Clinical-Community Relationships Evaluation Roadmap

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Clinical-Community Relationships Evaluation Roadmap

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Executive Summary

Despite abundant evidence of the effectiveness of certain clinical preventive services, many patients do not receive them. The reasons are numerous, including competing demands and limited reimbursement in primary care. A promising approach to enhancing the delivery of preventive services is for clinicians to coordinate, cooperate, and collaborate with external nonclinical organizations such as local health departments and community-based organizations. The Agency for Healthcare Research and Quality (AHRQ) is interested in understanding the ways in which relationships between primary care practices and community organizations may be effective and feasible in improving the delivery of clinical preventive services recommended by the United States Preventive Services Task Force (USPSTF).

Based on a targeted literature review of evidence on the effectiveness of clinical-community resource relationships for delivering select preventive services, we found that the existing body of evidence is sparse and heterogeneous. Similarly, the number of studies using existing measures for research or evaluation of clinical-community resource relationships is sparse. Substantial research is needed to better understand the potential benefit of clinical-community resource relationships for improving preventive care for patients.

This *Evaluation Roadmap* is designed to be a resource for future research and evaluation, of use to funders, researchers, and program evaluators interested in primary care and understanding effective clinical-community resource relationships. The *Roadmap* is rooted in a conceptual framework that depicts the interrelationships between several factors that may influence the effectiveness of linkages between primary care clinics and community resources for preventive services. The framework includes three basic elements-- the clinic/clinician, the patient, and the community resource--and the three dyadic relationships between these elements. This framework is explained in more detail in Appendix A.

While the *Roadmap* specifically addresses clinical-community resource relationships for selected clinical preventive services, the principles and questions presented here may also apply to other clinical and non-clinical services. Thus, the *Roadmap* also may prove useful and applicable to those interested in effective relationships and coordination between clinics and a variety of community organizations, such as schools or providers of social services.

The following priority questions and recommendations for advancing research and developing measures are based on an environmental scan of measures, a targeted literature review of research, an assessment of evidence gaps, and input from an expert panel.

Priority Questions

1. How do the characteristics of primary care clinicians and clinics, patients, and community resources influence the effectiveness of linkages for the delivery of clinical preventive services?

2. How do characteristics of the clinician-patient relationship, the patient-community resource relationship, and the clinical-community resource relationship influence the effectiveness of linkages for the delivery of clinical preventive services?

3. How does the relative importance and influence of clinics and clinicians, patients, and community resources, and their mutual interrelationships, vary in different circumstances or contexts, including the delivery of different clinical preventive services?

4. What are the best methods, strategies, and settings for studying and improving clinical-community resource relationships for the delivery of clinical preventive services?

5. What are the best measures for evaluating the effectiveness of clinical-community resource relationships for the delivery of clinical preventive services?

Recommendations

1. Researchers should use complex systems approaches to best understand the influence of contextual issues on the effectiveness of clinical-community resource relationships for the delivery of clinical preventive services.

2. Research on clinical-community resource relationships should be designed to flexibly accommodate variability in primary care clinic, patient, and community resource characteristics, including the use of tailored or semi-tailored interventions.

3. Researchers and program evaluators should use and develop standard measures of relevant characteristics of the six elements and relationships that influence the effectiveness of linkages for the delivery of clinical preventive services.

4. Research into clinical-community resource relationships for the delivery of clinical preventive services should be relevant and rigorously designed, using deep qualitative methods as well as formal quantitative study designs.

5. Research findings should be reported more thoroughly and in more useful formats.

6. Studies should include assessments of the feasibility and sustainability of interventions to improve clinical-community resource relationships for the delivery of clinical preventive services, including effects on clinics, patients, and community resources.

7. Future research could consider the conceptual framework developed for this project as a starting point that might be further refined.

As a general conceptual guide for future research in a field that is relatively underdeveloped, the *Roadmap* is meant to provide direction for next steps, rather than a definitive vision of the ultimate research and measurement goals. It is hoped and expected that, as the field advances, more specific and well-defined evidence gaps will become apparent, and with those gaps the associated research and measurement needs will become clearer and more specific.

1. Introduction and Purpose

1.1 Background

Clinical preventive services can reduce morbidity and mortality from various health conditions. The United States Preventive Services Task Force (USPSTF) issues recommendations for the delivery of clinical preventive services based on the findings of systematic evidence reviews (USPSTF, 2010). Even with strong evidence of effectiveness (e.g., USPSTF recommendation levels A and B), many patients do not receive recommended clinical preventive services (McGlynn et al., 2003). The reasons for this are numerous, including competing demands in primary care clinics and limited reimbursement for clinical preventive services (Infante et al., 2007). Another important factor could be the high number of recommended preventive services. One study concluded that it would require 7.4 hours each day for an average primary care clinician to provide all recommended preventive care (Yarnall et al., 2003), which is a practical impossibility.

Certain preventive services may be provided effectively in nonclinical community settings. Examples of such community resources are telephonic smoking cessation counseling services, physical activity programs at the YMCA or health clubs, commercial weight loss programs, Alcoholics Anonymous, or La Leche League. In addition to increasing the availability of preventive services for the community at large, collaborative efforts between primary care practices and community resources, including local health departments, offer the possibility of an effective, efficient, patient-centered approach to address the preventive service needs of some or many of their patients. Examples of several approaches to implementing this type of collaborative clinical-community relationship can be found in Appendix C.

Despite this promise, even when a clinical preventive service could be provided by a non-clinician in the community, and even when such community resources are available, clinicians may be unaware of them, or lack the ability to both make referrals to these external organizations and receive confirmation that appropriate preventive services are delivered. Previous research has indicated that it is possible to establish effective relationships between clinics and community resources, to the benefit of patients, clinicians, and the community resources (Woolf et al., 2006). Certain strategies such as infrastructure support and improved communication systems may facilitate such relationships (Etz et al., 2008).

1.2 Purpose and Scope of the Evaluation Roadmap

This *Evaluation Roadmap* is intended to serve as a general guide and resource for future research and evaluation into the design and implementation of effective clinical-community resource relationships for the provision of selected clinical preventive services. The complete list and rationale for the selection of services is provided in Appendix B-1. The *Roadmap* may be of use to funders, researchers, and program evaluators interested in primary care and understanding effective clinical-community resource relationships. AHRQ's goal in developing the *Roadmap* is to stimulate interest in both implementation and research in this emerging approach to the delivery of selected clinical preventive services. In the *Roadmap* we present a number of priority questions and recommendations for advancing research and developing measures that are

considered to be broadly applicable across multiple preventive services. While the *Roadmap* specifically addresses clinical-community resource relationships for selected clinical preventive services, the principles and questions presented here may also apply to other clinical services and/or to non-clinical services. As such, the *Roadmap* may also prove to be useful and applicable to a broader audience, including those interested in effective relationships and coordination between clinics and a variety of community organizations, such as schools or providers of social services. The *Roadmap* was developed with the input and guidance of a panel of eight national experts, however, the authors are solely responsible for its content. See Appendix D for the expert panel membership.

The *Roadmap* is rooted in a conceptual framework described in detail in Appendix A. The conceptual framework comprises six interrelated components that may influence the effectiveness of a primary care clinic's[1] effort to connect a patient with a community resource to successfully receive a clinical preventive service. These six components include three basic elements (clinic/clinician; patient; community resource) and the three dyadic relationships between these three basic elements (clinician-patient relationship; clinical-community resource relationship; patient-community resource relationship). The clinical-community resource relationship, which is the central emphasis of the *Roadmap*, is one of the basic interrelated components of the conceptual framework. We distinguish a "*clinical-community resource relationship"* from a "*linkage.*". A linkage represents the *combined* interactive influences of all three basic elements and their three respective dyadic relationships in the connection of a primary care patient with a community resource for delivery of a preventive service. The clinical-community resource relationships of interest here are those that have been established and exist with the intent of facilitating the referral of patients to receive preventive services, or that may have been established for another purpose, but which might nonetheless facilitate the delivery of preventive services. This distinction is more fully described in Appendix A. In the *Clinical-Community Relationships Measures Atlas* (Dymek et al., 2013), we pair the six basic factors of the conceptual framework with Donabedian's structure-outcome-process model (Donabedian, 1980) to organize domains of measurement that might be used to evaluate clinics' efforts to connect patients with community resources for preventive services. This framework for thinking about the elements and relationships is also useful for considering high-priority research and evaluation needs, and we have used it as an important guide in developing this *Roadmap*.

The *Roadmap* is based on a targeted literature review of the effectiveness of clinical-community resource relationships for delivering eight different clinical preventive services (described in Appendix B-1); an assessment of gaps in that body of evidence; an environmental scan of studies using existing measures to evaluate clinical-community resource relationships (described in Appendix B-2); a Web-based *Atlas* of measures of clinical-community resource relationships[2]; and consultations with an expert panel. Consistent with earlier work (Porterfield

[1] In the Roadmap, we use the term "clinic" to indicate any type of primary care setting or practice.

[2] Dymek C, Johnson M Jr, McGinnis P, Buckley DI, Fagnan LJ, Mardon R, Hassell S, Carpenter D. Clinical-Community Relationships Measures Atlas. (Prepared by Westat under Contract No. HHSA 290-2010-00021.) AHRQ Publication No. 13-0034-EF. Rockville, MD: Agency for Healthcare Research and Quality. March 2013. http://www.ahrq.gov/professionals/prevention-chronic-care/resources/clinical-community-relationships-measures-atlas/index.html.)

et al., 2012), we found that the existing body of evidence is sparse and heterogeneous, which precluded our identifying a set of discrete evidence gaps related to specific key research questions. Similarly, the number of studies using existing measures for research or evaluation of clinical-community resource relationships is sparse. Given the current relatively underdeveloped state of research, the *Roadmap* provides general conceptual guidance for needed next steps with examples of the types of studies that can begin to fill in gaps in the research.

The *Roadmap* complements and is consistent with other recent initiatives to improve the quality of health care and foster the integration of clinics/clinicians and community organizations that provide health services. These include the "Triple Aim" of the Institute for Healthcare Improvement (http://www.ihi.org/offerings/initiatives/TripleAim) and the National Strategy for Quality Improvement in Health Care (the National Quality Strategy) (http://www.healthcare.gov/law/resources/reports/quality03212011a.html). The Triple Aim includes improved patient experience of care, improved health of populations/communities, and reduced cost of care. The National Quality Strategy provides direction for achieving these aims, by promoting quality health care in which the needs of patients, families, and communities guide the actions of all those who deliver and pay for care. Six priority areas have been identified in the National Quality Strategy, including the promotion of effective communication and coordination of care, the promotion of the most effective prevention practices for leading causes of mortality, and working with communities to promote wide use of best practices to enable healthy living. Developing clinical-community resource relationships for the provision of select USPSTF-recommended preventive services—the focus of this *Roadmap*—contributes directly to achieving the triple aim as it can increase the delivery of effective preventive services, thereby improving population health and averting preventable illnesses.

1.3 The Importance of Context

The expert panel emphasized the importance of considering and accounting for the specific contexts in which clinical-community resource relationships for the delivery of preventive services occur. Primary care and communities are complex and interrelated systems, which exist within broader socioeconomic and health care system frameworks. Clinical-community resource relationships must be evaluated with the potential effects of broader socioeconomic and health care system factors in mind. Communities differ in population size, wealth, educational attainment, cultural diversity, and their approach to addressing local challenges. Primary care clinics exist within a larger health care system that rewards certain behaviors based on payment mechanisms, regulations, and public reporting. The specific health care and other community resources available and accessible in each community are unique and may logically influence the effectiveness of linkages for delivery of preventive services. Furthermore, primary care clinics/clinicians, patients, and community resources vary in numerous particular characteristics that can affect the relevance and effectiveness of different approaches for establishing, managing, and maintaining successful clinical-community resource relationships for delivering preventive services. These are described below.

Primary care clinics/clinicians may vary in their: (a) training and capacity to deliver preventive services, related to clinic size, staffing, and workload; (b) information technology infrastructure, including electronic health records, and clinical decision support systems; (c)

delivery system design, related to the services of social workers or mental health professionals, as well as staffing patterns and roles within a clinic; (d) organizational infrastructure, related to ownership (e.g., health system or hospitals, public or private), profit/nonprofit status, single specialty or multi-specialty; and (e) knowledge of and familiarity with community resources.

Patients may vary in their: (a) health literacy; (b) capacity for self-management related to personal resources, such as financial status, transportation availability, and family support; (c) accessibility to primary care related to insurance coverage and ability to take time off from work; (d) knowledge of and familiarity with community resources; (e) access to the community resource, including ability to pay for a service; and (f) readiness for behavior change.

Community resources may vary in: (a) capacity to provide services, related to size, staffing, and training; (b) information technology infrastructure, including the ability to identify patients due for preventive services, provide automated reminders, and track services delivery; (c) delivery system design, including the scope of professional services and how those services are provided; (d) organizational infrastructure, related to profit/nonprofit status, board composition, and governance structures; and (e) marketing or communication on the availability of services.

For any given clinic in a particular community, the nature of these three elements (clinic/clinician; patient; community resource) and the relationships among them determine the nature and scope of viable clinical-community resource relationships for successfully providing patients with preventive services. In addition, the relevance and influence of different factors will vary according to the particular clinical preventive service in question. A recent report on improving the integration of primary care clinics and public health organizations noted “that the types of interactions between the two sectors are so varied and dependent on local circumstances, such as the availability of resources and differences in health challenges, that it is not possible to prescribe a specific model or template for how integration should look” (Institute of Medicine, 2012, Report Brief, pp. 1-2).

In recognition of wide local variations in myriad influential factors, the expert panel strongly emphasized the importance of considering and accounting for the context in which research, quality improvement, and evaluation initiatives occur. The relevance and effectiveness of particular interventions depend on each community’s unique needs, values, priorities, customs, resources, and preferences. Hence, it is critical that contextual factors are considered in the design, implementation, and evaluation of research into clinical-community resource relationships for delivery of clinical preventive services. Interventions should be flexibly tailored when indicated to accommodate local circumstances. And, given the rich complexity of the interrelated systems involved, it is especially important to conduct rich qualitative research that elucidates the nature and influence of the contextual factors themselves.

2. Priority Questions and Recommendations

The following priority questions and recommendations are offered as a resource and guide for future research and evaluation into the effectiveness of clinical-community resource relationships for the delivery of clinical preventive services, as well as to stimulate additional thinking about important questions that must be answered to build a sound body of evidence in this area. The questions and recommendations do not describe discrete gaps in evidence, which, if filled, would answer specific research or evaluation questions. Rather, given the current relatively underdeveloped state of research and dearth of measures, the *Roadmap* provides general guidance for needed next steps. *The order in which the priority questions and recommendations are presented does not imply a relative importance.* Following most priority questions is a list of illustrative examples of specific research questions relevant to the topic. These lists are not exhaustive, and questions in one topic area may also be applicable to other areas.

2.1 Priority Questions

2.1.1 How Do the Characteristics of Primary Care Clinicians and Clinics, Patients, and Community Resources Influence the Effectiveness of Linkages for the Delivery of Clinical Preventive Services?

Our conceptual framework describes each of the three fundamental elements of a linkage between a primary care clinic and a community resource to provide a patient with a preventive service: clinic/clinician, patient, and community resource. It is known that some characteristics of these three basic elements may influence the receipt or effectiveness of preventive services—for example, a patient's assessed stage of readiness for change, or a clinic's usual workload. However, little is definitively known about how different characteristics may influence the success of *linkages* between clinics and community resources for that purpose. Examples of relevant questions include:

Primary Care Clinics and Clinicians

- What is the role of information technology infrastructure, and how can it best be used in different contexts to support clinical-community relationships?

- What types of clinical organizations are best suited to participate in clinical-community relationships? Are clinics with certain organizational or financing structures more or less likely to make successful linkages?

- What are the key organizational roles that must be filled at primary care clinics, and how can they best be staffed?

- How does a clinician's level of comfort discussing potentially stigmatized behaviors (e.g., alcohol use, smoking, or sexual activity) influence the success of linkages?

Community Resources

- What types of community organizations are best suited to participate in clinical-community relationships?
- What are the key organizational roles that must be filled at community organizations, and how can they best be staffed?
- How does the organizational infrastructure of a community resource affect its ability to reliably provide feedback to referring clinicians?
- What external conditions in the community might facilitate or hinder the formation or success of clinical-community relationships for preventions?

Patients

- Which patient populations are more or less receptive to receiving clinical preventive services through a clinical-community relationship?
- Does patient health literacy influence the likelihood of a successful linkage?
- How does a patient's level of comfort discussing potentially stigmatized behaviors (e.g., alcohol use, smoking, or sexual activity) influence the success of linkages?
- Does a patient's cultural or religious background influence the effectiveness of a linkage? If so, does it vary for different preventive services?

The answers to questions such as these could begin to distinguish the characteristics that are essential for effective linkages. Understanding which characteristics are essential or not for successful linkages, and in which circumstances, could increase the effectiveness and efficiency of efforts to improve clinical-community resource relationships for delivering preventive services.

2.1.2 How Do Characteristics of the Clinician-Patient Relationship, the Patient-Community Resource Relationship, and the Clinical-Community Resource Relationship Influence the Effectiveness of Linkages for the Delivery of Clinical Preventive Services?

As with the three basic elements discussed in the preceding question, our conceptual framework describes the three basic dyadic relationships as fundamental aspects of a linkage between a primary care clinic and a community resource to provide a patient with a preventive service. These relationships are also considered because of the conceptual plausibility that their characteristics may influence the success of linkages for delivery of preventive services.

While some characteristics of the **clinician-patient relationship** (e.g., continuity of care; mutual trust) are known to be associated with better patient outcomes, little is definitively known

about how aspects of that relationship may influence the success of *linkages* between clinics and community resources for preventive services. Illustrative examples of relevant questions include:

- How do the duration and continuity of the clinician-patient relationship influence the success of linkages between clinics and community resources for preventive services?

- Is effective shared decision-making different in quality or importance when a preventive service is provided by linkage to a community resource rather than in the clinic?

More has been learned about the characteristics of successful **relationships between clinics/clinicians and community resources.** Recently, the Institute of Medicine (IOM) convened an expert committee to assess past and current efforts to integrate primary care and public health. This committee's report describes core principles for successful integration, including involving the community in defining and addressing its needs, sustainability, and the collaborative use of data (Institute of Medicine, 2012). The report also notes that integration of primary care and public health can occur on a continuum, similar to Himmelman's schema for a continuum of strategies for working together that includes networking, coordination, cooperation, and collaboration (Himmelman, 2002). While the IOM report addressed primary care and public health integration efforts for colorectal cancer screening, many of its principles might apply more generally to clinical-community relationships for prevention.

In another recent initiative, AHRQ and the Robert Wood Johnson Foundation (RWJF) Prescription for Health program (www.prescriptionforhealth.org) funded projects to develop and test innovative ways to help patients improve their health behaviors. Many of these projects involved connecting primary care clinics and community resources for preventive services related to tobacco use, unhealthy diet, physical inactivity, and alcohol misuse. In an analysis of eight of these projects, Etz et al., identified promising strategies for connecting primary care clinics and community resources for delivery of these preventive services, including developing referral guides and using external intermediaries (Etz et al., 2008). These recent initiatives provide an important and valuable base for needed future research into the clinical-community resource relationship, which is central to establishing linkages. Still, current understanding of how aspects of the clinical-community resource relationship influence the success of *linkages* for delivery of preventive services is not definitive or complete. Illustrative examples of relevant questions include:

- To which circumstances are the various degrees of relationship on Himmelman's continuum (e.g., networking, coordination, cooperation, collaboration) best suited? Is this the most useful framework for characterizing the levels or intensity of the relationship?

- What level of relationship intensity is best suited for various preventive services?

- What level of relationship intensity is best suited for particular types of clinics, patients, and/or community resources?

- What qualities in the relationship make for more effective two-way communication about patients and their progress? Does this depend on whether the relationship is limited in terms of duration, service, or patient population?

- How can primary care clinics maintain current information on the existence and availability of relevant community resources?

Finally, little is known about the possible influence of characteristics of the **patient-community resource relationship** on the likelihood of successful linkages. Illustrative examples of relevant questions include:

- How might continuity of care and mutual trust between the patient and the community resource influence the effectiveness of linkages?

- Do the quality and importance of shared decision-making within the community resource setting differ from those of shared decision-making between patient and clinician?

As with the three basic elements, future research may begin to distinguish the characteristics of the three basic dyadic relationships that are essential for effective linkages. Understanding which characteristics are essential or not for successful linkages and in which circumstances, could increase the effectiveness and efficiency of efforts to improve clinical-community resource relationships for delivering preventive services.

2.1.3 How Do the Relative Importance and Influence of Clinics and Clinicians, Patients, and Community Resources and Their Mutual Interrelationships, Vary in Different Circumstances or Contexts, Including the Delivery of Different Clinical Preventive Services?

The six interrelated components that comprise the conceptual framework include three basic elements (clinic/clinician; patient; community resource) and the three dyadic relationships between these three basic elements (clinician-patient relationship; clinical-community resource relationship; patient-community resource relationship). The effects of the six factors combine in the making of linkages for the delivery of clinical preventive services as described in more detail in Appendix A. It is not presumed that each factor exerts an equal influence on the presence or success of a linkage. In fact, the relative influence of factors is generally expected to vary according to the particular preventive service and the specific circumstances of individual clinics, clinicians, patients, community resources, and communities. Little is definitively known, however, about how the relative influence or importance of the factors depends on particular circumstances.

To illustrate, consider the potential variable importance of one factor—the clinical-community resource relationship. While the nature and intensity of successful clinical-community resource relationships may occur along a continuum, it is not known under which circumstances a particular degree of relationship is optimal. The type of community resource may make a difference in the importance of the clinical-community resource relationship. For example, a moderate level of interorganizational coordination might be required to link a patient with a face-to-face tobacco cessation program at the local public health department, whereas no real relationship beyond simple awareness may be necessary for a referral to a telephonic smoking cessation program. In both cases, the patient element may not exert a significant influence on the success of the linkage, aside from being at an adequate stage of readiness to

change. Similarly, the type of preventive service may make a difference in the importance of the clinical-community resource relationship. For example, a referral to the same local public health department for counseling about sexually transmitted diseases may require a still higher level of interorganizational cooperation.

Similar scenarios can be described for each of the six basic factors:

- Does the influence of certain patient characteristics (e.g., cultural or religious background) on the success of a linkage vary according to the particular preventive service (e.g., breastfeeding counseling)?

- Are particular types of community resources more successful at linkages in particular types of communities?

- Is the type of clinic organizational structure more important for successful linkages for particular preventive services?

- Which clinical preventive services are more or less suited for delivery through a clinical-community relationship?

Future research that elucidates the circumstances under which the basic six factors are most important and/or influential—individually and relative to each other—could increase the effectiveness and efficiency of efforts to improve clinical-community resource relationships for delivering preventive services.

2.1.4 What Are the Best Methods, Strategies, and Settings for Studying and Improving Clinical-Community Resource Relationships for the Delivery of Clinical Preventive Services?

With relatively few studies to date, the best approaches to studying and improving clinical-community resource relationships for the delivery of clinical preventive services are still not certain. However, earlier work, such as that conducted through the RWJF- and AHRQ-funded Prescription for Health initiative (www.prescriptionforhealth.org), has shown the promise of some intervention and evaluative strategies (Cohen et al., 2008; Etz et al., 2008; Green et al., 2008; Holtrop et al., 2008; Krist et al., 2008). As the following limited examples illustrate, many methodological questions remain and much future research is needed.

The Prescription for Health projects were all conducted in practice-based research networks (PBRNs), a seemingly ideal setting for this work. Do PBRNs, as currently designed, adequately involve community and patient partners on an equal footing? How might these valuable networks best organize to conduct research into the effectiveness of clinical-community resource relationships for the delivery of clinical preventive services? Many studies were of complex approaches that combined multiple elements of clinical-community resource relationships and other interventions such as the “five A’s” (Whitlock et al., 2002). Little is known about the relative effectiveness of individual elements and combinations of elements of complex interventions—knowledge that might inform more efficient approaches.

While it seems clear that effectiveness research in real-world settings is the most promising general approach, little is known about the best methods and approaches for understanding and accounting for the unique complexity of local circumstances, related to variation in clinics, patients, community resources, and communities. Relevant methodological questions include, but are not limited to:

- What are the best qualitative approaches to understanding the complexity introduced by differences in local context?
- Which qualitative approaches are best suited to which questions and contexts?
- Under which circumstances and for which questions are formal study designs such as cluster-randomized trials most valuable?
- Would studies comparing types and elements of clinical-community resource relationships to other types and elements of clinical-community resource relationships (i.e., comparative effectiveness research) be viable?
- How might methods of implementation science be best applied to research in this area?
- What are the factors that can motivate clinical and community organizations to form relationships for the delivery of clinical preventive services? How important are financial incentives and how can they best be structured?
- What are the barriers to forming and sustaining clinical-community relationships for prevention, and how can they be overcome?
- Given the diversity of local circumstances, what are the best methods for assessing and reporting on unique aspects and external validity of studies?
- What are the most appropriate methods for identifying and reporting on key lessons that may be useful for those doing research or implementing programs in this field?

2.1.5 What Are the Best Measures for Evaluating the Effectiveness of Clinical- Community Resource Relationships for the Delivery of Clinical Preventive Services?

The multifactor complexity of connecting primary care patients with community resources for clinical preventive services presents a myriad of potential factors that might be measured to assess the effectiveness of clinical-community resource relationships for delivering those services. Measures could relate to each of the three basic elements (clinic/clinician; patient; community resource) and each of the three dyadic relationships (clinician-patient relationship; clinical-community resource relationship; patient-community resource relationship) of the conceptual framework. Within each of these six basic factors, multiple measures could relate to numerous different domains. For example, measures related to the clinic/clinician element could

include the domains of accessibility, delivery system design, information technology infrastructure, etc. In fact, the *Atlas* describes 56 possible measurement domains grounded in the conceptual framework.

However, few studies using relevant measures currently exist. It is not known which existing or potential measures would be the most useful, practical, or valid for evaluating the effectiveness and outcomes of clinical-community resource relationships for the delivery of preventive services. A critical goal of future research should be to better understand which are the most useful and relevant domains to measure and what are the best measures to use across various interventions, settings, and contexts.

2.2 Recommendations

2.2.1 Researchers Should Use Complex Systems Approaches to Best Understand the Influence of Contextual Issues on the Effectiveness of Clinical-Community Resource Relationships for the Delivery of Clinical Preventive Services

Primary care and communities are complex systems. As others have noted, primary care needs systems approaches to work (Thompson, 2008). Establishing relationships between primary care and community resources to provide patient services further increases the complexity of the resulting interrelated systems. This underscores the need for systems approaches to develop, understand, maintain, and evaluate these relationships. This project's expert panel strongly emphasized the need for research and evaluation using complex systems approaches to best understand the influence of contextual issues on the effectiveness of clinical-community resource relationships for the delivery of clinical preventive services.

The interactions of a clinic/clinician, a patient, and a community resource to create a linkage are inherently complex. Furthermore, these activities function within broader socioeconomic, health care systemic, and community contexts, all of which underscores the critical importance of considering contextual factors in the design, implementation, and evaluation of research into clinical-community resource relationships for delivering preventive services.

While not endorsing one particular approach, the expert panel emphasized that the overarching principles of complex-interactive systems approaches are essential to research and evaluation of clinical-community resource relationships. Useful approaches would entail far more than merely gathering and analyzing quantitative data on various contextual factors. Rather, the best approaches would be intensive and aim for a rich and deep understanding of the complexity of the relationships. Examples might include approaches informed by complexity science, Situational Analysis, Dynamic Systems Modeling, and Realist Evaluation.

2.2.2 Research on Clinical-Community Resource Relationships Should Be Designed to Flexibly Accommodate Variability in Primary Care Clinic, Patient, and Community Resource Characteristics, Including the Use of Tailored or Semi-Tailored Interventions

As previously noted, local circumstances vary considerably, and the characteristics of clinics/clinicians, patients, and community resources may affect the relevance and success of a particular intervention to improve clinical-community resource relationships for delivering preventive services. Local circumstances may especially present challenges to the successful implementation and evaluation of complex interventions, such as those that would be used to improve linkages for delivering preventive services. In a report based on analyses of projects from the AHRQ and RWJF funded Prescription for Health initiative (www.prescriptionforhealth.org), Cohen et al., describe the importance of adapting interventions to accommodate local circumstances (Cohen et al., 2008). To improve the integration of complex interventions into clinics and community resources, researchers should tailor interventions to better fit with local needs, resources, organizational capacity, values, customs, priorities, and preferences. Cohen et al., emphasize that such adaptations should be done cautiously to maintain adherence to key components of the intervention while modifying components that facilitate integration (Cohen et al., 2008).

Tailoring interventions to fit local needs must be based on a good understanding of the local circumstances, which in turn is dependent on the input and participation of patients, clinics, and community resources. Studies should assess and report on adaptations that were made to the intervention or protocol and how the adaptations affected the success of implementation, integration, and sustainability of interventions. Adaptations are common and usually precipitated by important real-world needs and considerations, and hence could provide rich and useful information—information that is generally lost because it is not reported.

2.2.3 Researchers and Program Evaluators Should Use and Develop Standard Measures of Relevant Characteristics of the Six Elements and Relationships That Influence the Effectiveness of Linkages for the Delivery of Clinical Preventive Services

The use of validated standard measures can improve the quality of individual research studies and evaluation projects while also improving the ability to assess a body of existing research or programs. A set of valid standard measures of the most relevant characteristics of the six basic elements and relationships would allow for more reliable results and for more accurate and meaningful comparisons across studies or programs. There is an important need for the development and use of such measures by researchers and evaluators. Few studies have used existing measures related to clinical-community resource relationships for delivery of clinical preventive services, and those studies have used common measures of proportion, not specially developed measures. There is both a need to use and test existing common measures that have not heretofore been used in this field of study, as well as a need to develop new specialized measures.

A forthcoming report listing ideas for "candidate" measures, is being produced for AHRQ in conjunction with the *Measures Atlas* and this *Roadmap.* The report, to be released later this year, describes potentially valuable measures for use and/or future development.

Given the multifactor complexity of connecting primary care patients with community resources for clinical preventive services and the consequently large number of possible measurement domains, a goal of future research should be to determine which domains are most important to measure for which objectives. The resulting measures should be practical and valid for use across various interventions, settings, and contexts.

2.2.4 Research Into Clinical-Community Resource Relationships for the Delivery of Clinical Preventive Services Should Be Relevant and Rigorously Designed Using Deep Qualitative Methods as Well as Formal Quantitative Study Designs

Although the majority of the evidence gaps identified by our expert panel were principally due to the relative dearth of literature, many of the studies included in the literature review were inadequately designed, insufficiently rigorous, and/or incompletely reported. Studies using robust qualitative methods for a deep understanding of the effectiveness of interventions were especially lacking. There is a need for much research, which should be rigorously designed and employ a variety of relevant methods.

There is a role for rigorously designed traditional analytic studies, such as cluster randomized controlled trials. Although half of the literature review studies on tobacco use counseling and interventions were of a cluster randomized trial design, there is a relative overall lack of cluster randomized trials of the effectiveness of interventions to establish or improve clinical-community resource relationships for the delivery of clinical preventive services, especially for other preventive services. Although potentially useful for a variety of interventions, cluster randomized trials should especially be considered for testing of highly standardized interventions with high potential for implementation in a variety of settings. Future research should also use meaningful comparison groups and specifically define "usual care"—the relative absence of which was a notable deficiency in many studies included in the literature review. And, studies should include meaningful intermediate and process outcomes, as well as ultimate patient health outcomes.

While cluster randomized trials may be useful for answering many important questions related to clinical-community resource relationships for delivery of preventive services, the complexity of the topic and the variability in local circumstances necessitate the use of rich qualitative methods grounded in a systems perspective. There is a need for studies designed and evaluated with a thorough understanding of the nature and effects of contextual factors. The particular approaches may vary, and could include a range of qualitative data-gathering and evaluative methods, but the goal should be to get beyond a traditional quantitative assessment of an intervention's effectiveness to a deeper understanding of the contextual factors at play. In many situations, mixed-methods studies using quantitative and qualitative approaches together may be the best way to understand the effectiveness and contextual influences of an intervention.

A large range of possible interventions is available to improve clinical-community resource relationships for delivery of preventive services. Future studies should include innovative and effective uses of health care information technology in clinical-community resource relationships. As the evidence base grows, future research should attempt to systematically assess not only the effectiveness of individual interventions , but also their suitability to particular local circumstances by studying what types of interventions are best suited to different preventive services, and what types of interventions most effectively cut across multiple services.

In addition to interventions designed and evaluated as part of formal studies, a variety of quality improvement initiatives have given rise to various interventions to develop and maintain clinical-community resource relationships. The experiences of these "natural experiments" could be a valuable addition to our understanding of effective interventions and contextual factors. Research is needed on existing successful programs; such research could include ethnographic or "naturalistic" qualitative methods in the relevant communities.

2.2.5 Research Findings Should Be Reported More Thoroughly and in More Useful Formats

More thorough and useful reporting of research findings is needed. Studies should describe interventions and clinical-community resource relationships in greater detail, including details of distinct elements of the relationship that might be critical to its effectiveness. Given the current lack of consistency across studies, this would allow for better comparisons and conclusions about the effectiveness of different interventions. When relevant, researchers should use standardized methods for thorough and transparent reporting of study results, such as the CONSORT statement (Schulz et al., 2010; Moher et al., 2010) for randomized controlled trials and the STROBE statement (STROBE, 2007) for observational studies. To make the greatest use of their findings, future qualitative research on clinical-community resource relationships should be more thoroughly reported, perhaps with a standard set of qualitative contextual factors. When possible, qualitative researchers should also use standardized methods for thorough and transparent reporting, such as the Consolidated Criteria for Reporting Qualitative Research (COREQ) for interviews and focus groups (Tong et al., 2007). And, given the great variety of local circumstances in which this research occurs, researchers should consider using the Reach, Efficacy/Effectiveness, Adoption, Implementation, Maintenance (RE-AIM) framework (Glasgow et al., 1999) to improve adoption and implementation of effective interventions.

2.2.6 Studies Should Include Assessments of the Feasibility and Sustainability of Interventions to Improve Clinical-Community Resource Relationships for the Delivery of Clinical Preventive Services, Including Effects on Clinics, Patients, and Community Resources

Many interventions that are found to be effective in formal studies ultimately may not be feasible or sustainable for clinics, patients, or community resources. This may be due to certain artificial or idealized conditions under which the studies are conducted, such as with study funds or extra staff time. Even effectiveness studies intended to reflect real-world conditions may not be successfully implemented by other clinics or communities due to unique contextual factors.

Future research on clinical-community resource relationships should consider the effectiveness of implementation, including in particular the feasibility and sustainability of interventions. The Consolidated Framework for Implementation Research (CFIR) is a tool that may be useful for such assessments (Damschroder et al., 2009).

For example, studies should include assessments of the cost of interventions to the clinic practice (e.g., financial cost, staff time, extra roles assumed by staff members), including followup studies for practices that maintain the intervention. There is a related need to study and understand potential "ripple" effects (positive and negative) of a practice change intervention (e.g., medical assistants are used to the highest level of their training to facilitate the practice change intervention and subsequently find a different job). Studies should also assess the cost to patients, including financial cost and time demands, and understand how these factors affect feasibility and sustainability. And, there is a need to study the impact (positive and negative) of interventions on community resources. For example, an intervention to increase clinic referrals for nutritional counseling may increase referrals with the unintended effect of overwhelming the community resource's capacity. Assessing factors such as these, related to successful implementation, may help to improve the feasibility and sustainability of interventions.

2.2.7 Future Research Could Consider the Conceptual Framework Developed for This Project as a Starting Point That Might Be Further Refined

The conceptual framework that underlies this *Roadmap* expanded on the idea of a bridge between primary care practices and community resources as described by Etz et al. (Etz et al., 2008). The Etz bridge characterizes the two "anchors"—the clinic/clinician and the community resource—as well as the relationship between the two anchors. Our conceptual framework (Appendix A) added the critical element of the patient to this bridge. Including the patient element with the clinic/clinician and community resource elements produces a framework that represents the combined interactive influences of all three basic elements and their three respective dyadic relationships. We believe that this conceptual framework may serve as a useful guide for next steps in understanding and improving the real-world process of placing actual patients on an existing bridge to connect them with community resources to receive needed preventive services. With the knowledge gained by future research and evaluation, we hope that the relevance and function of its components will be further elucidated and that the conceptual framework may be further developed.

3. Conclusion

Although establishing relationships between primary care clinics/clinicians and community resources is a promising approach for improving the delivery of clinical preventive services, the existing body of evidence as to the effectiveness of this approach is sparse and heterogeneous. Similarly, the number of studies using existing measures for research or evaluation of clinical-community resource relationships is sparse. Substantial research is needed to better understand the potential benefit of clinical-community resource relationships for improving preventive care for patients.

This *Evaluation Roadmap* is intended as a guide for future research and evaluation into the effectiveness of clinical-community resource relationships for the provision of clinical preventive services. The *Roadmap* is rooted in a conceptual framework of various factors that may influence the effectiveness of connecting patients in primary care clinics with community resources for the receipt of preventive services. The priority questions and recommendations for advancing research and developing measures are based on a targeted literature review of research, an assessment of evidence gaps, an environmental scan of measures, and expert opinion. The priority questions and recommendations were considered to be broadly applicable across multiple different clinical preventive services, and not merely relevant to only a single service.

As a general conceptual guide for future research in a field that is relatively underdeveloped, the *Roadmap* is meant to provide direction for next steps, rather than a definitive vision of the ultimate research and measurement goals. It is hoped and expected that, as the field advances, more specific and well-defined evidence gaps will become apparent, and with those gaps, the associated research and measurement needs will become clear and more specific.

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Appendices: Preliminary Work and Findings

The priority questions and recommendations of the *Evaluation Roadmap* are premised on earlier work and findings of this project. The following appendices discuss earlier work of particular relevance that was considered in the development of the *Roadmap*:

- The **conceptual framework** that underlies the *Roadmap* (**Appendix A**)
- The **current state of the evidence** regarding:
  - The **effectiveness** of clinical-community resource relationships (**Appendix B-1**), and
  - The **use of measures** in evaluating clinical-community resource relationships (**Appendix B-2**).
- **Examples of the current state of practice** related to clinical-community resource relationships for delivering clinical preventive services (**Appendix C**).
- The **members of the Expert Panel** who provided guidance during the development of the *Roadmap* (**Appendix D**).

Appendix A: Conceptual Framework

The *Evaluation Roadmap* is based on an understanding of clinical-community resource relationships rooted in a previously developed conceptual framework. This conceptual framework is premised on clinical-community resource relationships in which patient referrals originate from the clinic toward the community resource, although reciprocity within the relationship is also considered. The conceptual framework describes six interrelated components that may influence the effectiveness of a clinic's effort to connect a patient with a community resource to successfully receive a clinical preventive service. These **six components include:**

Three basic elements:

- Clinic/clinician;
- Patient; and
- Community resource.

Three dyadic relationships between these three basic elements:

- Clinician-patient relationship;
- Clinical-community resource relationship; and
- Patient-community resource relationship.

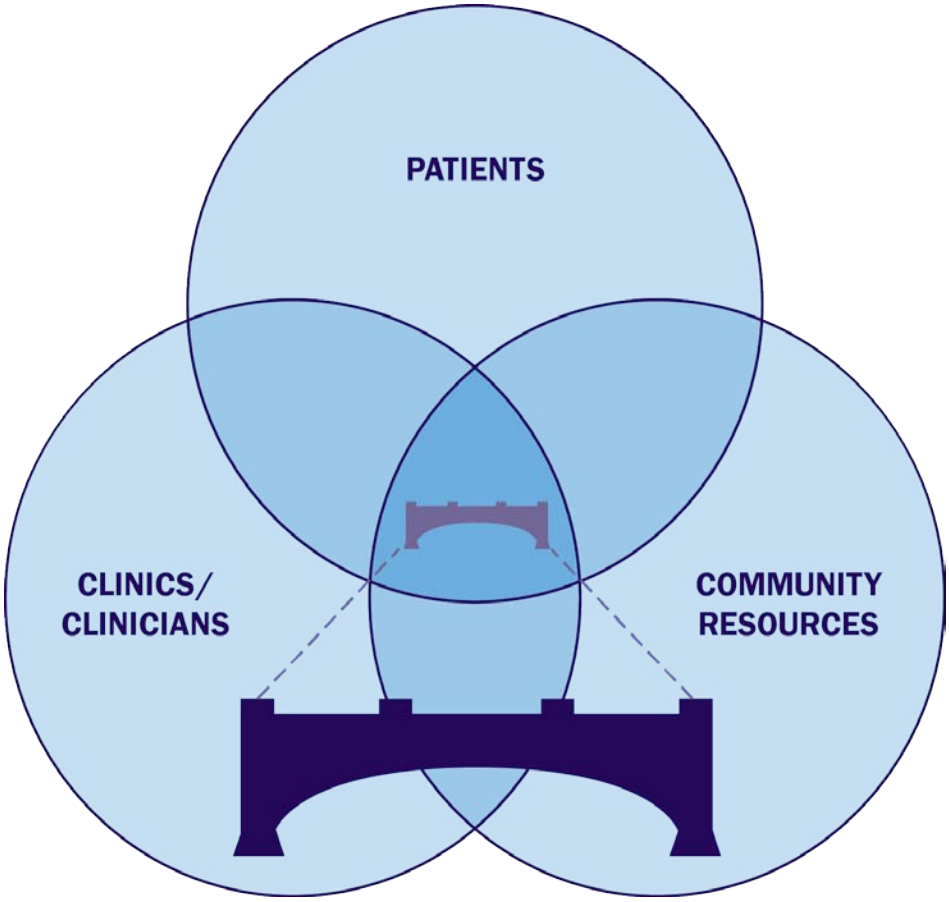
The clinical-community resource relationship, which is the central emphasis of the *Roadmap*, is one of the basic interrelated components of the conceptual framework.

The conceptual framework is represented in Figure A-1, below. The three interconnected circles of this Venn diagram represent the three basic elements of the framework—the primary care clinic/clinician, the patient, and the community resource.

- The ***clinic/clinician element*** includes individual clinicians and clinic support staff operating in clinical primary care settings. Examples of clinic/clinician characteristics that might influence the effectiveness of efforts to connect patients with community resources for clinical preventive services include: awareness of community resources, capacity and training to deliver particular clinical preventive services, organizational infrastructure, openness for change, and information technology infrastructure.
- The ***patient element*** is defined as the individual who receives primary care services, including preventive care and illness care. Examples of patient characteristics that might influence the effectiveness of a clinic's effort to connect the patient with a community resource include: stage of readiness for change, health literacy, capacity for self-management, and accessibility to the community resource.

- The ***community resource element*** encompasses a range of organizations and programs that provide services to patients, including USPSTF-recommended clinical preventive services. Examples of community resource characteristics that might influence the effectiveness of efforts to connect patients with the community resource include: capacity to deliver the services, organizational infrastructure, and information technology infrastructure.

Figure A-1. Conceptual framework of linkages between clinics and community resources for delivering clinical preventive services



The areas of intersection of the three circles represent relationships between the three basic elements. The three dyadic relationships between the three basic elements are fundamental aspects of the conceptual framework.

- Examples of characteristics of the ***clinic/clinician-patient relationship*** that might influence the effectiveness of efforts to connect the patient with a community resource for preventive services include: trust between the clinician and patient, shared decision-making, and mechanisms for mutual support of patient self-management.

- Examples of characteristics of the ***clinic/clinician-community resource relationship*** that might influence the effectiveness of efforts to connect patients between the two include: level of interrelationship along Himmelman's continuum for collaborative processes (Himmelman, 2002), formal mechanisms for referrals, and effective mechanisms for feedback from community resource to clinic.

- Examples of characteristics of the ***patient-community resource relationship*** that might influence the effectiveness of clinics' efforts to connect patients with the community resources include: patients' perception and trust of the community resource, formal mechanisms for referrals, and effective communication between patient and community resource.

In the *Atlas* (*Clinical-Community Relationships Measures Atlas*. Dymek et al., 2013)), we pair the six basic factors of the conceptual framework with Donabedian's structure-outcome-process model (Donabedian, 1980) to organize various domains of measurement that might be used to evaluate clinics' efforts to connect patients with community resources for preventive services. This framework for thinking about the elements and relationships is also useful for considering high-priority research and evaluation needs, and we have used it as an important guide in developing this *Evaluation Roadmap*.

Our conceptual framework expands on the idea of a bridge between primary care practices and community resources as described by Etz et al. (Etz et al., 2008). The larger bridge imposed over the Venn diagram in Figure A-1 represents this connection between the clinic/clinician and the community resource. The Etz bridge includes foundational ("anchor") characteristics of the clinic/clinician and the community resource, as well as the relationship between the two. Our conceptual framework adds the critical element of the patient to this bridge. Given that the real-world function of connections between clinics and community resources to actually deliver preventive services cannot occur without patients, including patient-related factors is essential. By including the patient element in the framework, we consider the potential influence of patient characteristics and the relationships of patients with clinics/clinicians and with community resources.

Defining "Linkage". Including the patient element with the clinic/clinician and community resource elements produces the central area of the Venn diagram above, where all three circles intersect. This area at the center of the diagram is of particular interest, as it represents the combined interactive influences of all three basic elements and their three respective dyadic relationships. The larger bridge in the diagram can represent relationships that are established

with the intent of facilitating the referral of patients to receive preventive services, or existing relationships between clinics and community resources that are not specific to the delivery of clinical preventive services, but which might nonetheless facilitate the delivery of those services. The smaller bridge at the center of the diagram represents the process of placing actual patients on that existing bridge to connect them with community resources to receive needed preventive services. We refer to the former concept, represented by the larger bridge, as *"clinical-community resource relationships,"* which is one of the six basic interrelated components of the conceptual framework. We refer to the latter concept, represented by the smaller bridge at the center of the diagram, as a *"linkage."* A linkage, therefore, represents the *combined* influence of all six basic factors in the actual realization (or not) of a primary care patient being connected with a community resource for delivery of a preventive service.

It is important to note that the symmetry of the diagram does not imply that each of the basic six factors necessarily exerts an equal influence in making a linkage for the delivery of a clinical preventive service. In fact, the relative influence of factors is generally expected to vary according to the particular preventive service and the specific circumstances of individual clinics, clinicians, patients, community resources, and communities. The relevance of situational variability in the influence of different factors, including the clinical-community resource relationship, is discussed in more detail in Section 1-3, "The Importance of Context."

Appendix B.1: Evidence on Effectiveness

The project team conducted a targeted literature review of existing evidence related to the effectiveness of clinical-community resource relationships for the delivery of select preventive services. That review served as the basis for an assessment of evidence gaps. The literature review and gaps assessment served as a basis for this *Roadmap*. The literature review included studies related to the eight clinical preventive services listed below, all USPSTF A or B recommendations. Based on input from the expert panel, these services could potentially be provided in non-clinical settings and are candidates for delivery through a clinical-community relationship:

- Alcohol misuse screening and counseling;
- Breastfeeding counseling;
- Healthy diet counseling for adults with known risk factors for cardiovascular and diet-related chronic disease;
- Obesity screening and counseling for adults;
- Obesity screening and counseling for children;
- Sexually transmitted infections (STIs) counseling;
- Tobacco use counseling and interventions for non-pregnant adults; and
- Tobacco use counseling for pregnant women.

In addition, the literature review specifically assessed evidence on counseling to promote physical activity as an aspect of screening and counseling for obesity.

AHRQ had funded an earlier targeted literature review of clinical-community resource relationships for delivery of preventive services that address healthy diet, physical activity, obesity, or tobacco use (Porterfield et al., 2012). The investigators of that review found the evidence base to be small and heterogeneous, and suggested that it was still insufficient for a focused systematic review. Therefore, the literature review conducted for the current project was also a non-systematic targeted review; the review was broadly inclusive of studies that had assessed the effect of clinical-community resource relationships on patient outcomes related to any of the preventive services of interest. It did not include quality assessments of included studies or a summary assessment of the strength of evidence.

Consistent with the earlier findings of Porterfield et al. (2012), the review found that the evidence base was sparse. Most of the existing research addresses tobacco cessation counseling for non-pregnant adults (16 of 27 studies) or obesity screening and counseling for adults (15 of 27 studies), with few studies identified for other preventive services. No evidence was identified for three of the eight preventive services—breastfeeding counseling, obesity screening, and counseling for children, and counseling for STIs. Additionally, the existing evidence is very

heterogeneous in the interventions, outcomes, and settings studied; with a lack of sufficient numbers of studies of promising interventions using common outcomes to allow for rigorous comparisons of effectiveness. This dearth of evidence suggested that the general topic of the effectiveness of clinical-community resource relationships for providing clinical preventive services is broadly understudied.

Based on the findings of the literature review, we engaged a panel of eight national experts to provide input regarding the evidence reported in the review and to identify and characterize gaps in the evidence. Panel members had specific experience and expertise in collaborations between primary care and public health agencies and linking primary care with community resources for clinical preventive services. The panel spent half a day engaged in an in-person, facilitated and structured process to identify and characterize evidence gaps. Two members of the panel further clarified and elaborated on a preliminary written synthesis of the full panel's conclusions. The full panel was then reconvened for a teleconference meeting to finalize the gaps report.

We classified evidence gaps according to current recommendations (Chang et al., 2012) into content gaps, which relate to particular questions or aspects of questions, and methodological gaps, which relate to multiple key questions. We further classified content gaps as they relate to each element of the "PICOS" format – population (P), intervention (I), comparison (C), outcome (O), and setting (S). The great majority of identified evidence gaps (31 of 42) were relevant to most or all of the clinical preventive services of interest. This was particularly true given that approximately one quarter (7 of 27) of the included studies were of interventions that targeted multiple preventive services.

The targeted literature review was broad in scope and addressed a general question without specific key questions. In addition, as previously noted, the evidence base was sparse and heterogeneous, with no evidence for several preventive services. As a consequence, many of the gaps identified by the panel were essentially described as general research needs, rather than as discrete gaps in evidence, which, if filled, would answer specific research questions.

Methodological gaps were articulated in broad terms and suggest the need for foundational research ranging from cluster randomized trials of the effectiveness of clinical-community resource relationships to qualitative research into the myriad of contextual factors that may influence the effectiveness of such relationships. The gaps report, along with the sparse evidence of existing measures, formed the basis of the priority questions and recommendations of this *Roadmap*.

Appendix B.2: Use of Measures in Evaluation

The project team conducted an environmental scan consisting of a literature search of five major health and social science databases as well as targeted and general Internet searches. The environmental scan identified a few studies that used existing measures relevant to clinical-community resource relationships. The *Atlas* reports on five measures from two studies specifically related to both primary care and community resources for the delivery of clinical preventive services (Holtrop et al., 2008; Krist et al., 2008). Each of the five measures pertains to four preventive services: alcohol misuse counseling; healthy diet counseling; obesity screening and counseling for adults; and tobacco use counseling and interventions for non-pregnant adults. These measures assessed the proportion of patients referred for services, the proportion that met with a referral liaison, or the proportion that initiated the intended behavior change.

With so few studies having used existing measures related to clinical-community resource relationships for delivery of clinical preventive services, a forthcoming report listing ideas for "candidate" measures, is being produced for AHRQ in conjunction with the *Measures Atlas* and this *Roadmap*. The report, to be released later this year, describes potentially valuable measures for use and/or future development and classifies measures into domains grounded in the conceptual framework. The candidate measure report underscores the need for standard, validated measures for researchers and evaluators interested in the effectiveness of clinical-community resource relationships for the delivery of clinical preventive services.

Appendix C: Examples of Current State of Practice

In addition to evidence regarding measures and effectiveness of clinical-community resource relationships for the delivery of clinical preventive services, the project team identified several examples of relevant current practices reported on the AHRQ Innovations Exchange (http://www.innovations.ahrq.gov/linkingClinicalPractices.aspx), a web-based repository of new and better ways to deliver health care. An earlier AHRQ-funded project (Porterfield et al., 2012) included in-depth case study assessments of five clinical-community resource relationships. Using mostly qualitative descriptive data, the investigators examined how clinical-community resource relationships for preventive services were implemented, including an analysis of predisposing, enabling, and reinforcing factors. It was not within the scope of this project to identify a comprehensive list of current practices or to conduct in-depth assessments; however, a few examples illustrate some existing approaches to fostering clinical-community resource relationships for delivery of preventive services.

- One group of medical practices adopted an electronic system that prompts clinicians to initiate behavioral counseling for diet, exercise, smoking, and alcohol consumption at the point of care; and then electronically sends referrals to community-based counseling organizations, which contact patients for continued counseling services. (see http://www.innovations.ahrq.gov/content.aspx?id=2121).

- Another program, adopted by fifteen primary care practices in three different communities, used four Health Educator Referral Liaisons to link patients with community resources for counseling to reduce smoking, alcohol consumption, and physical inactivity. The liaisons also provided feedback to the referring clinicians. (see http://www.innovations.ahrq.gov/content.aspx?id=2244).

- In a third program to promote weight loss and physical activity, clinicians write "prescriptions" for specified recreational activities and exercise programs that community organizations have agreed to offer free of charge to patients who present these prescriptions. (see http://www.innovations.ahrq.gov/content.aspx?id=2934).

Each of these programs reported successful linkages of patients with community resources and/or improvements in targeted behaviors.

Appendix D: Members of the CCRM Expert Panel

The following individuals served as members of the Clinical-Community Relationships Measures Expert Panel:

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Centers for Disease Control and Prevention

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Center for Community Health and Evaluation
Group Health Research Institute

Rebecca Etz, Ph.D.
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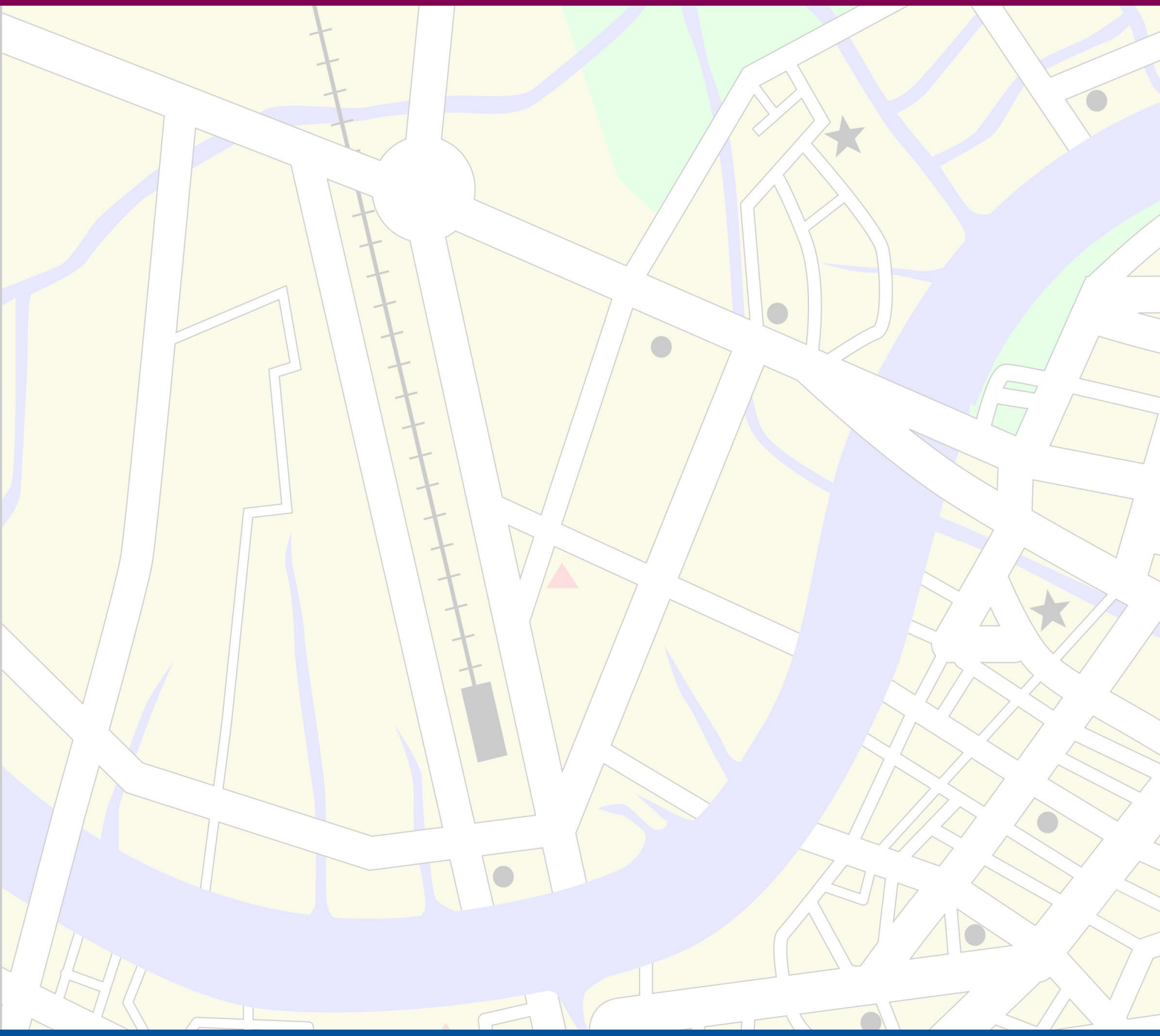
Virginia Commonwealth University

Russell E. Glasgow, Ph.D.
National Cancer Institute
Cheryl Irmiter, Ph.D., L.C.S.W., CADC
Easter Seals

Robert Pestronk, M.P.H.
National Association of County and City Health Officials

Ruta Valaitis, R.N., Ph.D.
McMaster University
City of Hamilton, Public Health Department



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