Community-Clinical Linkages for the Prevention and Control of Chronic Diseases

A Practitioner's Guide

Centers for Disease Control and Prevention
National Center for Chronic Disease Prevention and Health Promotion

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U.S. Department of Health and Human Services
Centers for Disease Control and Prevention
National Center for Chronic Disease Prevention and Health Promotion
Division for Heart Disease and Stroke Prevention
Applied Research and Evaluation Branch

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About This Guide

Community-clinical linkages are defined as connections between community and clinical sectors to improve population health. This document guides public health practitioners on key strategies to implement community-clinical linkages that focus on adults 18 years or older.

This guide, *Community-Clinical Linkages for the Prevention and Control of Chronic Diseases: A Practitioner's Guide,* is based on a review of peer-reviewed journal articles, gray literature publications, publicly available program information, and conversations with Centers for Disease Control and Prevention (CDC) grantees and others who have participated in community-clinical linkages.

This guide offers the following information on each strategy: rationale, key considerations, and potential action steps.

- **Rationale**

  Explains why the particular evidence-based strategy is important to support a community-clinical linkage.

- **Key Considerations**

  Includes information that may be important for public health practitioners to have when implementing a particular strategy.

- **Potential Action Steps**

  Identifies potential steps that public health practitioners can take to implement a particular strategy.

In addition, this guide presents resources for public health practitioners to use when implementing the strategy and examples of community-clinical linkages. Public health practitioners can use these examples as models for community-clinical linkages in their areas.

Introduction

Public health leaders have prioritized community-clinical linkages as an effective approach to prevent and control chronic diseases. For example, CDC's National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP) recommends coordinating chronic disease prevention efforts in four key areas or domains, one of which is "community programs linked to clinical services," or what this guide calls community-clinical linkages. The other three domains are epidemiology and surveillance, environmental approaches, and health care system interventions.

When clinical and community sectors work synergistically, they can improve care and support patients better than either of these sectors could do alone. NCCDPHP promotes community-clinical linkages as helping to "ensure that people with or at high risk of chronic diseases have access to the resources they need to prevent, delay, or manage chronic conditions once they occur."

Community-clinical linkages are connections between community and clinical sectors to improve population health.

Similarly, the Institute of Medicine upholds that "enhanced collaboration among the public health, health care, and community non-health care sectors could produce better prevention and treatment outcomes for people living with chronic diseases."

As community-clinical linkages have gained prominence as an effective approach in the prevention and control of chronic diseases, science and translation of research for this approach has increased. Programs that have used this approach have documented improvements in clinical health outcomes and behavioral changes. For example:

Improved clinical health outcomes have been documented in the control of:

- Coronary heart disease.
- Blood pressure.
- Cholesterol.
- Prediabetes.
- Diabetes.
- Asthma.

Improved behavioral changes have been documented in:

- Nutrition.
- Physical activity.
- Diabetes self-management behaviors.
- Smoking cessation levels.
- Medication adherence.

In addition, community-clinical frameworks and tools have been developed to prevent and control type 2 diabetes and obesity and to measure community-clinical relationships. Despite increased focus on community-clinical linkages in the literature, particularly in relation to community health workers, there is little information about how to implement this approach. This guide serves to fill that gap and presents strategies that involve practitioners from the public health sector who are leading efforts to link community and clinical sectors (see Figure 1).

Figure 1. Public Health Sector Linking Community and Clinical Sectors

Community Sector

Composed of organizations that provide services, programs, or resources to community members in non-health care settings.

Public Health Sector

Composed of public health organizations that can lead efforts to build and improve linkages between community and clinical sectors.

Clinical Sector

Composed of organizations that provide services, programs, or resources directly related to medical diagnoses or treatment of community members by health care workers in health care settings.

Organizations and individuals working in public health can lead efforts to link the sectors in the following ways:

- Establishing and maintaining strategic partnerships within community and clinical sectors.
- Facilitating the connection between community and clinical sectors.
- Contributing infrastructure and capacity support (e.g., content area expertise, such as evaluation, funding, and staff).
- Providing a population-based perspective on local issues related to chronic disease prevention and control.
- Informing practitioners and community representatives about the latest evidence-based approaches.
- Linking and aligning local and state efforts to national initiatives, such as Million Hearts®.

Strategies

The following seven strategies have been shown to be effective for implementing community-clinical linkages:

L earn about community and clinical sectors.

I dentify and engage key stakeholders from community and clinical sectors.

N egotiate and agree on goals and objectives of the linkage.

K now which operational structure to implement.

A im to coordinate and manage the linkage.

G row the linkage with sustainability in mind.

E valuate the linkage.

Basic Terms

As indicated previously, community-clinical linkages are connections between community and clinical sectors to improve population health. The terms *connections, community sectors,* and *clinical sectors* have been used in various ways. Sometimes, community health centers and other Federally Qualified Health Centers are regarded as community-based organizations. Other times, they are regarded as belonging in the clinical sector. Likewise, some people view state and local health departments as being part of the clinical sector rather than as part of the public health sector. Because of these types of variations, it is important to define key terms as they are used in this guide.

Community Sector

The community sector is composed of organizations that provide services, programs, or resources to community members in non-health care settings. Examples include:

- Community pharmacies (as opposed to a pharmacy in a health care setting, such as a hospital).
- Employers.
- Prisons and jails.
- Faith-based organizations.
- Barbershops.
- Community centers (e.g., senior centers).
- Volunteer organizations (e.g., American Heart Association).
- Nonprofit organizations (e.g., YMCAs).

Clinical Sector

The clinical sector is composed of organizations that provide services, programs, or resources directly related to medical diagnoses or treatment of community members by health care workers (e.g., physicians, nurses, nursing assistants, physical therapists, emergency medical service personnel, dentists, pharmacists, laboratory personnel) in health care settings. Examples of these include:

- Hospitals.
- Federally Qualified Health Centers (e.g., community health centers, public housing primary care programs, migrant health centers).
- Rural clinics.

- Group practices.
- Single practices.
- Community clinics.

As the name implies, the focus of community-clinical linkages is on linking (or connecting) community and clinical sectors so that they can support or refer patients to services or resources that improve management of chronic diseases. Once connections are established, they should be dynamic and interactional, and they can occur along a continuum of collaboration (see Figure 2).

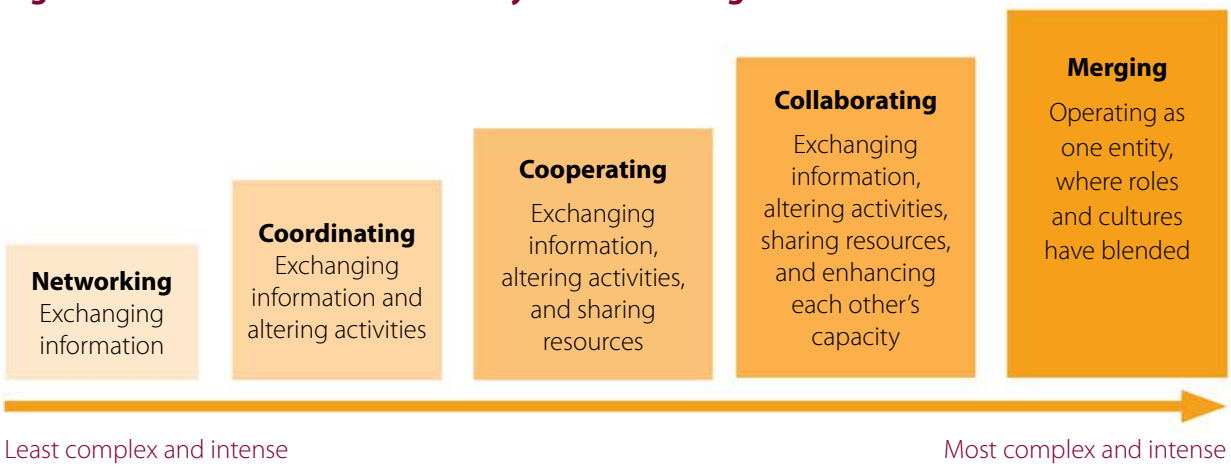
Levels of Community-Clinical Linkages

The level of community-clinical linkage (see Figure 2) used will be based on your goals and objectives. The overarching aim is not to have a complete merger, with one organization replacing formerly distinct organizations. Rather, the aim is to strive for more complex and intense linkages, when possible, recognizing that organizations can work effectively at earlier levels of the continuum. Ultimately, public health practitioners should aim to connect community and clinical sectors so closely together that, from the target population's perspective, the health care they receive is comprehensive, holistic, and seamlessly integrated with community supports and resources.

As shown in Figure 2, community and clinical sectors can be linked in five ways:

- **Networking**—Exchanging information for mutual benefit. The primary focus is on sharing information, and it involves minimal levels of time and trust.
- **Coordinating**—Exchanging information and altering activities for mutual benefit and to achieve a common purpose. The primary focus is on increasing accessibility to services and resources, and it involves moderate levels of time and trust.
- **Cooperating**—Exchanging information, altering activities, and sharing resources for mutual benefit and to achieve a common purpose. The primary focus is on extensive sharing of resources, risks, responsibilities, and rewards. Cooperating involves substantial levels of time, trust, and access to each other's resources.
- **Collaborating**—Exchanging information, altering activities, sharing resources, and enhancing each other's capacity for mutual benefit and to achieve a common purpose. The primary focus is on full sharing of resources, risks, responsibilities, and rewards. Collaborating involves significant levels of time, trust, and access to each other's resources.
- **Merging**—Integrating information, activities, and resources to enhance each other's capacity for mutual benefit and to achieve a common purpose. The primary focus is on organizational restructuring to achieve full integration and to operate as one entity.

Figure 2. Continuum of a Community-Clinical Linkage



Adapted from Himmelman AT. *Collaboration for a Change: Definitions, Decision-Making Models, Roles, and Collaboration Process Guide.*

Resource 1 shows how this process can be used to address high rates of high blood pressure and type 2 diabetes in a local area.

Resource 1. Example of a Community-Clinical Linkage

Sector and Population	Organization
Public Health Sector	XYZ Local Health Department
Clinical Sector	Community Health Center
Community Sector	YMCA
Target Population	Underinsured or uninsured residents of ABC County

To explore opportunities for working together to address high rates of high blood pressure and type 2 diabetes among low-income residents in a specific geographic location, XYZ Local Health Department facilitated a brief meeting with appropriate staff from a community-based organization (YMCA) and a safety net clinic (Community Health Center).

Networking

Staff discussed their complementary services and resources that improve management of high blood pressure and type 2 diabetes and agreed to exchange information. The XYZ Local Health Department shared information on evidence-based approaches. The YMCA shared information on lifestyle modification programs it offers. The Community Health Center shared information on the clinical services it provides and its patients' profiles.

Coordinating

During the next few months, the three organizations decided to synergize their efforts by altering their organizational practices or policies so that, when combined, their services and resources would support patient care in an effective and efficient manner. For example, the XYZ Local Health Department provided one-page documents on evidence-based approaches for the prevention and control of high blood pressure and type 2 diabetes. At the Community Health Center, in addition to their usual general counseling about physical activity, physicians wrote specific prescriptions for individualized physical activity plans accompanied by information about and referrals to the YMCA. The YMCA offered free, 1-year family memberships to patients with proof-of-referral forms issued by the Community Health Center.

Cooperating

To further increase the effectiveness and efficiency of working together, the three organizations contributed resources to support a coordinator for these efforts. The XYZ Local Health Department paid for the position, and the Community Health Center and YMCA provided space for the coordinator to be housed at each of their locations for 2 days per week.

Collaborating

Shortly after the coordinator was hired, the three organizations agreed to provide skill development training at appropriate times for each other's staff to enhance each other's capacity to understand and address high blood pressure and type 2 diabetes.

Merging

One year after the three organizations started their collaboration, they each decided to undergo organizational restructuring and fully integrate their respective services into one entity called ABC Health Services.

Learn About Community and Clinical Sectors

Rationale

The first step in implementing a community-clinical linkage is to learn as much as possible about organizations and resources in community and clinical sectors, through both qualitative (e.g., focus groups) and quantitative methods (e.g., Geographic Information Systems data) and from as many sources as feasible. Thoughtful, systematic planning will help prepare you to implement evidence-based approaches and interventions through a community-clinical linkage that is responsive to your target population's needs.

Key Considerations

- As planning and evaluation go hand-in-hand, the process of learning about organizations and resources in community and clinical sectors should be conducted as systematically as possible and include evaluation methods and tools like those described in the Evaluate the Linkage strategy.
- Although organizations in community and clinical sectors may have complementary missions and functions, they are often unaware of each other and operate in silos.
- Organizations in community and clinical sectors are heterogeneous, with varying eligibility and payment criteria.
- Both private and government-supported clinical providers face the same challenges, such as:
  - A shortage of physicians, nurse practitioners, physician assistants, and other health care workers.
  - Staff overwhelmed by competing priorities.
  - High staff turnover.
  - Wide variation in health information technology capability.

Potential Action Steps for Public Health Practitioners

- Learn about ongoing national and state health policy issues and priorities, and consider how a community-clinical linkage can support these efforts.
- Collaborate with evaluators or agencies that have assessments under their purview, such as nonprofit hospitals. The Affordable Care Act (ACA) mandates that nonprofit hospitals conduct a community health needs assessment at least once every 3 years and make the results widely available to the public. Completing this assessment is a condition of their federal tax-exempt status. Therefore, nonprofit hospitals are good to partner with because, for their assessment process, they must consider input from people who represent the broad interests of their community, including those with expertise in public health.
- Conduct a new assessment or review or enhance an existing state or local assessment, such as an environmental scan or survey. This assessment can help you document data or information about the organizations or resources within each sector that can be used or leveraged for the linkage. Because state and local assessments can be broad in scope and time-consuming, consider limiting the scope of the assessment to focus on a particular strategy or strategies you are working on.
- Develop a set of criteria to determine which organizations of interest have the capacity and readiness to support the linkage.

Resource 2 presents questions to consider when deciding if an organization in community and clinical sectors should be included in a community-clinical linkage. Answering these questions can give public health practitioners a sense of whether an organization is ready or able to participate—even if the answer to some of the questions is "No." Resource 2 is repeated at the end of this document in a larger format that you can print and fill out.

Potential Data Sources for State or Local Needs Assessments

- Behavioral Risk Factor Surveillance Survey data.
- US Census data.
- State or local health department status reports.
- County health rankings and road maps.
- Community health status indicators.
- Public hospital community needs assessments.
- Surveys from community stakeholders.
- Environmental scan of available resources.
- Payer data (e.g., Medicaid).
- Hospital discharge data.
- Health plan performance data.

Resource 2. Criteria for Identifying Organizations that Can Support a Community-Clinical Linkage

Name of Organization	Yes	No
INDIVIDUAL (personal knowledge, attitudes, skills)		
Is there a champion or strong leadership?		
Are staff members aware of the other sector?		
INTERPERSONAL (formal and informal social network and social support systems)		
Are the staff in the organization cohesive? (e.g., high commitment to meeting organization's goals)		
INSTITUTIONAL (social institutions with organizational characteristics and formal and informal rules and regulations for operation)		
Does the institution have a large reach and impact? (i.e., Is the organization a large health care system? Is the organization a national or state organization or a local chapter of a national organization, such as the YMCA?)		
Could any of the organization's goals and objectives be achieved or enhanced by a community-clinical linkage?		
Are the community organization's resources (e.g., physical activity facilities) easily available?		
Are the community organization's resources affordable?		
Are the community organization's resources perceived as credible or valuable to patients?		
In the clinical facility, is there a quick and easy way to assess or screen patients at risk?		
In the clinical facility, is there an ability to make referrals (e.g., electronic health records)?		
Will the organization be able to incorporate activities that support the community-clinical linkage into its routine services or programs?		
Can resources, including volunteer and in-kind resources, be pooled or shared?		
Are the community and clinical organizations in close geographic proximity to each other?		
Is funding stable, or can a lack of stable funding serve as a catalyst for community-clinical linkage?		
COMMUNITY (relationships among organizations and institutions within defined boundaries)		
Has the organization previously worked with an organization in the other sector?		
PUBLIC POLICY (local, state, and national laws and policies)		
Is there a clear mandate for collaboration (e.g., Affordable Care Act provision for public hospitals, funding/grant requirement)?		

Adapted from McLeroy KR, Bibeau D, Steckler A, et al. An ecological perspective on health promotion programs. *Health Educ Q.* 1988;15(4):351-377.

Identify and Engage Key Stakeholders from Community and Clinical Sectors

Rationale

Community-clinical linkages are most successful when key stakeholders are engaged. By soliciting the opinions, interests, concerns, and priorities of key stakeholders from the beginning, you are more likely to address stakeholders' needs and obtain their buy-in. By engaging diverse stakeholders who represent or influence both the community and clinical sectors, you can ensure that the linkage is relevant and meaningful to stakeholders and develop consensus and support for the linkage.

Key Considerations

- Organizations in community and clinical sectors operate quite differently, and each sector has its own culture and perspective on addressing chronic disease prevention and control.
- Not only do the cultures of the two sectors differ, but there are also differences in culture and perspectives among disciplines within each sector. For example, in the clinical sector, physicians have a worldview that may differ from that of nurses or physician assistants. Likewise, in the community sector, there are differences among CEOs, program coordinators, and volunteers. These different professions have the culture and paradigm of their particular profession, as well as the culture of the sector they represent, and this influences how a linkage functions.
- Engaging and involving key representatives or gatekeepers from multiple layers ensures that the linkage's activities become integrated into each organization's structure.
- Most organizations in both community and clinical sectors have administrative decision makers who are more concerned with issues such as financial obligations and return on investment than on positive clinical outcomes.

- Health care providers are sometimes reluctant to work with community-based programs because they may be unsure of the cost and quality of the services they provide.
- Some stakeholders, such as health care providers and community representatives, do not adopt evidence-based strategies and practices quickly following publication of the evidence. Reasons for this include stakeholders' limited time to keep abreast of continuously updated research findings, limited ability to appraise published research, and information overload, as well as information not being presented in culturally relevant ways.

Potential Action Steps for Public Health Practitioners

- Identify and engage people from the following categories, which are considered critical by researchers:
  - **Participants:** Those served or affected by the program, such as patients or clients, community members, and community leaders.
  - **Implementers:** Those involved in program operations in community and clinical organizations, such as coordinators, liaisons (sometimes called "spanners"), frontline practitioners, administrators, and quality improvement staff.
  - **Decision Makers:** Those who can make decisions about the community-clinical linkages, such as national, state, or local leaders; senior managers; funders, purchasers, and payers, and local media.
- From the assessment you conducted (see the Learn About Community and Clinical Sectors strategy), determine which organizations meet your established criteria. Identify key stakeholders from these organizations who can help you get your foot in the door. Before initiating preliminary discussions and meetings with key stakeholders, think through what their perspectives and needs are, what messages or themes might resonate with them, and why they would be interested in participating in your community-clinical linkage.
- Understand the differences in disciplinary and sectoral cultures within community and clinical sectors (see Resource 3) and the relationships between them. Continually consider these factors throughout implementation to minimize the effect of cultural differences.
- Identify champions within each organization in community and clinical sectors. They continually inspire others to address their organizations' goals and objectives and to align and accomplish the goals and objectives of the community-clinical linkage.
- Inform community members about the community-clinical linkage by conducting an educational campaign and outreach services.
- Engage current state and local partners who fall in the three categories of stakeholders and who meet your criteria by informing them about your plans to develop or enhance a community-clinical linkage, and then expand to new partners. Consider inviting new stakeholders who can improve credibility, support implementation, or facilitate funding or authorization decisions.

- Engage administrative decision makers by sharing economic and return-on-investment data from previously conducted, successful community-clinical linkages to highlight potential cost savings.
- Establish a state or local advisory committee, co-led by representatives of an organization in each sector, to provide guidance and oversight of community-clinical linkage implementation efforts. This group can establish the community-clinical linkage's goals and objectives (see the Negotiate and Agree on Goals and Objectives of the Linkage strategy) and delineate roles and responsibilities among committee members.

  This committee should:

  - Include stakeholders critical to community-clinical linkages.
  - Engage an appropriate organization that represents patients or community members and ensure that they are fully engaged (e.g., ensure that they attend meetings and assign staff to help with the effort).
  - Gain commitment, support, and integral involvement from senior staff of the organizations on the community-clinical linkage advisory committee. Making structural or organizational changes requires the commitment and involvement of senior leaders because it requires time and resources. Examples of senior staff in the clinical sector include physicians, clinical directors, nurse supervisors, and chief operating officers. Examples of senior staff in the community sector include executive directors, program managers, and religious leaders.
  - Establish and maintain co-leadership on your advisory committee to balance the interests of both sectors.
  - Ensure representation and buy-in from frontline staff in the clinical sector (e.g., nurses, physician's assistants) and community sector (e.g., program coordinators), as they are critical partners in addressing any issues, conflicts, or misunderstandings.
  - Share state and local data to inform members about the benefits of community-clinical linkages.
- Disseminate evidence-based materials and tools related to community-clinical linkages to appropriate stakeholders in community and clinical sectors. For example, given their time pressures, health care providers may want brief and succinct evidence-based materials (e.g., the Million Hearts® initiative's Hypertension Control: Change Package for Clinicians). They may also be interested in making short visits to health care providers and office staff members as part of an educational campaign. Representatives from the community sector may want in-depth information, such as guides or tool kits.

Resource 3. Community and Clinical Perspectives

Perspective	Community	Clinical
Focus	Community	Individual
Ethics	Community service ethic, tempered by concerns of the individual.	Personal service ethic, conditioned by awareness of social responsibilities.
Emphasis	Disease prevention, health promotion for the whole community.	Diagnosis and treatment, care for the whole patient.
Paradigm	Employs a spectrum of interventions aimed at the environment, human behavior and lifestyle, access to health care, and social determinants of health.	Places predominant emphasis on medical care.
Identity	Multiple professional identities with diffuse public image.	Well-established profession with sharp public image.
Training	Variable system for training and certifying specialists.	Uniform system for training and certifying specialists beyond professional medical degree.
Specialization	• Setting (e.g., churches, prisons). • Population (e.g., uninsured adults, obese adults). • Substantive health problem (e.g., high blood pressure, HIV/AIDS). • Social determinants of health (e.g., transportation, housing).	• Organ system (e.g., cardiology, neurology). • Patient group (e.g., obstetrics, pediatrics). • Etiology and pathophysiology (e.g., infectious diseases, oncology). • Technical skill (e.g., radiology, surgery).
Social Sciences	An integral part of community education.	An elective part of medical education.
Clinical and Biologic Sciences	Peripheral to professional training; rooted mainly in the community sector.	An essential part of professional training; rooted mainly in the private sector.

Adapted from Fineberg HV. Public health and medicine: where the twain shall meet. *Am J Prev Med.* 2011;41(4)(suppl 3):S149-S151.

Negotiate and Agree on Goals and Objectives of the Linkage

Rationale

Linkages between community and clinical sectors have been shown to be more effective when the mission, goals, objectives, and activities are jointly determined and systematically communicated to stakeholders at all levels. Thus, the process of developing a shared understanding of the goals and objectives of the linkage is critical.

Key Considerations

- Negotiating and agreeing on what the linkage will accomplish may prove challenging as this often involves resolving differences and finding ways to compromise with different stakeholders from two different sectors.
- A critical element in agreeing on goals and objectives is to develop trust, which takes time. Trust is an essential element that ensures that strengths and weaknesses are identified, differing views are heard, and decisions are made openly and transparently.
- To ensure that goals and objectives identified are relevant and appropriate at the local level, local tailoring is essential to get buy-in and acceptance from local stakeholders.

Potential Action Steps for Public Health Practitioners

- Ensure that patients, clients, consumers, or representatives of these groups are present to discuss the goals and objectives of the community-clinical linkage. As part of this process, think about yourself and your family members' experiences as patients in primary care to help identify the patient perspective. Be prepared to observe procedures from the providers' perspective.

- Use a formal method with key stakeholders to reach consensus and a common understanding of what the linkage will entail by spelling out the "who, what, when, where, and how." One way to do this is by collaboratively developing a model or diagram that depicts the details of the linkage, such as a logic model (see Resource 4). The logic model can be developed backwards, by first coming to agreement on what you ultimately want (outcomes) in the short-term, intermediate term, and long-term, and then by discussing the activities that should occur. Finally, you can collaboratively determine the resources that will be needed for the activities.
- Identify roles and responsibilities of stakeholders and how they will contribute to the goals and objectives of the community-clinical linkage. When stakeholders discuss and agree on roles and responsibilities early in the process, they ensure alignment of their needs, interests, and resources.

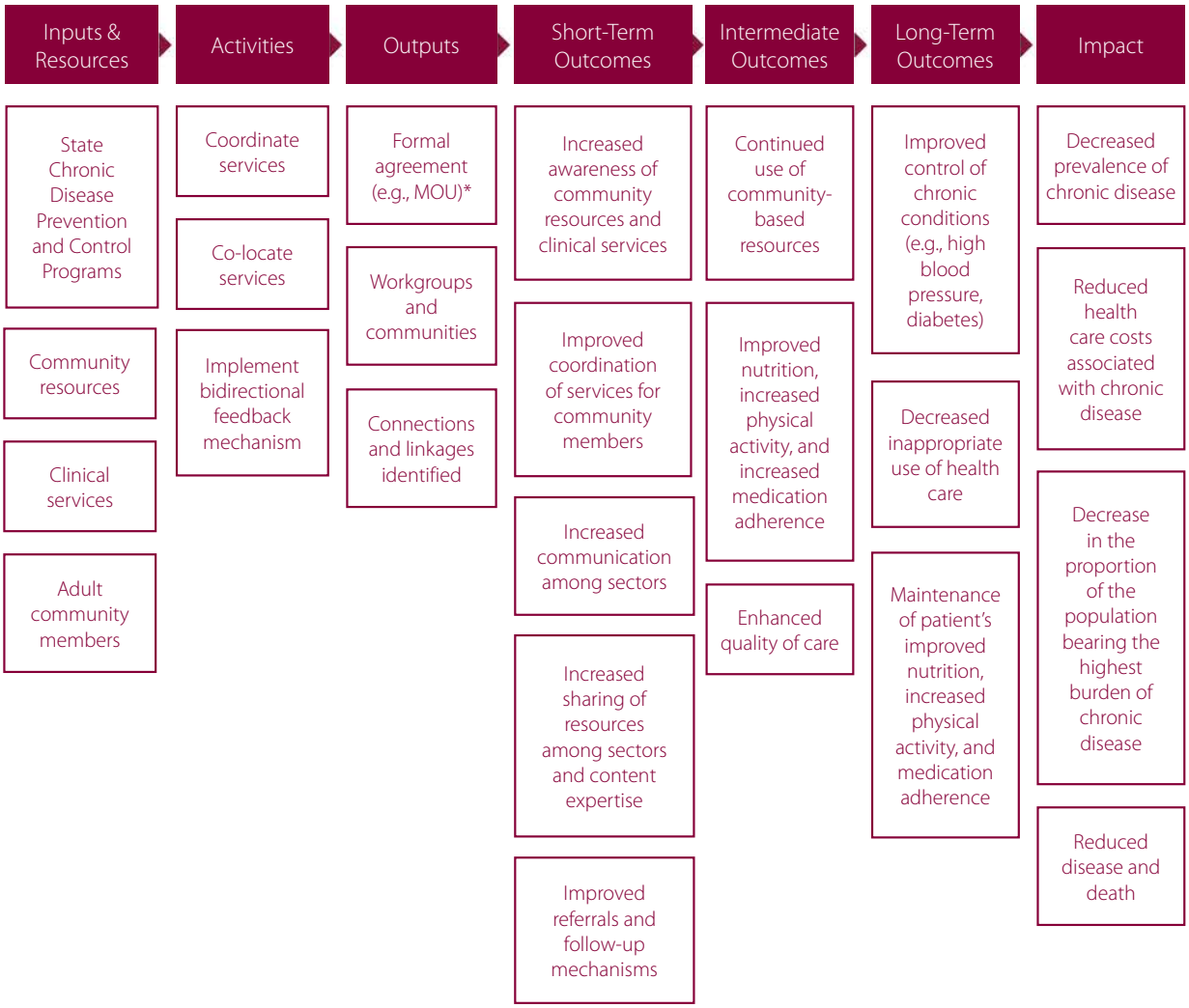
  A few examples of roles and responsibilities include the following:

  - Providing funding.
  - Contributing products or services, such as transportation, home medical supplies, and incentives, for patients.
  - Providing training. Implementing community-clinical linkages will require a state or community-level paradigm shift, and new skills will need to be acquired across multiple levels in organizations in both sectors. Trainings can offer a venue to share and learn ideas and to engage in peer-to-peer exchange.
  - Planning and organizing meetings.
- Ensure that goals and objectives build on assets of the organizations in community and clinical sectors. For example, several health care practices have implemented a patient centered medical home (PCMH) model, which is an approach that complements and reinforces community-clinical linkages because it is comprehensive, team-based, coordinated, accessible, and of high quality. Nearly all states have PCMHs and, as of December 31, 2013, a total of 36 states have laws authorizing or affecting PCMHs. PCMH staff are interested in learning about resources and services that support patient self-management in what some are now calling "patient-centered medical neighborhoods."
- Help stakeholders understand different terms that are often used synonymously, but that have different meanings, measurements, and accountabilities (e.g., continuity of care, coordination of care, seamless care, comprehensive care), so that goals and objectives are precise and correct.
- Ensure that the priorities of the staff members who interact directly with community members and partner organizations (e.g., program coordinators) align with senior leaders' priorities regarding the community-clinical linkage.

Resource 4. Community-Clinical Linkage Logic Model

Contextual Factors

- Community's unique needs, values, priorities, customs, organizational capacity, resources, and preferences.
- Clinician's awareness of community resources, capacity and training to deliver clinical preventive services, openness for change, and infomation technology infrastructure.
- Patients' stage of readiness for change, health literacy, capacity for self-management, and accessibility to clinicians and community resources.



* Memorandum of Understanding

Know Which Operational Structure to Implement

Rationale

Establishing an operational structure makes the best use of differing perspectives, resources, and skills to foster solutions that maximize partnership synergy.

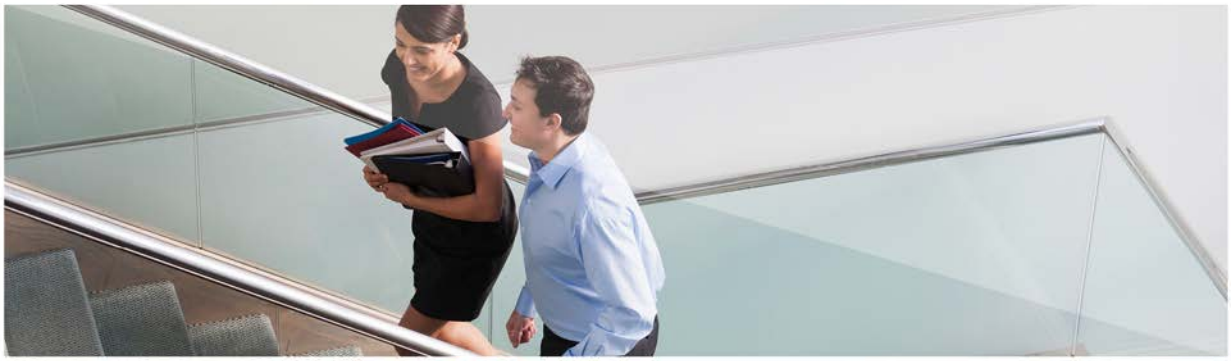
Key Considerations

- The operational structure should address the following three components, and community and clinical sectors should participate in at least one of them:
  - **Engagement**—Examples include raising public awareness, identifying people who need services, and encouraging them to receive the service.
  - **Administration**—Examples include administering and interpreting a screening test, counseling and supporting a patient, and prescribing medication.
  - **Follow-up**—Examples include immediate action (e.g., documenting delivery in medical records), long-term support to maintain healthy behaviors and medication adherence, and continued reassessment to address patients' relapse or follow-up appointments.
- In community-clinical linkages, a referral and bidirectional feedback structure allows an organization in one sector to refer patients or clients and communicate about their health-related issues to an organization in the other sector. Referrals and bidirectional feedback can be made in several ways, such as through the electronic health record, over the phone, or in writing, and the services can be provided at either the originating or referral site.
- Although sharing patients' health-related information between organizations in community and clinical sectors may be useful for referrals and bidirectional feedback in a community-clinical linkage, it is critical to ensure that information exchange complies with applicable

state and federal privacy laws. At the federal level, the Privacy Rule of the Health Insurance Portability and Accountability Act (HIPAA) provides standards and regulates how certain entities use and disclose certain health-related information that can identify a specific individual (e.g., name, address, social security number, health status) and that is transmitted or maintained in any form (e.g., electronic, paper, oral). The standards in HIPAA's privacy rule do not preempt state laws with stricter standards. In order to ensure compliance with HIPAA and applicable state privacy laws, public health practitioners should consult with a lawyer.

Potential Action Steps for Public Health Practitioners

- Determine how the linkage should be structured, taking into account changes in the existing structure or process of the community and clinical organizations that would optimize adoption, implementation, effectiveness, and maintenance of the linkage.
- Determine if staff from community and clinical sectors will work in separate facilities or in the same facility but in different offices. Two commonly used structures are:
  - Referral and feedback between two organizations at different sites or facilities.
  - Referral and feedback between two organizations at the same site or facility.
- Determine if there will be entirely separate systems, sharing of some systems (e.g., scheduling, health records), or the use of one system.
- Determine expectations for communications. Organizations may agree to communicate only under compelling circumstances, periodically about shared patients by phone or e-mail, or frequently in person. Processes for communication can include in-person meetings, virtual meetings, electronic communication (e.g., e-mails), or status reports.
- Identify key point people from the organizations involved as appropriate to streamline communication. Determine methods or channels for communication to work together on common resources.
- Once a consensus is reached on the structure of the linkage, the next step should be developing a formal agreement. Examples include a Memorandum of Agreement, an action plan, and a contract.
- Regardless of which formal agreement you use, it should clearly outline a shared vision or mission, provide a timeline, and describe each entity's commitment and support of the linkage.
- Consult with a lawyer to make sure community-clinical linkage structure and agreements comply with state and federal laws.



Aim to Coordinate and Manage the Linkage

Rationale

Coordinating and managing the community-clinical linkage requires ground rules that define roles, responsibilities, and communication protocols.

Key Considerations

- Staff and technologies used as coordinators or liaisons for the linkage (sometimes referred to as "spanning infrastructure") can link community and clinical sectors and other key stakeholders in different ways and align activities among them.
- Coordination and management of a community-clinical linkage involve issues such as the following:
  - Engaging and maintaining stakeholders' interest in the agreed-upon goals and objectives of the linkage.
  - Implementing the chosen strategies by providing appropriate infrastructure, resources, and coordination mechanisms.
  - Developing ways to promote constructive conflict and manage destructive conflict.
  - Implementing information systems to monitor progress over time.
  - Adjusting when leaders or stakeholders leave their jobs or are no longer involved with or committed to the linkage.
  - Creating methodology for data collection, as well as a reporting system to track results and improve performance (see the Evaluate the Linkage strategy).

- Effective coordinating entities share several characteristics. They often have a clear vision of what needs to be the focal point. Thus, resulting actions are focused, but adaptive. They lend an ear to all ideas, but act on ones that have the end goal in mind. In addition, coordinating entities are results-oriented and always engage the community to act on essential issues. They are collaborative and work well with partners. They are also charismatic and are influential communicators.
- The coordinating entity should make sure that the people involved can improve all aspects of the linkage by assessing each activity, making changes when appropriate, and contributing within the agreed-upon structure and chain of communication. Coordination and management efforts should continually be refined on the basis of lessons learned.

Potential Action Steps for Public Health Practitioners

- Define the roles of each organization and identify point people with appropriate skills from each organization to facilitate communication and actions needed to complete common tasks.
- Support the point people to provide regular and frequent opportunities for the representatives from organizations in community and clinical sectors to meet, review data, discuss challenges, and develop solutions. In addition to promoting smooth implementation and process improvement, these face-to-face meetings will help build trust and foster positive relationships.
- Work with the coordinating entity to conduct training to staff in organizations from community and clinical sectors regarding the referral process, how it will be managed, and the process for providing feedback and sharing medical records and patient information.
- Help the coordinating entity use multiple and varied strategies to engage and convene different stakeholders, such as the following:
  - Engaging communities at the grassroots level to build public will.
  - Sharing local best practices and outcomes to engage and educate decision makers.
  - Coordinating funds from diverse sources to support shared goals and strategies.
- Ensure that the coordinating entity has processes in place for sharing resources (e.g., human, physical, fiscal) to make it easier to track what each linked organization is contributing and how to account for the contributions.

Grow the Linkage with Sustainability in Mind

Rationale

To work towards and achieve measurable results, such as improved health outcomes, community-clinical linkages must be sustained across a significant period of time. Achieving desired short-term outcomes keeps stakeholders engaged and motivated to strive for long-term outcomes. These "small wins" can set the stage for expanding your efforts, particularly those that are comprehensive, systemic, and state- or community-wide.

Key Considerations

By starting small, implementation efforts can be refined before the partnership activities are rolled out more broadly throughout the entire community or state. Further, focusing on short-term goals in a small area can lead to small wins, which can build momentum, commitment, and trust among stakeholders.

Potential Action Steps for Public Health Practitioners

- Start by implementing small-scale community-clinical linkage activities (e.g., a few clinics, a small group of patients, limited linkage protocols) that are challenging, achievable, and significant enough to make a state- or community-wide impact. If a linkage's activities are too ambitious, stakeholders can become discouraged. On the other hand, overly cautious activities sometimes leave stakeholders feeling that the effort is not worth their time or resources.
- Reach out to organizations that were not included during the initial outreach efforts but that expressed interest in implementing community-clinical linkages.
- Strengthen or maintain the roles of champions and leaders to sustain the legitimacy and visibility of the community-clinical linkage.

- Increase or maintain resources, such as funding, staffing, and electronic health records.
- Use performance monitoring or evaluation results to make necessary changes along the way.
- Develop a sustainability plan that addresses how the contributing organizations in the community-clinical linkage can maintain efforts when startup resources end.

Evaluate the Linkage

Rationale

Evaluating a community-clinical linkage may require both process and outcome evaluation approaches. It offers opportunities to understand what processes and dynamics can make an effective linkage and affect health outcomes. This evaluation approach differs from evaluating interventions that are primarily based in one setting.

For each sector, there are different factors to consider when approaching the evaluation, such as how and when to engage stakeholders, how to develop the evaluation questions, and how to address the distinct challenges presented by community-clinical linkages. These challenges include the following:

- **Distinctly different stakeholders**—Because stakeholders of a community-clinical linkage represent different perspectives, there may be various opinions on how to approach evaluation and multiple needs for the evaluation results. Recognizing and embracing these differences is an essential step to ensuring the engagement of stakeholders and the use of evaluation findings.
- **Data collection and access**—Collecting data in multiple locations may present challenges with accessing data and may affect the feasibility of the evaluation. A community-clinical linkage may require data sharing agreements with all partners.

Key Considerations

- The CDC Framework for Program Evaluation in Public Health, which provides general principles for program evaluation of public health programs, is one model that can be used to evaluate community-clinical linkages. This model recommends that you engage stakeholders as a first step in evaluation, before launching the community-clinical linkage. During this step, evaluators should be involved in bringing together partners from community and clinical settings to agree on goals, activities, and outcomes of the linkage. Stakeholder engagement

helps to ensure that all parties understand what activities and outcomes they are responsible for and enables discussion on what evaluation data are available.

- Because evaluation data will be collected separately in community and clinical settings, think holistically about how the two entities work together to improve health outcomes. Stakeholders from community and clinical settings have different organizational cultures and might have differences in how they view evaluation. Thus, varied strategies for engaging stakeholders in the evaluation may be used. For example, stakeholders from the community sector might prefer to use a participatory-based approach to evaluation and might be more familiar with developing logic models. Stakeholders from the clinical sector might prefer to analyze and report clinical outcome data.
- A community-clinical linkage evaluation should determine how effective the linkage was in achieving the desired health outcomes. The evaluation outcomes might focus on processes, such as health care system changes, referral processes, and sharing and reporting of data, with the expectation that they will lead to outcomes related to improved quality, effective delivery, and appropriate use of health care systems. See Resource 7 for other elements to consider in the evaluation process.
- The evaluation may require a data sharing agreement that clarifies how the information may be used and shared. As discussed in the Know Which Operational Structure to Implement strategy, it is imperative, through legal consultations, to ensure that any use and sharing of health-related data complies with state and federal laws, such as HIPAA. Because negotiations with community and clinical organizations to develop data agreements may take time, facilitate and establish data agreements well before data collection is underway. The extent to which data are accessible will affect the feasibility and rigor of your evaluation plans. The data agreement will also help preserve data sharing and use over time regardless of staff turnover in an organization. Alternatively, the organization that has the clinical data may be asked to be solely responsible for data collection. Even if a formal data agreement is not established, a document should be written that spells out the data required so that all parties know what to expect as they proceed into the collaborative work.

Potential Action Steps for Public Health Practitioners

- Conduct an informal assessment of how and when each partner should be engaged in the planning and implementation of the evaluation.
- Refer to existing evaluation frameworks (see Resource 5) that provide approaches to better understanding the different components and opportunities for evaluating the effectiveness of a community-clinical linkage.
- Determine the feasibility of the evaluation plan by:
  - Identifying the availability of data needed to address your evaluation questions.
  - Considering how much of your evaluation will require primary data collection, which is typically more labor intensive than secondary data collection. (Secondary data collection involves pulling data from an existing data source.)

- Reviewing your available resources to determine if they can be used to cover all aspects of your evaluation plan, or if a phased approach will be needed.
- Prioritizing your evaluation efforts by deciding how the evaluation data will be used or what is most important to gather for stakeholders' needs.

Resource 5. Examples of Evaluation Frameworks Related to Community-Clinical Linkages

The Agency for Healthcare Research and Quality (AHRQ) developed the following measurement frameworks that practitioners can use in evaluating clinical-community relationships:

- *Clinical-Community Relationships Evaluation Roadmap.*
- *Clinical-Community Relationships Measures Atlas.*
- *Potential Measures for Clinical-Community Relationships: A Supplement to the Clinical-Community Relationships Measures Atlas.*

The Robert Wood Johnson Foundation's Diabetes Initiative released a series of checklists that are tied to the *Framework for Building Clinic-Community Partnerships to Support Chronic Disease Control and Prevention*. These checklists were designed as tools that help practitioners track the progress and success of their clinical-community relationships.

Community-Clinical Linkage Examples

Resource 6 is an example of a community-clinical linkage focused on using community pharmacists (as opposed to pharmacists in a health care setting, such as a hospital) to help patients manage their high blood pressure. Evaluation questions were developed to better understand the systems that connect clinicians, pharmacists, and community resources.

Resource 6. Example of a Community-Clinical Linkage

Sector and Population	Organization
Public Health Sector	State XYZ Health Department's Chronic Disease Bureau
Clinical Sector	Clinical providers
Community Sector	• State health care quality improvement organization • Community pharmacists • Community health workers
Target Population	Adults in a rural region of XYZ state with uncontrolled high blood pressure

Resource 7 provides examples of elements that can be used to evaluate a community-clinical linkage, such as questions, outcomes, data collection methods, and stakeholders.

State XYZ Health Department's Chronic Disease Bureau is implementing a community-clinical linkage to control high blood pressure among adults in a rural region of the state. The project links patients with uncontrolled high blood pressure to clinical providers, community pharmacists, and community health workers. The Chronic Disease Bureau collaborated with the state health care quality improvement organization to establish a Health Information Technology Portal.

The portal allows clinical providers, community pharmacists, and community health workers to receive electronic notifications, make referrals, and communicate with each other about a patient with uncontrolled high blood pressure. Clinical providers can refer patients to community pharmacists. Community pharmacists conduct medication therapy management, which involves educating patients about their medications and resolving any drug therapy problems (e.g., negative side effects). Community pharmacists can ask community health workers to follow up with patients to assess their needs and direct them to appropriate evidence-based community self-management programs.

To assess the extent to which a Health Information Technology Portal helped control high blood pressure, the Chronic Disease Bureau collaborated with key partners (i.e., the state health care quality improvement organization, clinical providers, community pharmacists, community health workers) to evaluate the impact of the community-clinical linkage.

The state also worked with its partners to develop the following evaluation questions:

- To what extent did the Health Information Technology Portal support effective management of patients' blood pressure medication?
- To what extent was the referral process between the community pharmacists and the community self-management programs effective?
- To what extent did community health workers ensure that patients followed up with community pharmacists on medication management?
- What were the health outcomes of patients exposed to the intervention?

Resource 7. Sample Elements for Evaluating a Community-Clinical Linkage

Intervention	Potential Evaluation Questions	Sample Outcomes	Potential Data Collection Methods	Stakeholders Involved
Health plans and worksite strategies to improve employee access to preventive services	1. What worksite strategies are most effective in motivating employees to access preventive services? 2. How has employees' access to and use of preventive services changed?	Enrollments or referrals Use of preventive services Costs	Participant surveys or interviews Employer interviews Document review (e.g., de-identified health records, activity reports)	Health plan representatives Employer leadership Employees
Community health centers linked to Chronic Disease Self-Management (CDSM) programs	1. To what extent are CDSM program participants who were referred by community health centers participating in and completing the program? 2. What lifestyle changes are occurring among referred participants who have completed the program? 3. What are the barriers to program completion? What follow-up activities can be completed or facilitated by the community health center to help improve program participation among referred patients?	Program participation or completion rates Integrated referral process Partner and participant satisfaction Participants' stage of behavior change Health-related quality of life Adherence to self-management plans Physical activity levels Dietary habits Alcohol or tobacco use	Participant surveys or interviews Stakeholder surveys or interviews Document review (e.g., activity reports) Review of medical records (de-identified)	Community health center administration and staff CDSM program implementers CDSM program participants or patients

Resource 7. Sample Elements for Evaluating a Community-Clinical Linkage (cont.)

Intervention	Potential Evaluation Questions	Sample Outcomes	Potential Data Collection Methods	Stakeholders Involved
Community health workers (CHWs) serving as community liaisons to primary care practices by offering, referring, and linking patients to community supports	1. Which community supports offered to the patients are most used and why? Which community supports offered to the patients are least used and why? 2. To what extent have health outcomes improved among patients engaged with CHWs?	CHWs' knowledge and familiarity with community supports Quality of community support services Partner and patient satisfaction Integrated referral process Patient linkage to community supports Health-related quality of life High blood pressure control rates Cholesterol levels Blood sugar levels Weight loss or body mass index	Participant surveys or interviews Stakeholder surveys or interviews Document review (activity reports) Review of medical records (de-identified)	CHWs Primary care practice representatives Patients Community support representatives

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Resource 2. Criteria for Identifying Organizations that Can Support a Community-Clinical Linkage

Name of Organization	Yes	No
INDIVIDUAL (personal knowledge, attitudes, skills)		
Is there a champion or strong leadership?		
Are staff members aware of the other sector?		
INTERPERSONAL (formal and informal social network and social support systems)		
Are the staff in the organization cohesive? (e.g., high commitment to meeting organization's goals)		
INSTITUTIONAL (social institutions with organizational characteristics and formal and informal rules and regulations for operation)		
Does the institution have a large reach and impact? (i.e., Is the organization a large health care system? Is the organization a national or state organization or a local chapter of a national organization, such as the YMCA?)		
Could any of the organization's goals and objectives be achieved or enhanced by a community-clinical linkage?		
Are the community organization's resources (e.g., physical activity facilities) easily available?		
Are the community organization's resources affordable?		
Are the community organization's resources perceived as credible or valuable to patients?		
In the clinical facility, is there a quick and easy way to assess or screen patients at risk?		
In the clinical facility, is there an ability to make referrals (e.g., electronic health records)?		
Will the organization be able to incorporate activities that support the community-clinical linkage into its routine services or programs?		
Can resources, including volunteer and in-kind resources, be pooled or shared?		
Are the community and clinical organizations in close geographic proximity to each other?		
Is funding stable, or can a lack of stable funding serve as a catalyst for community-clinical linkage?		
COMMUNITY (relationships among organizations and institutions within defined boundaries)		
Has the organization previously worked with an organization in the other sector?		
PUBLIC POLICY (local, state, and national laws and policies)		
Is there a clear mandate for collaboration (e.g., Affordable Care Act provision for public hospitals, funding/grant requirement)?		

Adapted from McLeroy KR, Bibeau D, Steckler A, et al. An ecological perspective on health promotion programs. *Health Educ Q.* 1988;15(4):351-377.

* Resource 2 is repeated from page 11 in a larger format for ease of removal and use.

For more information, please contact

Centers for Disease Control and Prevention

1600 Clifton Road NE, MS F77, Atlanta, GA 30329-4027

Telephone: 1-800-CDC-INFO (232-4636)/**TTY:** 1-888-232-6348

E-mail: https://wwwn.cdc.gov/dcs/ContactUs/Form

www.cdc.gov

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