October 2010

Linkages Between Clinical Practices and Community Organizations for Prevention

Final Report

Prepared for

Therese Miller, DrPH
Lead, Prevention & Care Management Portfolio
Center for Primary Care, Prevention & Clinical Partnerships
Agency for Healthcare Research and Quality
540 Gaither Road, Room 6145
Rockville, MD 20850

Prepared by

Deborah Porterfield, MD
Laurie Hinnant, PhD
Heather Kane, PhD
Joseph Horne, BA
Kelly McAleer, MSPH
Amy Roussel, PhD
RTI International
3040 Cornwallis Road
Research Triangle Park, NC 27709

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RTI International is a trade name of Research Triangle Institute.

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EXECUTIVE SUMMARY

The U.S. health care delivery system plays a critical role in helping patients address unhealthy behaviors, such as tobacco use, unhealthy diet, and physical inactivity, which are the leading causes of preventable morbidity and mortality in the United States. However, national data suggest that patients are receiving only about half of the clinical preventive services (e.g., screening, behavioral counseling, and referral to behavioral change programs) recommended by the U.S. Preventive Services Task Force (USPSTF).

The Agency for Healthcare Research and Quality (AHRQ) has set a long-term goal to understand whether fostering linkages between clinical practices and community organizations, such as local health departments and community-based organizations, is a potentially effective and feasible way to enhance the delivery of clinical preventive services. AHRQ's focus is on clinical preventive services recommended by the USPSTF to address nutrition, physical activity, obesity, and tobacco use. AHRQ is particularly interested in linkages that result in preventive services delivery outside the usual clinical setting.

With this goal, AHRQ implemented a series of related activities, including convening an initial summit of health care and health policy stakeholders in 2008. In 2009–2010, AHRQ, with assistance from RTI International, conducted a complementary effort in three phases:

- a literature review and environmental scan to identify examples of linkages between clinical practices and community organizations and to begin to describe and characterize these efforts;
- case studies of five different interventions resulting from linkages between clinical practices and community organizations; and
- a summit that brought together representatives from federal agencies and other stakeholder organizations to develop a national strategy for promoting linkages to increase the delivery of clinical preventive services.

This report describes the findings from each of these three activities and also provides to AHRQ recommendations on enhancing research efforts, sharing promising models, and promoting policy change to improve preventive service delivery through clinical and community linkages.

Before undertaking the project activities, RTI, in collaboration with AHRQ, developed a guiding conceptual model by synthesizing a number of theoretical models and planning frameworks. The model depicts the relationships among the building blocks that contribute to improved delivery of clinical preventive services for individuals and shows the factors at multiple levels that influence implementation of linkages and clinical outcomes. The model directly informed the study questions of the current project, and the model has been refined

based on project results. To guide this project, AHRQ and RTI also engaged an expert Steering Committee of seven individuals with extensive experience researching and implementing linkages.

ES.1 Literature Review and Environmental Scan

The first phase of the project involved a literature review and an environmental scan to identify and describe linkages between clinical practices and community organizations. Only linkages with a focus on the improved delivery of clinical preventive services for AHRQ's target health behaviors and conditions (nutrition, physical activity, obesity, and tobacco use) were included. An additional inclusion criterion specified that at least two partners be involved in the implementation of an intervention and not just in planning activities or as a part of a collaborative. The literature review consisted of a search of four major health services and social science electronic databases. Over 750 abstracts were reviewed, and ultimately 19 articles describing 36 linkage interventions were included. The environmental scan consisted of a thorough search of the practice-based literature in electronic formats via both general and targeted Internet searches. An additional 13 interventions were identified by the environmental scan.

The literature search and environmental scan revealed that over half of the linkages identified were a part of three large centrally coordinated public health efforts funded by the Robert Wood Johnson Foundation or the Health Resources and Services Administration (HRSA). The remaining 22 linkages ranged from large state-coordinated efforts to smaller community- or individual practice–level linkages. A wide variety of clinical and community organizations were represented in this sample. The majority of the linkages addressed a combination of the target health behaviors and conditions, rather than just one. The linkages fell into several categories: (1) referral process, (2) provision of training and resources to improve medical provider practices, (3) clinical partner referral to health resources, (4) clinical partner volunteering at community programs, and (5) other. Only 18 interventions described evaluation outcomes and methodology, and a subset of these reported impact or outcome results that extended beyond general process measures (e.g., involvement, enrollment, or attendance). Outcomes reported by three studies that included a control group demonstrated significant improvements in perception of physical condition, physical self-worth, and physical health, and significant improvements in tobacco use abstinence rates among self-reported smokers. None of the studies focused on evaluating the linkage itself or organizational outcomes.

ES.2 Case Studies

In the second phase of the project, RTI conducted case studies of five interventions identified through the literature review and environmental scan. In February and March 2010, RTI conducted in-person or telephone interviews with a total of 30 stakeholders

across all five cases. Individual case analyses and cross-case analyses were conducted. Cross-case analyses yielded further understanding of how linkages are developed and implemented and how they contribute to delivery of clinical preventive services in the community. In particular, the case studies revealed organizational, community, provider, and intervention characteristics that serve as facilitators to the linkages. For instance, funding plays a critical role in establishing and maintaining interventions implemented through a partnership between two or more organizations; however, many of the relationships established through interventions are maintained during funding transitions. Tailoring interventions to community needs and resources is also important, as is building a trusting relationship between clinical and community partners and the community members served. Organizationally, relationships between clinical and community organizations are more easily fostered when there is strong communication between the partner organizations and a shared mission, vision, and purpose to their work. Other key facilitators include having strong management and leadership support, as well as knowledgeable and skilled staff who are committed to the community and the health issues being addressed.

ES.3 Summit Meeting

In the final phase of the project, AHRQ and RTI hosted a summit that brought together over 50 representatives from other federal agencies, community-based organizations, academic institutions, and policy organizations to inform a national strategy for promoting linkages to increase the delivery of clinical preventive services. The 2010 summit provided an opportunity for key stakeholders to network with one another and yielded a concrete set of recommendations for components of a flexible national strategy to facilitate linkages between clinical practices and community organizations. The individual strategies were developed in four specific areas: research, development of metrics, dissemination, and policy.

ES.4 Discussion and Recommendations

The findings from the three phases of the project are consolidated into key conclusions and recommendations to AHRQ. The following are the key conclusions:

- The existing published literature does a poor job capturing and describing linkages, and when evaluation is undertaken, the emphasis is on the intervention rather than the linkage.
- A wide variety of clinical and community partners can be engaged in these linkages; key facilitators of developing linkages have to do with finding a compatible organizational partner (e.g., with similar characteristics, values, missions of the organizations).
- Funding is of critical importance to initiating and sustaining linkages between clinical practices and community organizations.

- While interventions cannot always be sustained as originally designed, the linkages/relationships themselves may be sustained, and interventions may be adapted so that they are sustained in some form.
- Evaluation is challenging and often focuses on individual participant outcomes rather than organizational outcomes.

The three phases of the project each contributed to a set of recommendations for AHRQ, and secondarily to other stakeholders, for fostering successful linkages. Organized around the four domains that were the basis for the summit discussions, these recommendations include the following:

- *Identifying research gaps and funding research*: Because the evidence base for linkages between clinical practices and community organizations is lacking, most of the recommendations for AHRQ fall under this category. Critical areas for future research are evaluating the effectiveness of linkages, describing costs, describing facilitators and barriers specific to linkages for the delivery of clinical preventive services and specific to the organization types, and understanding mechanisms to enhance sustainability. Summit participants in particular encouraged AHRQ to consider new models for and broader engagement in research, such as supporting work that promotes research competencies and evaluation skills in community-based organizations.
- *Developing metrics to measure successful linkages*: In the literature review, environmental scan, and case studies, RTI consistently found an overall lack of evaluation and variation in types of outcomes measured. Partnering organizations evaluated neither the linkage nor organizational outcomes. AHRQ can play a key role in facilitating the evaluation of linkages by defining outcomes measures and evaluation metrics for linkages. Summit participants recommended that AHRQ convene a workgroup to develop metrics related to linkages between clinical practices and community organizations.
- *Sharing promising models*: AHRQ already plays a role in dissemination of these models through the inclusion of examples of successful interventions on the Innovations Exchange Web site: http://www.innovations.ahrq.gov. To advance its goal of dissemination, AHRQ can enhance the promotion of this Web site and ensure that the Web site has a search function that allows for easy identification of linkages between community organizations and clinical practices. In addition, AHRQ can consider the development of a separate Web site, similar to the National Cancer Institute's Research-tested Intervention Programs (RTIPS), so that linkages considered "research tested" and prioritized for dissemination are grouped together and easily reviewed.
- *Promoting policy change*: The role of policy in the establishment of linkages is not well defined or understood at the local implementation level; recommendations to AHRQ came primarily from the summit. The following are suggested steps for AHRQ to promote policy change for linkages: (1) convene a joint meeting among Centers for Medicare and Medicaid Services, state governments, and employers to discuss

reimbursement issues for providers participating in linkage interventions; (2) promote systems and tools that allow patient information exchange between clinical and community partners and ensure that community provider resource information is incorporated or can be incorporated into health IT systems; and (3) develop an organizational policy that promotes promotion of linkages internally and in collaboration with other agencies (e.g., by including requirements for establishing linkages in funding announcements and opportunities).

Because clinical practices cannot provide all of the necessary clinical preventive services, fostering linkages between clinical practices and community organizations has become increasingly important and presents a viable strategy for improving delivery of and access to such preventive services. Recognizing this, AHRQ can draw on these project findings and recommendations in its continued efforts to develop and implement a national strategy to promote these important linkages.

1. INTRODUCTION

The U.S. health care delivery system plays a critical role in helping patients address unhealthy behaviors, such as tobacco use, unhealthy diet, and physical inactivity, which are the leading causes of preventable morbidity and mortality in the United States (McGinnis & Foege, 1993; Mokdad, Marks, Stroup, & Gerberding, 2004). The U.S. Preventive Services Task Force (USPSTF) provides specific recommendations for the delivery of clinical preventive services, such as screening, behavioral counseling, and referral to behavioral change programs, to support patients in behavior change and decrease their risk for chronic disease and death (USPSTF, 2002, 2003a, 2003b, 2003c).

Despite these recommendations, patients are not receiving the appropriate clinical preventive services in their doctors' offices. A large national study reported that patients receive only about half of the recommended clinical preventive services overall and less than 20% of recommended counseling or education services (McGlynn et al., 2003). Although practice-level data are scarce, one recent study of 52 primary care practices showed that practices only rarely to occasionally use nurses or health educators for individual patient counseling and rarely provide group counseling (Hung et al., 2007). Within a practice, barriers to the delivery of clinical preventive services, such as counseling, include time constraints, organizational factors, and reimbursement issues (Hung et al., 2006, 2007; Thompson, 2008; Woolf et al., 2006a; Yarnall, Pollack, Østbye, Krause, & Michener, 2003).

The alternative to providing services such as counseling in a clinical setting is to provide referrals to outside providers, such as local health departments, tobacco quitlines, or community-based organizations. However, available evidence suggests that this practice is also not common (Hung et al., 2007). This may be due to limited and variable access to such services (Beitsch, Grigg, Menachemi, & Brooks, 2006; National Association of City and County Health Officials [NACCHO], 2006). Even when available, services may be underutilized because clinicians are unaware of the resources or because they face numerous barriers related to reimbursement, organizational structure, and inter-organizational linkages (Etz et al., 2008; Woolf et al., 2006a). Although recent studies have suggested that linkages between organizations for referrals may be facilitated by advanced communication technologies (Krist et al., 2008), these changes may be difficult for the average practice to implement.

The Agency for Healthcare Research and Quality (AHRQ) has set a long-term goal to understand whether fostering linkages between clinical practices and community organizations is an effective and feasible way to enhance the delivery of clinical preventive services. With that goal, AHRQ has implemented a series of related activities, including convening a summit of health care and health policy stakeholders in 2008. In 2009–2010,

AHRQ, with assistance from RTI International, conducted a complementary effort in three phases: a literature review and environmental scan to identify examples of linkages between clinical practices and community organizations and to begin to describe and characterize these efforts, case studies of five linkages, and a summit that brought together representatives from federal agencies and other stakeholder organizations to develop a national strategy for promoting linkages to increase the delivery of clinical preventive services. This report describes the findings from each of the three phases and also provides to AHRQ recommendations on enhancing research efforts, sharing promising models, and promoting policy change to improve preventive service delivery through clinical and community linkages.

1.1 Background

Past efforts describing clinical and community linkages have laid important groundwork in terms of creating a typology for such programs and exploring specific types of clinical and community linkages, for example, targeted to services for the elderly population. Several important initiatives have attempted to demonstrate the potential for clinical and community linkages and to describe the barriers and the solutions to these barriers:

- The seminal document, which has influenced the study of clinical and public health linkages since its publication in 1997, was developed as a part of the Medicine and Public Health Initiative (Beitsch, Brooks, Glasser, & Coble, 2005), a joint effort of the American Medical Association (AMA) and the American Public Health Association. With additional support from the Robert Wood Johnson Foundation (RWJF), the New York Academy of Medicine developed a monograph that described and categorized 414 examples of medicine and public health collaborations (Lasker, 1997). Six discrete models of collaboration, termed "synergies," emerged from the numerous examples that were studied. The authors provided strategies for successful collaboration, argued for the benefits of collaborations or the "collaboration paradigm," and highlighted recommended strategies to further medicine and public health collaborations, including increasing awareness of strategies, legitimizing the collaborative approach, providing tools to persons in the field to help them initiate and sustain collaborations, and identifying and addressing barriers to collaborations.
- In a 2009 report to the Canadian Health Services Research Foundation, researchers at McMaster University in Canada described a scoping literature review to understand structures, processes, and outcomes of collaborations between public health and primary care, and markers of successful collaboration (Martin-Misener & Valaitis, 2009). Their work built on several previous efforts in Canada to understand and promote clinical and public health partnerships (Ciliska, Ehrlich, & DeGusman, 2005; Rachlis, 2006; Rowan, Hogg, & Huston, 2007). These authors identified 114 examples of collaboration through an electronic database search, Web search, and key informant interviews. They provided descriptive information about the programs, including a categorization using Lasker's Synergy typology, and they described facilitators, barriers, and outcomes that are being studied. The authors concluded

that, although solid evidence is not available to document the effectiveness of collaborations, these efforts are likely to have a positive impact on services and outcomes. The authors called for a theoretical framework to guide future research and a rigorous study design to evaluate the effectiveness of collaborations.

- A 2009 monograph produced by the University of North Carolina at Chapel Hill and AMA describes a national scan for successful primary care practices and public health agency partnerships, with a particular focus on programs that support the health care needs of older adults (Sloane, Bates, Gadon, Irmiter, & Donahue, 2009). Through Internet and literature searching, a national survey of public health agencies, and snowball sampling, 48 active programs were identified that involved a primary care provider and a health department/cooperative extension service/or Area Agency on Aging and that provided direct services to patients. Respondents from a subsample of 18 programs were interviewed. Results focused on how the partnerships functioned, how they served the needs of partners, and the barriers and strengths of the collaborations. The authors conclude that partnerships are rare, but they emphasize their potential to improve health care and to be cost-effective. They detail barriers and potential strategies to overcome the barriers, as well as principles of effective collaboration based on their findings.
- In 2009, the Centers for Disease Control and Prevention (CDC), the American Association of Retired Persons (AARP), and AMA released a report describing a collaborative project to highlight opportunities to broaden the use of clinical preventive services among adults aged 50 to 64 years in the United States (CDC, 2009). The report describes a literature search for community-based interventions that documented increased access to and/or use of multiple clinical preventive services among adults aged 50 to 64. In the report, three interventions are featured; the authors provide conclusions based on commonalities across the interventions.
- The Prescription for Health initiative, a research project sponsored by RWJF and implemented in Practice Based Research Networks supported by AHRQ, funded a number of projects that involved clinical and community partnerships to enhance the delivery of clinical preventive services. Using data from grant reports, site visits, and diaries, investigators associated with this initiative created a general model of linking practices and community resources. Investigators also described characteristics of practices and communities that influenced the ability to initiate connections (Etz et al., 2008). The authors conclude that more research and funding are needed to understand the process of linking practices and community resources.

These previous initiatives have been important steps in understanding the barriers to developing partnerships between clinical, public health, and community-based organizations. However, gaps in knowledge remain specific to AHRQ's goal to understand linkages between clinical practices and community organizations for clinical preventive services delivery. Specifically, an articulation of the barriers and facilitators that map to specific action steps or recommendations for programs and policymakers is missing. In addition, previous initiatives have not been specific to AHRQ's focus of health promotion and

health behavior change; thus, lessons learned from other reports may not be directly applicable. Previous work in this area has also varied in the description of community or public health partners, with some including only governmental public health/health department partners and excluding other nongovernmental public health service providers. Finally, some efforts have examined linkages within a limited set of centrally coordinated efforts, therefore excluding what may be considered grassroots linkages that were not a part of a larger effort.

This project was designed to gather information specific to linkages among organizations for clinical preventive services delivery to assist AHRQ in its goal of improving primary care outcomes through such linkages. AHRQ's focus is on preventive services as recommended by the USPSTF for nutrition, physical activity, obesity, and tobacco use. Also, AHRQ is particularly interested in linkages that result in clinical preventive services delivery outside the usual clinical setting as an efficient method of delivery. As discussed in this section, barriers to the delivery of preventive services within the clinical setting are numerous (Hung et al., 2006, 2007; Thompson, 2008; Woolf et al., 2006a; Yarnall et al., 2003). If an outside agency already has the capacity to deliver preventive services, such as counseling or a physical activity intervention, then developing channels for referrals and solving funding or reimbursement issues will likely be more efficient than attempting to create this infrastructure within the clinical setting.

1.2 Defining Terms

To understand how clinical and community partners work together to deliver clinical preventive services, the term "linkages" must first be defined within this context. "Linkages" is a term and concept that is perhaps less commonly used than "partnership" and "collaboration." These concepts are popularly ascribed to many types and levels of interaction across the public, private, and nonprofit sectors. "Partnership" has many labels and different connotations depending on the sector (e.g., business, government nonprofit health and human services organizations, schools, faith communities, clinical practices) (Huxham, 1996) and tends to be characterized by who is involved and the purpose for "working together."

Although there is no one accepted definition of partnership, the more popular definitions have a common theme of a group or multiple groups or organizations choosing to work together to achieve a mutual goal. Partnerships have also been depicted on a developmental continuum from the least to the most involved and complex. For this project examining relationships between clinical practices and community organizations, Himmelman's (2002) model of collaboration may be particularly useful (Table 1-1). In this model, Himmelman describes and defines four strategies for working together: networking, coordinating, cooperating, and collaborating. These strategies are distinguished by the formality of the relationships, key characteristics, and resource sharing.

Table 1-1. Himmelman's Model of Collaboration

Characteristics	Networking	Coordinating	Cooperating	Collaborating
Definition	Exchanging information for mutual benefit	Exchanging information for mutual benefit, and altering activities to achieve a common purpose	Exchanging information for mutual benefit, and altering activities and sharing resources to achieve a common purpose	Exchanging information for mutual benefit, and altering activities, sharing resources, and enhancing the capacity of another to achieve a common purpose
Relationship	Informal	Formal	Formal	Formal
Characteristics	Minimal time commitments, limited levels of trust, and no necessity to share turf; information exchange is the primary focus	Moderate time commitments, moderate levels of trust, and no necessity to share turf; making access to services or resources more user-friendly is the primary focus	Substantial time commitments, high levels of trust, and significant access to each other's turf; sharing of resources to achieve a common purpose is the primary focus	Extensive time commitments, very high levels of trust, and extensive areas of common turf; enhancing each other's capacity to achieve a common purpose is the primary focus
Resources	No mutual sharing of resources necessary	No or minimal mutual sharing of resources necessary	Moderate to extensive mutual sharing of resources and some sharing of risks, responsibilities, and rewards	Full sharing of resources, and full sharing of risks, responsibilities, and rewards

Source: Himmelman, 2002.

Although there has been extensive study of the concepts of partnership and collaboration more broadly, our preliminary review of the literature describing relationships between clinical and community partners indicates that a variety of terms have been used but that these relationships are rarely defined. These relationships have been called partnerships, collaborations, linkages, bridges, and cross-sectoral relationships, among others (Etz et al., 2008; Holtrop, Dosh, Torres, & Yum, 2008; Krist et al., 2008; Lasker, 1997; Woolf et al., 2006a). Only one article (Etz et al., 2008) provided definitions for the two terms used in their work, linking and bridges:

- Linking: "The work that project teams did to forge connections between primary care practices and community resources…. Links were potentially static, easily broken, and not necessarily used" (p. S391).
- Bridges: "Suggests a dynamic and interactive connection as well as the need for strong foundations, for knowledge of local landscapes, and for continuous maintenance. Practices, patients, and resources needed help to make their way across" (p. S391).

The current project uses the term "linkage" (versus partnership) to represent the relationships between clinical organizations and community or public health organizations under examination. The term linkage is used for this work because the focus is on linking or joining clinical and community organizations with the purpose of improving the delivery of clinical preventive services. Using this model to ground this project's definition of linkage, the current project defines the linkages examined as follows:

> *The inter-organizational relationships between clinical preventive practice and/or public health and/or the community as defined by the type of relationship (formal versus informal), time commitment, trust, sharing and exchange of resources, and sharing of risks and responsibilities that result in improved delivery of, access to, and quality of preventive services.*

1.3 Conceptual Model for the Project

AHRQ and RTI developed a conceptual model to guide and focus this work, synthesizing a number of theoretical models, planning frameworks, and outcome measures. Key models and frameworks include partnership and integration literature (Brinkerhoff, 2002; Holden, Wordlaw-Stinson, Stone-Wiggins, Jones-Bell, & Soloe, 2007; Lasker, Weiss, & Miller, 2001; Roussos & Fawcett, 2000), PRECEDE-PROCEED (Green & Kreuter, 1992), RE-AIM (Glasgow, Vogt, & Boles, 1999), the Social Ecological Model (McLeroy, Bibeau, Steckler, & Glanz, 1988), and dissemination and implementation literature (Durlak & DuPre, 2008), as well as prior medicine–public health linkages work (Lasker, 1997; Etz et al., 2008).

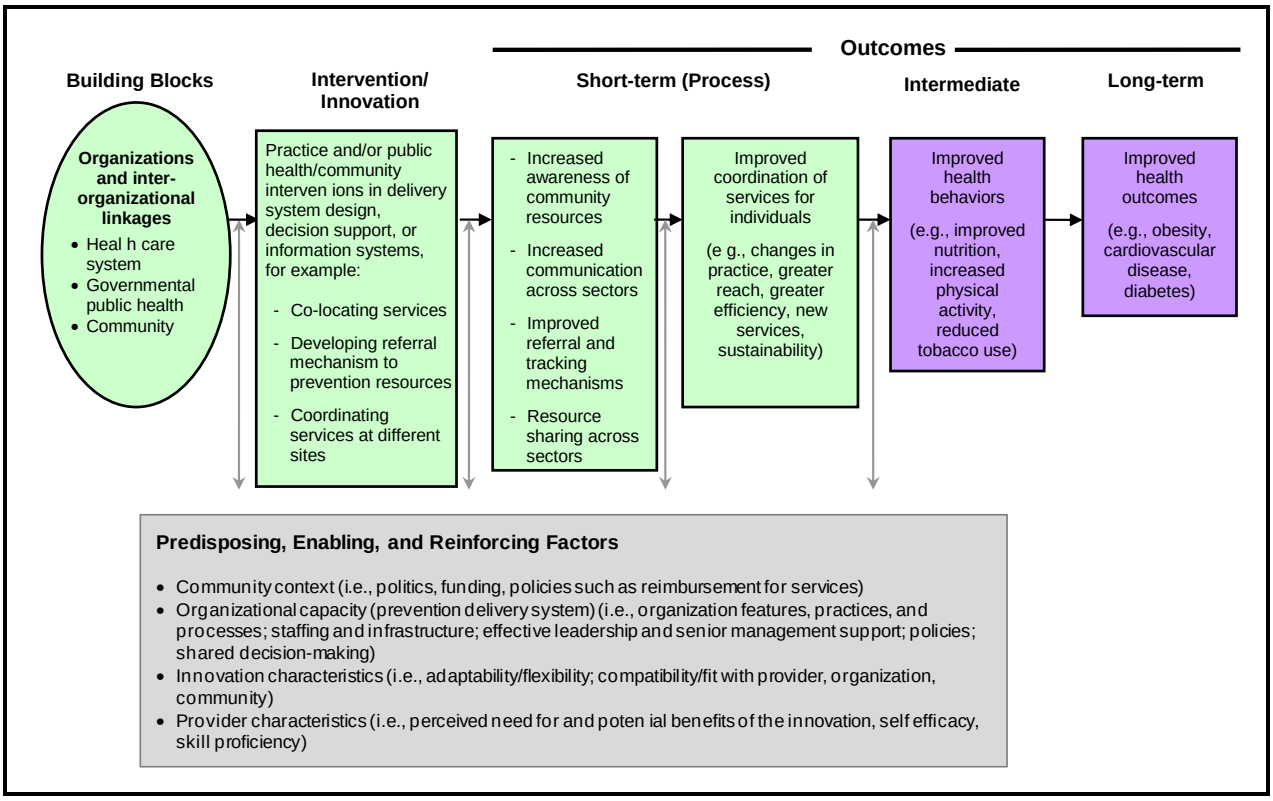
The model (Figure 1-1) illustrates the relationship among the building blocks, activities, and outcomes from linkages between clinical practices and community organizations. It depicts the linkages leading to improved coordination of services for individuals (with Lasker's Synergy I as the short-term outcome of interest) and the factors at multiple levels that influence implementation of linkages and ultimately clinical outcomes.

The current project focused specifically on the predisposing, enabling, and reinforcing factors at the community contextual, organizational, and individual levels. Although the terms predisposing, enabling, and reinforcing factors have traditionally been defined at the individual level, they are also applicable at the organizational level. Predisposing factors are those that influence why an organization becomes involved in a particular action and may include characteristics such as organizational values, knowledge, attitudes, and perceived

needs. Enabling factors are those that make it possible for an organization to engage in a particular action. In this case, enabling factors may include funding and existence or absence of programs, resources, partners, and management support. Finally, reinforcing factors are those that contribute to the sustainability of a particular relationship or intervention and may include feedback from partners, intervention participants, or funding organizations, and, in some cases, organizational policy that is adopted to support sustainability of a particular program or activity or even organizational commitment to a particular topic or issue.

The model directly informed the study questions of the current project, and the model will be refined based on study results. Moving forward, AHRQ and other stakeholders can continue to use the model to define testable research questions about how to facilitate linkages and how to measure their effectiveness and implementation.

Figure 1-1. Linking Clinical Practices and Community Organizations for Prevention: Proposed Model



1.4 Steering Committee

To help guide this project, an expert Steering Committee of seven individuals with extensive experience researching and implementing linkages was established. This committee helped

to inform the process designed by AHRQ and RTI and to interpret findings. A list of Steering Committee members is provided as Appendix A. The Steering Committee

- brought an understanding of past work in linkages and how previous and proposed work can facilitate AHRQ's goals to identify and describe linkages at the local level as a way to influence primary care and preventive service delivery;
- represented the perspectives of stakeholder groups to ensure relevance of the project;
- provided technical guidance in development of the study methodology while considering timeline and budget constraints; and
- reviewed and assisted in the interpretation and dissemination of findings.

The Steering Committee participated in a series of teleconferences over the course of the project beginning in June 2009 and provided input during key phases of the project, including development of research questions, study methodology, and data collection protocols.

2. LITERATURE REVIEW AND ENVIRONMENTAL SCAN

2.1 Methods

To understand linkages between clinical practices and community/public health, AHRQ contracted with RTI to conduct a "scoping" literature review and an environmental scan. A scoping review, unlike a systematic review, broadly surveys the literature but does not evaluate articles for methodological quality (Martin-Misener & Valaitis, 2009). An environmental scan examines unpublished literature and publically available program information. A total of 49 interventions that met the inclusion/exclusion criteria were identified through the literature review and environmental scan.

Using the definition of linkages provided above and the conceptual model depicted in Figure 1-1, RTI and AHRQ developed a list of study questions that we could address with a literature review and environmental scan (see Appendix B for list of study questions). The study questions were vetted with AHRQ and the Steering Committee to identify the questions that were of greatest importance to this effort. We describe our methods for the literature review and environmental scan in Sections 2.1.1 and 2.1.2, respectively.

2.1.1 Literature Review

To initiate this review, RTI and AHRQ generated the following general search parameters:

- English language,
- journal articles (not including book reviews, commentaries, editorials),
- human subjects,
- 1999 to present,
- no age group limitations, and
- U.S. and international.

These parameters were selected to capture programs that might be active beyond the publication date and therefore might be contacted for participation in a case study.

Next, RTI and AHRQ developed search terms by using several strategies. First, we listed keywords for the topics of interest, such as obesity, physical activity, tobacco cessation, and partnership/linkage. Second, RTI asked AHRQ and the Steering Committee to recommend exemplar articles. RTI then selected five exemplars and examined those articles' Medical Subject Headings (MeSH) terms for additional search terms. Finally, RTI asked the Steering Committee to suggest additional keywords or MeSH terms.

After assembling a comprehensive list of relevant MeSH terms and keywords, RTI grouped terms logically into three categories: terms relating to program content, terms dealing with

primary care, and terms describing the community health or public health component of the intervention. Table 2-1 presents the search terms and their organization.

Table 2-1. Search Terms for the Literature Review and Environmental Scan

Program Content	Primary Care	Community Health or Public Health
Exercise	Primary health care	Community health services
Exercise therapy	Medical home	Health promotion
Motor activity		Referral and consultation
Nutrition therapy		Directive counseling
Diet therapy		Insurance, health, reimbursement
Health behavior		Reimbursement mechanisms
Tobacco use cessation		Reimbursement, incentive
Tobacco use disorder		Community-based participatory research
Smoking		Patient education as a topic
Smoking cessation		Delivery of health care, integrated
Obesity		Partnership practice
Diet, reducing		Primary prevention
		Clinical preventive services
		Practice-based public health
		Health department

Using the search terms, RTI searched the following major health services and social science electronic databases:

- PUBMED (MeSH terms),
- CINAHL (MeSH terms),
- ISI Web of Science (author determined keywords), and
- PsychInfo (author determined keywords).

To facilitate the search, we applied Boolean operators (i.e., AND, OR) between each of the keywords and their categories. Within an article, we wanted to find at least one of the terms within the column; thus, we searched by using "OR" between all of the terms within a column. Because we were interested in the combination of terms across columns, we applied "AND" for terms across columns.

RTI then ran iterative searches and assessed search quality (i.e., presence of the five exemplar articles) and volume (i.e., number of articles returned from the search). To

winnow the number of articles, RTI applied MeSH subheadings, which yielded a manageable 745 results after duplications were removed. At the same time, RTI developed inclusion/exclusion criteria to select articles that corresponded to our definition of linkage and the conceptual model:

- Articles must contain a linkage between a clinical practice and public health or community health organization. Health plans were not included as a clinical practice.
- Articles must address counseling or other activities to promote healthy diet, exercise, or tobacco cessation. Delivery of clinical preventive services as recommended by the USPSTF was desirable but was not an inclusion criterion.
- Clinical practices that were primarily increasing their capacity to provide preventive health services through expanding clinic staff and program offerings were excluded.

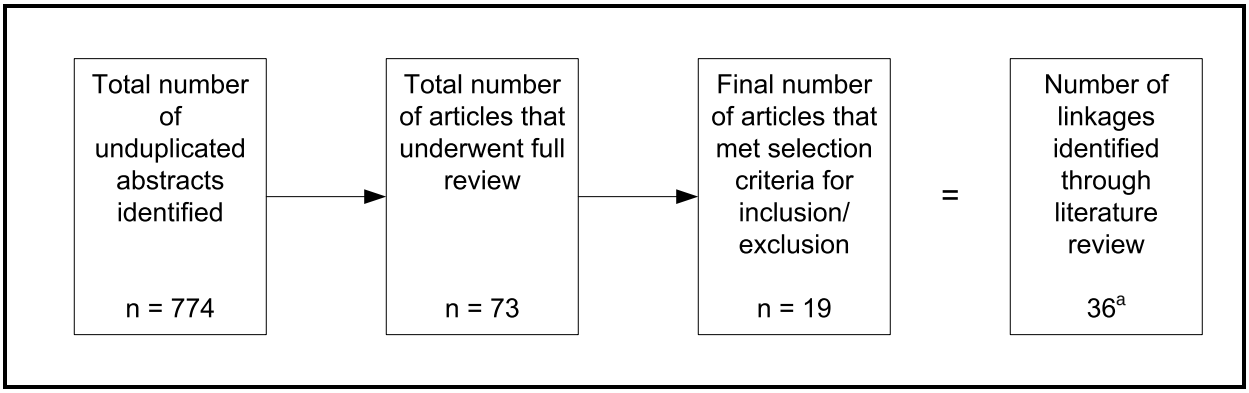
While assessing the literature, RTI made a number of refinements to the inclusion/exclusion criteria. For instance, articles meeting the inclusion criteria sometimes centered on particular categories of participants (e.g., a smoking cessation program for people with diabetes). These were included as they addressed this effort's core set of clinical preventive services. Research studies and clinical trials were also included despite concerns about limited generalizability. However, RTI opted to exclude articles that described interventions yet to be implemented or a strategic planning process so that the focus could remain on studies of interventions being implemented in the field. RTI also excluded articles in which the community or clinical partner played a nominal role, such as serving on an advisory group or steering committee.

To determine whether an article should be included, abstracts and subsequently full texts were reviewed by members of the research team. When questions arose, a second reviewer would review the abstract and/or full text, and decisions were made by consensus. At the end of the literature review, 19 articles were included, yielding 36 examples of linkages (Figure 2-1). Most commonly, articles were excluded because they addressed issues that were outside of the content areas being examined and/or they did not include an intervention that included both a clinical and a community partner.

Coding Structure and Access Database

Using the conceptual model, linkage definition, and research questions, the RTI team developed a coding structure for extracting data from the selected articles. The coding structure included such topics as program focus (e.g., physical activity, nutrition), participating partners (e.g., hospital, health care system, health department, community-based organization), intervention/innovation, and predisposing conditions. To facilitate analysis, RTI then created an Access database containing these codes and entered all selected articles into it. (The abstraction form is available from RTI upon request.)

Figure 2-1. Literature Review Flow Diagram



[a]Several articles yielded more than one linkage example.

2.1.2 Environmental Scan

For the environmental scan, the project team conducted general and targeted Internet searches. In the general search, we entered various configurations of the search terms into Google; for the targeted search, we examined Web sites recommended by AHRQ, the Steering Committee, and RTI experts. We describe each activity below.

General Search

RTI conducted a thorough search of the practice-based literature in print and electronic formats. In this search, we looked for clinical and public health organizations that highlight or include examples of clinical-community partnerships and linkages through their work. Using a variety of search terms (Table 2-2), the team used the Google search engine to identify examples of linkages between clinicians/health care providers and community prevention programs.

Each set of Google search results was mined for possible examples that met the inclusion/exclusion criteria. The first 20 links were reviewed for possible linkage examples. If a potential example was identified in that set of links, then the next 10 links were reviewed. If another example was identified, then the next 10 links were reviewed until no additional potential examples were identified. Once a set of search terms was exhausted, a different combination of terms was entered into Google and the same process was repeated. Interventions that met the selection criteria were added to the Access database.

Table 2-2. Examples of Search Terms Used in Google and Targeted Web Search

Terms Dealing with Types of Partners	Terms Dealing with the Type of Relationship	Additional Terms
Clinical	Partner (and variants: partnership, partnering)	Prevention
Clinicians	Linkages (and variants: links, linking)	Public health
Providers	Relationship	Community health
Health providers	Referral	Community
Health care providers		
Community programs		
Community prevention programs		
Community health center		
Health center		

Targeted Search

In addition to a broader Google search, RTI gathered additional examples of linkages from Steering Committee members and other contacts using a Program Identification Form. Finally, a targeted search of relevant organizational Web sites was conducted to identify any additional examples. A list of organizational Web sites that were included in the search is provided in Table 2-3.

In a process similar to the Google search, reviewers used a variety of search terms when searching these organizational Web sites to identify any relevant examples of linkages. Additional searches of the New York Academy of Medicine Grey Literature Report were conducted to capture supplementary resources not identified through other sites or searches.

Because many sites listed hundreds of activities and interventions, many of which were not relevant to the selection criteria established for this work, conducting an exhaustive search of each site would have been cost-prohibitive. Instead, a qualitative approach was used in which each site was reviewed for up to 1 hour to identify interventions and activities that most closely met the inclusion/exclusion criteria.

Using a record abstraction form that corresponded to the Access database, reviewers captured key descriptive information about each relevant case. This information was then entered into the Access database so that it could be analyzed concurrently with the literature review data. Thirteen additional interventions were included in the final analyses.

Table 2-3. Targeted Web Sites Included in the Scan

Type of Organization	Organization
Government agencies	• AHRQ • CDC – Division of Diabetes Translation – Office on Smoking and Health – Division of Nutrition and Physical Activity – Division of Heart Disease and Stroke Prevention – Racial and Ethnic Approaches to Community Health (REACH) – Steps to a HealthierUS • Health Resources and Services Administration
Public and private organizations	• Robert Wood Johnson Foundation • W.K. Kellogg Foundation • Kaiser Family Foundation
Practitioner and public health–related organizations	• American Medical Association • American Academy of Family Practice • American College of Preventive Medicine • American Public Health Association
Other prevention partners	• Association of Prevention Teaching and Research • Association of State and Territorial Health Officials (ASTHO) • National Association of City and County Health Officials (NACCHO)
Other relevant sites	• New York Academy of Medicine Grey Literature Report

2.2 Findings

The literature review and environmental scan aimed to address a number of key study questions (Appendix B) that were developed in concert with the conceptual model (Figure 1-1) that guides this project. The key questions of interest are presented in Table 2-4.

Table 2-4. Key Literature Review and Environmental Scan Research Questions

Concept in Framework	Research Questions of Interest
Building blocks	• Which organizations are involved? • What types of linkages exist? • Can the described linkages be categorized according to existing partnership or linkages frameworks?
Interventions/innovations	• What types of interventions/innovations have been implemented? – What are the target populations? – Where do interventions take place? – How has information technology been incorporated into the interventions?
Outcomes	• What outcomes are being measured? • What data sources are used? • What did the linkages accomplish? • What were key intervention/linkage facilitators and barriers?

2.2.1 Overview

Using the pre-established selection criteria, the literature review and environmental scan yielded a total of 49 interventions that included a linkage as a part of the intervention or program implementation. See Appendix C for a list of interventions.

Examination of the interventions found that 27 of the 49 interventions identified were a part of large, funded and centrally coordinated public health efforts. These included Prescription for Health (n = 19) and the Building Community Support initiatives (n = 5), both funded by RWJF, and the Health Resources and Services Administration's (HRSA's) Women's and Children's Health Program Healthy Behaviors in Women Effort (n = 3). The remaining 22 interventions varied from large state coordinated efforts to smaller community or individual practice-level interventions. A majority of the interventions identified were located within the United States (n = 44), with a smaller number of interventions (n = 5) located outside of the United States, including the United Kingdom, Sweden, and Spain. Programs located in the United States were implemented in 23 different states.

Funding sources for these efforts varied and included the following:

- national agencies and organizations (e.g., HRSA, CDC, National Cancer Institute, AHRQ, National Institutes for Health);
- state agencies and organizations (e.g., Cooperative Extension, State Departments of Public Health);
- foundations (e.g., Kate B. Reynolds Charitable Trust, RWJF, Allina Health Foundation);

- health care organizations and systems (e.g., local hospital, academic medical center); and
- corporate sponsors (e.g., Pepsico, Inc., McDonald's Corporation).

The following sections highlight intervention information obtained from the articles and resources reviewed. It must be noted that in many cases the information may not fully reflect all aspects of the interventions examined because the review was limited to the information contained within the print or electronic resources. Additional data collection from a subset of interventions identified through the literature review and environmental scan will be conducted in the next phase of this work. Preliminary findings from this work indicate that the counts provided within the articles and resources reviewed are underestimates, which indicates that many more partners and activities are implemented through these efforts.

2.2.2 Building Blocks

This section describes the results pertaining to the "building blocks" component of the conceptual framework in Figure 1-1. The following questions are addressed:

- Which organizations are involved?
- What types of linkages exist?
- Can the described linkages be categorized according to existing partnership or linkages frameworks?

Which Organizations Are Involved?

The interventions reviewed engaged a wide variety of clinical and community partners in the implementation of program activities. At a minimum, both a clinical partner and a community partner had to be present to be selected for inclusion in the review. Most often, the organization initiating the intervention or from which the intervention was initially originated was the clinical partner or practice (Table 2-5). "Other" initiating organizations include national associations and academic or educational institutions.

Table 2-5. Organizations Initiating the Intervention

Organization Initiating the Intervention	Frequency (%[a])
Clinical practices	26 (53%)
Community organizations	11 (22%)
Other	5 (10%)
Not stated/could not be determined	7 (14%)

[a]The total percentage exceeds 100% because some interventions involved multiple clinical practice types.

Clinical partners varied widely but included community health centers, hospitals, health care systems, and single provider practices. Frequencies of the types of clinical partners are presented in Table 2-6. The numbers reported in Tables 2-6 and 2-7 are likely undercounts as the data rely on the level of detail provided in the reports or articles reviewed.

Table 2-6. Types of Clinical Partner Organizations

Clinical Practice Type	Frequency (%[a])
Community health center	7 (14%)
Hospital	4 (8%)
Health care system	7 (14%)
Group practice	1 (2%)
One or more single practices	10 (20%)
Other	5 (10%)
Unspecified clinical partner	22 (45%)

[a]The total percentage exceeds 100% because some interventions engaged multiple clinical practice types.

As with clinical partners, a wide variety of community organizations or partners were also engaged in the implementation of program activities. Generally, these partners were classified as community-based organization, community coalition, governmental public health, or other. In many cases, multiple community partners were engaged in the implementation of program activities. Fourteen programs included unspecified community service organizations (all were Prescription for Health programs described in a single article).

Table 2-7. Types of Community Partner Organizations

Partners	Frequency (%[a])
Community-based organization	6 (12%)
Community coalition	3 (6%)
Governmental public health	3 (6%)
Community-based organization and community coalition	3 (6%)
Community-based organization and governmental public health	3 (6%)
Educational institutions/universities	9 (18%)
Businesses	2 (5%)
Commercial weight loss programs	3 (6%)
Other, which includes other combinations of more than one community partner	11 (22%)
Unspecified community partner	14 (29%)

[a]The total percentage exceeds 100% because some interventions engaged multiple clinical practice types.

What Types of Linkages Exist?

The 49 linkages examined represent a wide variety of program activities and interventions that sought to impact both individual and organizational practices and behaviors as well as larger community-level improvements designed to lead to improved health outcomes. The interventions themselves or subcomponents of the interventions can be classified into several common types or categories: referral process, provision of training and resources to improve medical provider practices, clinical partner referral to health resources, clinical partner volunteers at community program, and other. Some interventions had more than one component; thus, the following categories are not necessarily mutually exclusive.

Referral Process

Referral of patients from clinical practice to community partner: Fourteen interventions involved a system of referral where a clinical practice identified patients who could benefit from assistance to improve their health. The interventions often included programs to help patients quit smoking or improve their diet and exercise. Clinicians were often trained on how to identify at-risk patients, using screening tools, notes in electronic medical records (EMRs), or other note systems, and then provided information on how to refer patients to a particular community program or organization that provided intervention services.

Referral of patients from community partner to clinical practice: Two interventions used a referral process where individuals enrolled in a community health program were referred to clinical partners for medical services. One of these community programs worked with a clinical partner to provide potential program participants with a physical exam and medical clearance prior to enrolling in the program. The second program referred participants with diabetes to clinical partners for ongoing medical care, testing, and treatment.

Six interventions that included a referral from a provider to a community program or from a community program to a provider described a feedback process that included sharing of patient/participant information between the two partners. This information often included enrollment and participation in an intervention as well as participant progress made during, and in some cases after, their participation in the intervention (e.g., weight lost).

Referral of Patients by Clinical Practices to Health Resources

Patient referral to Web site or electronic health resources: Six initiatives involved providers referring patients to electronic health resources or Web sites where they could find a variety of health information on their own. In some cases, the information provided to patients via these Web sites was specific to a particular intervention with which the clinician was involved. In other interventions, the resources included a program partner's Web site and/or more general resources on health and behavior change. In one case, patients were referred

to a Web site where they could complete a health history and then would be directed to tailored health promotion resources, information, and programs.

Provision of a community guide describing local health services and resources to clinical practices (in electronic or paper format): Five initiatives included the provision of a community guide that helped patients identify local program resources to assist them with health improvement. Clinicians provided this guide both electronically via the Web and through available hard copies.

Training for Medical Providers by Community Organizations to Improve Medical Provider Practices

Training for medical providers on how to assess patient health status and encourage behavior change: Fifteen initiatives involved an intervention where community partners trained or provided resources to providers to improve their ability to identify issues or behaviors that may affect patient health and to work with patients to address those issues. Health care providers received training on a variety of issues, including

- referring patients to outside resources, including smoking quitlines, community health and wellness programs, and self-management programs;
- talking with patients about weight management, diet, exercise, and smoking cessation;
- using the five As (assess, advise, agree, assist, arrange);
- motivational interviewing/counseling;
- patient goal setting and action planning; and
- patient screening.

Training for medical providers on development and implementation of in-house clinical preventive services: Thirteen initiatives involved clinical practices working with a community partner to offer preventive services within their practice or system. These services often included diabetes self-management classes, hiring of an in-house "health change facilitator"/health educator/health coach, and implementation of a wellness club. Often these programs were combined with other interventions.

Volunteer Work by Clinical Partners at Community Organizations

Two programs described a linkage that involved clinical partners volunteering their time at a community organization/intervention site to provide services to program participants. In both of these interventions, these community partners provided services to medically underserved populations. One example also consisted of medical students implementing a health promotion initiative at a community center. This effort served a dual role of providing

medically underserved families with resources and tools to improve their health and wellness and training medical students on how to work with community partners to provide health services.

Other

Other types of program activities include

- community partners making presentations to schools about diabetes awareness (*n* = 1);
- clinical partners making presentations to schools about nutrition, fitness, and well-being (*n* = 1); and
- coordinated community-wide change initiative that entailed interventions across multiple community partners and organizations; linkages between community and clinical partners was just one aspect of the community-wide effort to improve the health of an entire community (*n* = 1).

Can the Described Linkages Be Categorized According to Existing Partnership or Linkages Frameworks?

Each of the 49 linkages was categorized using Himmelman's (2002) model of collaboration. This model organizes collaboration into four levels: networking, coordinating, cooperating, and collaborating. Table 1-1 provides an overview of this framework. Using this framework for collaboration, the linkages were found to fall most commonly within the coordinating category (*n* = 11), followed by networking (*n* = 6), cooperating (*n* = 6), and collaborating (*n* = 4). Because most of the papers reviewed were not solely focused on describing the linkage, but rather the intervention, it was not possible to characterize the type of collaboration between the clinical and community partners using this framework in almost half (*n* = 22) of the programs.

2.2.3 Interventions/Innovations

This section describes the results pertaining to the intervention component of the conceptual framework in Figure 1-1. The following questions are addressed:

- What types of interventions/innovations have been implemented?
- What are the target populations?
- Where do interventions take place?
- How has information technology been incorporated into the interventions?

What Types of Interventions/Innovations Have Been Implemented?

The selection criteria limited this review to interventions that focused on a relatively small number of health behaviors and conditions: nutrition, physical activity, obesity, tobacco

avoidance, and tobacco cessation. The majority of interventions addressed a combination of these health behaviors and conditions, rather than just one. Table 2-8 summarizes the health focus of the interventions reviewed.

Table 2-8. Health Behavior and Conditions Addressed by the Linkages

Health Behavior/Condition	Frequency (%)
Nutrition, physical activity, and obesity	8 (16%)
Nutrition, physical activity, and tobacco cessation	8 (16%)
Nutrition and physical activity	7 (14%)
Physical activity	6 (12%)
Nutrition, physical activity, tobacco avoidance, and tobacco cessation	4 (8%)
Obesity	2 (4%)
Tobacco cessation	3 (6%)
Nutrition	2 (4%)
Other	9 (18%)

What Are the Target Populations?

The interventions reviewed targeted a wide range of ages. A majority of the linkages sought to impact the behaviors and services provided to adults over the age of 18 (59%) or served all ages (8%), and a small number served people under the age of 18 (10%) (Table 2-9).

Table 2-9. Age Groups Served

Age Groups Served	Frequency (%)
All ages	4 (8%)
Youth (<18 years of age)	5 (10%)
Adults (>18 years of age)	29 (59%)
Missing/not explicitly stated	11 (22%)

Less commonly, interventions focused on meeting the needs of specific racial and/or ethnic groups. These groups include African Americans (five interventions), American Indians (three interventions), Hispanics/Latinos (two interventions) and Asians (one intervention).

Where Do Interventions Take Place?

Services were often administered in a wide variety of community settings, including clinics, primary care offices, schools, worksites, and a variety of other community organization offices/facilities (Table 2-10).

Table 2-10. Intervention Setting

Intervention Setting	Frequency (%)
Clinical care office (clinic, primary care office, hospital)	16 (33%)
Community organization office/facility or meeting place in the community	19 (39%)
School	3 (6%)
Worksite	1 (2%)
Not stated	18 (34%)

How Has Information Technology Been Incorporated into the Interventions?

Use of information technology for the administration of these efforts was examined in the reports of all 49 interventions. In 15 of 49 interventions (31%), some form of information technology was used in the administration of their interventions, including e-mail, phone, Internet/Web, EMRs, and handheld devices.

2.2.4 Outcomes

This section presents results pertaining to the evaluation of the interventions, what the interventions accomplished, and how this was measured. The following questions are addressed:

- What outcomes are being measured?
- What data sources are used?
- What did the linkages accomplish?
- What were key facilitators and barriers?
- Are these linkages sustained?

What Outcomes Are Being Measured?

A wide variety of outcomes were measured across the interventions examined. Evaluation focused on a mix of process, impact, and outcome indicators, as presented in Table 2-11. Organizational outcomes were examined by a very small number of programs and were not clearly defined. For that reason, they are not included in the table.

What Data Sources Are Used?

Evaluation methods and findings were described by 18 of 49 linkages. However, 19 of the interventions without a description of their evaluation efforts were a part of larger national initiatives, namely Prescription for Health and Building Community Support. So while evaluation of specific efforts may not have been described in the articles reviewed, evaluations of both individual programs and the overall coordinated efforts were likely conducted. For articles that did describe evaluation efforts, a wide variety of evaluation methods, indicators, and outcomes were described. Data collection tools and methods were not as well described as the outcomes being measured.

The evaluation methods used varied significantly from relatively simple process evaluations of program implementation to more complex measurement of program impacts and outcomes. Impact and outcome evaluation strategies included self-report data from program participants and pre-post intervention studies. A small number of interventions included more complex evaluation studies that included randomized control group comparisons. Several evaluations included some form of post-intervention follow-up, which varied from immediately following the intervention through 1 to 2 years post-intervention.

Primary data collection methods include

- surveys of participants via written survey instrument or via e-mail,
- interviews with participants conducted in person or over the phone, and
- review of EMRs or patient medical charts.

Evaluation appears to have been conducted by some program staff; however, in a large number of interventions, a formal evaluation partner, most commonly a university partner, was responsible for evaluation design and implementation.

Table 2-11. Evaluation Outcomes Measured

Type of Evaluation	Outcomes Measured
Process	• Characteristics related to program implementation • Enrollment • Referrals • Attendance at intervention activities • Ongoing engagement beyond program period • Participant satisfaction • Visits to health care provider • Participation in health screenings • Program implementation/fidelity to intervention protocol • Intervention costs

(continued)

Table 2-11. Evaluation Outcomes Measured (continued)

Type of Evaluation	Outcomes Measured
Impact	• Individual psychological measures • Stage of change, motivation to change, readiness to change • Perception of health/physical condition/self-worth • Well-being • Self-efficacy • Attitudes • Behavioral outcomes • Level/frequency/duration/intensity of physical activity • Changes in diet • Changes in alcohol/tobacco use • Changes in self-management behavior
Outcome	• Clinical health outcomes • Health-related quality of life • Health events • Diabetic control • Cholesterol levels (LDL, HDL) • Blood pressure • Blood sugar levels (glycosylated hemoglobin, HbA1c) • Body mass index (BMI) • Weight loss

What Did the Linkages Accomplish?

Eighteen interventions described evaluation outcomes and methodology, and a subset of these reported impact or outcome results that extended beyond general process measures of involvement, enrollment, or attendance. Three interventions that used a comparison group design found significant differences between intervention and control groups in impact or outcome measures. Outcomes reported by the first two studies included significant improvements in perception of physical condition, physical self-worth, and physical health (Taylor & Fox, 2005) and significant improvements in tobacco use abstinence rates among self-reported smokers (Hollis et al., 2005). A third study, the MONICA Project/Norsjo Intervention Programme, which implemented a long-term community-wide intervention that included linkages between community and clinical partners, found significant changes in total cholesterol levels and systolic blood pressure between the intervention and reference population and a 36% reduction in predicted coronary heart disease mortality (using the North Karelia risk equation) after adjustment for

age and education, compared with 1% in the comparison community (Weinehall, Hellsten, Boman, & Hallmans, 2001).

Six studies reported some changes in participant behaviors and characteristics when pre-post intervention comparisons were made. Behavior changes include

- improvements in diet (fruit, vegetable, water, and low fat dairy product consumption) (HRSA, 2008b; Holtrop et al., 2008),
- improvements in physical activity (number of days, duration or intensity or physical activity and number of days with limited activity) (HRSA, 2008a; Holtrop et al., 2008; Woolf et al., 2006b),
- improvements in diabetes self-management behaviors (Ingram, Gallegos, & Elenes, 2005), and
- increased numbers of smokers who have quit (Massachusetts Tobacco Cessation and Prevention Program, 2009; Hollis et al., 2005; Holtrop et al., 2008).

Six studies reported some improvement in clinical health outcomes. Study designs varied across the interventions but consisted primarily of pre-post intervention. One project collected data 6 months post-intervention and one collected data 12 months post-intervention. One study included pre-post intervention comparisons with a matched comparison community (Weinehall et al., 2001). Improvements in the following clinical health outcomes were reported:

- blood sugar levels (Ingram, Gallegos, & Elenes, 2005),
- cholesterol levels (Weinehall et al., 2001),
- blood pressure (HRSA, 2008b; Weinehall et al., 2001),
- predicted coronary heart disease mortality (Weinehall et al., 2001), and
- BMI and weight (often 5% or more of pre-intervention weight lost) (HRSA, 2008b; Holtrop et al., 2008; Lavin et al., 2006; McQuigg et al., 2005).

Finally, two interventions that sought to change clinical provider behaviors to improve delivery of clinical preventive services noted improvements in related behaviors by providers, although these changes did not necessarily translate into changes in patient health behaviors. These outcomes include the following:

- Improvement in clinician referral of patients to community programs for health behavior change and improvements in rates of discussion of diet, exercise, and weight management (Flocke, Gordon, & Pomiecko, 2006): Data were collected by conducting follow-up calls with patients to inquire if their provider had discussed health education topics or provided health education materials. While the evaluation noted increased rates of provider discussions in these key areas, the evaluation also noted that there was no difference in patient motivation to modify behavior 8 weeks

after the clinical visit was made, when compared to motivation before seeing the doctor.

- Improvement in clinician behaviors to measure BMI, provide healthy messages, and follow up with patients (Pomietto et al., 2009): Data were collected primarily by clinical teams that conducted monthly chart audits at participating sites.

Although a few interventions conducted evaluations and reported evaluation findings, a far greater number either did not conduct evaluations of their interventions or did not describe evaluation findings in the articles and materials reviewed. A key question in this field is whether provision of clinical preventive services through linkages is a more effective approach when compared to service delivery solely through a clinician's office. Unfortunately, none of the evaluations conducted sought to understand or measure whether there is an added benefit to patients or providers when a linkage is in place.

What Were Key Facilitators and Barriers?

Facilitators

Although not well detailed in the publications reviewed, a number of program facilitators were cited that are worth noting.

Implementation

- Funding for the development of a program Web site was important; although Web sites are initially expensive to develop, once developed they are a relatively economical tool to maintain and provide information and services to patients (Woolf et al., 2006b).
- A common EMR system facilitated the ease with which staff across practices used an electronic behavioral counseling system (Krist et al., 2008).
- Inclusion of community advocates in program planning helped to facilitate linkages and involvement of other key community partners who were influential in program implementation (Plescia & Groblewski, 2004).
- Utilization of a well-known community liaison was influential in improving community awareness of program efforts and community member participation in program efforts (New York State Community Health Partnership and Milbank Memorial Fund, 1999).
- Offering incentives such as transportation, childcare, discounted gym memberships, and permission to continue using services after program completion was valuable in encouraging and maintaining participant involvement (across several cases).

Policy

- National and local public health policies and recommendations in Spain and England resulted in the development and implementation of successful programs to improve provision of primary care services through linkages with new and existing community health programs (Gine-Garriga et al., 2009; McQuigg et al., 2005).
- Recommendations by the accrediting organization, The Joint Commission, facilitated commitment by health plans in Massachusetts to collaborate with the Massachusetts Department of Public Health to develop and fund a service to help patients quit smoking (Massachusetts Tobacco Cessation and Prevention Program, 2009).

Sustainability

- Selection of program models that are designed to be self-sustaining and can be integrated into other initiatives or organizational structures helped facilitate program sustainability and dissemination beyond original funding (ASTHO, 2007; Pomietto et al., 2009).

Barriers

The primary barrier cited by programs examined was lack of sufficient funding for program implementation. This manifested in several ways, including being unable to compensate clinical care providers for their time and effort and creating demand for services that the intervention was unable to meet.

Are these Linkages Sustained?

To better understand if the linkages identified through the literature review and case study have been sustained since the publication about their intervention, the RTI team developed a process to follow up on each of the 49 examples identified. This follow-up included a multimethod approach that included search of the Internet and key organization Web sites, e-mails to the primary point of contact for each article, utilization of information gathered during the case study site visits and/or calls (as described in Section 3 of this report), contacts to project officers, and, if needed, phone calls to the primary point of contact for each article.

From this process, we sought to classify each linkage example as one of the following:

- **Active:** The intervention identified through the literature search/environmental scan is currently ongoing as the same intervention.
- **Complete:** The intervention identified through the literature search/environmental scan is complete, and there is no evidence that the intervention continues under a different name or through an alternative funding source.

- **Active but altered from original:** The intervention as identified through the literature search/environmental scan is complete, but some aspects of the intervention are continuing with one or more of the following changes:
  - funder and/or amount of funding,
  - partnering organizations,
  - components/subcomponents of the intervention being implemented (not implementing the entire program), or
  - target population.
- **Unable to determine:** The intervention identified through the literature search/environmental scan cannot be found through any means, and we are unable to determine its status.

Table 2-12. Sustainability of Linkages

Sustainability Status	Method of Follow-up					
	Case study case	E-mail	Web site	Phone	Prescription for Health	Total
Active	1	-	9	2	-	12
Complete	3	4	4	1	3	15
Active but altered from original	1	3	-	-	4	8
Unable to determine	-	2	-	2	10	14
Total	**5**	**9**	**13**	**5**	**17**	**49**

3. CASE STUDIES CROSS-CASE ANALYSIS

The final step of data collection for this project involved the design and implementation of an abbreviated case study that built upon what was learned in the preceding literature review and environmental scan. Many of the articles and resources identified through the preceding work focused on the intervention and not necessarily on the linkage itself. Therefore, the case study sought to expand AHRQ's understanding of how linkages are implemented, barriers, facilitators, and lessons learned, as well as to examine key components of the conceptual framework developed to guide this project.

3.1 Methods

3.1.1 Step 1: Selection Criteria

Upon completion of the literature review and environmental scan, the RTI team worked with AHRQ and the Steering Committee to develop selection criteria that were used to identify potential case study examples. These criteria included key community or program characteristics, which have been categorized according to the framework (Figure 1-1).

Based on the feedback from the Steering Committee and AHRQ, RTI proposed to select cases that maximized variation on key selection criteria, defined in Table 3-1.

Using the selection criteria, RTI reviewed the linkage examples identified through the literature review and environmental scan to generate a short list of 11 potential candidate interventions (or cases). The list of 11 interventions was reviewed by AHRQ and RTI team members and prioritized in terms of the top five potential cases for inclusion and then secondary back-up cases to be contacted if representatives from the first six could not be reached or chose not to be involved in the case studies.

3.1.2 Step 2: Recruitment of Case Study Examples

Interventions selected for participation in the case study were contacted via e-mail to introduce the case study and ask them for additional information about their intervention, including a primary point of contact. Each e-mail was followed by a phone call from an RTI team member to the specified point of contact. During this call, RTI assessed the intervention's eligibility and interest in participating. If an intervention appeared to be a good "fit" with the study priorities and objectives, then they were asked to participate in a 1-day face-to-face site visit during which RTI staff could speak with representatives from their community and clinical partners. From the initial list of 11 cases, a total of five cases were successfully recruited for participation in the case studies.

Table 3-1. Selection Criteria for Case Selection

Selection Criteria	Definitions
Types of Organizations Involved	• At least one case from the following community partners: – State and/or local government public health agency – University partner – Community-based organization • At least one case from the following clinical partners: – One or more single practices – Health care system – Community health center, clinic, health department • Additionally, all efforts will be made to select cases that were initiated by the clinical side and examples that were initiated by the community side
Research vs. Community Effort	• At least two cases that are representative of a larger research or funded effort, such as Prescription for Health or Building Community Support • At least two cases that were initiated independently of a larger research or coordinated effort
Geography (Rural vs. Urban)	• At least two cases that occur in a rural context • At least two cases that occur in an urban context
Type of Linkage	• At least one case with a linkage other than a referral system
Sustainability	• At least three cases with linkages that are active

3.1.3 Step 3. Collect Data from Key Partners

In collaboration with the Steering Committee and AHRQ, an interview guide was developed that consisted of a series of semi-structured questions aimed at describing the intervention, lessons learned, barriers and facilitators, other characteristics identified as priorities by the Steering Committee and AHRQ, and outcomes of the effort. All protocols and case study procedures were reviewed by the RTI Institutional Review Board (IRB) and were found to be exempt. (Interview protocols are available from RTI upon request.)

Upon agreeing to participate in the case study, an RTI team member worked with four of the cases to schedule interviews with key program stakeholders from both the clinical and community partners. Face-to-face visits were conducted with four cases (Sisters in Action; Strong Kids, Strong Teens; Salud Para Todos; and the North Carolina Prevention Collaborative). A fifth case, the Charlotte REACH 2010 project, was no longer active, and key staff had since moved into other roles in other states; thus, interviews were conducted via phone. Interviews were requested from key staff or individuals for a minimum of one interview with the clinical partner and one interview with the community partner. Each interview lasted approximately 1 hour and, with the interviewee's permission, was digitally recorded to assist with note taking.

3.1.4 Step 4. Data Analysis

Much of the data collected through the case studies were descriptive in nature. Qualitative thematic analyses were conducted to identify characteristics acknowledged as important to the linkages between clinical practices and community/public health interventions. For each case, an RTI team member who participated in the site visit was responsible for analysis of the interview data. Individual case analyses were conducted according to the case study priority questions and, in some cases, the protocol questions. Individual case study summaries were developed for each case. Building upon each individual case analysis, a cross-case analysis was conducted in which critical elements common across cases were identified. The results of the cross-case analyses are presented in the following text. Individual case summaries are provided in Appendix D.

3.2 Findings

3.2.1 Overview

The following findings represent cross-case analyses that examine key study questions across all five cases. Five cases were selected for inclusion in the case studies. These are described in Table 3-2.

Table 3-2. Case Study Cases

Intervention	Location	Years of Implementation	Funders
Charlotte REACH 2010	Charlotte, North Carolina	1999–2007	Centers for Disease Control and Prevention
North Carolina Prevention Collaborative	Central and Eastern North Carolina	2007–2009	Kate B. Reynolds Charitable Trust
Salud Para Todos	Yuma County, Arizona	2008–present	Office of Minority Health
Sisters in Action	Grand Rapids, Michigan	2006–2009	Health Resources and Services Administration
Strong Kids, Strong Teens	Seattle, Washington	2003–present	Steps to a HealthierUS

All interviews were conducted in February and March 2010. Face-to-face interviews were conducted with 26 partners, and telephone interviews were conducted with four partners, yielding a total of 30 stakeholders interviewed across all five cases. Fifteen stakeholders represented community partners, 13 stakeholders represented clinical partners, and two were representatives from “other” stakeholder groups or individuals.

3.2.2 Building Blocks

Case Study Questions of Interest

- What organizations are involved in these linkages?
- What do these linkages look like?
- Why were the linkages established?

Organizations Involved in Linkages

A review of the key partners found that a wide variety of community and clinical partners are engaged in linkages to improve delivery of clinical preventive services (see Table 3-3). Community partners included governmental public health organizations, an Area Health Education Center (AHEC), a community center, YMCAs, and a public university. Clinical partners included two health systems, primary care practices, a community health center, and a hospital.

Table 3-3. Partners Involved in Linkages

Intervention	Community Partners	Clinical Partners
Charlotte REACH 2010	Community Health Department, YMCA and other organizational partners	Carolinas Healthcare System
North Carolina Prevention Collaborative	UNC Chapel Hill, NC Department of Health and Human Services, AHEC, and other organizational partners	Community-based nonprofit primary care practices
Salud Para Todos	Campesinos Sin Fronteras	Sunset Community Health Center
Sisters in Action	YMCA	Spectrum Health System
Strong Kids, Strong Teens	Two area YMCAs	Seattle Children's Hospital

Types of Linkages Being Implemented

Although there was some variability in how the linkages were implemented across the five cases, referral systems and processes were the most common structure for linking patients with both clinical and community support and resources. Four of the five cases examined in the case study were found to utilize referral systems where patients were referred from a clinical partner to a community partner or from a community partner to a clinical partner.

Within the Strong Kids, Strong Teens program, health care providers were educated about the availability of a YMCA obesity treatment program and then encouraged to refer obese youth to the program so that they could receive information about adopting a healthy lifestyle.

In two examples—Charlotte REACH 2010 and the Salud Para Todos program—referrals were bidirectional with individuals being referred by and to both clinical and community partners.

The Charlotte REACH 2010 program included a certified diabetes educator located within a community clinic, who referred eligible patients to the variety of community partner programs. This effort also used lay health advisors who worked within the community and referred residents in need of medical assistance to the participating clinics. The Salud Para Todos program utilized promotoras within each partner organization to create a bidirectional referral process between the partner organizations. The promotoras served as the primary point of contact within each partner organization and referred individuals who were at risk for conditions such as diabetes, pre-diabetes, and hypertension or were in need of services to diagnose and educate about such conditions.

For each of the linkages where referral processes were in place, there was no evidence that any type of feedback loop existed, where the referring organization received an update or information on the individual referred, including diagnosis, enrollment in an intervention, or completion of an activity. Thus, while a bidirectional referral process may be in place, communication after a referral was only unidirectional. It is possible that the Health Insurance Portability and Accountability Act (HIPAA) rules and regulations may have some role in the limited feedback from clinical partners to community partners.

In addition to referral systems, one case focused primarily on provision of information and resources to both patients and providers. The North Carolina Prevention Collaborative developed and utilized a variety of materials and approaches to educate primary care providers about the resources available within the state health system and how to assess patient needs.

Reasons for Establishing Linkages

Each of the five case study cases reported unique goals and objectives for their particular linkage and intervention. In all cases, linkages were formed to provide services and resources to individuals who lived within a particular community or were representative of a population that had previously been found to be facing particular health-related challenges and barriers. In three out of the five case examples, clinical and community partners had a history of working together to address these or other issues in the target community. In one example, Salud Para Todos, the clinical and community partner had maintained a partnership for more than 10 years.

Organizations in three of the case study cases (Salud Para Todos, Sisters in Action, and Charlotte REACH 2010) had worked together on other health-related efforts. These relationships, as well as those formed in the two additional cases, were used as a mechanism to implement a particular intervention that had received external funding to meet the previously identified community health challenge. In most cases, this funding was limited in terms of time (from 2 to 8 or more years) and topic (see Table 3-4).

3.2.3 Interventions/Innovations

Case Study Questions of Interest

- What issues are the linkages addressing?
- What is the role of the clinical partner?
- What is the role of the community partner?
- How is information technology used by these linkages?

Each case addressed at least one of the core health behaviors of study. Table 3-4 shows the health behaviors addressed by each of the case study cases. Physical activity and nutrition were addressed by all of the interventions; tobacco was addressed by two. Four of the five case study examples had a focus on a particular target population, defined by race/ethnicity, health condition, gender, and age. Target groups included Hispanic/Latino farm workers, overweight and obese African American women and African American communities more broadly, and overweight and obese youth. In only one case example, the North Carolina Prevention Collaborative, the target population varied significantly due to local-level implementation across six communities; however, all patients were underserved because the clinical partners in all instances were nonprofit community health clinics. Three of the case study interventions were being implemented within urban community settings, one was implemented in a rural community, and one, which had multiple sites, was implemented in both rural and urban communities.

Table 3-4. Health Behaviors Addressed and Target Populations

Intervention	Health Behavior Focus			Geographic Setting	Target Population
	Physical Activity	Nutrition	Tobacco		
Charlotte REACH 2010	X	X	X	Urban	Predominantly African American communities
North Carolina Prevention Collaborative	X	X	X	Mix	Patients served by nonprofit community health clinics
Salud Para Todos	X	X	-	Rural	Hispanic/Latino farm workers
Sisters in Action	X	X	-	Urban	Overweight and obese African American women
Strong Kids, Strong Teens	X	X	-	Urban	Overweight and obese youth

Clinical Partners

As described above, a variety of clinical partners were involved in the linkages. Clinical partners included two health systems, primary care practices, a community health center, and a hospital. In three of the five cases, the clinical partner initiated the linkage and

intervention. These partners, having led the identification of and application for funding, also served as the fiscal agent for external funding. The role of the clinical partners varied across cases. In all cases, the clinical partner played an active role in the development and/or implementation of the interventions being implemented. Clinical partner activities varied significantly across each of the five cases, but commonly included

- intervention administration (including fiscal oversight and reporting to granting organizations);
- intervention implementation (including hiring staff; developing intervention protocols, procedures, and curricula; recruiting, screening, and referring patients and potential program participants);
- coordination with community partners; and
- evaluation oversight (including development of evaluation protocols, data collection, and analysis).

A variety of clinical staff helped to establish and maintain the linkages and the interventions. Staff consisted of clinicians (e.g., physicians, nurses, health educators) and administrative personnel (e.g., program directors and coordinators). Clinical partners in two cases hired clinical staff to help serve patients recruited for the intervention. This included a certified diabetes educator and a promotora; both were located in community clinics and served intervention participants. Within each of the five cases, each clinical partner had a primary point of contact for the linkage and intervention. However, this individual had different roles in each case. For example, in the Salud Para Todos program, it was a program coordinator for the entire clinic (not just Salud Para Todos); in the Sisters in Action initiative, the point of contact was someone working for the Spectrum Health System Healthier Communities Program (a public health division within the health system); and in two examples—the Charlotte REACH 2010 program and the Strong Kids, Strong Teens initiative—the programs were led by a coalition of community representatives, including clinicians. In addition to having a primary point of contact within each organization, respondents indicated that it was centrally important that their management was supportive of the effort and the time required by staff to coordinate with the community partner and implement the intervention. The meaning of the term "management," however, varied and included departmental leadership (although not necessarily hospital-level management) in the case of Strong Kids, Strong Teens; division-level leadership within Spectrum Health; and the medical director at Sunset Community Health Center for the Salud Para Todos program.

Community Partners

Community partners included governmental public health organizations, an AHEC, a community center, YMCAs, and a public university. Of note, four of the five case study cases involved the YMCA in some respect, with respondents from each of those cases indicating

that the YMCA provides resources for both implementation of health promotion activities and community outreach.

As with the clinical partners, the role of the community partners varied across each of the cases and was largely dependent on the intervention being implemented. Activities commonly included

- intervention administration;
- intervention implementation (including hiring staff; developing intervention protocols, procedures, and curricula, teaching classes or intervention components; recruiting and referring patients and potential program participants; providing intervention support activities, including transportation and childcare; and providing space for interventions to be implemented);
- coordination with clinical partners; and
- support for evaluation activities by collecting data from participants.

Community partners were less involved with fiscal oversight of the intervention, as in most of the case study examples the funding was awarded to the clinical partners and played primarily a supporting role in the evaluation of the interventions. Community partners tended to play a more significant role in the administration of the intervention, including leading or hiring staff to lead education and behavior change activities as well as providing support services, such as transportation and childcare.

A wide variety of staff within the community partners were involved with the development and implementation of the intervention. As mentioned previously, the YMCA was found to be a critical community partner engaged in these linkages. A variety of staff from the YMCA were involved, including individuals hired to serve as program coordinators, dieticians, and exercise coordinators. YMCA support staff, including front desk support, and childcare staff also played an important role. Within the Salud Para Todos program, promotoras were hired by both the clinical and the community partners, which helped facilitate coordination.

Use of Information Technology (IT) to Implement the Intervention

The literature review showed that some linkages used IT (e.g., Web sites and handheld devices) as part of the interventions. Staff within each of the case study cases were asked about the role of IT in the implementation of their linkage or intervention. Among these five cases, IT played a very limited role. Staff with the North Carolina Prevention Collaborative developed a Web site where clinical practice teams could submit their data, track progress, and find resources that met the needs identified through their quality improvement audit, although program staff viewed it as time consuming and challenging. Consequently, the Web site was underutilized. Although not a part of the design of the Sisters in Action effort, the coordinators found that one of the groups of women enrolled started their own social networking group where they could e-mail each other and share victories, healthy

restaurant recommendations, and coupons for healthy foods. This group was not facilitated by the partner organizations; however, partners indicated that the support offered by other women enrolled in the intervention was particularly important to their success.

3.2.4 Predisposing, Enabling, and Reinforcing Factors

Within the aforementioned framework (Figure 1-1), a hypothesized set of predisposing, enabling, and reinforcing characteristics are presented. This categorization is useful as it helps one to better understand the characteristics and conditions that affect why and how an organization may engage in a linkage with a clinical or community partner and in particular interventions.

In this section, we present our findings on predisposing, enabling, and reinforcing factors as organized by the original program framework, although with the categories slightly altered based on what has been learned through this work. We use the headings of Community Context; Organizational Characteristics, which includes Organizational Capacity and Interactional Characteristics (building upon the work of Dr. Ruth Martin-Misener and Dr. Ruta Valaitis from McMaster University) (Martin-Misener & Valaitis, 2009), and Intervention/Innovation Characteristics. In addition to adding Interactional Characteristics, we included Provider Characteristics in the category of Organizational Characteristics because the organizational structure within which providers operate has a significant influence on their behaviors and delivery of services. We also note that the term "provider" should be expanded conceptually to include all individuals who provide services to individuals through a community or clinical organization and that the term not be limited to a health care provider or physician.

With this understanding, a variety of predisposing, enabling, and reinforcing factors that affect successful linkages were identified through the case study and are presented below. In most cases, the findings are described in a "positive" or facilitative manner where their presence will help facilitate the development and implementation of linkages and health promotion initiative. It can be assumed in most cases that the absence of these same factors will serve to challenge or act as a barrier to development and implementation of these efforts.

Case Study Questions of Interest

- What community conditions supported or challenged the linkages and their interventions?
- What role does policy play in the development and implementation of these linkages?
- What motivated providers to become involved?

Community Context

Within the five case study cases, community context plays an important role in the types of interventions and linkages that are implemented. Community context is conceptualized as factors that are either characteristic of the community or external to the partner organizations that serve as predisposing, enabling, or reinforcing factors

to the linkages and interventions. The following are several key factors within the community context:

- funding for linkages and interventions,
- understanding of community members' health needs,
- understanding of community resources,
- trust between communities and organizations implementing programs, and
- policies.

Funding for linkages and interventions: Funding played a critical role in the implementation of all of the interventions implemented, and the presence or absence of funding serves as an important enabling factor. All five cases indicated that without funding the interventions would not have occurred and, in four of the five cases, the linkages between partners would not have been developed as fully. In some cases, relationships between the clinical and community partners were already established. External funding further solidified these relationships and contributed to the development of a more formal linkage with the purpose of implementing a particular intervention. For organizations without preexisting relationships, the presence of new external funding to implement a particular intervention was often a motivation to identify and establish new relationships and linkages. For example, for the Strong Kids, Strong Teens initiative, Seattle Children's Hospital had the expertise to develop an evidence-based program, but they needed better reach within the community to market the program and reach the target population. To do this, they identified and recruited the YMCA as a partner. "Given the Y's broad presence and the similarity in our missions, it looked like they were the logical choice. … Our challenge with trying to do it ourselves was that we weren't able to meet kids where they were" (clinical partner).

Respondents from all cases reported that without the external funding these linkages and interventions would not have been implemented. Similarly, although funding helped to establish these linkages, respondents from four of the five cases commented that looking forward, long-term relationships had been established through these efforts and will be used in future health promotion efforts. For instance, the partnering organizations for the Salud Para Todos program have worked together for 10 years on various health promotion efforts; each of these efforts was supported by external funders, such as the Office of Minority Health and RWJF.

Understanding of community members' health needs: Two of the five case study cases had previously conducted or been involved with a community-level health needs assessment. Staff with the Grand Rapids YMCA collected health information (e.g., height, weight, BMI) from the African American community; from that needs assessment, they discovered high rates of overweight and obesity among this population. Similarly, one case example used

chart audits as part of a quality improvement effort to assess the health needs of patients receiving services from participating practices. These needs assessments served as important predisposing factors that helped the organizations to identify important health issues and prompted them to develop linkages and interventions to target those issues.

Understanding of community resources: According to case study respondents from two cases, having a solid understanding of community resources enables organizations to develop and offer relevant programs that meet the needs of community members. In one case, the absence of available programs to which providers could refer youth indicated a community need for such a program. Other respondents indicated that understanding resources that may contribute to interventions, such as transportation needs, can have a significant influence on who to involve in a linkage, infrastructure needed for implementation, and the nature of the intervention itself.

Trust between the communities and organizations implementing programs: Trust between the communities being served by programs and the organizations seeking to provide programs was a critical issue in several of the case study cases. This was particularly true for the Charlotte REACH 2010 case where there was as history of distrust between the community and the hospital. The Charlotte REACH 2010 effort was one way to try to build this trust, as was establishing a health clinic within the community. "[It] took lots of years of coalition squabbles to get people to a place of trust where community could benefit from this relationship with the hospital" (clinical partner). If trust does not already exist between the community and the partner organizations, it is important to take the process slowly and build that trust through open and honest engagement of the community in planning and implementation. For Charlotte REACH 2010, one way of doing this was through the leadership of a coalition with diverse community and organizational membership.

Policies: Staff from each of the cases were asked about community, state, or national policies that would impact the development of linkages to deliver preventive health services. Respondents consistently reported that they had never thought about the role of policy in establishing or maintaining linkages or in the delivery of preventive health services. We suggest that this is an area that needs further examination.

Organizational Characteristics

Organizational Capacity

In all five case study cases, the capacity of an organization to address key community needs was important to establishing successful linkages and implementing interventions. Capacity refers to the ability of an organization to take action or meet organizational goals and objectives. It may include organizational infrastructure, support, and commitment to work with other organizations. Respondents identified three key characteristics related to the capacity of organizations to create linkages with partner organizations and implement health promotion interventions:

- leadership and management support,
- knowledge and skills of staff, and
- organizational policies and values.

Case Study Questions of Interest

- What motivated the partners to become and remain involved in these linkages?
- What needs were addressed through these linkages?
- What resources need to be in place to facilitate these linkages and their interventions?
- What other organizational factors facilitated or challenged the development and implementation of the interventions?

Leadership and management support: Respondents within each of the case study cases indicated that having the support of organizational management was critical to the success of their linkages and interventions. As an enabling factor across the cases, management support included the commitment of staff who could develop and oversee the organizational relationships and interventions; commitment of resources, often in-kind to support the intervention; and organizational commitment to addressing the health and wellness needs of the communities within which they operate. In two cases, evaluation data from previous efforts helped program staff to garner management support. For example, when the medical director of the Sunset Community Health Center saw data indicating that patients who worked with promotoras reduced their hemoglobin A1c, he became convinced that the clinic should also adopt and integrate the promotora model. As a result, he advocated for the promotora model and continued to work with Campesinos Sin Fronteras.

Knowledge and skills of staff: Ranging from an understanding of the clinical needs of patients, or how to implement support groups and health education programming, each organization brought with it a core set of knowledge and skills that facilitated their ability to implement the intervention and establish a successful linkage. Such knowledge and skills serve as an important enabling factor. Each organization also recognized that, although their organization could have provided some services, there existed resource gaps that could not be addressed without assistance from other partners. Creating a linkage allowed multiple organizations to use their strengths more effectively to deliver services and create opportunities and resources to meet needs that neither partner could fill alone.

Organizational policies and values: Representatives from all five case study cases reported that the organizations involved in these efforts had a strong organizational commitment to the communities they serve. In some ways, these policies and values serve as predisposing, enabling, and reinforcing factors at different times. One community partner reported, "We are always working with little or no money. [We] truly believe in the work that [the founder of the organization] did. [We] need community programs to service the need of the people who are invisible." Another community partner reported, "Without the [clinical partner's] support, this would never have happened. They leveraged the grant writing team, they were committed to serving the population and social responsibility." These values encouraged respondents to work through challenges, continue seeking funds, and look for additional

opportunities for collaboration. It is also important to note that timing plays an important role in whether an organization seeks to address a particular topic or issue. Organizational policies and foci may change over time, and this will impact if and how an organization becomes engaged in a particular issue and whether that support is sustained.

Interactional Characteristics

As with any partnership or relationship that involves more than one organization, how those organizations interact and relate to each other is of critical importance to how successful this relationship is and what it is able to accomplish. Three core characteristics were reported as having an influence on these linkages:

- history of collaboration between partner organizations,
- shared mission/vision/purpose between partner organizations, and
- communication between partner organizations.

History of collaboration between partner organizations: Serving as both a predisposing and enabling factor, many of the organizations and/or staff involved in the case study cases had a history of working together on previous efforts. Some of the organizations had formal partnerships in the past, but others had only become familiar with each other through a variety of other efforts, coalitions, and workgroups. Capitalizing on these previous relationships, they could build linkages and implement health promotion efforts. Existing linkages and relationships also enabled them to bring in new partners. In one example, Salud Para Todos, the clinical and community partners had worked collaboratively for more than a decade and had identified opportunities and funding both internally and externally to support their collaboration. With the Charlotte REACH 2010 initiative, the hospital system and local health department had shared staff and developed a relationship through that partnership.

Shared mission/vision/purpose between partner organizations: Many partners reported that their organization became engaged in these linkages because the goals of the effort were in line with their organizational mission, vision, and purpose, indicating that having shared mission, vision, and purpose serves as an important predisposing factor in our model. While each organization may be working toward these objectives independently, these linkages provided an opportunity for organizations to work collaboratively with other community partners who have a common purpose. One clinical partner reported, "Given the YMCA's broad presence and the similarity in our missions (nonprofit, kids, and families being the focus), it looked like they were the logical choice to be our partner in this initiative."

Communication between partner organizations: Respondents from each of the five programs reported that open and regular communication was critical and enabled the relationships to be developed and the interventions to be implemented. According to one

respondent, having a primary point of contact available to troubleshoot issues contributed to the ability of the partners to respond thoughtfully and in a timely manner to issues. One community partner reported, "We have to deal with communication and avoiding duplication of effort. [That is a] major challenge that [the] partnership faces. [Partnerships] need a key contact person to make sure that they will be communicating and addressing community challenges." Communicating frequently was also helpful with respondents from one case indicating that they communicate weekly at a minimum and another having bimonthly meetings and monthly reporting.

Provider Characteristics

Providers include both clinical and community partners who deliver health promotion services to patients and individuals in a community. They include, but are not limited to, physicians, nurses, physician assistants, dieticians, exercise leaders, and public health professionals.

Provider characteristics serve as key enabling factors within the proposed model. Staffing was perhaps the most important component of organizational capacity to establish and maintain successful linkages and interventions. Respondents from all of the cases indicated that having the right people involved was critical. When asked about what makes someone the "right" person, characteristics included individuals who

- represent and/or are familiar with the target population or culture being served;
- are passionate about the community and the issue being addressed;
- understand the clinical and the community perspectives and can "wear both hats" when making decisions;
- are credible to the community, the general public, and policymakers; and
- have key skills and knowledge related to health promotion and program implementation (e.g., grant writing).

In addition to the characteristics above, respondents from one case emphasized the importance of having staff who believe in and are willing to take action to promote good health behaviors as a mechanism for disease prevention. Since the traditional medical model tends to focus on disease treatment and not necessarily health promotion, it is of critical importance to engage staff—both clinical and community—who are willing to take the time to work with individuals and patients who may be at risk for chronic disease.

Intervention/Innovation Characteristics

The interventions implemented by each of the case study cases varied depending on a variety of characteristics, including their topic, target

Case Study Question of Interest

- What additional organizational factors were facilitators of the development or implementation of the intervention?

population, partners, and resources. However, some common themes were identified across some of the case study cases, including

- alignment with existing organizational and community priorities and needs, and
- cultural competency.

Alignment with existing organizational and community priorities and needs: For most of the cases, the topics addressed through the linkages were in line with organizational or public health priorities and thus were more easily adopted by partner organizations. In one case, the YMCA had recently adopted their Activate America initiative, which is one of the initiatives the YMCA has developed to address health promotion and disease prevention. This initiative was in line with the goals and objectives of the Strong Kids, Strong Teens program, and thus, when approached to become involved, the YMCA was a willing partner. "Activate America … also has an external focus, which is working with community partners. (Active America) has some outcomes regarding large and extensive change so we are perceived as a prevention organization, as well as embracing what the communities need now" (community partner). Another YMCA partner from a different case reported, "It [the program] has to connect with our mission. I have to say no to many things because it does not connect with our mission." Thus, it is beneficial to seek out partners who are also looking to address a particular issue or topic when developing an intervention and linkage. In both of these cases, the YMCA has clearly adopted the role as an organization that has a focus on health promotion and disease prevention.

In addition to aligning with organizational priorities related to health, some cases also appeared to address the organizational priorities to gain research funding in order to implement and evaluate evidence-based programs. The North Carolina Prevention Collaborative and the Strong Kids, Strong Teens program both appeared to align with the research priorities of their respective institutions.

Many linkages and interventions funded were in line with existing national public health priorities. Two cases—Charlotte REACH 2010 and Strong Kids, Strong Teens—were funded because they sought to affect health issues that were aligned with CDC priorities. In part because these local efforts addressed national priorities, they were able to successfully secure funding for program development and implementation.

Cultural competency: The interventions developed were all tailored to be culturally competent and address the unique needs of the target populations and groups. Stakeholders worked hard to ensure that intervention activities were culturally relevant and sensitive. In one case, this included hiring an African American dietician and exercise leader to ensure that the women were comfortable with the program staff leading the instructional sessions. Two other cases that involved lay health leaders and promotoras used this structure to ensure that they had individuals engaging with the community members who

were familiar with the community and understood the unique challenges and needs of the community members; this was important in part because many of the health care providers were not from the community or representative of the target population.

3.2.5 Outcomes

Case Study Question of Interest

- What did the linkages accomplish?
- What outcomes are being measured?
- What are the data sources?

All five of the case study cases conducted some form of evaluation to examine key outcomes of interest. At the time of the case study data collection, two cases were still ongoing but had some preliminary evaluation results (Strong Kids, Strong Teens and Salud Para Todos), and two ended within a year of the case study data collection and were still finishing analyses but were able to share some preliminary findings (North Carolina Prevention Collaborative and Sisters in Action). Only one case (Charlotte REACH 2010) had completed its evaluation and subsequent write-ups of results and findings.

A review of the evaluation information from each case indicates that most of the evaluations were designed to examine key short-term/process and intermediate outcome questions of interest. Process outcomes included participant satisfaction, attendance at program activities and training sessions, and enrollment of the target population in the intervention. Intermediate outcomes included changes in knowledge and behaviors related to improved diet, physical activity, and smoking. Evaluation designs consisted primarily of pre-post data collection from participants with no long-term follow-up or longitudinal data collection to assess long-term program outcomes. Data collection consisted primarily of patient surveys of health behaviors and knowledge. Some cases also included collection of biometrics (clinical outcomes), such as blood pressure, weight, blood sugar, and waist circumference. Other data collection methods utilized, although not by more than one case, included a community-level survey, focus groups, interviews, a patient survey, and chart audits of participating clinical practices.

In three of the five cases, evaluation activities were conducted by staff from one or more of the clinical or community partners. One case contracted with a university partner for evaluation, and one clinical partner engaged an evaluation partner within their health system to conduct the evaluation activities.

The outcomes of interest for the case study cases varied and were dependent on the intervention and linkage focus and topic. Evaluations in all five cases were focused on the intervention implementation and not necessarily on the linkage between the clinical and community partner or how the linkage facilitated or improved service delivery to patients. Similarly, few cases included assessment of any organizational outcomes; however, one case, Salud Para Todos, examined outreach and access to patients, screening for

cardiovascular disease risk factors by program staff, education provided by the program staff, and cultural competency of staff.

As mentioned above, because four of the five cases had not completed their evaluations, availability of final evaluation results was limited.

Preliminary behavioral outcomes reported by cases with some evaluation data—Charlotte REACH 2010; Strong Kids, Strong Teens; Sisters in Action; and Salud Para Todos—included increases in physical activity (duration and intensity) and fruit and vegetable consumption and a decrease in caloric intake. Clinical outcomes included a decrease in blood pressure, weight, and BMI. Organizational outcomes were not examined as frequently as individual-level changes and appeared to be more of an afterthought for most cases. Examples reported included changes in how the YMCA defined family for the purpose of providing a free "family" membership to those women enrolled in the Sisters in Action program. Respondents from the Salud Para Todos program also noted that they would be able to sustain promotoras in both the clinical and community partner organizations once Office of Minority Health funding ends.

Anecdotally, respondents within each of the case study cases indicated that they believe their linkages have been a successful way to provide preventive health services and that that the interventions have been a success in reaching the intended target population. While it is difficult to say whether these interventions have truly resulted in improved patient health outcomes, it is possible to conclude that in each of these case examples, the linkages resulted in the development and implementation of programs, services, and resources that were not available to individuals in these target communities prior to these efforts. Therefore, they were successful in improving delivery of preventive health services to individuals who otherwise would not have received any services or support.

3.2.6 Sustainability

Although sustainability is often challenging, it is generally a goal of most programs and interventions. Although one case (the North Carolina Prevention Collaborative) was designed as a 1-year pilot effort, sustaining programs and linkages appears to have been an objective of the other four case study cases. Two of these cases (Charlotte REACH 2010 and Sisters in Action) were unable to identify ongoing funding to continue to implement their interventions as originally designed and implemented. However, partners in the Charlotte REACH 2010 program were able to sustain small subcomponents of their effort (a farmers market and the ongoing presence of a certified diabetes educator at the community health center). Despite a waiting list of 250 persons, Spectrum Health and the YMCA of Grand Rapids were unable to identify funding for Sisters in Action and could not absorb the costs themselves.

Two other programs (Strong Kids, Strong Teens and the Salud Para Todos) have been sustained by their partner organizations. The Salud Para Todos program, which utilized promotoras in both the clinical and community partner organizations, has been sustained by additional external funding obtained by Campesinos Sin Fronteras. The Strong Kids, Strong Teens program has been sustained largely through fundraising efforts at the local YMCA level and through in-kind contributions of the YMCA and Seattle Children's Hospital Children's Obesity Action Team (COAT) members.

Although most of these efforts may not have been sustained in their original form and design, many of the cases were able to sustain subcomponents of their efforts or were able to be adapted in some way to obtain additional funding. For example, the YMCA and Spectrum Health System were able to obtain funding for a similar program for Latino women and are hopeful that they will eventually identify funding to reinitiate the Sisters in Action program. This adaption or "morphing" of programs from one into another appears to be an alternative for programs that cannot identify new external or internal funding.

Although the interventions may not have been sustained, interviewees' responses indicate that the linkages formed through these efforts have been significantly valuable to both clinical and community organizations alike and that those relationships will continue in the future as new opportunities for collaboration are examined and sought out. One representative from the Charlotte REACH 2010 project reported, "Some of the projects have to end but the benefits live on. The health care system in Charlotte is much more engaged with the community. Community and professional people are more skilled and capable in going and doing community work elsewhere. Not a sustainability plan that worked, but sometimes the view is too shallow. May not benefit that particular community but there will be benefit in other similar communities." Thus, while the interventions may not be sustained, the linkages and relationships between partners continue.

4. SUMMIT SUMMARY

As a third phase to the project, in May 2010, the Agency for Healthcare Research and Quality (AHRQ), with assistance from RTI International, hosted a summit that brought together representatives from other federal agencies, community-based organizations, academic institutions, and policy organizations to develop a national strategy for promoting linkages to increase the delivery of clinical preventive services. The summit built upon a 2009 summit at which AHRQ initially convened a similar group of stakeholders to understand and facilitate the development of linkages. In addition to AHRQ and RTI staff, 52 participants came from 38 different organizations, including 6 offices and centers within the Department of Health and Human Services, the Veterans Administration, 2 health care systems, 11 clinical professional organizations, 5 public health professional organizations, 2 hybrid organizations, 2 consumer organizations, 1 governmental public health agency, and 5 academic or research institutions (see Appendix E for the complete summit report).

The summit objectives were as follows:

1. Provide an ongoing forum for dialogue and learning for individual and organizational stakeholders with an interest in improving the delivery of preventive services through linkages between primary care and community organizations.

2. Present the results of an environmental scan and case studies of primary care and community linkages conducted during 2009–2010.

3. Engage stakeholders to envision a national strategy to support local efforts to develop primary care and community linkages.

4. Engage stakeholders to determine prioritized next steps for AHRQ; other federal agencies; and partners in the areas of dissemination, policy, and research as they relate to primary care and community linkages.

To accomplish these objectives, AHRQ and RTI designed a meeting process to focus and engage summit participants. The meeting began with presentations to specify the meeting's purposes, define key terms, and provide relevant background. Following the morning presentations, participants were involved in a series of facilitated small group discussions (termed World Café sessions) to identify the core components of a flexible national strategy to support efforts to develop primary care and community linkages. Four key areas related to linkages between clinical practices and community organizations were identified in advance of the meeting as being part of AHRQ's areas of expertise and purview:

- identifying research gaps and funding research,

- developing metrics to measure successful linkages,
- sharing promising models, and
- promoting policy change.

On Day 2, summit participants worked in small groups to identify specific strategies in the same four areas that AHRQ should consider pursuing as it works to support linkages between clinical practices and community organizations. These strategies (over 40 in all) were then posted on the conference room walls, and each participant was given 12 votes to allocate to strategies on each of two dimensions: importance and feasibility within a 12–24 month timeframe. The top strategies in each dimension were those that ranked in the top 20%. Table 4-1 displays the strategies the group ranked in the top quintiles for both importance and feasibility; the strategies ranked in the top quintile for importance but ranked lower in feasibility; and the strategies ranked in the top quintile for feasibility but ranked lower in importance.

Table 4-1. Prioritized Strategies to Support Local Efforts to Develop Linkages

Strategies identified as both highly important and feasible	• Convene a workgroup to develop metrics related to linkages between clinical practices and community organizations. • Create a joint taskforce with CDC on linking clinical practices and community organizations to improve clinical preventive services. • Identify how linkages contribute to better outcomes. • Promote research competencies within community-based programs to understand the outcomes of primary care and community linkages.
Strategies identified as highly important but less feasible	• Fund a demonstration project to address disparities via social determinants of health in communities. • Convene a joint meeting among Centers for Medicare and Medicaid Services, state governments, and employers to discuss reimbursement issues. • Develop an organizational policy at AHRQ that promotes collaboration with other federal agencies to promote linkages. • Consider new models for and broader engagement in research.
Strategies identified as highly feasible but less important	• Disseminate promising practices. • Reduce separation and promote greater integration between USPSTF and TFCPS. • Engage stakeholders to incorporate community provider information into developing health IT systems to support the delivery of preventive services. • Promote systems and tools to allow exchange of information between clinical and community partners.

4.1 Synopsis of Conclusions and Recommendations

The 2010 Summit on Linking Primary Care and Community Organizations for Prevention sponsored by AHRQ provided an ongoing forum for dialogue and learning for individual and organizational stakeholders with an interest in improving the delivery of clinical preventive services through linkages between primary care and community organizations.

The output of the summit was a set of recommendations for components of a flexible national strategy to facilitate linkages between clinical practices and community organizations. The components, or individual strategies, were developed in four specific areas: research, development of metrics, dissemination, and policy.

Of the 12 prioritized strategies, one was a dissemination strategy, one was related to metrics, three were research, and seven were policy focused. Nearly every approach called for some sort of collaboration with other federal agencies, within AHRQ, or with other nonfederal stakeholders; throughout the summit, discussion emphasized that AHRQ could not and should not "do this alone."

Not surprisingly, given the discussion on Day 1 of the dearth of evidence supporting the effectiveness of these linkages, only one dissemination strategy was prioritized as opposed to the four total in metrics and research. The participants expressed that more research is needed on the effectiveness of linkages before models or best practices can be widely disseminated.

Of the seven strategies that were initially developed in the policy group, one was a recommendation that AHRQ develop an organizational priority to partner with other federal agencies to promote linkages; two strategies addressed convening stakeholders to develop health IT to support linkages; and one strategy addressed convening stakeholders (notably, the Centers for Medicare and Medicaid Services) to discuss improvement of reimbursement related to linkages.

Although further input from the stakeholder group on the 12 strategies is expected, from the summit discussion it was possible to identify where there was particular synergy between AHRQ and the group among the prioritized strategies. The strategies that appeared to garner the most support were the strategy to develop a workgroup to determine metrics for future research, the strategy for AHRQ to fund research to study the effectiveness of linkages, and the two strategies promoting developing health IT to facilitate linkages at the local level. These strategies appear to address recurrent themes in participants' comments about the need for data and information flow between organizations in order for linkages to be successful and about the need for more research to establish the effectiveness of linkages.

A full report of the summit is provided in Appendix E.

5. DISCUSSION

Linkages between clinical providers and community or public health entities have an immense potential to affect unhealthy behaviors, such as tobacco use, unhealthy diet, and physical inactivity, which are the leading causes of preventable morbidity and mortality in the United States (McGinnis & Foege, 1993; Mokdad et al., 2004). Through models such as enhanced referral processes to community providers, interventions that aim to improve preventive health services delivered through linkages can enhance the delivery of screening and behavioral counseling and decrease patients' risk for chronic disease and premature death (USPSTF, 2002, 2003a, 2003b, 2003c). The present project combined a literature review and environmental scan, five in-depth case studies, and a summit to bring AHRQ a multidimensional understanding of the current status of clinical linkages to deliver clinical preventive services, the evidence to support them, the facilitators and barriers to their development and sustainability, and methods for studying them. In this section, we provide our primary findings, followed by a description of the limitations of the project. In conclusion, information learned in the course of the project is translated into specific recommendations for AHRQ and stakeholders to follow in facilitating the development and evaluation of linkage interventions.

5.1 Synthesis of Findings

5.1.1 Current Status of Linkages

The literature review, environmental scan, and case studies provide rich data to AHRQ on the current status of linkages between clinical practices and community organizations and the interventions implemented through these types of efforts. Although the inclusion/exclusion criteria limited linkages of interest to those focused on a limited set of health behaviors or conditions (nutrition, physical activity, obesity, and tobacco) and predominantly on a specific type of linkage (i.e., patients are screened by a primary care provider and then referred to a community partner or program), a number of examples were identified that span geographic settings, target populations, intervention settings, and provider or organizational types. It is assumed that this sample (n = 49) is only a very small proportion of the linkage interventions in existence, namely, the ones that are large enough and sufficiently well-funded to have an evaluation or report in the published literature or on a Web site.

The types of linkages identified through the literature review and environmental scan were sorted into categories of referral process from clinical partner to community partner, or vice versa; referral from clinical partner to community resource; provision of training and resources to improve medical provider practice; volunteering by clinicians at community partner programs; and other. Because of the nature of the inclusion/exclusion criteria, the majority of the interventions identified consisted of a referral process whereby community

partners provided a wide variety of free or inexpensive health promotion programs and services to address the needs identified by the provider. In the sample derived from the literature review and environmental scan, only the more advanced referral networks offer a mutual exchange of information related to patient involvement and progress so that clinical providers are kept abreast of services sought and obtained by their patients and any progress made toward health behavior change.

More than half of the linkages identified were part of a large, funded, and centrally coordinated public health effort. These included the Prescription for Health (n = 19) and Building Community Support initiatives (n = 5), both funded by RWJF, and HRSA's Women's and Children's Health Program Healthy Behaviors in Women Effort (n = 3). Many of these efforts were conducted as part of research efforts by university partners. Although these examples can be helpful in intervention testing, they are less effective in addressing questions about whether practices involved in these efforts can integrate and institutionalize these types of services into their routine program practices, because these linkages often end at the conclusion of the research. In addition, these types of linkages and interventions are likely less generalizable than non–research-based interventions, given that they often involve additional resources, funding, and oversight needed for successful implementation.

5.1.2 Evidence to Support Linkages

The evidence of effectiveness of linkages to improve delivery of clinical preventive services and their associated interventions remains limited. This report provides an overview of the evaluations conducted as part of the 49 programs identified through the literature review and environmental scan. A number of studies reported improvements in one or more intervention outcomes; however, only 18 of the 49 examples conducted evaluations that were rigorous enough to capture changes in intermediate or long-term health outcomes. Given this small number, a likely bias exists in the outcome information that is being reported, with only the linkages with positive outcomes reporting their results. In addition, a significant number of examples were conducted as part of research studies intended to evaluate particular intervention designs. Therefore, although some evidence of effectiveness of certain interventions is available, little evidence is provided that indicates that these linkages and the associated interventions are generalizable to other settings. Also evident is the lack of evaluation of organizational outcomes and evaluation of the linkage itself.

The case studies support the findings of the literature review and environmental scan in terms of documenting the variation in evaluation being undertaken and the paucity of findings. The interviews also revealed the varying levels of capacity to conduct evaluation among program staff. Anecdotally, respondents in each of the case study cases indicated that they believe their linkages have been a successful way to provide preventive health services and reach the intended target population. Although it is difficult to say whether these interventions have resulted in improved patient health outcomes, it is possible to

conclude that in each of these case examples, the linkages resulted in the development and implementation of programs, services, and resources that were not available to individuals in these target communities prior to these efforts.

5.1.3 Facilitators of Linkages

The case studies provide rich information on facilitators of the development and implementation of linkages. As described in detail in Section 3, diverse characteristics organized around the framework (depicted in Figure 1-1) were described as facilitators of the linkages by the site visit participants, and in many cases the absence of these characteristics was described as a barrier. Within the community context, funding and the policy priorities of funding organizations were the major facilitators of linkages. An understanding of community needs and how to meet those needs was also a strong facilitator. Within organizational characteristics, leadership support, specific knowledge and skills, and organizational mission or policies were all described as strong facilitators. Although not part of the original framework, interactional characteristics, such as history of collaboration, shared mission or purpose, and communication, emerged as facilitators of the linkages. Finally, provider characteristics and the characteristics of the intervention itself, such as fit with the community's or organization's needs, were important facilitators of the linkages. From a funder's perspective, understanding these facilitators can assist in identifying which applicants have the highest likelihood of intervention success. Also, many of these characteristics are mutable and can be targets for effort to increase the likelihood of linkage success.

5.1.4 Sustainability of Linkages and Associated Interventions

Sustainability of interventions implemented through linkages appears to be strongly tied to the original funding source. Of the 49 interventions identified through the literature review and environmental scan (limited to articles from 1999 to the present), 20 were found to still be in existence in 2010. Of the three case cases whose primary funding had ended, all had essentially ended their intervention as it was originally designed. In some instances, small parts of the intervention were sustained by partner organizations, and respondents also pointed to unmeasured benefits, such as increased capacity of organizations to partner in the future. These results highlight an important area of future research, which is how one linkage intervention can influence the development of the next. There appear to be organizations that have a mission and the capacity to work in partnership with other organizations in a sustained way, although the nature or content of the particular project may change as funding sources change. An understanding of the evolution of interventions in a larger context (rather than just a cross-sectional view, as this report provides) and an understanding of these high-capacity organizations may prove helpful to agencies such as AHRQ that wish to promote the development of such linkages.

5.1.5 How Best to Study Linkages

The literature review, environmental scan, and case studies provide information to AHRQ about how to move forward with further work to characterize and evaluate linkages and the interventions implemented through linkages. Although the search terminology and the search methods developed for this project may be useful in the future, to be repeated after more interventions are published, most interventions will not be identified in this way. The Steering Committee that guided the project strongly recommended that future work use snowball sampling and methods, such as a Web site for registration of programs to identify the smaller programs that are doing similar work but which fall outside of the usual methods to identify programs. The findings also support that evaluation capacity needs to be increased among the organizations implementing the interventions. Case studies appear to provide the richness of detail that is critical for characterizing the linkages and, in the future, testing specific hypotheses about which are the important facilitators of linkage effectiveness.

5.2 Limitations

Several limitations of this work are worth noting. The information in the literature review and environmental scan is based on a review of the published literature and a search of the Internet. The number of examples of linkages in the field likely far exceeds the number of examples that have been published in academic journals or on the Internet. For this reason, we characterize this work as a sample of linkage efforts that met our inclusion/exclusion criteria, rather than a census of all possible examples of linkages.

The selection criteria established to guide this effort resulted in a relatively narrow focus that limited the overall number of articles and excluded a large number of other linkage efforts that addressed health issues outside the priorities of interest, such as HIV, maternal and child health, and mental health. In addition, the narrow inclusion criteria required that at least two partners be involved in the implementation of an intervention and not just in planning activities or as a part of a collaborative. Finally, other models of linkages (e.g., health behavior specialists hired by a clinic) were not examined.

Our case study findings are limited by the small sample size. In addition, the cases were selected from the pool of interventions identified by the literature review and environmental scan; hence, the same limitations of the sample apply. Interviews were conducted only with organizational staff involved in the administration and oversight of the linkage and related intervention. No data were collected from individuals enrolled in the interventions; therefore, participants' perceptions of the linkages were not examined. The sample was also one of convenience, with cases selected based on certain criteria, including willingness and availability of staff to participate.

The limitations to the information gained from the summit relate to the brief duration of the meeting and participation by certain organization types. Given the relatively short timeframe of the meeting—only 2 days—participants did not have sufficient time to develop specificity for some of the strategies. Another shortcoming of the process was the absence of foundations and the small numbers of health care systems or payers of health care in attendance despite the fact that representatives of these groups were invited. These shortcomings highlight the need for future work and ongoing dialogue between AHRQ and stakeholders to advance AHRQ's portfolio in this area and to continue the engagement and efforts of stakeholders to contribute to the national strategy.

5.3 Recommendations to AHRQ

The literature review and environmental scan, case studies, and the summit provide AHRQ with a concrete set of recommendations for components of a flexible national strategy to facilitate linkages between clinical practices and community organizations. The components, or individual strategies, are presented in four specific areas all within AHRQ's domain: identifying research gaps and funding research, developing metrics to measure successful linkages, sharing promising models, and promoting policy change.

5.3.1 Identifying Research Gaps and Funding Research

The evidence base for linkages between clinical practices and community organizations is lacking: more rigorous evaluation of the various types of linkages is needed. AHRQ can work with other funders (e.g., RWJF, other foundations) to develop awareness of the need to fund the implementation and rigorous evaluations of such linkages. An important output of this project is a set of study questions (Appendix B) developed around the framework that can guide individual projects to develop and test appropriate hypotheses to better understand outcomes, facilitators, and barriers of these linkages. With the preliminary results from this project, AHRQ can also consider funding a comprehensive research initiative, inviting a small number of sites to develop and test interventions based on the framework. Critical areas for future research are

- evaluating the effectiveness of linkages,
- describing costs,
- describing facilitators and barriers specific to linkages for the delivery of preventive services and specific to the organization types (e.g., small practices, community health centers, health systems, local health departments), and
- understanding mechanisms to enhance sustainability.

Evaluating the effectiveness of linkage interventions will also include establishing the relative effectiveness of different models of service delivery (outside the clinical setting, as was the focus of this report, compared to linkages that serve to increase service delivery

within the clinical setting). As the evidence base around these linkages evolves, an additional area of future research to consider is a systematic review of interventions that include a linkage.

Summit participants, in particular, encouraged AHRQ to consider new models for and broader engagement in research. To accomplish this, AHRQ can support efforts to promote the research and evaluation competencies within community-based programs. A learning collaborative structured around linkages, with specific evaluation technical assistance provided by AHRQ or by other research sites, could be developed to promote research competencies in such organizations.

5.3.2 Developing Metrics to Measure Successful Linkages

A finding across the literature review, environmental scan, and case studies was the overall lack of evaluation and variation in types of outcomes measured. Also, programs did not evaluate the linkage or organizational outcomes. AHRQ can play a key role in facilitating the evaluation of linkages by defining outcomes measures and evaluation metrics for linkages, including organizational outcomes. Summit participants recommended that AHRQ convene a workgroup to develop metrics related to linkages between clinical practices and community organizations. AHRQ could take the lead to test the metrics through implementation by those funded by AHRQ or other partner agencies (e.g., HRSA, CDC).

5.3.3 Sharing Promising Models

Individual studies and reports are emerging of linkages that have successfully increased the delivery of clinical preventive services. AHRQ already plays a role in dissemination of these models through the inclusion of examples of successful interventions on the Innovations Exchange Web site. To advance their goal of dissemination, AHRQ can enhance the promotion of this Web site and ensure that the search function allows for easy identification of linkages of this type. In addition, AHRQ can consider the development of a separate Web site, similar to the National Cancer Institute's Research-tested Intervention Programs (RTIPS), so that interventions considered "research tested" and prioritized for dissemination are grouped together and easily reviewed. Other stakeholders (e.g., national prevention organizations) may be interested in hosting such a Web site in partnership with AHRQ.

A final mechanism for sharing promising models is convening key stakeholders from governmental agencies and nongovernmental organizations to inform them about the current status of these linkages, which will also serve to build momentum to achieve the additional strategies of enhancing research and promoting policy change.

5.3.4 Promoting Policy Change

Lack of reimbursement to clinical providers for the time spent developing and maintaining linkages with other organizations, for making referrals to organizations for preventive

services, and for the delivery of the services themselves has been well documented (Thompson, 2008; Woolf et al., 2006a) and was a priority issue for summit participants. To address this issue, AHRQ can convene a joint meeting among the Centers for Medicare and Medicaid Services, state governments, and employers to discuss reimbursement issues.

AHRQ can influence the development and implementation of linkages through its work in health IT. As suggested by summit participants, AHRQ can promote systems and tools to allow exchange of information between clinical and community partners and/or ensure that community provider resource information is incorporated or can be incorporated into health IT systems.

AHRQ can develop an organizational policy that promotes linkages internally and in collaboration with other agencies. AHRQ can consider adding a requirement to its funding announcements that organizations receiving funding are responsible for building a linkage between clinical and community partners for the purpose of implementing their intervention. AHRQ may also want to stipulate that a linkage already be in place (thereby rewarding organizations that use this type of a model), along with evidence of how these organizations have worked together in the past, and/or include a linkage sustainability plan so that at least the relationship will be maintained after the intervention funding has ended.

5.4 Recommendations to Other Stakeholders

AHRQ is committed to engaging other agencies and stakeholders in the effort to promote linkages between clinical practices and community organizations for prevention. Through sponsoring sequential summits, AHRQ has provided an ongoing forum for dialogue and learning for individual and organizational stakeholders with an interest in improving the delivery of clinical preventive services.

Given the broad representation at the May 2010 summit (52 participants from 38 different organizations, including federal agencies, health care systems, clinical professional organizations, public health professional organizations, hybrid organizations, consumer organizations, and academic institutions), it is expected that that the ensuing recommendations will have relevance not only for AHRQ, but also for other partners interested in working with AHRQ to achieve this national strategy. Many of the strategies detailed in Section 5.3 will benefit from stakeholder participation. Specifically, stakeholders may have an important role in the following strategies:

- identifying research gaps and funding research
  - by funding research efforts and/or applying for research grants through AHRQ, and
  - by partnering with AHRQ to offer a learning collaborative for researchers working in linkages;
- developing metrics to measure successful linkages

  - by participating on workgroups sponsored by AHRQ to determine metrics for measuring linkages;
- sharing promising models
  - by sharing promising models through their organizations' dissemination channels (e.g., Web sites, newsletters, conferences), and
  - by promoting the Innovations Exchange to organizations they work with and encouraging linkages they fund to publish their experience and present at conferences; and
- promoting policy change
  - (for federal agencies) by participating or leading collaborative meetings to discuss how changes to reimbursement can promote linkages,
  - (for other stakeholders) by advocating for changes in reimbursement,
  - by developing an organizational policy that promotes promotion of linkages internally and in collaboration with other agencies,
  - by adding a requirement to their funding announcements that organizations receiving funding be responsible for building a linkage between clinical and community partners for the purpose of implementing their intervention, and
  - by participating in future summits sponsored by AHRQ to continue to contribute to the development of a flexible national strategy to facilitate linkages.

AHRQ recognizes that the efforts of other stakeholders will be needed to make significant progress in understanding and facilitating linkages to improve the delivery of clinical practices and community organizations.

REFERENCES

Adelman, A. M., & Graybill, M. (2005). Integrating a health coach into primary care: reflections from the Penn state ambulatory research network. *Annals of Family Medicine*, *3*(Suppl 2), S33–S35.

ASTHO (2007). ASTHO Collaboration Snapshots, North Carolina: Innovations in Clinical Preventive Practice 2007. Retrieved August 5, 2009, from http://www.astho.org/page.aspx?aspxerrorpath=/pubs/PartnershipSnapshots_06.07.pdf.

Beitsch, L. M., Brooks, R. G., Glasser, J. H., & Coble, Y. D., Jr. (2005). The medicine and public health initiative ten years later. *American Journal of Preventive Medicine*, *29*(2), 149–153.

Beitsch, L. M., Grigg, M., Menachemi, N., & Brooks, R. G. (2006). Roles of local public health agencies within the state public health system. *Journal of Public Health Management and Practice, 12*(3), 232–241.

Bentz, C. J., Bayley, K. B., Bonin, K. E, Fleming, L., Hollis, J. F., & McAfee, T. (2006). The feasibility of connecting physician offices to a state-level tobacco quit line. *American Journal of Preventive Medicine*, *30*(1), 31–37.

Brinkerhoff, J. M. (2002). Assessing and improving partnership relationships and outcomes: A proposed framework. *Evaluation and Program Planning, 25*, 215–231.

Brownson, C. A., O'Toole, M. L., Shetty, G., Anwuri, V. V., & Fisher, E. B. (2007). Clinic-community partnerships: A foundation for providing community supports for diabetes care and self-management. *Diabetes Spectrum, 20*(4), 209-214.

Centers for Disease Control and Prevention (CDC), AARP, American Medical Association (CMA) (2009). *Promoting preventive services for adults 50–64: Community and clinical partnerships*. Atlanta, GA: National Association of Chronic Disease Directors.

Cifuentes, M., Fernald, D. H., Green, L. A., Niebauer, L. J., Crabtree, B. F., Stange, K. C., et al. (2005). Prescription for health: Changing primary care practice to foster healthy behaviors. *Annals of Family Medicine*, *3*(Suppl 2), S4–S11.

Ciliska, D., Ehrlich, A., & DeGusman, A. (2005). *Public health and primary care: Challenges and strategies for collaboration*. Report prepared on behalf of the PHRED Operations Committee.

Durlak, J. A., & DuPre, E. P. (2008). Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *American Journal of Community Psychology, 41*(3/4), 327–350.

Etz, R. S., Cohen, D. J., Woolf, S. H., Holtrop, J. S., Donahue, K. E., Isaacson, N. F., et al. (2008). Bridging primary care practices and communities to promote healthy behaviors. *American Journal of Preventive Medicine, 35*(5 Suppl), S390–S397.

Flocke, S. A., Gordon, L. E., & Pomiecko, G. L. (2006). Evaluation of a community health promotion resource for primary care practices. *American Journal of Preventive Medicine*, *30*(3), 243–251.

Gary, T. L., Batts-Turner, M., Bone, L. R., Yeh, H., Wang, N., Hill-Briggs, F., et al. (2004). A randomized controlled trial of the effects of nurse case manager and community health worker team interventions in urban African-Americans with type 2 diabetes. *Controlled Clinical Trials*, *25*(1), 53–66.

Gine-Garriga, M., Martin, C., Martin, C., Puig-Ribera, A., Anton, J. J., Guiu, A., et al. (2009). Referral from primary care to a physical activity programme: Establishing long-term adherence? A randomized controlled trial. Rationale and study design. *BMC Public Health*, *9*, 31.

Glasgow, R. E., Vogt, T. M., & Boles, S. M. (1999). Evaluating the public health impact of health promotion interventions: The RE-AIM framework. *American Journal of Public Health 89*(9), 1322–1327.

Green, L. W., & Kreuter, M. W. (1992). CDC's planned approach to community health as an application of PRECEDE and an inspiration for PROCEED. *Journal of Health Education, 23*(3), 140–147.

Himmelman, A. T. (2002). Collaboration for a change: Definitions, decision-making models, roles, and collaboration process guide. Retrieved June 1, 2009, from http://www.youthhealthlink.org/documents/Himmelman--Collaboration_for_a_Change%5B1%5D%5B1%5D.pdf.

Holden, D. J., Wordlaw-Stinson, L., Stone-Wiggins, B. P., Jones-Bell, M., & Soloe, C. S. (2007, April). *Integration within a public health context: A review of the literature.* Report prepared for the Centers for Disease Control and Prevention.

Hollis, J. F., Polen, M. R., Whitlock, R. P., Lichtenstein, E., Mullooly, J. P., Velicer, W. F., et al. (2005). Teen reach: outcomes from a randomized, controlled trial of a tobacco reduction program for teens seen in primary medical care. *Pediatrics*, *115*(4), 981–989.

Holtrop, J. S., Dosh, S. A., Torres, T., & Thum, Y. M. (2008). The community health educator referral liaison (CHERL): A primary care practice role for promoting healthy behaviors. *American Journal of Preventive Medicine*, *35*(5 Suppl), S365–S372.

HRSA (2007). Healthy Behaviors in Women abstract FY 2007—Bad River Band of Lake Superior Shippewa. Abstract detail. Available at: https://perfdata.hrsa.gov/mchb/DGISReports/Abstract/AbstractDetails.aspx?Source=TVIS&GrantNo=H59MC04439&FY=2007.

HRSA (2008a) Healthy Behaviors in Women FY 2008—Idzane' Fit & Fabulous program. Abstract detail—Healthy Behaviors in Women Program—White Mountain Apache Tribe Project Period Final 2008. Available at: https://perfdata.hrsa.gov/mchb/DGISReports/Abstract/AbstractDetails.aspx?cbAbstractSummary=H59MC07460_2008_NonResearch_6&tbKeyword=Idzane&rbKeyword=Exact.

HRSA (2008b). Healthy Behaviors in Women Abstract FY 2008. Sisters in Action https://perfdata.hrsa.gov/mchb/DGISReports/Abstract/AbstractDetails.aspx?Source=TVIS&GrantNo=H59MC07734&FY=2008.

Hung, D. Y., Rundall, T. G., Crabtree, B. F., Tallia, A. F., Cohen, D. J., & Halpin, H. A. (2006). Influence of primary care practice and provider attributes on preventive service delivery. *American Journal of Preventive Medicine*, *30*(5), 412–422.

Hung, D. Y., Rundall, T. G., Tallia, A. F., Cohen, D. J., Halpin, H. A., & Crabtree, B. F. (2007). Rethinking prevention in primary care: Applying the chronic care model to address health risk behaviors. *The Milbank Quarterly, 85*(1)*,* 69–91.

Huxham, C. (1996). *Collaboration and collaborative advantage* (pp. 1–18). London, England: Sage Publications, Ltd.

Ingram, M., Gallegos, G., & Elenes, J. (2005). Diabetes is a community issue: The critical elements of a successful outreach and education model on the U.S.-Mexico border. *Preventing Chronic Disease* [serial online]. Retrieved June 28, 2010, from http://www.cdc.gov/pcd/issues/2005/jan/04_0078.htm.

Jilcott, S. B., Keyserling, T. C., Samuel-Hodge, C. D., Rosamon, W., Garcia, B., Will, J. C., et al. (2006). Linking clinical care to community resources for cardiovascular disease prevention: The North Carolina Enhanced WISEWOMAN Project. *Journal of Women's Health*, *15*(5), 569–583.

Krist, A. H., Woolf, S. H., Frazier, C. O., Johnson, R. E., Rothemich, S. F., Wilson, D. B., et al. (2008). An electronic linkage system for health behavior counseling: Effect on delivery of the 5As. *American Journal of Preventive Medicine*, *35*(5 Suppl), S350–S358.

Lasker, R. D., & Committee on Medicine and Public Health. (1997). Medicine and public health: The power of collaboration. Retrieved December 8, 2008, from http://www.cacsh.org/pdf/MPH.pdf.

Lasker, R. D., Weiss, E. S., & Miller, R. (2001). Partnership synergy: A practical framework for studying and strengthening the collaborative advantage. *The Milbank Quarterly, 79*(2), 179–205.

Lavin, J. H., Avery, A., Whitehead, S.M., Rees, E. Parsons, J., Bagnall, T., et al. (2006). Feasibility and benefits of implementing a Slimming on Referral service in primary care using a commercial weight management partner. *Public Health*, 120(9), 872–881.

Martin-Misener, R., & Valaitis, R. (2009). A scoping literature review of collaboration between primary care and public health. McMaster University. Retrieved February 16, 2010, from http://fhs.mcmaster.ca/nursing/docs/MartinMisener-Valaitis-Review.pdf.

Massachusetts Tobacco Cessation and Prevention Program (2009). QuitWorks, Massachusetts Department of Public Health. Retrieved June 26, 2010, from http://makesmokinghistory.org/en_US/quitworks/.

McGinnis, J. M., & Foege, W. H. (1993). Actual causes of death in the United States. *Journal of the American Medical Association, 270*(18), 2207–2212.

McGlynn, E. A., Asch, S. M., Adams, J., Keesey, J., Hicks, J., DeCristofaro, A., et al. (2003). The quality of health care delivered to adults in the United States. *New England Journal of Medicine*, *348*(26), 2635–2645.

McLeroy, K. R., Bibeau, D., Steckler, A., & Glanz, K. (1988). An ecological perspective on health promotion programs. *Health Education Quarterly, 15*(4), 351–377.

McQuigg, M., Brown, J., Broom, J., Laws, R. A., Reckless, J. P. D., Noble, P. A., et al. (2005). Empowering primary care to tackle the obesity epidemic: The Counterweight Programme. *European Journal of Clinical Nutrition*, *59*(Suppl 1), S93–S100; discussion S101.

Mokdad, A. H., Marks, J. S., Stroup, D. F., & Gerberding, J. L. (2004). Actual causes of death in the United States, 2000. *Journal of the American Medical Association*, *291*(10), 1238–1245.

National Association of City and County Health Officials (NACCHO). (2006). *2005 national profile of local health departments*. Washington, DC: NACCHO. Retrieved December 18, 2008, from http://www.naccho.org/topics/infrastructure/profile/upload/NACCHO_report_final_000.pdf.

National Association of City and County Health Officials (NACCHO). (2009). *Building health communities: Lessons learned from CDC's Steps Program*. Washington, DC: NACCHO.

New York State Community Health Partnership and Milbank Memorial Fund (1999). Partners in Community Health: Working Together for a Healthy New York 1998: Cornell Cooperative Extension's Community Health Advocates Project Suffolk County. Retrieved June 26, 2010, from http://www.milbank.org/reports/nypartners/section3.html.

Plescia, M., & Groblewski, M. (2004). A community-oriented primary care demonstration project: refining interventions for cardiovascular disease and diabetes. *Annals of Family Medicine*, *2*(2), 103–109.

Pomietto, M., Docter, A. D., Van Borkulo, N., Alfonsi, L., Krieger, J., & Liu, L. L. (2009). Small steps to health: Building sustainable partnerships in pediatric obesity care. *Pediatrics*, *123*(Suppl 5), S308–S316.

Rachlis, M. (2006). Public health and primary health care collaboration. Retrieved February 16, 2010, from http://www.michaelrachlis.com/publications.php.

Roussos, S. T., & Fawcett, S. B. (2000). A review of collaborative partnerships as a strategy for improving community health. *Annual Review of Public Health, 21*, 369–402.

Rowan, M., Hogg, W., & Huston, P. (2007). Integrating public health and primary care. *Healthcare Policy/Politiques de Sante*, *3*, 1–22.

Sloane, P. D., Bates, J., Gadon, M., Irmiter, C., & Donahue, K. (2009). Effective clinical partnerships between primary care medical practices and public health agencies. Retrieved February 16, 2010, from http://www.ama-assn.org/ama1/pub/upload/mm/433/clinical-partnerships.pdf.

Taylor, A. H., & Fox, K. R. (2005). Effectiveness of a primary care exercise referral intervention for changing physical self-perceptions over 9 months. *Health Psychology*, *24*(1), 11–21.

Thompson, R. S. (2008). The prescription for health initiative: Some steps on the road to success: What will it take to complete the journey? *American Journal of Preventive Medicine, 35*(5 Suppl), S431–S433.

U.S. Preventive Services Task Force (USPSTF). (2002, August). Behavioral counseling in primary care to promote physical activity. Retrieved December 16, 2008, from http://www.ahrq.gov/clinic/uspstf/uspsphys.htm.

U.S. Preventive Services Task Force (USPSTF). (2003a, January). Behavioral counseling in primary care to promote a healthy diet. Retrieved December 16, 2008, from http://www.ahrq.gov/clinic/uspstf/ uspsdiet.htm.

U.S. Preventive Services Task Force (USPSTF). (2003b, November). Counseling to prevent tobacco use and tobacco-caused disease. Retrieved December 16, 2008, from http://www.ahrq.gov/clinic/ uspstf/uspstbac.htm.

U.S. Preventive Services Task Force (USPSTF). (2003c, December). Screening for obesity in adults. Retrieved December 16, 2008, from http://www.ahrq.gov/clinic/uspstf/uspsobes.htm.

Weinehall, L., Hellsten, G., Boman, K., & Hallmans, G. (2001). Prevention of cardiovascular disease in Sweden: The Norsjo community intervention programme—motives, methods and intervention components. *Scandinavian Journal of Public Health Supplement*, *56*, 13–20.

Woolf, S. H., Krist, A. H., & Rothemich, S. F. (2006a) Joining hands: Partnerships between physicians and the community in the delivery of preventive care. Center for American Progress. Retrieved December 15, 2008, from http://www.american progress.org/issues/2006/10/health_reports.html/pdf/health_woolf.pdf.

Woolf, S. H., Krist, A. H., Johnson, R. E., Wilson, D. B., Rothemich, S. F., Norman, G. J., et al. (2006b). A practice-sponsored Web site to help patients pursue healthy behaviors: An ACORN study. *Annals of Family Medicine*, *4*(2), 148–152.

Yarnall, K. S., Pollack, K. I., Østbye, T., Krause, K. M., & Michener, J. L. (2003). Primary care: Is there enough time for prevention? *American Journal of Public Health, 93*, 635–641.

Appendix A:
Steering Committee Members

Table A-1. Steering Committee Members

Organization Type	Steering Committee Members
Academia	Steven Woolf, MD, MPH Professor of Family Medicine, Epidemiology, and Community Health, Virginia Commonwealth University
	Roz Lasker, MD New York Academy of Medicine and Clinical Professor of Public Health, Division of Health Policy and Management at the Joseph L. Mailman School of Public Health of Columbia University
Public health organizations	Robert Pestronk, MPH Executive Director National Association of County and City Health Officials
Governmental medicine/public health	Stephanie Bailey, MD, MS Chief of Public Health Practice Centers for Disease Control and Prevention
	James W. Krieger, MD, MPH Clinical Professor of Medicine and Health Sciences, University of Washington, Seattle Chief, Chronic Disease and Injury Prevention Section Public Health—Seattle and King County
Clinical organizations	Tom Bodenheimer, MD University of California, San Francisco School of Medicine Department of Family and Community Medicine San Francisco General Hospital
Health care systems	George Isham, MD, MS Chief Health Officer and Plan Medical Director, Health Partners

Appendix B:
Study Questions

Table B-1. Study Questions and Their Relationships to the Conceptual Framework and Study Methodologies

Concept in the Framework	Study Questions	Addressed by Literature Review	Addressed by Case Studies
Building Blocks	What do linkages look like? What are the configurations in the field?	•	•
	Which organizations are involved?	•	•
	Can the described linkages be categorized according to "levels" of linkage?	•	•
	Why were the linkages established? Did the linkages have explicit/clearly stated goals?		•
	Were the linkages created as an ongoing effort, or were they limited in some way (e.g., time, topic, activity)?		•
Intervention/ Innovation	What types of interventions/innovations have been implemented? • What are the target populations? • Who is delivering the services? • Where do interventions take place? • How has information technology been incorporated into the interventions?	•	•
	What is the role of the provider? What is the role of the lead at the public health organization/community health organization?		•
	What is the role of other staff at the clinical practice? What is the role of other staff at the public health organization/community health organization?		•
Predisposing, Enabling, and Reinforcing Factors (provider characteristics)	What motivated the provider to get involved? To stay involved?		•

(continued)

Table B-1. Study Questions and Their Relationships to the Conceptual Framework and Study Methodologies (continued)

Concept in the Framework	Study Questions	Addressed by Literature Review	Addressed by Case Studies
Predisposing, Enabling, and Reinforcing Factors (public health/ community health organization characteristics)	What motivated the public health organization/community health organization to get involved? To stay involved?		•
Predisposing, Enabling, and Reinforcing Factors (organizational capacity)	What resources (e.g., staffing, materials, funding) need to be in place within the respective organizations? • What financial incentives, if any, were available to facilitate the linkage or for individual partners? • What types of resources were leveraged through the linkage?		•
	What additional organizational factors were facilitators of the development or implementation of the intervention?		•
	What were the barriers to the development or implementation of the intervention? How were these barriers overcome or addressed?		•
Predisposing, Enabling, and Reinforcing Factors (community context)	What community conditions supported the intervention?		•
	What community conditions challenged the intervention?		•
Outcomes	What did the linkages accomplish? How did they do it?	•	•
	Were the linkages successful in meeting their goals/objectives (either partially or wholly)? • Why? Why not? • How do the partners define success?		•
	What outcomes are being measured? What are the data sources?	•	•
	What were the lessons learned from the clinical practice side? From the public health organization/ community health organization side? From the linkage as a whole?		•

Appendix C:
Examples of Linkages/Interventions

Program Name	Location	Reference
Activating Resources for Community Health Promotion	Cuyahoga County, Ohio	Flocke, S. A., Gordon, L. E., & Pomiecko, G. L. (2006). Evaluation of a community health promotion resource for primary care practices. *American Journal of Preventive Medicine*, *30*(3), 243–251.
Americans in Motion	National	http://www.aafp.org/online/en/home/clinical/publichealth/aim/about.html
Building Community Support—Assessing Needs and Addressing Gaps	Waterville, Maine	Brownson, C. A., O'Toole, M. L., Shetty, G., Anwuri, V. V., & Fisher, E. B. (2007). Clinic-community partnerships: A foundation for providing community supports for diabetes care and self-management. *Diabetes Spectrum*, *20*(4), 209–214.
Building Community Support—Community Resource Guide	Sidney, Montana	Brownson, C. A., O'Toole, M. L., Shetty, G., Anwuri, V. V., & Fisher, E. B. (2007). Clinic-community partnerships: A foundation for providing community supports for diabetes care and self-management. *Diabetes Spectrum*, *20*(4), 209–214.
Building Community Support—Community self-management classes, volunteer health coaches, and social services	Texas City, Texas	Brownson, C. A., O'Toole, M. L., Shetty, G., Anwuri, V. V., & Fisher, E. B. (2007). Clinic-community partnerships: A foundation for providing community supports for diabetes care and self-management. *Diabetes Spectrum*, *20*(4), 209–214.
Building Community Support—Coordination and Collaboration	Homestead, Florida	Brownson, C. A., O'Toole, M. L., Shetty, G., Anwuri, V. V., & Fisher, E. B. (2007). Clinic-community partnerships: A foundation for providing community supports for diabetes care and self-management. *Diabetes Spectrum*, *20*(4), 209–214.
Building Community Support—Native American Physical Activity	Minneapolis, Minnesota	Brownson, C. A., O'Toole, M. L., Shetty, G., Anwuri, V. V., & Fisher, E. B. (2007). Clinic-community partnerships: A foundation for providing community supports for diabetes care and self-management. *Diabetes Spectrum*, *20*(4), 209–214.
Community Health Advocates Project	Suffolk County, New York	New York State Community Health Partnership and Milbank Memorial Fund (1999). *Partners in community health: Working together for a healthy New York 1998: Cornell Cooperative Extension's Community Health Advocates Project Suffolk County.* Available at: http://www.milbank.org/reports/nypartners/section3.html.
Exercise Referral Intervention	Hailsham, East Sussex, United Kingdom	Taylor, A. H., & Fox, K. R. (2005). Effectiveness of a primary care exercise referral intervention for changing physical self-perceptions over 9 months. *Health Psychology*, *24*(1), 11–21.

Program Name	Location	Reference
Honor Our Women	Odanah, Wisconsin	HRSA (2007). Healthy Behaviors in Women Abstract FY 2007—Bad River Band of Lake Superior Shippewa. Abstract detail. Available at: https://perfdata.hrsa.gov/mchb/DGISReports/Abstract/AbstractDetails.aspx?Source=TVIS&GrantNo=H59MC04439&FY=2007.
Idzane Fit and Fabulous Program	Whiteriver, Arizona	HRSA (2008). Healthy Behaviors in Women FY 2008—Idzane' Fit & Fabulous program abstract detail—Healthy Behaviors in Women Program—White Mountain Apache Tribe Project Period final 2008. Available at: https://perfdata.hrsa.gov/mchb/DGISReports/Abstract/AbstractDetails.aspx?cbAbstractSummary=H59MC07460_2008_NonResearch_6&tbKeyword=Idzane&rbKeyword=Exact.
Keep it Fit Chicago	Chicago, Illinois	Keep it Fit Chicago. (2009). Available at: http://www.keepitfitchicago.org/.
MONICA Project/Norsjo Intervention Programme	Norsjo, Vasterbotten, Sweden	Weinehall, L., Hellsten, G., Boman, K., Hallmans, G. (2001). Prevention of cardiovascular disease in Sweden: The Norsjo community intervention programme—motives, methods and intervention components. *Scandinavian Journal of Public Health Supplement*, *56*, 13–20.
Oregon Tobacco Quit Line	Oregon, Statewide	Bentz, C. J., Bayley, K. B., Bonin, K. E, Fleming, L., Hollis, J. F., & McAfee, T. (2006). The feasibility of connecting physician offices to a state-level tobacco quit line. *American Journal of Preventive Medicine*, *30*(1), 31–37.
Pediatric Obesity Quality Improvement Project	King County, Washington	Pomietto, M., Docter, A. D., Van Borkulo, N., Alfonsi, L., Krieger, J., & Liu, L. L. (2009). Small steps to health: building sustainable partnerships in pediatric obesity care. *Pediatrics*, *123*(Suppl 5), S308–S316.
Prescription for Health: North Carolina Prevention Collaborative—part of the North Carolina Chronic Disease Management Collaborative	Raleigh, North Carolina	ASTHO (2007). *ASTHO collaboration snapshots, North Carolina: Innovations in clinical preventive practice 2007.* Retrieved August 2009, from http://www.astho.org/page.aspx?aspxerrorpath=/pubs/PartnershipSnapshots_06.07.pdf.
Prescription for Health: Alabama Practice Based Research Network	Alabama	Cifuentes, M., Fernald, D. H., Green, L. A., Niebauer, L. J., Crabtree, B. F., Stange, K. C., et al. (2005). Prescription for health: Changing primary care practice to foster healthy behaviors. *Annals of Family Medicine*, *3*(Suppl 2), S4–S11.
Prescription for Health: CHERL (Community Health Educator Referral Liaison)	East, West, and Upper Peninsula, Michigan	Holtrop, J.S., et al. (2008). The community health educator referral liaison (CHERL): A primary care practice role for promoting healthy behaviors. *American Journal of Preventive Medicine*, *35*(Suppl 5), S365–S372.

Program Name	Location	Reference
Prescription for Health: Clinicians Enhancing Child Health	Not specified	Cifuentes, M., Fernald, D. H., Green, L. A., Niebauer, L. J., Crabtree, B. F., Stange, K. C., et al. (2005). Prescription for health: Changing primary care practice to foster healthy behaviors. *Annals of Family Medicine*, *3*(Suppl 2), S4–S11.
Prescription for Health: Colorado Research Network, High Plains Research Network (NPRN, CaReNet)	High Plains, Colorado	Cifuentes, M., Fernald, D. H., Green, L. A., Niebauer, L. J., Crabtree, B. F., Stange, K. C., et al. (2005). Prescription for health: Changing primary care practice to foster healthy behaviors. *Annals of Family Medicine*, *3*(Suppl 2), S4–S11.
Prescription for Health: Dartmouth-Northern New England	Not specified	Cifuentes, M., Fernald, D. H., Green, L. A., Niebauer, L. J., Crabtree, B. F., Stange, K. C., et al. (2005). Prescription for health: Changing primary care practice to foster healthy behaviors. *Annals of Family Medicine*, *3*(Suppl 2), S4–S11.
Prescription for Health: Great Lakes Research Into Practice Network (GRIN)	Not specified	Cifuentes, M., Fernald, D. H., Green, L. A., Niebauer, L. J., Crabtree, B. F., Stange, K. C., et al. (2005). Prescription for health: Changing primary care practice to foster healthy behaviors. *Annals of Family Medicine*, *3*(Suppl 2), S4–S11.
Prescription for Health: Health Coach	State College, Pennsylvania	Adelman, A.M., & Graybill, M. (2005). Integrating a health coach into primary care: Reflections from the Penn state ambulatory research network. *Annals of Family Medicine*, *3*(Suppl 2), S33–S35.
Prescription for Health: Kentucky Ambulatory Network (KAN)	Kentucky	Cifuentes, M., Fernald, D. H., Green, L. A., Niebauer, L. J., Crabtree, B. F., Stange, K. C., et al. (2005). Prescription for health: Changing primary care practice to foster healthy behaviors. *Annals of Family Medicine*, *3*(Suppl 2), S4–S11.
Prescription for Health: Midwest Nursing Centers Consortium Research Network (MNCCRN)	Not specified	Cifuentes, M., Fernald, D. H., Green, L. A., Niebauer, L. J., Crabtree, B. F., Stange, K. C., et al. (2005). Prescription for health: Changing primary care practice to foster healthy behaviors. *Annals of Family Medicine*, *3*(Suppl 2), S4–S11.
Prescription for Health: Minnesota Academy of Family Physicians Research Network (MAFPRN)	Minnesota	Cifuentes, M., Fernald, D. H., Green, L. A., Niebauer, L. J., Crabtree, B. F., Stange, K. C., et al. (2005). Prescription for health: Changing primary care practice to foster healthy behaviors. *Annals of Family Medicine*, *3*(Suppl 2), S4–S11.
Prescription for Health: New England Clinicians Forum	Not Specified	Cifuentes, M., Fernald, D. H., Green, L. A., Niebauer, L. J., Crabtree, B. F., Stange, K. C., et al. (2005). Prescription for health: Changing primary care practice to foster healthy behaviors. *Annals of Family Medicine*, *3*(Suppl 2), S4–S11.

Program Name	Location	Reference
Prescription for Health: Northwest Ohio Primary Care Research Network (NOPCRN)	Ohio	Cifuentes, M., Fernald, D. H., Green, L. A., Niebauer, L. J., Crabtree, B. F., Stange, K. C., et al. (2005). Prescription for health: Changing primary care practice to foster healthy behaviors. *Annals of Family Medicine*, *3*(Suppl 2), S4–S11.
Prescription for Health: Pediatric PitNet	Not specified	Cifuentes, M., Fernald, D. H., Green, L. A., Niebauer, L. J., Crabtree, B. F., Stange, K. C., et al. (2005). Prescription for health: Changing primary care practice to foster healthy behaviors. *Annals of Family Medicine*, *3*(Suppl 2), S4–S11.
Prescription for Health: Pen State Ambulatory Research Network (PSARN)	State College, Pennsylvania	Cifuentes, M., Fernald, D. H., Green, L. A., Niebauer, L. J., Crabtree, B. F., Stange, K. C., et al. (2005). Prescription for health: Changing primary care practice to foster healthy behaviors. *Annals of Family Medicine*, *3*(Suppl 2), S4–S11.
Prescription for Health: Research Association of Practices (RAP)	Not specified	Cifuentes, M., Fernald, D. H., Green, L. A., Niebauer, L. J., Crabtree, B. F., Stange, K. C., et al. (2005). Prescription for health: Changing primary care practice to foster healthy behaviors. *Annals of Family Medicine*, *3*(Suppl 2), S4–S11.
Prescription for Health: Virginia Ambulatory Care Outcomes Research Network	Virginia	Cifuentes, M., Fernald, D. H., Green, L. A., Niebauer, L. J., Crabtree, B. F., Stange, K. C., et al. (2005). Prescription for health: Changing primary care practice to foster healthy behaviors. *Annals of Family Medicine*, *3*(Suppl 2), S4–S11.
Prescription for Health: eLinKs (electronic system for health behavior counseling)	Tidewater region of Virginia	Krist, A. H., Woolf, S. H., Frazier, C. O., Johnson, R. E., Rothemich, S. F., Wilson, D. B., et al. (2008). An electronic linkage system for health behavior counseling effect on delivery of the 5A's. *American Journal of Preventive Medicine*, *35*(5 Suppl), S350–S358.
Prescription for Health: My Healthy Living (MHL) Web site	Northern Virginia	Woolf, S. H., Krist, A. H., Johnson, R. E., Wilson, D. B., Rothemich, S. F., Norman, G. J., et al. (2006b). A practice-sponsored Web site to help patients pursue healthy behaviors: an ACORN study. *Annals of Family Medicine*, *4*(2), 148–152.
Programme for the Promotion of Physical Activity (Phase 2)	Catalonia, Spain	Gine-Garriga, M., Martin, C., Martin, C., Puig-Ribera, A., Anton, J. J., Guiu, A., et al. (2009). Referral from primary care to a physical activity programme: Establishing long-term adherence? A randomized controlled trial. Rationale and study design. *BMC Public Health*, 9, 31.
Project Sugar 2	Baltimore, Maryland	Gary, T. L., Batts-Turner, M., Bone, L. R., Yeh, H., Wang, N., Hill-Briggs, F., et al. (2004). A randomized controlled trial of the effects of nurse case manager and community health worker team interventions in urban African-Americans with type 2 diabetes. *Controlled Clinical Trials*, *25*(1), 53–66.

Program Name	Location	Reference
Promotores (community health workers)	Yuma and Santa Cruz County, Arizona	Ingram, M., Gallegos, G., & Elenes, J. (2005). Diabetes is a community issue: The critical elements of a successful outreach and education model on the U.S.-Mexico border. *Prev Chronic Disease* [serial online]. Available at: http://www.cdc.gov/pcd/issues/2005/jan/04_0078.htm.
QuitWorks MA	Massachusetts, statewide	Massachusetts Tobacco Cessation and Prevention Program: QuitWorks, Massachusetts Department of Public Health (2009). Available at: http://makesmokinghistory.org/en_US/quitworks/.
REACH: Carolinas Healthcare System Primary Care Center and Health Promotion Pilot Interventions	Charlotte, North Carolina	Plescia, M., & Groblewski, M. (2004). A community-oriented primary care demonstration project: refining interventions for cardiovascular disease and diabetes. *Annals of Family Medicine*, *2*(2), 103–109.
REACH 2010: Latino Health Project	Lawrence, Massachusetts	REACHing Latinos in Lawrence, Massachusetts. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Available at: http://www.cdc.gov/REACH/pdf/MA_Greater_Lawrence.pdf.
REACH 2010: The Chicago Lawndale Health Promotion Program	Chicago, Illinois	REACHing Hispanic and African Americans in Chicago Illinois. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Available at: http://www.cdc.gov/reach/pdf/IL_Lawndale.pdf. Page last modified April 2, 2007.
Slimming on Referral in Primary Care	Southern Derbyshire, United Kingdom	Lavin, J. H., Avery, A., Whitehead, S.M., Rees, E. Parsons, J., Bagnall, T., et al. (2006). Feasibility and benefits of implementing a Slimming on Referral service in primary care using a commercial weight management partner. *Public Health*, 120(9), 872–881.
Strong Kids, Strong Teens Program, Steps to a Healthier King County	Seattle, Washington	NACCHO Building Healthy Communities: Lessons Learned from CDC's Steps Program, July 2009.
Sisters in Action	Grand Rapids, Michigan	HRSA (2008). Healthy Behaviors in Women Abstract FY 2008. Sisters in Action. Available at: https://perfdata.hrsa.gov/mchb/DGISReports/Abstract/AbstractDetails.aspx?Source=TVIS&GrantNo=H59MC07734&FY=2008.
Steps to a Healthier Washington	Chelan, Douglas and Okanogan Counties, Washington	NACCHO Building Healthy Communities: Lessons Learned from CDC's Steps Program, July 2009.
Teen Reach	Portland, Oregon and Vancouver, Washington	Hollis, J. F., Polen, M. R., Whitlock, R. P., Lichtenstein, E., Mullooly, J. P., Velicer, W. F., et al. (2005). Teen reach: Outcomes from a randomized, controlled trial of a tobacco reduction program for teens seen in primary medical care. *Pediatrics*, *115*(4), 981–989.

Program Name	Location	Reference
The Counterweight Programme	United Kingdom	McQuigg, M., Brown, J., Broom, J., Laws, R. A., Reckless, J. P. D., Noble, P. A., et al. (2005). Empowering primary care to tackle the obesity epidemic: The Counterweight Programme. *European Journal of Clinical Nutrition*, *59*(Suppl 1), S93–S100; discussion S101.
Wellness on Wheels	Wright County, Minnesota	NACCHO Wright County Public Health Wellness On Wheels Program (undated). Available at: http://www.naccho.org/topics/modelpractices/database/practice.cfm?PracticeID=156.
WISEWOMAN	North Carolina	Jilcott, S. B., Keyserling, T. C., Samuel-Hodge, C. D., Rosamon, W., Garcia, B., Will, J. C., et al. (2006). Linking clinical care to community resources for cardiovascular disease prevention: The North Carolina Enhanced WISEWOMAN Project. *Journal of Women's Health*, *15*(5), 569–583.

Appendix D:
Case Study Summaries

CHARLOTTE REACH 2010

Clinical Partner: Carolinas Healthcare System

Community Partner: Community coalition including the Mecklenburg County Health Department, the McCrorey branch of the YMCA of Greater Charlotte, and other organizational partners

Health Behaviors Addressed: Nutrition, physical activity and smoking

Target Population: African American adults

Location: Charlotte, North Carolina

Overview

The **Charlotte REACH 2010** project, part of the Centers for Disease Control and Prevention's (CDC's) Racial and Ethnic Approaches to Community Health (REACH) initiative, began in 1999 and ended in 2007. A coalition of the Carolinas Healthcare System (CHS), the Mecklenburg County Health Department, the McCrorey branch of the YMCA of Greater Charlotte, and other organizational partners provided oversight to the intervention. The goal of the project was to improve diabetes and cardiovascular health outcomes among residents of a predominantly African American, 14-neighborhood area in Charlotte, NC. The project was funded initially by a 1-year planning grant and subsequently by a 7-year implementation grant from CDC. Carolinas Healthcare System is a large, integrated healthcare delivery system with 32 hospitals and over 1,400 provider practices in North and South Carolina. Information about **Charlotte REACH 2010** was obtained from key informant interviews in March, 2010.

Program Planning and Development

The project developed out of community needs assessments conducted by the Carolinas Community Health Institute (CCHI), a part of CHS. The needs assessments were funded by a planning grant from the Health Resources and Services Administration. As part of this work, CHS staff conducted outreach and coalition-building in a 14-neighborhood area in Charlotte, NC, which was also the service area of one of the health system's satellite clinics: Carolinas Medical Center (CMC) Biddle Point. After the needs assessment was completed, meetings continued between CHS staff and community members and organizations, and together these stakeholders decided to apply for **REACH** funding.

In addition to CHS, the primary partner was the Mecklenberg County Health Department, a large county health department serving the most populous community in NC (over 900,000 people). Other organizations were recruited to be involved in the **Charlotte**

REACH 2010 Coalition, including the YMCA, a neighborhood association, a community-based substance abuse coalition, and CMC Biddle Point.

The pre-existing relationship between CHS and the Mecklenberg County Health Department helped to facilitate this intervention. The health department had contracted with CHS for several years to conduct some of the clinical services normally provided by a local health department. Also, CHS had recently built CMC Biddle Point and had a vested interest in understanding the target community and building their trust in the health system. Although working in community health was a novel activity for CHS when the **REACH** grant was announced, CHS became involved in **REACH** because they wanted to demonstrate that they could have a health impact in this particular community. The amount of funding provided by the **REACH** grant was also a powerful motivator for all partners to become involved in the project.

Intervention Description

The **Charlotte REACH** intervention sought to address the needs of individuals with risk factors for cardiovascular disease and diabetes through peer education, mentoring by community role models, and local health promotion projects. Major components of the intervention included the following:

- Lay health advisors (LHAs), based in the community, provided peer health education and made referrals to primary care and to community-based programs.
- Smoking cessation classes and support groups were held in community settings.
- Exercise classes were held at the YMCA for program participants; walking groups and exercise classes were led by the LHAs.
- A diabetes education nurse located at CMC Biddle Point provided diabetes education to clinic patients and referred clinic patients to lay health advisors and to community-based programs.
- A diabetes registry was implemented at CMC Biddle Point to track the health of patients with diabetes.
- A community farmer's market provided better access to local produce.

Patients were referred to community interventions by healthcare providers (at CMC Biddle point or other practices in the area), by the LHAs, or by the diabetes education nurse; or they self-enrolled after learning about interventions through other channels. Program staff made sure that other healthcare providers, in addition to CMC Biddle Point, had brochures and flyers about the interventions to enhance referrals to the community interventions. Although providers could refer patients to smoking cessation or exercise interventions, there was no formal mechanism whereby providers at CMC Biddle Point were notified of enrollment or the outcomes of their patients' participation.

CHS was the primary grantee and the administrative and fiscal home of the project. CHS provided funding to three of the partnering organizations for program implementation. Key staff included the principal investigators, the program coordinator, and staff conducting the intervention evaluation. CMC Biddle Point served as the main clinical site where the diabetes education nurse was located. This site also served as a primary location through which patient referrals for the community-based programs were made.

The Mecklenburg County Health Department employed several staff, such as a nutritionist and smoking cessation counselor who worked with the LHAs on interventions, although

some of these were actually CHS employees located in the health department. The local YMCA received **REACH** funding to conduct exercise classes and to train LHAs to become certified exercise instructors. Another community-based organization received funding to manage the LHA program.

Implementation Facilitators and Challenges

The primary challenge to implementation of the program was the historic low level of trust that community had in CHS at the outset of the project. Trust was slowly built over the course of the project through the formation of the coalition and successful problem solving when conflicts arose. The strong preexisting relationships among the community, the health department, and other members of the coalition helped CHS to eventually gain the trust of the community.

Numerous facilitators to the implementation to the program were described by **REACH** staff: the preexisting relationship between CHS and the health department; a strong neighborhood association that already had a deep understanding of the needs of the area and credibility among the residents; a local YMCA that had long-standing ties to community advocacy groups; and strong physician champions and senior leadership within CHS that supported the project. **REACH** staff also mentioned that timing was a factor in the health system's support for the initiative. At the time the project was being developed, CHS was expanding its interest into the surrounding communities through the needs assessment project; it had recently partnered with the health department to provide services; and it was building a neighborhood clinic, CMC Biddle Point. CHS was very interested in being successful in serving this community better, and saw this program as a mechanism to accomplish that.

Outcomes and Evaluation

The project conducted both process and outcome evaluation, using quantitative and qualitative methods. By comparing results from an annual community survey to results from the state's Behavioral Risk Factor Surveillance System, the project was able to demonstrate improvements in physical activity and nutrition among African Americans in the **REACH** community compared to other African Americans in North Carolina. The evaluators also tracked indicators such as mortality for heart disease and diabetes, and hospitalization rates and emergency room use for diagnoses related to heart disease and diabetes, but did not find significant changes during the time period of the project.

Role of Institutional, Organizational, or Governmental Policy

The most important local policy that **REACH** staff described as instrumental to program implementation was organizational policy to allow staff time to be involved in the project, for both the clinical and public health organizations. Significant in-kind contribution of staff time was necessary to implement the project. In addition, CHS had adopted a policy of measuring its success by looking at the health indicators of the community it served, which facilitated the organization's interest in the project. Notably, the policy priority of the CDC to fund and implement this large-scale initiative in health disparities was critical to the development and implementation of the **Charlotte REACH** intervention.

Program Sustainability and Development of Related Programs

The intervention and coalition as whole ended with the end of **REACH** funding in 2007. However, two pieces of the intervention have been maintained at some level: the community farmer's market, which is being run by the community, and the diabetes education nurse, who is supported by CMC Biddle Point.

For more information on **Charlotte REACH 2010**, contact LaTonya Chavis (former Project Director, Charlotte REACH 2010) at lkj9@cdc.gov or 770.488.6061.

References

Improving health behaviors in an African American community: the Charlotte Racial and Ethnic Approaches to Community Health project. Plescia M, Herrick H, Chavis L. *Am J Public Health*. 2008 Sep;98(9):1678-84. Epub 2008 Jul 16.

A lay health advisor program to promote community capacity and change among change agents. Plescia M, Groblewski M, Chavis L. *Health Promot Pract*. 2008 Oct;9(4):434-9. Epub 2006 Nov 14.

A qualitative assessment of Charlotte REACH: an ecological perspective for decreasing CVD and diabetes among African Americans. DeBate R, Plescia M, Joyner D, Spann L. *Ethn Dis*. 2004 Summer;14(3 Suppl 1):S77-82.

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North Carolina Prevention Collaborative

THE NORTH CAROLINA PREVENTION COLLABORATIVE

Clinical Partner: Community-based nonprofit primary care practices

Community Partner: University of North Carolina at Chapel Hill, North Carolina Department of Health and Human Services, Wake Area Health Education Center, and a variety of local community partner organizations

Health Behaviors Addressed: Varied across partners but included nutrition, physical activity, and smoking cessation

Target Population: Medically underserved adults

Location: Six sites across North Carolina

Overview

The **North Carolina Prevention Collaborative** was funded by the Kate B. Reynolds Charitable Trust as a pilot prevention and quality improvement initiative from 2007 through 2009. Partners in this initiative included the University of North Carolina at Chapel Hill (UNC), the North Carolina State Health Department's Chronic Disease and Injury Prevention Section, the Wake Area Health Education Center (AHEC), six nonprofit community health clinics, and partners with local organizations within their community. The purpose of the Collaborative was to work with local nonprofit health practices and clinics to assess and improve the quality of their prevention practices by providing assistance on how to develop linkages with state and local community partners and resources. Information about the **North Carolina Prevention Collaborative** was obtained during a site visit in March, 2010.

Program Planning and Development

The **North Carolina Prevention Collaborative** evolved from the Improving Performance In Practice (IPIP) initiative also being implemented in North Carolina. IPIP focuses on improving the quality of care for asthma and diabetes in primary care practices across the state and includes support to conduct structured chart audits to better understand patient needs and provider practices' ability to address those needs. Stakeholders in the IPIP initiative were recruited into a planning group to develop the North Carolina Prevention Collaborative pilot study. The Collaborative sought to examine whether the IPIP methods used for improving quality of care for asthma and diabetes could be tailored to address

issues in health promotion and disease prevention, such as physical activity, nutrition, obesity, and smoking cessation. As a key component of this work, the Collaborative encouraged and facilitated the development of linkages between the clinical practices and local community partners and state health department programs.

The intervention utilized the IPIP quality improvement (QI) methodology, which includes baseline and follow-up chart audits to help practices identify and assess patient needs within each clinical practice. The quality improvement aspect of this initiative served as an entry point to improve preventive service delivery in the practices, and helped to galvanize the practices to seek resources in their communities that could assist them in preventive service delivery.

The members of the **North Carolina Prevention Collaborative** planning committee developed a list of approximately 35 practices to recruit for this 1-year pilot intervention. Because of limited resources to support these practices, the geographic target area was limited to central and eastern North Carolina, making it easier for the Quality Improvement Consultant (QIC) to be actively involved in each practice's activities. Each practice was required to be a nonprofit adult or pediatric practice (e.g., community health center, free clinic) and to focus on medically underserved populations.

Intervention Description

With the help of a QIC, each of the six practices developed a QI team that consisted of key staff at the practice. These staff varied across each practice but included physicians, nurses, and support personnel. The QIC then conducted or worked with the QI team to conduct a thorough baseline chart audit to examine all of the measures of interest. These data were then reviewed and used to develop a practice "change package" that highlighted how the practice planned to address at least one or two priority measures. To track progress, the QIC and QI team then audited 20 records per month to gather additional data on the prevention measures being addressed. Each QI team also conducted an environmental scan of resources and potential partners within their community that could provide preventive services to patients, and identified other interventions that could be implemented within the practice.

As a part of their environmental scan, each practice was responsible for identifying community partners to assist them with delivery of prevention services. These partners varied based on the measures each practice choose to address, but included organizations such as the YMCA and a local senior center that offered exercise classes. The QIC worked with each practice QI team to help identify these partners and build these relationships.

The Chronic Disease and Injury Prevention Section of the NC Department of Health and Human Services served as a critical community partner that provided information to clinical practices on state and local programs and resources that are available in local communities. As a part of this process the state health department developed a resource manual, which includes a listing of various state-sponsored programs that are offered. A primary point of contact at the state health department was identified and this individual supported each practice by responding to questions and requests and by linking practices with other state and local program staff who could address practice needs.

Throughout the course of the pilot project, quarterly dinner meetings were held with all of the partners and practices. These dinners served as a venue for sharing information on the resources that were available in the community and discussing the experiences and needs of the participating practices.

Key staff within the **NC Prevention Collaborative** include the project director, from the University of North Carolina. This individual served as the bridge between the IPIP Program and the **Prevention Collaborative**. She was responsible for obtaining and overseeing the funding from the Kate B. Reynolds Charitable Trust, facilitation of the quarterly stakeholder meetings and for collection and analysis of all evaluation data. The QI Coordinator was a staff member at the Wake Area Health Education Center (AHEC). In this role, she supported all QI activities at each of the clinical practices and served as a resource for practices as they sought out community partners.

Implementation Facilitators and Challenges

The QIC was recognized as being one of the key factors to the success of this collaborative. The role of QIC involved coaching and guiding the participating practices on how to examine and utilize their own data to improve health promotion service delivery. The QIC also worked closely with practices to identify resources within each community and to understand where service gaps existed. She served as the quality improvement expert and guided practices through the process of conducting audits and analyzing patient data.

Each practice received a small stipend to help offset some of the costs of the QI process. The Collaborative was also able to offer providers who worked through a structured QI process up to 20 hours of Continuing Medical Education (CME) credit, and their involvement could be used for Maintenance of Certification, Part 4. CME credits were also offered to practice team members (providers and nurses) for attendance at the quarterly dinners.

Despite the modest stipend and CME credits, the primary challenge of this intervention was recruitment of practices. The Collaborative staff found that many practices approached for participation reported that they were simply too busy to engage in this type of effort and that they regularly receive invitations for different QI activities. Practices voiced concerns about the burden that would be incurred during the initial chart audit and through the monthly follow-up abstractions. They also voiced concerns about the financial and staffing resources that would be required to conduct the community resource activities.

Outcomes and Evaluation

The **North Carolina Prevention Collaborative** is in the process of completing the evaluation of this 1-year pilot program, and no data were available at the time of the case study. The Collaborative's evaluation methods included examination of each practices baseline data collected from all patients, the monthly abstraction of 20 records to track progress on key measures of interest, and a final post-intervention audit of all patient records. The outcomes related to primary prevention include smoking and blood pressure (for adults), and smoking and body mass index (for children). Additional measures were also collected for other focus areas.

Role of Institutional, Organizational, or Governmental Policy

Stakeholders indicated that in order to get clinicians and community stakeholders engaged in collaborative efforts, public health and community organizations need to have policies that include partnership development as a part of employee job descriptions.

Stakeholders indicated that unless this type of work is required by an individual's position, it is easily overlooked.

Program Sustainability and Development of Related Programs

This project was presented to the participants as a project that would continue for only 1 year. Since the project ended in 2009, the QIC has followed up with each of the practices to find out what additional support is needed. Only a few of the practices have maintained regular communication to request additional resources and assistance.

For more information on the **North Carolina Prevention Collaborative**, contact Katrina Donahue, MD, at Katrina_Donahue@med.unc.edu.

Reference

Newton, WP. Lefebvre, A. Donahue, KE. Bacon, T. Dobson, A. Infrastructure for Large-Scale Quality Improvement Projects: Early Lessons From North Carolina Improving Performance in Practice. *Journal of Continuing Education in the Health Professions*, 30(2):106–113, 2010.

Seattle Children's
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YMCA
OF GREATER SEATTLE

STRONG KIDS STRONG TEENS

Clinical Partner: Seattle Children's Hospital

Community Partner: YMCA of Greater Seattle, YMCA of Snohomish County, YMCA of Pierce and Kitsap Counties

Health Behaviors Addressed: Nutrition and physical activity

Target Population: Overweight and obese children and adolescents

Location: Seattle, Washington

Overview

Strong Kids Strong Teens is a healthy lifestyle intervention in the Greater Seattle area that began in 2003 as a result of a collaboration between Seattle Children's Hospital and the YMCA of Greater Seattle. The program seeks to teach and reinforce healthy behaviors related to nutrition and physical activity in obese children and adolescents and their families. Information about the **Strong Kids Strong Teens** intervention was obtained during a site visit in April, 2010.

Program Planning and Development

Strong Kids Strong Teens was developed in late 2002 and early 2003 when the Children's Obesity Action Team (COAT) at Seattle Children's Hospital began planning for a community healthy choices program to address overweight and obesity. Using local grant funds, COAT conducted focus groups with local families and providers to determine community needs. Around the same time, the national YMCA organization was promoting its Activate America initiative, in which local YMCAs were striving to position themselves to provide services to support community members who have various challenges preventing them from being active and eating healthfully.

When COAT began planning the intervention, a team member who was a former YMCA exercise instructor proposed that the YMCA would be an ideal community partner to help deliver a program like **Strong Kids Strong Teens**. Members of COAT initiated discussions with leadership at the YMCA of Greater Seattle and, given the common goals of both organizations, they quickly determined to work together to develop a program. A leadership planning committee was formed with representation from both organizations. In 2003, after the needs assessment focus groups within the community, the COAT team at Seattle Children's Hospital applied for and received funding from the Seattle-King County Health Department's Steps to a HealthierUS program to implement the **Strong Kids Strong Teens** intervention.

Intervention Description

The **Strong Kids Strong Teens** program is a referral-based intervention for the families of children, aged 8 to 14, who are in the 85th percentile or above in body mass index (BMI) for age. Referrals are made by primary care providers in Seattle Children's Hospital's primary care clinic and other primary care providers who know about the program through marketing efforts conducted by Seattle Children's Hospital and YMCA staff. Children and their families also may learn about the program themselves and join the program by obtaining a referral from their primary care provider, who need not be a part of Seattle Children's Hospital. To enroll, potential participants must be English-speaking and indicate on a questionnaire that they are sufficiently ready to make health behavior changes.

Program coaches lead a group of 5-10 participating children and their families through a 12-week curriculum focused on healthy choices regarding nutrition, physical activity, body image and self-esteem, followed by a 6-week maintenance phase. The 90-minute evening classes meet twice per week at YMCA branches throughout the Greater Seattle area and in Snohomish and Pierce Counties. Program coaches, including nutritionists and physical activity specialists, are trained in motivational interviewing to foster behavior change. During all sessions, children and parents receive separate coaching before coming together for family coaching.

Program delivery is provided by at least two full-time or part-time staff at each YMCA branch. In the last year, recruitment and marketing efforts directed to primary care providers, formerly conducted by Seattle Children's Hospital staff, have been shifted to individual YMCA branches. Local YMCA staff are also responsible for tracking program participants and providing basic data for evaluation to the staff at Seattle Children's Hospital.

The **Strong Kids Strong Teens** program is overseen by a core leadership team of approximately 10 individuals from the YMCA of Greater Seattle and Seattle Children's Hospital. Staff from Seattle Children's Hospital include registered dietitians, registered nurses, and pediatricians. Staff from the YMCA of Greater Seattle include the Senior Director of Health and Wellbeing and a newly created position, the Chronic Disease Director. These individuals on the leadership team are primarily responsible for curriculum development. In addition, the YMCA Chronic Disease Director serves as a liaison between the leadership team and the programming directors at individual YMCA branches. The leadership team participates in a weekly conference call.

The initial 5-year grant from the Seattle-King County Health Department Steps to a HealthierUS program funded the **Strong Kids Strong Teens** curriculum in five pilot YMCA branches throughout the Seattle area. Funding was directed through Seattle Children's Hospital to the YMCA. Funding paid for a portion of salaries for leadership team members, participant fees, and salaries for the coaches who delivered the intervention. Over time, the program expanded to additional YMCA branches within the Greater Seattle system, as well as YMCAs in Snohomish and Pierce Counties.

Implementation Facilitators and Challenges

The major challenge for program implementation has been enrollment and attendance. At times, enrollment has been sufficiently low to prompt postponing a planned series of classes. This enrollment challenge has been surprising, given the fact that focus

groups with providers prior to development of the intervention documented no other community-based health behavior program available for overweight or obese children and adolescents. As described below, recent focus groups with families, providers, and YMCA staff have suggested programmatic changes to address this challenge. An additional implementation challenge is described by YMCA staff, who are responsible for recruitment, marketing, and tracking program participants. These responsibilities have been viewed as a challenge because these activities go beyond their usual program roles.

The key facilitators of the program, as described by members of the leadership team, have been each organization's commitment to the issue of obesity and the organizations' overlapping missions. Both organizations have a stake of ownership in the program, which was fostered by having both key players involved in program development from the beginning. The YMCA brings its expertise in fundraising and delivery of programs within the community, and members of the COAT team at Seattle Children's Hospital bring their clinical expertise in developing an evidence-based curriculum for the program.

Outcomes and Evaluation

As of April 2010, the **Strong Kids Strong Teens** program has conducted approximately 40 series of classes in the Greater Seattle area. Analyses of enrollment and attendance data have shown that a large share of the youth participants were in the 95th percentile for BMI, and greater than 75% of participants came from minority families. These data indicate success in reaching the program's target audience. Attendance data, however, have been low, with retention rates averaging between 50% and 60%. In addition, a pre-post evaluation documented some positive behavior changes among participants and their families; for example, the pre-post evaluation showed a 35% increase in the number of days per week that participants reported vigorous physical exercise. Until recently, because of its focus on healthy choices as opposed to weight loss, the program had not measured body weight or BMI at completion of the intervention, but, when available, these data have been collected from referring physicians.

In 2008, a member of the COAT team obtained a National Institutes of Health (NIH) grant to conduct a more formal three-phase evaluation and enhancement of the **Strong Kids Strong Teens** program. Phase 1 involved qualitative data collection with participants and referring providers to gain a full understanding of the program, its strengths, and areas for improvement. Focus groups and interviews were also conducted with YMCA staff. Initial findings indicated that participating families believe in the program and want it to continue; however, families have indicated that the program's time commitment can be burdensome, and providers and YMCA staff have indicated that improvements are needed for the marketing and referral process and the process for generating feedback loops to providers.

Phase 2 is ongoing and has involved program enhancements and modifications, including additional training for local YMCA staff, enhanced marketing efforts, and adjustments to the timing of the class series to enhance accessibility to the program. Program leadership is currently considering offering sessions once per week instead of twice per week, which staff hope will increase enrollment and retention. Phase 3 will involve collecting extensive clinical and behavioral evaluation data from participants and families, as well as from a comparison group of children in the Seattle area not participating in **Strong Kids Strong Teens**.

Role of Institutional, Organizational, or Governmental Policy

Members of the **Strong Kids Strong Teens** leadership team cited the new national focus on childhood obesity—particularly First Lady Michelle Obama's awareness-raising efforts—as being an important policy element helping to sustain the program since the expiration of Steps to a HealthierUS funding. Since the beginning of the program, the Activate America initiative at the YMCA of the United States has been an enabling policy factor in that it has prioritized provision of programs beyond the "swim and gym" model that typically targets individuals who are already self-motivated. Notably, the policy priority of the CDC to fund and implement this large-scale community based health improvement initiative was critical to the development and implementation of the **Strong Kids Strong Teens** intervention.

Program Sustainability and Development of Related Programs

Despite the ending of Steps to a HealthierUS funding in 2008, the Strong Kids Strong Teen program has continued and is being offered in a growing number of YMCA branches and communities in Western Washington. The program has been sustained largely as a result of fundraising efforts at the individual YMCA branches and through the in-kind contributions of the YMCA and Seattle Children's Hospital COAT members committed to the effort.

Due to the low rates of enrollment in the program, there has been increasing pressure from local YMCA steering groups to discontinue or reduce involvement in the **Strong Kids Strong Teens** program at individual branches, especially given the present economy. To adjust to changes in budget allocations and to save on program operating costs, some branches have reduced the number of program coaches from three to two.

For more information on **Strong Kids Strong Teens**, contact Lindsey Gregerson, Chronic Disease Director for YMCA of Greater Seattle (lgregerson@seattleymca.org, 206.344.3181) or visit http://obesity.seattlechildrens.org.

SPECTRUM HEALTH

SISTERS IN ACTION

Clinical Partner: Spectrum Health

Community Partner: YMCA of Greater Grand Rapids

Health Behaviors Addressed: Nutrition and physical activity

Target Population: African American women

Location: Grand Rapids, Michigan

Overview

The **Sisters in Action (SIA)** program represents a collaboration between the YMCA of Greater Grand Rapids and programs of Spectrum Health. Within Spectrum Health, the HeartReach program (a program housed in Spectrum Health's cardiology until its integration into Healthier Communities in June of 2008), Healthier Communities (a public health division within the system) and the Spectrum Health Foundation (the philanthropic unit associated with the system) contributed to the **SIA** program. The intervention was implemented between 2006 and 2009 with the goal of improving the health of African American women through nutrition education and physical activity training. Information about **Sisters In Action** was obtained during a site visit in March, 2010.

Program Planning and Development

In 2005–2006, the Grand Rapids YMCA, in collaboration with Healthier Communities, conducted a community body mass index (BMI) study. The study found that many African American women in the Greater Grand Rapids area had BMIs greater than 30, which raised concerns about the rates of overweight and obesity in this community. At the same time, the HeartReach program became interested in combating obesity and reducing risk for heart disease among African American women. HeartReach Program staff contacted Healthier Communities and the YMCA to gauge their interest in collaborating on a project for African American women. As a result, representatives from Healthier Communities, HeartReach, and the YMCA met and discussed how they might address this public health issue in their community. From this meeting, the **SIA** program emerged.

To identify funding to implement **SIA**, HeartReach staff worked with Spectrum Health Foundation grant writers to prepare a proposal for a Health Resources and Services Administration (HRSA) funding opportunity. In 2006, **SIA** received 3 years of intervention funding through the HRSA Healthy Behaviors in Women program.

Intervention Description

To recruit participants, HeartReach leveraged their relationship with a consortium of African American churches and advertised the program through a local African American paper and radio station. They held an informational breakfast at an African American church, which was attended by over 300 women. Ultimately, the advertising, breakfast, and word of mouth led to a waiting list of over 250 women interesting in participating in **SIA** during the 3 years of the intervention.

The **SIA** intervention consisted of health examinations for African American women, combined with health education and physical activity training. Prior to beginning the intervention, potential participants underwent a physical examination consisting of biometric screening and risk factor identification conducted by HeartReach clinical staff and Polar Tri Fit® assessments. Screenings were initially held at churches and the YMCA and later at Healthier Communities. HeartReach clinical staff tested interested women for diabetes, hypertension, cholesterol, height, weight, and waist circumference. Polar Tri Fit® testing by the YMCA examined multiple risk factors as well as strength, flexibility, and body composition. Physicians were required to clear potential participants for physical activity prior to their enrollment. Women were asked to make a commitment to go to the YMCA three times per week. If they could not, they were not invited to participate in the program.

After the women completed the initial screening assessments, HeartReach and the YMCA invited 50 women at a time to enroll in the intervention. All women had a BMI between 25 and 55. HeartReach arranged for participants' transportation to the YMCA from local church parking lots and buses provided by the YMCA. The YMCA provided each woman and the members of her family with a membership to the YMCA for the duration of the 12-week intervention. The YMCA provided an orientation session to introduce the women to the center; thereafter, **SIA** participants came to the YMCA twice a week for an hour-long health education class and an hour-long physical activity session, for a total of 4 hours per week. These classes were led by a multidisciplinary team. Additionally six 2-hour interactive nutritional classes were led by an African American registered dietitian, which included topics such as nutrition, portion control, food labeling, stress management, and healthy cooking. For the physical activity sessions, a certified wellness expert, who was also African American, led women through a variety of exercises (e.g., dancing, strength training, walking, yoga). In addition to their twice weekly group sessions, women were required to exercise at the YMCA on their own at least one additional time each week.

At the completion of the 12 weeks, the women received another, less intensive, physical exam to assess changes in blood pressure, BMI, cholesterol, strength, and flexibility. HeartReach staff tracked clinical measures in an Access database. The women were then invited to continue with a 12-week maintenance phase that included participation in three weekly 1-hour exercise sessions and continued free membership at the YMCA. Participants who attended 70% or more of their education and exercise sessions in both the program and maintenance phases were then eligible for another free 6-month YMCA membership.

Each partner maintained a program coordinator who was responsible for the activities of their organization partner and whom communicated regularly with the other during recruitment and implementation of the intervention. HeartReach staff conducted the physical exams; they also managed the grant and tracked the clinical data. The YMCA committed the use of their staff, transportation, exercise and child care facilities for program implementation. YMCA staff tracked attendance at both the classes and activities at the YMCA outside of the classes, however this information was not reported back to participant's primary care providers.

Implementation Facilitators and Challenges

Both HeartReach and the YMCA identified the presence of a coordinator at each organization as a key facilitators to the success of their partnership and the intervention. The coordinators served as bridges between the organizations, communicating program and participant concerns and working together to resolve problems as they arose. For example, when the clinical assessments were held onsite at the YMCA, YMCA staff realized that they did not have sufficient space. The coordinators from both partners recognized this difficulty and moved the physical examination to a Spectrum Health site. In addition, Healthier Communities and YMCA staff reported that the networks created by participants were of critical importance during the intervention.

The primary implementation challenge involved making the YMCA's processes and procedures culturally appropriate for this community. For example, during the 12-week program, women and their families received a free membership to the YMCA. YMCA intake forms defined "family" as wife, husband, and dependent children; however, family was found to be defined more broadly in this community, often including grandparents, nieces and nephews, and grandchildren. The YMCA staff revised the intake form to accommodate these additional family members and defined family as two adults and all of the dependent children living in the same household. This was important because the YMCA provided full memberships, with access to all YMCA services, for the participants and their families. The YMCA also made sure that both daycare and youth programs on health and wellness were available for those accompanying the **SIA** participants during their weekly sessions.

Outcomes and Evaluation

Healthier Communities and YMCA staff reported that the program was a resounding success and they were pleased with their work. A total of 311 women participated in **SIA** over 3 years. 252 completed all components of the program (matched results). 82% completing the initial 12-week intervention and more than 67% of those women completing the follow-up maintenance phase.

As mentioned above, Healthier Communities conducted pre- and post-intervention clinical assessments and collected data on participant satisfaction and self-efficacy. Clinical outcomes consisted of changes in blood pressure, weight, and BMI. Most participants showed improvements in each of these domains. Improvements were also found in participants' diet (e.g., fruit and vegetable consumption, decreased caloric intake) and participation in weekly exercise. Participants reported being very satisfied with the intervention, and this contributed to interest throughout the community, resulting in an ongoing waiting list of more than 250 women who are eager to enroll in **SIA**.

Role of Institutional, Organizational, or Governmental Policy

Healthier Communities was created by Spectrum Health administrative leaders with the goal of coordinating with local organizations in the Grand Rapids area to improve the health and wellbeing of the communities they serve. This includes, but is not limited to, providing small grant opportunities, collaborating on research projects and co-sponsoring health events. The concept for Healthier Communities developed out of the 1997 merger between two local hospitals, Blodgett and Butterworth Hospitals. When these hospitals merged to form Spectrum Health the judge overseeing this merger mandated that the

newly formed health system invest $6 million annually into the greater Grand Rapids (underserved, at risk) community. Healthier Communities has been supporting health and wellness activities in the Grand Rapids area ever since.

Program Sustainability and Development of Related Programs

At the end of the HRSA funding in 2009, Healthier Communities and the YMCA could not sustain **SIA**. Healthier Communities staff had anticipated being able to build funding for **SIA** into the Spectrum Health budget, but that was not possible after the recent economic downturn. Should new funding opportunities arise, the partnering organizations have maintained a waiting list (currently with 250 interested women) with which to restart the program.

In the meantime, the YMCA of Greater Grand Rapids submitted a grant proposal to the Healthier Communities community grant program and received funding to implement a program that is similar to **SIA**, titled Healthy U for Hispanic Women. This new program will serve Latinas and will include the nutrition education and physical activity components, but not the clinical component (i.e., the physical examinations).

Because of the successful outcomes achieved in the **SIA** program, Healthier Communities received a 3-year HRSA grant to fund a program entitled Healthy Minds and Bodies. This program serves new, low-incomes mothers. Although the YMCA is not currently a part of this grant, Healthier Communities is working with the YMCA to bring the program there.

For more information on **Sisters in Action**, contact Linda Heine, BSN, RN, Manager, Spectrum Health Hospitals (linda.heine@spectrum-health.org, 616 486-6537).

SALUD PARA TODOS

Clinical Partner: Sunset Community Health Center

Community Partner: Campesinos Sin Fronteras

Health Behaviors Addressed: Nutrition and physical activity

Target Population: Low-income Hispanic adults

Location: Yuma County, Arizona

Overview

Funded by the Office of Minority Health (OMH), the **Salud Para Todos** program brings together Campesinos Sin Fronteras (CSF), a non-profit community-based organization committed to serving farm workers, and Sunset Community Health Center (SCHC), a local, not-for-profit corporation operating community-based clinics that serve low-income individuals in medically underserved communities. CSF serves as the OMH grantee for the **Salud Para Todos** program and subcontracts with CSF. The program focuses on preventing cardiovascular disease and other chronic disease (e.g., diabetes) by providing health education to Hispanic adults and using *promotoras* (community health workers) as connectors between the clinic and the community. *Promotoras* educate clients on nutrition, physical activity, stress management, and depression. The goal of the program is to improve patient health outcomes related to cardiovascular disease and chronic disease prevention and management, improve patient satisfaction with medical services provided, and improve the overall quality and cultural competency of services provided at SCHC. Information about **Salud Para Todos** was obtained during a site visit in March, 2010.

Program Planning and Development

CSF and SCHC had complementary goals of serving the community and helping to address the substantial health needs of area residents. CSF and SCHC have worked together since 2000 when they collaborated on the Centers for Disease Control and Prevention (CDC)-funded Border Health Strategic Initiative (Border Health ¡Si). In 2002, SCHC and CSF expanded their collaboration to include implementation of the Campesinos Diabetes Management Program (CDMP). CDMP is a *promotora*-based diabetes management model that was developed to assist Hispanic community members, primarily elderly former farm workers, through ongoing weekly support and education groups. *Promotoras* facilitate the groups and provide education on diabetes-related needs, such as medications, physical activity, nutrition, depression education, family issues, stress, self-esteem, and spirituality. CSF received funding for the CDMP from the Robert Wood Johnson Foundation and subcontracted with SCHC during its implementation.

The documented success of these programs convinced the medical director at SCHC of the benefits of the *promotora* model, and he became a champion of the work and programs at CSF. At this time SCHC was facing challenges of limited physician time for patients and cultural differences between the community, which is primarily Hispanic, and the physicians, who were primarily from other cultures (e.g., Middle Eastern and Southeast Asian cultures). To address these challenges, SCHC and CSF decided to continue their longstanding partnership and work together on the **Salud Para Todos** grant. The goal of the **Salud Para Todos** program is to utilize *promotoras* in the clinic and at CSF to help patients navigate the health care system by providing them with culturally competent education, support, and assistance with finding resources in the community for their needs.

Intervention Description

Both CSF and SCHC employ *promotoras* who provide culturally relevant health education and social support to the farm worker community (primarily of Mexican descent). This is done by conducting outreach in the community, providing group health education, and providing individual patient support. All of the *promotoras* in this program have been farm workers or are children of farm workers, so they are familiar with the culture and with the challenges that individuals in this community face.

A two-way referral process exists between SCHC and CSF whereby patient referrals to Salud Para Todos are made by both SCHC and CSF. If a patient receives a diagnosis of a particular condition or is at risk for a condition (e.g., diabetes, pre-diabetes, hypertension), an SCHC physician refers the patient to an SCHC *promotora*. The SCHC *promotora* provides one-on-one clinical education related to the patient's condition (e.g., explaining what a particular medication is and how to take it). The SCHC *promotora* then contacts a CSF *promotora* who provides individual ongoing support (including case management for social services), engages the individual in health education classes (including nutrition, physical activity, stress management, and depression management), and invites the individual to support groups (e.g., diabetes support, depression support). After the referral, both the SCHC and CSF *promotoras* follow up with the patient to ensure that the linkage has been made and services are being provided.

Likewise, individuals in the community who independently seek medical assistance at CSF are referred by the CSF *promotora* to the SCHC *promotora* to ensure that the person is seen by a physician and that they then receive services at the clinic. This cycle continues as the *promotoras* from both partners follow up with the patient and recommend that they return to SCHC for treatment.

The *promotoras* understand the importance of evaluation and documentation, and each organization maintains a database of all of the *promotoras'* encounters with patients so that there is a record of every interaction.

Key staff within SCHC include the medical director, who champions the program and encourages colleagues to take advantage of the program; the program coordinator, who provides oversight, maintains documentation, and communicates with CSF; and the clinic *promotoras*, who provide one-on-one education to the patients and help them navigate through the health system. CSF's Chief Executive Officer (CEO) and Director of Grant Management and External Affairs played a major role in the grant writing for the project, and the Director also oversees the CSF *promotoras*. CSF *promotoras* offer group classes on nutrition and physical activity, lead support groups, and link clients to SCHC.

Implementation Facilitators and Challenges

Implementation of this program has involved a great deal of tangible and intangible resources from both organizations. SCHC and CSF have a long history of sharing staff, providing meeting space and logistical support to one another, partnering on grants, and sharing funding. This is relationship is based a common vision and goal of improving the health outcomes of the farm workers and their families. Other facilitators in the Salud Para Todos program include a medical champion (the medical director) who supports and believes in this program and in the *promotora* model; CSF staff's intimate knowledge of the community and its culture; and established internal ties among the individuals working in each of these organizations (e.g., the CEO of CSF worked at SCHC in the past and currently serves on SCHC's Board) and external ties between these organizations and the community.

Challenges in this program include communication issues between the organizations and logistical issues common to community health centers. Distinguishing roles and responsibilities has presented some difficulties. For instance, because SCHC staff had previously worked at CSF, they were well-versed in CSF's curriculum and transferred aspects of it to the SCHC setting. This has created some confusion among the *promotoras* because CSF staff thought they were responsible for teaching the CSF curriculum. Currently, partners are trying to resolve this issue through meetings and have determined that SCHC will provide more clinical, individual education (e.g., medication adherence) and that CSF will provide general health education (i.e., nutrition, physical activity, and diabetes prevention and management) and mental health support.

Logistical issues include a long wait time for appointments and limited time with physicians during appointments. Communication issues have been addressed by identifying key contact personnel in each organization, and sending all of the program participants through these key personnel to assure continuity of service. Resolving logistical issues within the community center has involved patient education regarding appointment wait time and making clinic *promotoras* available for one-on-one educational counseling at the clinic to answer any questions patients might have.

Outcomes and Evaluation

Evaluation has been an integral piece of the intervention and is conducted by both SCHC and CSF. Recognizing the importance of evaluation for obtaining future funding and for achieving program improvement, CSF staff have stressed the importance of evaluation and documentation throughout the span of this partnership. The *promotoras* are required to document all of the encounters that they have with the patients in a database for evaluation purposes. CSF has subcontracted with an external evaluator from the University of Arizona.

An evaluation of the Salud Para Todos program is currently ongoing. Aligned with grant objectives and stakeholder recommendations, domains for this evaluation include the following:

- outreach and access to participants,
- dietary habits of the participants,
- screening for cardiovascular disease risk factors by the program staff,
- education provided by the program staff,

- patient satisfaction with the program, and
- cultural competency among SCHC staff.

Initial evaluation results, available for some of these items, have shown that program participants report an increase in vegetable and fruit consumption and improved patient satisfaction with SCHC.

Role of Institutional, Organizational, or Governmental Policy

The key facilitators of this project were organizational policies supporting the *promotora* model, the instituting of *promotoras* within the clinics, the receipt of OMH funding, and the establishment of a formal partnership and collaboration between SCHC and CSF.

Program Sustainability and Development of Related Programs

The partnership between SCHC and CSF has been maintained and sustained for over a decade through different grants and funding opportunities. The longevity of this partnership can be attributed to several factors, the most important of which is their shared vision and commitment to the community. As designed, the **Salud Para Todos** program may end following the completion of the funding, but SCHC and CSF will maintain the *promotora* model and will continue collaborating. Historically, they have sustained programs in some form (e.g., CDMP) by using evaluation data to secure funding from local organizations and other grants.

For more information on the **Salud Para Todos** program, contact:

Sunset Community Health Center
Lucy Murrieta (lmurrieta@sunset-chc.org, 928-373-5710) or visit Sunsetcommunityhealthcenter.org

Campasinos Sin Fronteras
Floribella Redondo, Director of Grant Management & External Affairs (floribella@campesinossinfronteras.org)

References

Campesinos Sin Fronteras. *CDMP Programs*. Accessed on April 11, 2010. Available at http://campesinossinfronteras.org/diabetes.html.

Floribella Redondo, Emma Torres, BWS, Maia Ingram, MPH, Idolina Castro, and Angelica Villasenor: *Prevencion y Control de la Diabetes, Manual de Promotoras* (to be published in 2010)

Ingram, MPH, Emma Torres, BWS, Flor Redondo, Gail Bradford, BS, Chin Wang, MD, and Mary L. O'Toole, PhD: The Impact of Promotoras on Social Support and Glycemic Control Among Members of a Farmworker Community on the US-Mexico Border. Supplement to *The Diabetes Educator*, volume 33. June 2007

Reinschmidt KM, Bradford G, Drummond RL, Torres E, Redondo F, Elenes JJ, Sanders A, Gastelum S, Moore-Monroy M, Barajas S, Fernandez L, Alvidrea R, de Zapien JG, Teufel-Shone N. Taking a Broad Approach to Public Health Program Adaptation: Adapting a Family-Based Diabetes Education Program. *J of Prim Prev.* Special Issue. (Taking a Broad Approach to Public Health Program Adaptation: Adapting a Family-Based Diabetes Education Program in the following paginated issue of *The Journal of Primary Prevention:* Volume 31, Issue 1 (2010), Page 69).

Appendix E:
Summit Meeting Report

July 2010

Summit on Linking Primary Care and Community Organizations for Prevention

Meeting Report

Prepared for

Therese Miller, DrPH
Lead, Prevention & Care Management Portfolio
Center for Primary Care, Prevention & Clinical Partnerships
Agency for Healthcare Research and Quality
540 Gaither Road, Room 6145
Rockville, MD 20850

Prepared by

Deborah Porterfield, MD
Laurie Hinnant, PhD
Heather Kane, PhD
Amy Roussel, PhD
RTI International
3040 Cornwallis Road
Research Triangle Park, NC 27709

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Deborah Porterfield, MD
Laurie Hinnant, PhD
Heather Kane, PhD
Amy Roussel, PhD
RTI International
3040 Cornwallis Road
Research Triangle Park, NC 27709

RTI International is a trade name of Research Triangle Institute.

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1. BACKGROUND: LAYING THE GROUNDWORK FOR PRIMARY CARE AND COMMUNITY LINKAGES

In May 2010, the Agency for Healthcare Research and Quality (AHRQ), with assistance from RTI International, hosted a summit that brought together representatives from other federal agencies, community-based organizations, academic institutions, and policy organizations to develop a national strategy for promoting linkages to increase the delivery of clinical preventive services. The summit built upon a 2008 summit, at which AHRQ initially convened a similar group of stakeholders to understand and facilitate the development of linkages. In addition to AHRQ and RTI staff, 52 participants came from 38 different organizations, including 6 offices and centers within the Department of Health and Human Services, the Veterans Administration, 2 health care systems, 11 clinical professional organizations, 5 public health professional organizations, 2 hybrid organizations, 2 consumer organizations, 1 governmental public health agency, and 5 academic or research institutions (see Appendix A for the full participant list).

The summit focused on four key objectives:

1. Provide an ongoing forum for dialogue and learning for individual and organizational stakeholders with an interest in improving the delivery of preventive services through linkages between primary care and community organizations.

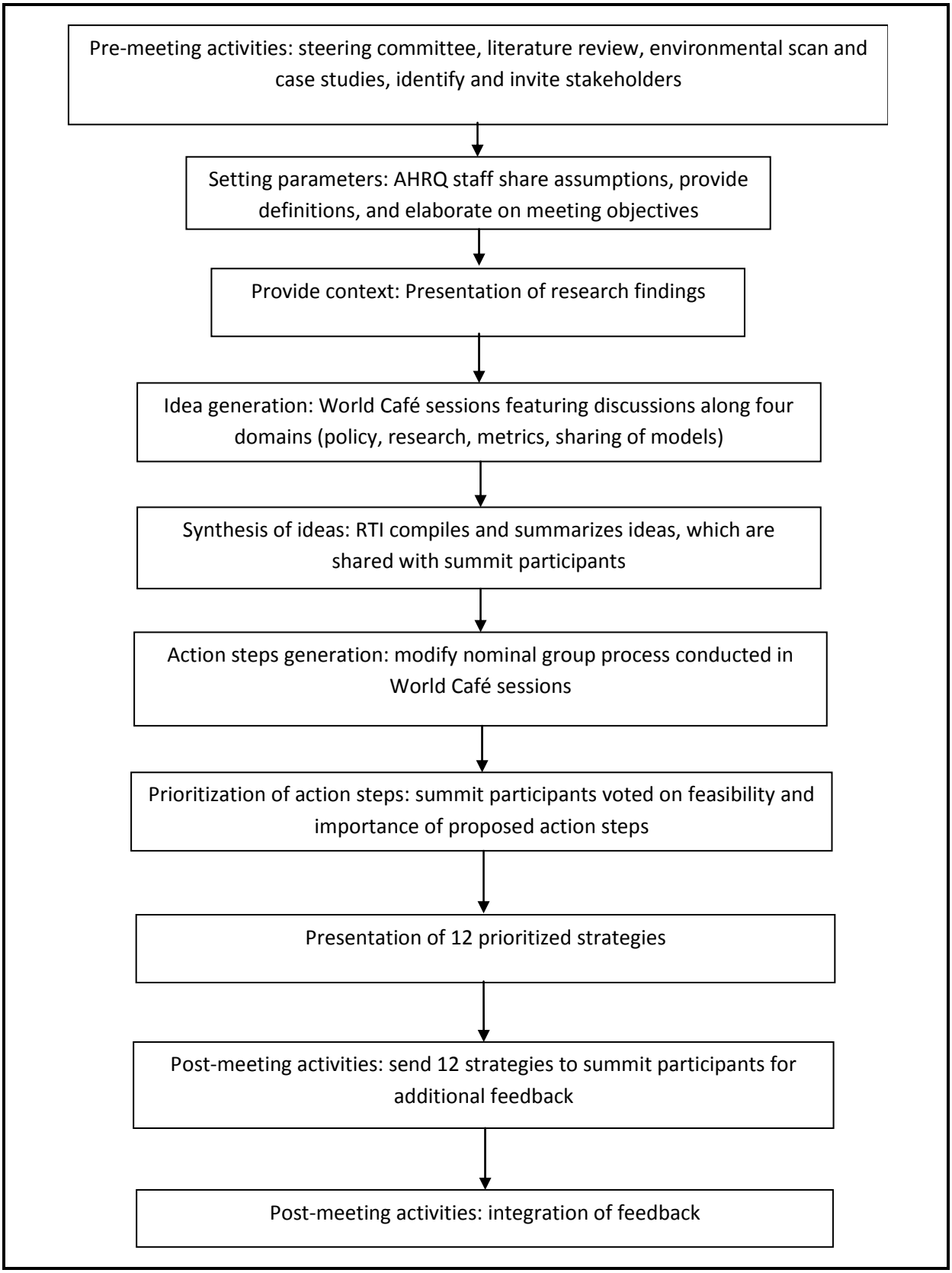
2. Present the results of an environmental scan and case studies of primary care and community linkages conducted during 2009–2010.

3. Engage stakeholders to envision a national strategy to support local efforts to develop primary care and community linkages.

4. Engage stakeholders to determine prioritized next steps for AHRQ, other federal agencies, and partners in the areas of dissemination, policy, and research as they relate to primary care and community linkages.

To accomplish these objectives, AHRQ and RTI designed a meeting process to focus and engage summit participants (see Figure 1-1 and Appendix B). The meeting process consisted of presentations to specify the meeting's purposes, define key terms, and provide relevant background. The meeting opened with presentations by AHRQ Deputy Director Kathleen Kendrick and the AHRQ Director of Center for Primary Care, Prevention and Clinical Partnerships, Dr. David Meyers. Presentations followed describing the U.S. and Canadian contexts for linkages between clinical practices and community/public health organizations. Drs. Deborah Porterfield and Laurie Hinnant of RTI shared findings from an environmental scan, literature review, and case studies; Dr. Ruta Valaitis presented her ongoing research on linkages in Canada. Each presentation is briefly described below.

Figure 1-1. Summit Process



Deputy Director Kendrick explained AHRQ's organizational structure, mandate, and focus; she elaborated on how AHRQ's interest in promoting linkages aligned with AHRQ's mission, "To improve the quality, safety, efficiency, and effectiveness of health care for all Americans," and vision, "as a result of AHRQ's efforts, American health care will provide services of the highest quality, with the best possible outcomes, at the lowest cost."

Dr. Meyers narrowed the focus from AHRQ's broad mission to its interest in fostering clinical-community linkages. One of its strategic goals pertains to improving clinical preventive services through supporting linkages: "Support the evidence base for and implementation of activities to improve primary care and clinical outcomes through…clinical-community linkages." Dr. Meyers gave the summit participants two additional charges:

1. Develop a vision of a comprehensive approach to support local efforts to develop primary care and community linkages.
   - The vision should focus on AHRQ's role within the national strategy.
2. Develop a prioritized list of next steps to move the nation toward creating sustainable primary care and community linkages.
   - The primary target audience for this list of strategies is AHRQ; the secondary audience is other federal partners; and the tertiary audience is nonfederal stakeholders.
   - The strategies should fall into the categories of research, measurement, policy and dissemination.

Dr. Meyers circumscribed these goals by several parameters. First, summit participants should assume that AHRQ would not have additional funding to support the development of primary care and community linkages, but participants could argue for shifting funds across the organization (although they should provide a strong rationale for such a shift). Second, any recommended action step should center on improving the delivery of clinical preventive services. Third, participants should concentrate on the primary health care system and linkages between primary care and community/public health organizations.

Next, Drs. Porterfield and Hinnant presented findings from RTI's literature review, environmental scan, and case studies. The literature review and environmental scan, which were focused on linkages that increased the delivery of preventive services for tobacco, nutrition, physical activity, and obesity, identified 49 unique linkage interventions. These linkages could be classified into several categories:

- referral of patients from clinical practices to community partner (or the reverse),
- referral of patients by clinical practices to a Web site or electronic health resources,
- provision of a community guide to local health services and resources to clinical practices,

- training for medical providers by community organizations on how to assess patient health status and encourage behavior change,
- training for medical providers by community organizations on development and implementation of in-house clinical preventive services, and
- volunteer work by clinical partners at community partner programs.

Of the 49 linkages, only 18 described evaluation or outcomes (e.g., process, impact, clinical, or organizational), and very few described linkage facilitators or barriers.

From these 49 linkages, AHRQ and RTI selected five for in-depth case studies. These case studies delved more deeply into facilitators, barriers, and evaluation and outcomes findings. Linkage facilitators included organizational and intervention capacities, such as having a physician champion, resources (e.g., staffing, funding), dedicated and paid staff, a common mission and vision, and existing networks or opportunities that could be built upon. Challenges to developing sustained linkages centered on insufficient funding, poor communication, staff turnover, low levels of trust, and issues of enrollment. Consistent with the literature review and environmental scan findings, few cases had conducted an evaluation, although in some cases evaluation was ongoing. Evaluations tended to focus on clinical outcomes (e.g., changes in blood pressure, weight, or BMI) and behavioral outcomes (e.g., increases in physical activity and fruit and vegetable consumption). None of the evaluations measured organizational changes or characteristics. Across the sites, sustainability was a concern; some, but not all, aspects of the programs would continue beyond the funding period. This finding highlights the importance of funding both to build and to sustain linkages.

In the final presentation, Dr. Valaitis from McMaster University shared her research on linkages between primary care and public health organizations in Canada. Her research projects included a scoping literature review and 70 key informant interviews. The literature review, which looked across multiple health issues (e.g., chronic diseases, immunizations, disaster response preparedness, smoking cessation), examined three key domains: (1) structures and processes required to build successful collaborations between public health and primary care, (2) lessons learned regarding collaborations between public health and primary care, and (3) markers of successful collaboration between public health and primary care. First, she found that many barriers and facilitators contributed to successful collaborations; these barriers and facilitators could be divided into three main categories: systemic, organizational, and interactional. Second, lessons learned regarding collaboration between public health and primary care included the following: (1) the strongest potential to integrate primary care and public health lies in surveillance, health promotion, and prevention; (2) the lack of participation by physicians can weaken the partnership; (3) the "spreading thin" of public health efforts can make partnership more challenging; and (4) determining payment and financial incentives for care can be a source of difficulties and

conflict. Lastly, markers of successful collaboration consisted of several indicators, including improvement in health outcomes and access to health services, increases in capacity and expertise, the development of new collaborations, and the sustainment of existing programs.

To explore the three aforementioned domains in greater detail, Dr. Valaitis and her research team conducted 70 key informant interviews. Her preliminary results detailed the importance of multiple systemic, organizational, and interactional facilitators. She highlighted the importance of systemic facilitators, including supportiveness of governmental policies and practices, the compatibility of health information systems, and the availability of an evidence base. Organizational facilitators consisted of a host of factors, such as having strong and supportive leadership, designated resources, and a shared understanding among partners. Finally, she elaborated several key interactional facilitators, including good communication, role clarity, and strong interpersonal relationships.

2. WORLD CAFÉ SESSIONS: DETERMINING A FLEXIBLE NATIONAL STRATEGY TO SUPPORT PRIMARY CARE AND COMMUNITY LINKAGES

Following the morning presentations that sought to ground the meeting participants on AHRQ focus and on the current knowledge about and evidence base for primary care and community linkages, participants were involved in a series of facilitated small group discussions (termed World Café Sessions) to identify the core components of a flexible national strategy to support efforts to develop primary care and community linkages. Four key areas related to primary care and community linkages were identified in advance of the meeting as being part of AHRQ's areas of expertise and purview (see Table 2-1):

- promoting policy change,
- identifying research gaps and funding research,
- developing metrics to measure successful linkages, and
- sharing promising models.

Table 2-1. World Café Key Areas

Key Area	Description
Promoting policy change	Action steps needed to promote policy solutions to overcome barriers to the implementation of linkages
Identifying research gaps and funding research	A research agenda for understanding and evaluating primary care and community linkages
Developing metrics to measure successful linkages	A description of the important outcomes and methods for measurement to evaluate primary care and community linkages
Sharing promising models	The systems and structures needed for ongoing sharing of promising models of clinical-community linkages among organizations likely to implement or disseminate such linkages

Each small group discussion lasted approximately 1 hour and was led by a facilitator who was either a Steering Committee member or RTI staff and a note taker. Meeting participants were assigned to participate in two of the four small groups based on pre-selected preferences. Participants in each group developed a vision for their component of the national strategy to promote primary care and community linkages to improve delivery of preventive services, as well as specific strategies to achieve that vision. Following the World Café sessions, a brief discussion was held at the end of the day to share output from each of the four groups with the entire participant group. Overnight, the discussions and suggestions developed by each group were synthesized into themes with associated

strategies by the meeting summit team, which served as a starting point for Day 2 activities. The summaries of the World Café sessions are provided below.

A. Themes and Strategies: Promoting Policy Change

Sustainability

- Build linkage requirements into accreditation/credentialing/certifying (e.g., National Committee for Quality Assurance [NCQA] recognition as a patient-centered medical home).
- Create an AHRQ policy that funds only linkage efforts that include a plan for sustainability.

Health information technology

- Facilitate policies that promote an information technology (IT) system and tools that will allow for the exchange of information between clinical and community partners. This could be through an electronic medical record (EMR) or other electronic system.
- Identify individuals and organizations that can move private practice toward utilization of a comprehensive EMR system that includes community referrals.
- Establish relationships with online and social media sites that directly reach clinicians and can be used to educate providers about primary care and community linkages and how they can benefit their practices.

Compensation

- Promote policies that will enable providers to be reimbursed for clinical preventive services delivered within the medical setting or system, including coordination with community partners.

Coordination and partnership

- Develop an organizational policy at AHRQ that promotes collaboration with other federal agencies (e.g., Centers for Disease Control and Prevention [CDC], Health Resources and Services Administration [HRSA]) to facilitate support for and study of primary care and community linkages. This may be through mandating that cooperative agreement or grant recipients be required to include primary care and community linkages as a part of their funded efforts.
- Reduce separation and promote greater integration between the U.S. Preventive Services Task Force (USPSTF) and the Task Force for Community Preventive Services (TFCPS).
- Promote and look for opportunities to integrate primary care and community linkages into the patient-centered medical home.
- Help facilitate policies and resources that will enable providers to have a better understanding of what resources are available within the communities they serve.
- Create guidance and policies that encourage and require clinical practices to engage community partners as a part of service delivery.
- Promote cross competencies in the area of primary care and community linkages (for both clinical and community partners).
- Utilize relationships with HRSA as a significant care provider to test and examine primary care and community linkage models.

- Establish policies and resources that will allow AHRQ to help local health departments understand their role within the current context of health reform.

Other

- Establish and support policies that recognize community health workers as health care providers.
- Track policy changes that occur at the local level and then look for opportunities to translate these policies to be applied at a state or national level.

B. Themes and Strategies: Identifying Research Gaps and Funding Research

Consider alternate models for research

- Encourage and engage a broader range of stakeholders, such as communities and patients, in setting the research agenda for linkages so that it is not just researcher or clinician driven.
  - Provide technical assistance (TA)/support to nontraditional grantees (e.g., on grant writing).
  - Fund nontraditional recipients.
- Go beyond traditional National Institutes of Health (NIH)-type peer-reviewed study sections and be open to alternate models of research and evaluation (not just hypothesis testing).
  - Acknowledge linkages as rare events that may necessitate nontraditional models to research and evaluate them (e.g., Bayesian thinking that provides rigor within small samples).
  - Consider adoption of an "X prize" model, where an award is given to a research team that achieves a specific goal, for example characterizing an innovative, effective type of primary care and community linkage.
  - Develop and test dynamic intervention models that are informed by an outcome feedback loop.
  - Think of new methods to identify problems, develop solutions, and implement them into wider practice.
  - Fund systems change research.
  - Conduct translational research flowing in both directions: bench to bedside to community, and back the other way.
- Provide longer-term funding that will allow for development and maintenance of collaborations.
  - Provide seed funding that will allow stakeholders to build their capacity to establish linkages and evaluate effectiveness.
- Recognize community organizations as sites of preventive services delivery, in addition to traditional health care settings.
- Establish AHRQ as the leader in evaluation of efforts to create primary care and community linkages and collaborate with other agencies/entities in their efforts to create and evaluate such linkages (e.g., CDC, HRSA).

Fund a range of research questions

- Address research questions related to capacity-building for linkages.

  - What are the important dimensions of capacity as they related to linkages? Appendix C
  - What does it take for a community or community partner to get to the point where they are ready to implement one of these evidence-based strategies?
  - What are the core competencies of the people who make linkages happen?
- Address research questions related to process/implementation of linkages.
  - What goes on inside a primary care and community linkage? What makes it work?
  - What are the barriers and facilitators to uptake/spread?
  - What contributes to sustainability? What is essential for sustainability?
  - What does it really cost to create linkages?
- Address research questions related to the health and organizational outcomes of linkages.
  - How do linkages contribute to better outcomes?
  - What kinds of linkages are most effective?
  - What kinds of linkages are most effective for enhancing delivery of different kinds of clinical preventive services?
  - To what extent do linkages contribute to improved health outcomes?
  - How cost effective are linkages?
- Address research questions related to dissemination/translation.
  - Who is using existing tools/databases? How are they using them? How might they be expanded? How might the audiences for the tools/databases be expanded?
  - What are the best strategies for reaching the full range of audiences (e.g., researchers, clinicians, community public health, people)?

Leverage other well-funded research streams; find the connections to linkages

- Example: Health IT/health information exchange research
  - Effective linkages require exchange of information between partners. What are the most effective models for that information exchange?
- Example: Patient safety research
  - Bobbled handoffs (e.g., patient referred for clinical preventive services without follow-up) should be considered errors of omission. If patient safety research were broadened to include errors of omission, that would overlap with linkages research.
- Example: Patient-centered health outcomes research (formerly known as comparative effectiveness research)
  - How do linkages contribute to patient-centered care?

C. Themes and Strategies: Developing Metrics to Measure Successful Linkages

The metrics group developed a list of action steps and recommendations for AHRQ to consider when developing metrics to measure successful linkages. These are provided below. In addition, this group developed an initial list of domains for metrics that could be considered. This list is included in Appendix C.

Considerations when developing metrics

- Conduct evaluation from a variety of perspectives (i.e., program participants and organizations as well as AHRQ or federal agencies).
- Acknowledge and support that delivery of services should not be the most distal outcome measured or reported.

Preliminary strategies

- Convene a workgroup to develop metrics related to primary care and community linkages.
- Explore related frameworks and "mine" them for possible measures.
- Fund a learning network of interventions that include primary care and community linkages, specifically to develop and evaluate measures related to linkages (whether they be process, impact, or outcomes).
- Facilitate better access to local health data in order to facilitate primary care and community linkage evaluation.

D. Themes and Strategies: Sharing of Promising Models

- Establish or draw upon existing communities of practice/learning communities (e.g., National Cooperative of Health Networks, Association for Community Health Improvement, Communities in Action) to identify promising models for sharing models.
- Develop a Web-based repository of examples of linkages.
  - Engage stakeholders (including potential contributors, federal agencies, foundations, and varied audiences) in development of a repository.
  - Ensure that the repository is searchable (e.g., search on special populations, disease topics.) and user-friendly.
  - Develop and include evidence ratings for examples included in the repository.
- Employ a "detailing" model to reach physicians.
- Create a toolkit on primary care and community linkages that can be used by HRSA National Health Service Corps providers.
- Tie into Health IT Regional Extension Centers' efforts.

3. PRIORITIZING ACTION STEPS: IMPORTANCE AND FEASIBILITY

On Day 2, summit participants identified specific strategies in the same four areas that AHRQ should consider pursuing as it works to support linkages between clinical practices and community organizations. Working in small groups, each participant was asked to name their top one or two strategies; participants generated over 40 potential strategies. These strategies were then posted on the conference room walls, and each participant was given 12 votes to allocate to strategies on each of two dimensions: importance and feasibility within a 12–24 month timeframe. The top strategies in each dimension are those that ranked in the top 20%.

Table 3-1 displays the strategies the group placed in the top quintiles for both importance and feasibility; Table 3-2 displays the strategies in the top quintile for importance but ranked lower in feasibility; and Table 3-3 lists strategies in the top quintile for feasibility but ranked lower in importance.

Table 3-1. Strategies Identified as Both Highly Important and Feasible

Prioritized Strategies	Action Steps
1. Convene a workgroup to develop metrics related to linkages between clinical practices and community organizations.	▪ Convene a workgroup on metrics regarding linkages. – Identify issues of health equity. – Track measures of equity related to clinical preventive services over time. – Identify how these measures relate to other federal and national initiatives (e.g., CDC-REACH, BRFSS). ▪ Develop a composite metric for preventive services' use in the community. – Collaborate with National Quality Forum to have measures approved and required of clinical practices. ▪ Create a learning network and use metrics to track outcomes of primary care and community linkages.
2. Create a joint taskforce with CDC on linking clinical practices and community organizations to improve clinical preventive services.	▪ Partner with CDC to create a single, joint task force that combines the work of USPSTF and TFCPS.
3. Identify how linkages contribute to better outcomes.	▪ Build the evidence base for linkages by supporting research on linkages and health outcomes. ▪ Provide for ongoing research on the impact on populations of USPSTF recommendations receiving an A- or B-level classification.
4. Promote research competencies within community-based programs to understand the outcomes of primary care and community linkages.	▪ Provide services to community organizations to promote the development of research competencies to study the outcomes of primary care and community linkages.

Table 3-2. Strategies Identified as Highly Important but Less Feasible

Prioritized Strategies	Action Steps
5. Fund a demonstration project to address disparities via social determinants of health in communities.	▪ Fund a demonstration project to build partnerships between clinical practices and community/public health organizations to address disparities via social determinants of health in communities.
6. Convene a joint meeting among Medicare/Medicaid, state governments, and employers to discuss reimbursement issues.	▪ Convene a joint meeting among Centers for Medicare and Medicaid Services, state governments, and employers; participants in a joint meeting can discuss if/how to reimburse services provided in the context of a linkage/partnership.
7. Develop an organizational policy at AHRQ that promotes collaboration with other federal agencies to promote linkages.	▪ Develop an organizational policy at AHRQ for collaboration with other federal agencies to promote linkages. – Convene AHRQ, CDC, HRSA, NIH, etc. to determine a Department of Health and Human Services (DHHS)-wide strategy and outcome metrics to drive community linkages. – Have these organizations jointly convene a conference for metrics needed (county and local) and promote health actors to communicate about and refine the department strategy. – Develop community metrics and report on a regular basis. – Figure out accountability for steps in the strategy by federal, local, and state actors. – Develop performance metrics and other accountability mechanisms and a method of tracking for each action step's contribution to the strategy. – Figure out community collaboration model that relates federal, local, and state government roles. – Study successful community partnerships. ▪ Meet with agencies that work with primary care and community organizations and identify opportunities within existing programs where they can collaborate to improve the delivery of preventive services. ▪ Promote greater collaboration between USPSTF and TFCPS. ▪ Identify specific grant programs—new or existing—where AHRQ can provide input and perhaps resources to advance primary care and community linkages and the evaluation of those linkages.

(continued)

Table 3-2. Strategies Identified as Highly Important but Less Feasible (continued)

Prioritized Strategies	Action Steps
8. Consider new models for and broader engagement in research.	▪ Engage a broad range of stakeholders in setting a research agenda for linkages. ▪ Consider alternative models for research (e.g., translational research that flows in both directions: bench to bedside to community and back the other way). ▪ Translate community-based participatory research methodology into an AHRQ-sensitive framework and vet it with stakeholders. ▪ Fund research to identify pilot methods that increase clinical preventive services in communities. ▪ Offer more community-driven and public health practitioner–driven opportunities for grants to study linkages, or require that community and public health organizations be the lead grantee. ▪ Require an advisory board (including community representatives, patient representatives, state and local health agency representatives, researchers, clinicians, and health care system representatives) to be engaged very early on in grants to study linkages. ▪ Develop RFPs for and fund practice based research networks. The scope of work should explicitly call for analysis of linkages between the practices and community entities such as YMCA regarding clinical preventive services and interventions.

Table 3-3. Strategies Identified as Highly Feasible but Less Important

Prioritized Strategies	Action Steps
9. Disseminate promising practices.	▪ Develop a repository of examples and decision-support mechanisms. – Link repository/decision support to current recommendations. – Work with the Office of the National Coordinator on Health IT, the National Library of Medicine, and CDC to develop the repository. – Work with Office of Disease Prevention and Health Promotion on facilitating policies/resources that will enable providers to have a better understanding of what resources are available within the communities they serve. – Create a Web interface for health practitioners that is an informational tool for listing community partners. – Disseminate a Web tool to training programs and physician/health provider organizations. ▪ Employ a “detailing” model by linking with EMRs to enhance provider reminders and facilitate referrals to community organizations and use of measurement tools. ▪ Educate providers and staff (e.g., Continuing Medical Education modules).

(continued)

Table 3-3. Strategies Identified as Highly Feasible but Less Important (continued)

Prioritized Strategies	Action Steps
10. Promote greater integration between USPSTF and TFCPS.	▪ Coordinate a joint meeting of the two groups with CDC and identify areas of overlap and areas of integration to promote between the two groups.
11. Engage stakeholders to incorporate community provider information into developing health IT systems to support the delivery of preventive services.	▪ Involve the AHRQ health IT portfolio to influence the incorporation of community resources and referrals into federal health IT regulations for contracts and vendors. ▪ Develop or lead an interagency team or taskforce (AHRQ, CDC, HRSA) to work with external partners (including states) to develop community resource databases. ▪ Partner with health provider organizations to educate clinicians/providers on community resources.
12. Promote systems and tools to allow exchange of information between clinical and community partners.	▪ Identify vendors and make this a requirement (or an option) for meaningful use. ▪ Develop an RFA to test this type of linkage in different environments.

4. DISCUSSION

The 2010 Summit on Linking Primary Care and Community Organizations for Prevention sponsored by AHRQ provided an ongoing forum for dialogue and learning for individual and organizational stakeholders with an interest in improving the delivery of preventive services through linkages between primary care and community organizations.

The output of the summit was a set of recommendations for components of a flexible national strategy to facilitate linkages between clinical practices and community organizations. The components were developed in four specific areas: research, development of metrics, dissemination, and policy. Meeting participants also provided AHRQ with potentially useful information on the extent to which the proposed strategies were viewed as important and/or feasible.

Of the 12 prioritized strategies, one was a dissemination strategy, one was metrics, three were research, and seven were policy. Nearly every approach called for some sort of collaboration with other federal agencies, within AHRQ, or with other nonfederal stakeholders; throughout the summit, discussion emphasized that AHRQ could not and should not "do this alone." One of the prioritized strategies had collaboration as a specific focus: "Develop an organizational policy at AHRQ that promotes collaboration with other federal agencies to promote linkages."

Not surprisingly, given the discussion on Day 1 of the dearth of evidence supporting the effectiveness these linkages, only one dissemination strategy was prioritized (#9) as opposed to the four total in metrics and research. The participants expressed that more research is needed on the effectiveness of linkages before models or best practices can be widely disseminated.

The flexible agenda of the summit allowed for discussion following each step in the process and a brief opportunity for AHRQ and the stakeholder group to discuss the 12 prioritized strategies at the very end of the meeting. Although further input from the stakeholder group on the 12 strategies is expected, from the summit discussion it was possible to identify where there was particular synergy between AHRQ and the group among the prioritized strategies. The strategies that appeared to garner the most support were the strategy to develop a workgroup to determine metrics for future research; the strategy for AHRQ to fund research to study the effectiveness of linkages; and the two strategies promoting developing health IT to facilitate linkages at the local level. These strategies appear to address recurrent themes in participants' comments about the need for data and information flow between organizations in order for linkages to be successful and about the need for more research to establish the effectiveness of linkages.

The discussion also included specific recommendations that AHRQ may wish to keep in mind as it moves forward to develop activities to facilitate linkages. Participants recommended that AHRQ do the following:

- Expand its area of concern to population health and not just accountability for the health care system.
- Reach for early, tangible results as it develops its portfolio in this area, in order to gain traction and support within the agency.
- With respect to developing health IT to facilitate linkages, ask clinicians what they want to know and avoid promoting or developing something they will not use.
- Consider the diffusion of innovation model as a framework to understand and address barriers to dissemination.
- Develop an understanding of the sustainability of linkages (describe it, study the factors that influence it, and work to facilitate it).

Several aspects of the summit strengthen the credibility of the output of the meeting. The first is the fact that it had broad representation of stakeholders in the meeting, with over 50 persons in attendance representing federal agencies, clinical and public health organizations, consumer groups, health care systems, and academia. Second, the structure of the meeting encouraged active participation by all in attendance; in the small breakouts on Day 2, every participant was required to contribute a strategy that was their priority. This level of engagement ensured that the output of the meeting had contributions from all program participants and organizations.

Shortcomings exist, however, related to the process and to the information gained. Given the relatively short timeframe of the meeting—only 2 days—there was not sufficient time to achieve specificity for some of the strategies.

Another shortcoming of the process was the absence of foundations and the small numbers of health care systems or payers of health care in attendance. These shortcomings highlight the need for future work and ongoing dialogue between AHRQ and stakeholders in order to advance AHRQ's portfolio in this area and to continue the engagement and efforts of stakeholders to contribute to the national strategy. AHRQ intends to use the information gathered during the summit to inform its future investments in this area.

APPENDIX A:
SUMMIT PARTICIPANT LIST

Mariela Alarcon-Yohe, MPH
Program Director
Directors of Health Promotion and Education
1015 18th Street NW, 3rd Floor
Washington, DC 20007
Phone: 202-659-2230 ext. 128

Kristin Anderson, MD, MPH
Health Communication Fellow and Clinical Advisor
Office of Disease Prevention and Health Promotion
1101 Wootton Parkway LL100
Rockville, MD 20852
Phone: 240-453-8269

Lynda Anderson, PhD
Acting Director, Division of Adult and Community Health
Centers for Disease Control and Prevention
4770 Buford Highway NE
Atlanta, GA 30341
Phone: 770-488-5269

Alan Balch MS, PHD
Vice President, Preventive Health Partnership
American Cancer Society/American Diabetes Association/American Heart Association
250 Williams Street
Atlanta, GA 30303
Phone: 404-329-7520

Michael Baryas
Health Resources and Services Administration/ Department of Health and Human Services
4701 Wilard Ave., Apt. 607
Chevy Chase, MD 20819
Phone: 802-233-2223

Michael Barry, CAE
Executive Director
American College of Preventive Medicine
455 Massachusetts Avenue, NW
Suite 200
Washington, DC 20001
Phone: 202-466-2044 ext. 106

Eric Baumgartner, MD, MPH
Director of Policy and Program Planning
Louisiana Public Health Institute
1515 Poydras Street, Suite 1200
New Orleans, LA 70112
Phone: 504-301-9808

Ron Bialek, MPP
President
Public Health Foundation
1300 L Street, NW, Suite 800
Washington, DC 20005
Phone: 202-218-4420

Paul Bonta, MA
Associate Executive Director, Policy and Government Affairs
American College of Preventive Medicine
455 Massachusetts Avenue NW
Suite 200
Washington, DC 20001
Phone: 202-466-2044 ext. 110

Kevin Bowman
Agency for Healthcare Research and Quality
kevinlbowman@gmail.com

Ahmed Calvo, MD, MPH
Senior Medical Officer
Office of Health IT and Quality
Health Resources and Services Administration/ Department of Health and Human Services
5600 Fishers Lane
Room 7 - 100
Rockville, MD 20857
Phone: 301-594-4293

Gina Capra, MPA
Division Director
Bureau of Primary Health Care
Health Resources and Services Administration
5600 Fishers Lane, Room 15-99
Rockville, MD 20857
Phone: 301-594-4327

Amanda Cash, DrPH
Public Health Analyst
Health Resources and Services Administration
5600 Fishers Lane, Room 10-49
Rockville, MD 20857
Phone: 301-443-0208

Faith Alcovi Cooper
National Medical Association
1012 10th St. NW
Washington, D.C. 20001
Phone: 202-347-1895 ext. 210

Sue Diamond, RN, MSN
Program Manager Health Promotion Disease Prevention Programs
Veterans Health Administration National Center for Health Promotion/Disease Prevention
3022 Croasdaile Drive, Suite 200
Durham, NC 27705
Phone: 919-383-7874 ext. 244

Katrina Donahue, MD, MPH
Assistant Professor
University of North Carolina
Department of Family Medicine
590 Manning Drive
Chapel Hill, NC 27599
Phone: 919-966-5090

Willarda Edwards, MD, MBA
President
National Medical Association
8403 Colesville Road
Suite 920
Silver Spring, MD 20910
Phone: 443-653-2604

Charissa Fotinos, MD
Medical Director
Public Health-Seattle & King County
401 5th Avenue, Suite 1000
Seattle, WA 98104
Phone: 206-263-8279

Susan Friedman
Deputy Director of Government Relations
American Osteopathic Association
1090 Vermont Avenue NW
Washington, DC 20005
Phone: 202-414-0143

Janice Genevro
Agency for Healthcare Research and Quality
540 Gaither Road
Rockville, MD 20859
Phone: 301-427-1627

Lori Gerhard
Director
Office of Planning and Policy Development
Administration on Aging
One Massachusetts Avenue NW, Suite 4001
Washington, DC 20001
Phone: 202-357-3443

Kelly Griffin, MAA
American Association of Retired Persons
601 E Street NW, B10-326
Washington, DC 20049
Phone: 202-434-3709

Mary Harrington, MPP, PhD
Associate Director
Mathematica Policy Research
555 S. Forest, Suite 3
Ann Arbor, MI 49104
Phone: 734-794-1124

Linda Harris, PhD
Lead, Health Communication and eHealth Team
Office of Disease Prevention and Health Promotion
1101 Wootton Parkway
Rockville, MD 20852
Phone: 240-453-8262

Iris Mabry Hernandez
Agency for Healthcare Research and Quality
540 Gaither Road
Rockville, MD 20850
Phone: 301-427-1605

Rebecca Hines, MHS
Supervisory Public Health Analyst
Department of Health and Human Services/ Health Resources and Services Administration/Office of Planning, Analysis & Evaluation
5600 Fishers Lane, Room 10-49
Rockville, MD 20857
Phone: 301-443-6439

Laurie Hinnant, PhD
RTI International
Social, Statistical, and Environmental Sciences
Social Policy, Health, and Economics Research
3040 Cornwallis Road
Research Triangle Park, NC 27709
Phone: 919-541-6000

Charles Homer, MD, MPH
President and CEO
National Initiative for Children's Healthcare Quality
30 Winter Street, 6th Floor
Boston, MA 2108
Phone: 617-391-2714

Cheryl Irmiter, PhD, LCSW, CADC
Senior Scientist
American Medical Association
515 North State Street
Chicago, IL 60626
Phone: 312-464-4049

George Isham, MD, MS
Medical Director & Chief Health Officer
HealthPartners, Inc.
PO Box 1309
MS-21110A
Minneapolis, MN 55440
Phone: 952-883-6769

Heather Kane, PhD
RTI International
Social, Statistical, and Environmental Sciences
Social Policy, Health, and Economics Research
3040 Cornwallis Road
Research Triangle Park, NC 27709
Phone: 919-541-6000

Kathleen Kendrick, RN, MS
Deputy Director
Agency for Healthcare Research and Quality
540 Gaither Road
Frederick, MD 20850
Phone: 301-427-1200

Patrick Killeen, MS, PA-C
President Elect
American Academy of Physician Assistants
950 North Washington Street
Alexandria, VA 22314
Phone: 203-526-4107

Christine Lehman
Westat
Washington, D.C.

Roz Lasker, MD
Clinical Professor of Health Policy and Management
Mailman School of Public Health
Columbia University
155 E. 76 Street #3G
New York, NY 10021
Phone: 917-371-6232

Bernadette Loftus, MD
Associate Executive Director
Kaiser Permanente Mid-Atlantic States
2101 E. Jefferson Street
Rockville, MD 20852
Phone: 301-816-6586

Vesnier Lugo, MPH
Public Health Analyst
Health Resources and Services Administration
5600 Fishers Lane
Rockville, MD 20852
Phone: 301-443-8394

David Meyers, MD
Director
Center for Primary Care, Prevention, and Clinical Partnerships
540 Gaither Road
Rockville, MD 20850
Phone: 3014271634

Tess Miller, DrPH
Lead, Prevention/Care Management Portfolio
Agency for Healthcare Research and Quality
540 Gaither Road
Rockville, MD 20850
Phone: 301-427-1585

Daniel Ostergaard, MD
Vice President
American Academy of Family Physicians
11400 Tomahawk Creek Parkway
Leawood, KS 66211
Phone: 913-906-6000 ext. 4500

Gregory Pappas
National Medical Association
Phone: 202-341-5004

Robert Pestronk, MPH
Executive Director
National Association of County and City Health Officials
1100 17th Street NW
2nd floor
Washington, DC 20036
Phone: 202-507-4271

Cheryl Peterson, MN, RN
Senior Nurse Consultant - Public Health Nursing
Indian Health Service
801 Thompson Avenue
Suite 300
Rockville, MD 21704
Phone: 301-443-1870

Deborah Porterfield, MD, MPH
RTI International
Social, Statistical, and Environmental Sciences
Social Policy, Health, and Economics Research
3040 Cornwallis Road
Hobbs 137
Research Triangle Park, NC 27709
Phone: 919-541-6000

Kyu Rhee, MD, MPP, FAAP, FACP
Chief Public Health Officer
Health Resources and Services Administration
5600 Fishers Lane
Parklawn Building, Room 14-05
Rockville, MD 20886
Phone: 301-443-2216

Elena Rios, MD, MSPH
President & CEO
National Hispanic Medical Association
1411 K Street, Suite 1100
Washington, DC 20005
Phone: 202-628-5898

Amy Roussel, PhD
RTI International
SSES, SPHERE
3040 Cornwallis Road
Hobbs 131
Research Triangle Park, NC 27709
Phone: 919-541-6000

George Rust, MD, MPH
Director
Morehouse School of Medicine
National Center for Primary Care
720 Westview Drive
Atlanta, GA 30310
Phone: 404-756-5740

Marcel Salive, MD, MPH
Director, Division of Medical & Surgical Services
Centers for Medicare & Medicaid Services
7500 Security Boulevard, MS C1-09-06
Baltimore, MD 21244
Phone: 410-786-0297

Charu Sawhney, MD, MPH
ACPM/Pfizer Health Policy Resident
American College of Preventive Medicine
455 Massachusetts Avenue NW
Suite 200
Washington, DC 20001
Phone: 202-466-2044

Katie Sellers
Association of State and Territorial Health Officers
2231 Crystal Dr., #450
Arlington, VA 22202
Phone: 571-527-3171

Doug Shenson, MD, MPH, MS
Executive Director
Sickness Prevention Achieved through Regional Collaboration
76 Prince Street
Newton, MA 2465
Phone: 617-796-7966

Elliot Siegel, PhD
Associate Director for Health Information Programs Development
National Library of Medicine/National Institutes of Health
8600 Rockville Pike
Bethesda, MD 20894
Phone: 301-496-8834

Amy Slonim, PhD
CDC-AARP Liaison
Centers for Disease Control and Prevention/
American Association of Retired Persons
601 E Street, NW
Washington, DC 20049
Phone: 202-434-6976

Jason Spangler, MD, MPH
Managing Senior Fellow & Senior Program Officer
Partnership for Prevention
1015 18th Street NW
Suite 300
Washington, DC 20036
Phone: 202-375-7819

Stephen Taplin, MD, MPH
Senior Scientist/Branch Chief
National Cancer Institute/Division of Cancer Control and Population Sciences
6130 Executive Boulevard, MSC 7344
Bethesda, MD 20892
Phone: 301-402-1483

Wilma Tilson, PhD, MPH
Senior Health Policy Analyst
Department of Health and Human Services/ Assistant Secretary for Planning and Evaluation
200 Independence Ave SW
Room 447D
Washington, DC 20201
Phone: 202-205-8841

Jan Towers, PhD
Director of Health Policy
American Academy of Nurse Practitioners
P.O. Box 40130
Washington, DC 20016
Phone: 202-966-6414

Cynthia Vinson, MPA
Dissemination and Implementation Coordinator
National Cancer Institute
6130 Executive Blvd. #6140
Bethesda, MD 20852
Phone: 301-594-5906

Rachel Weinstein
Agency for Healthcare Research and Quality
540 Gaither Road
Rockville, MD 20850
Phone: 301-427-1853

Claire Weschler, MSEd, CHES
Agency for Healthcare Research and Quality
540 Gaither Road
Room 6147
Rockville, MD 20850
Phone: 301-427-1577

Kathie Westpheling, MPH
Executive Director
Association of Clinicians for the Underserved
1420 Spring Hill Road
Suite 600
McLean, VA 22102
Phone: 703-442-5318

Tatiana Zanzano
Office of Disease Prevention and Health Promotion
1101 Wootton Parkway LL100
Rockville, MD 20852
Phone: 240-453-8255

Namvar Zohoori, MD, MPH, PhD
Associate Director for Science and Chronic Disease Director
Arkansas Dept Health
4815 W Markham Street, Slot 6
Little Rock, AR 72205
Phone: 501-661-2546

APPENDIX B:
SUMMIT AGENDA

AGENDA

Summit on Linking Primary Care and Community Organizations for Prevention

May 6–7, 2010

Meeting Objectives:

1. Provide an ongoing forum for dialogue and learning for individual and organizational stakeholders with an interest in improving the delivery of preventive services through linkages between primary care and community organizations.

2. Present the results of an environmental scan and case studies of primary care and community linkages conducted during 2009–2010.

3. Engage stakeholders to envision a national strategy to support local efforts to develop primary care and community linkages.

4. Engage stakeholders to determine prioritized next steps for AHRQ, other federal agencies, and partners in the areas of dissemination, policy, and research as they relate to primary care and community linkages.

May 6, 2010

9:00–9:45	Welcome and introductions • *Kathleen Kendrick, AHRQ*
9:45–11:00	Assumptions and definitions • *David Meyers, AHRQ* • *Review goals and objectives of meeting* • *Build consensus on key definitions*
11:00–11.15	Break
11:15–12:00	Setting the context: Examples of linkages from the field • *Deborah Porterfield, RTI* • *Laurie Hinnant, RTI*
12:00–1:30	Lunch and Keynote Speaker A Canadian perspective: Strengthening primary health care through primary care and public health collaboration • *Ruta Valaitis, McMaster University*

1:30–1:45	Introduction to afternoon World Café sessions • *Amy Roussel, RTI*
1:45–4:00	World Café Sessions: Determining a flexible, national strategy to support local efforts to develop primary care and community linkages • *Sharing promising models* • *Promoting policy change* • *Identifying research gaps and funding research* • *Developing metrics to measure the success of linkages*
4:00–5:00	Brief reports from World Café group leaders • *Amy Roussel, RTI*

May 7, 2010

8:30–9:15	Recap and discussion from Day 1 • *Amy Roussel, RTI*
9:15–10:30	Breakout: Identifying action steps • *Sharing promising models* • *Promoting policy change* • *Identifying research gaps and funding research* • *Developing metrics to measure successful linkages*
10:30–10:45	Break
10:45–11:30	Brief report from breakout groups and instructions for Gallery Walk • *Amy Roussel, RTI*
11:30–12:30	Lunch/Gallery Walk: Prioritizing action steps in terms of importance and feasibility
12:30–1:30	Healthy Communities Collaboratives • *Kyu Rhee, HRSA*
1:30–2:30	Making it happen: Next steps for AHRQ and stakeholders • *Amy Roussel, RTI*
2:30–3:00	Wrap-up • *Amy Roussel, RTI* • *Therese Miller, AHRQ*

APPENDIX C:
METRICS RELATED TO MEASUREMENT OF PRIMARY CARE AND COMMUNITY LINKAGES

This table depicts the major domains of measures identified by the group and the subheadings within each domain.

Who the partners are	**When the partners became involved**	**What each partner contributes**
▪ Organizational partner type ▪ Population of focus	In which stage: ▪ Defining the need to be addressed by the linkage ▪ Designing the linkage ▪ Participating in the linkage	▪ Knowledge ▪ Skills ▪ Resources – The population base ▪ Services – Administration – Leadership – Data analysis – Enabling services
How the organizations are linked	**What are the impacts (short/intermediate/long)**	**Why or why not?**
▪ Process of collaboration ▪ How services/skills are combined ▪ Infrastructure that allows partners to work together ▪ Productive interactions ▪ Who is the initiator of the linkage?	▪ Service delivery and health outcomes for population of focus ▪ Equity ▪ Benefits and drawbacks for population of focus ▪ Benefits and drawbacks for organizations in the linkage ▪ Sense of shared accountability ▪ Costs ▪ Sustainability	▪ Systemic – Presence of accountability requirement ▪ Organizational ▪ Individual ▪ Interaction – Presence of previous relationship