

- The urban clinic tracked and made multiple attempts to follow up with clients who were screened and given referrals. The clinic discovered many wrong phone numbers, but its intensive efforts—more than the rural clinic undertook—may be largely responsible for the doubling in conversion. Of course, the doubling might also have resulted from underlying differences between our rural and urban settings and the populations they serve.
- At the July screening, the “greeter” began telling some clients who wanted screenings that it was okay just to have a screening; clients did not need to come to the clinic. This undetected violation of agreed protocol resulted in fewer referrals, coupled with better compliance (fewer wrong numbers and more scheduled appointments). Clients wanted the

screening but did not want the referral; instead of saying they were not interested in obtaining care at the clinic, they simply gave a wrong phone number. Some of these clients came back every month for screening and gave a wrong number every month, rather than decline the referral.

Ironically, the greeter’s unapproved innovation on screening days conflicted with spontaneous referrals made by pantry staff on regular pantry distribution days.

SUMMARY OF PROJECT ACCOMPLISHMENTS, CHALLENGES, AND RECOMMENDATIONS

We have shared missteps in the LINKS pilot project as well as its intended planning and execution. All this information should be helpful to future efforts to forge partnerships between 2 different, but equally stressed social service agencies. Pantries rely on volunteers; they often amend procedures on-the-fly, in the hopes of being as helpful to clients as they can. When clinics conduct screenings, they cannot invest heavily in collecting information about people who often do not appear later for care.

Throughout the process, we observed screenings, interviewed key staff at pantries and clinics, and solicited written feedback from collaborators. This qualitative data leads us to offer the following summaries and recommendations for clinics, food banks, and

pantries that might wish to replicate the LINKS concept.

Accomplishments

- Together and with minimum preparation, these clinics and pantries mounted 12 health events, where members of more than 2 600 families saw displays and heard messages about the associations between diet and health. More than 1 000 adults were screened for a variety of diet-related conditions, and nearly 300 were found to need follow-up clinic appointments. More than 4 out of 10 of these people kept their appointments.
- The LINKS partnerships brought together social service agencies that had previously not worked together, despite geographic proximity and overlap in the populations served by each. The clinics now have a solid relationship with the pantries' clients and staff. With this relationship established, the pantries can continue to refer clients to the clinic.
- Having the health screenings at the food giveaway sites did increase the level of trust the clients felt about the screenings and the clinic. Knowing that the screenings were supported and encouraged by the food pantries increased clients' levels of comfort with the process and made it "okay" to go to the clinic for care. Without establishing this sense of trust, many food recipients mistakenly feared that clinics might reveal patients' documentation status to law enforcement.
- Clients were able to obtain healthy food items and learn about healthy eating and preventive health practices. For example, Hidden Harvest (the food bank serving the rural site) distributed more than 20 pounds of a wide variety of fresh produce, per family, across the 6 distributions. The organization provided recipes and demonstrated preparations of servings that were healthy (low salt, low fat, low calorie), tied to the fresh produce being distributed. These items were enthusiastically received.

- Although many of the screened clients were already patients of the clinic—and thus cannot be considered as an expanded reach for medical services—the screenings did prompt some patients to renew their attention to illness management routines they had abandoned. In fact, clients whose screenings showed abnormally high blood sugar levels often observed that they felt fine and were surprised by their screening results, a commonplace finding in diabetes management. Even if these clients did not keep the appointments made after the referral (as many did not, especially at the rural site), at least they were made more aware of the continuing presence of their disease, they were provided with written health education materials in their primary language, and clinic personnel gathered information that could be used in more intensive follow-up.

Challenges and recommendations

- Collaborations between agencies that have not worked together before can be fruitful, as we have seen; but they also can be difficult while partners learn each other's priorities. Potential collaborators should not try to do too much in the beginning. A key lesson was to keep it simple in terms of activities: health information dispensed, incentives offered, and screenings attempted. More items, activities, and different types of screenings can be added at subsequent events once partners and clients have grown comfortable with the process.
- The LINKS partnerships may have been underplanned, with fewer face-to-face meetings among collaborators than desirable. Consistency in protocols and integrity of data collection suffered. Against these liabilities, however, one must acknowledge that LINKS achieved a great deal of care outreach in a short period of time. Future replications will want to find their own balance between

amount of preparation and rigidity of procedures, on the one hand, and ease of execution on the other.

- Convening a participant group that involved members of the community as well as representatives from local churches, schools, and trusted community-based organizations in the planning may have improved processes and increased participation.
- It is also important to acknowledge early that the normal flow of food distributions will be disrupted by screenings, and that this is acceptable. A pantry's goal must rise from getting as many people through the line as quickly as possible to increasing clients' health knowledge and engaging more of them in self-management of chronic conditions. This change in focus requires a food pantry that is willing to explore new ideas and necessitates strong buy-in from the pantry leadership and staff.
- Midcourse meetings among collaborators could preserve greater consistency in project procedures. Initially at the urban site, there was inadequate communication among partners that resulted in inaccurate information being given to clients about whether all clinic care was provided at no cost; depending on client eligibility, some care was offered at minimal cost, based on a sliding scale. But, the misinformation circulated needlessly, causing confusion among staff and clients. The confusion was resolved through phone and e-mail conversations among the partners, but other operational lapses failed to gain an equal amount of attention. These included multiple screenings of the same pantry clients, which developed without forethought and which compromised the calculation of rates of accrual. Occasional meetings among site partners, convened by an overall LINKS coordinator, would also have permitted cross-fertilization between sites (the project, for example, might have induced the rural clinic to mimic intensive follow-up practices used by the urban clinic).
- If a food bank or food pantry or both has little or no experience working with a local health clinic, an experienced consultant/coordinator must help navigate both parties through the process. Finding an appropriate clinic, understanding clinic reimbursement methods, and complying with privacy issues may be too much of a barrier for the food bank and pantry to work through alone.*
- Collaborators at both sites were convinced that incentives for clients were needed to encourage them to be screened. This program provided a number of different types of incentives: fresh produce, exercise and cooking items, health education materials, raffles of kitchen appliances, and food demonstrations and recipes. The incentives appeared to work well for getting people to be screened, but we did not compare our items against alternatives. Perhaps more appealing items would have pushed up screening rates. Nor did we offer additional incentives for attending scheduled clinic appointments, a potential strategy.
- Our partnering clinics, in hindsight, have concluded that 6 months of back-to-back screenings yielded too much duplication, with too few new cases requiring care identified. During their review of project experiences, clinics expressed interest in continuing the screenings paired with food giveaways, but scheduling them once or twice a year.

CONCLUSION

Our rural and urban partners believe that their experiences with the LINKS pilot project were worthwhile. We conclude that

*The National Association of Community Health Centers maintains a listing of state and regional primary care clinic associations (www.nachc.org/primcare/srpalist.asp), potential resources for help in identifying a qualified consultant.

pantries and nearby clinics can be brought into collaboration to meet common goals in preventing diet-related illnesses and helping people with such conditions effectively access needed healthcare. A growing number of community-based pantries are distributing significant amounts of fresh produce and other nutritious foods. These sites and the food banks supplying them may increasingly embrace the role of health promotion, as well

as hunger relief. If they wish to partner with nearby clinics, all the collaborators will want to anticipate challenges posed by the investment of management time that such a cooperative venture brings. They will also want to engage community members in the planning process and set targets for patient accrual that partners believe would justify the extra effort entailed. Our LINKS experiments shed light on such issues.

REFERENCES

1. McBride CM, Emmons KM, Lipkus IM. Understanding the potential of teachable moments: the case of smoking cessation. *Health Education Research*. 2003; 18:156-170.
2. Center on Hunger and Poverty and Food Research and Action Center. *The Paradox of Hunger and Obesity in America*. <http://www.frac.org/pdf/hungerandobesity.pdf>. Published July, 2003. Accessed April 27, 2009.
3. Maillot M, Darmon N, Darmon M, Lafay L, Drewnowski A. Nutrient-dense food groups have high energy costs: an econometric approach to nutrient profiling. *Journal of Nutrition*. 2007;137:1815-1820.
4. Monsivais P, Drewnowski A. The rising cost of low-energy-density foods. *Journal of the American Dietetic Association*. 2007;107:2071-2076.
5. Sloane D, Diamant A, Lewis L, et al. Improving the nutritional resource environment for healthy living through community-based participatory research. *Journal of General Internal Medicine*. 2003;18:568-575.
6. Lopez RP. Neighborhood risk factors for obesity. *Obesity*. 2007;15:2111-2119.
7. Block JP, Scribner RA, DeSalvo KB. Fast food, race/ethnicity, and income: a geographic analysis. *American Journal of Preventive Medicine*. 2004;27:211-217.
8. Kennedy E. Evidence for nutritional benefits in prolonging wellness. *American Journal of Clinical Nutrition*. 2006;83(suppl):410S-414S.
9. James PT, Leach R, Kalamara E, Shayeghi M. The worldwide obesity epidemic. *Obesity Research*. 2001;9(suppl):228S-233S.
10. Khaw KT, Bingham S, Welch A, et al. Relation between plasma ascorbic acid and mortality in men and women in EPIC-Norfolk prospective study: a prospective population study. European Prospective Investigation into Cancer and Nutrition. *Lancet*. 2001;357:657-663.
11. Khaw KT, Wareham N, Bingham S, et al. Combined impact of health behaviours and mortality in men and women: the EPIC-Norfolk Prospective Population Study. *PLoS Medicine*. 2008;5(1). <http://medicine.plosjournals.org/perlserv/?request=get-document&doi=10.1371/journal.pmed.0050012>. Accessed February 10, 2008.
12. Cotugna N, Vickery CE, Glick M. An outcome evaluation of a food bank program. *Journal of the American Dietetic Association*. 1994;94:888-890.
13. Papa MJ, Singhal A, Papa WH. *Organizing for Social Change: A Dialectic Journey of Theory and Praxis*. Thousand Oaks, CA: Sage; 2005.
14. Parsons CS. A fresh take on food-donor programs. *Los Angeles Times*. November 26, 1997;:E1.
15. US Department of Agriculture and Environmental Protection Agency. Waste not, want not: feeding the hungry and reducing solid waste. http://www.epa.gov/epaoswer/non-hw/reduce/wast_not.pdf. Accessed February 10, 2008.