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# Using Information Systems to Build Capacity: A Public Health Improvement Tool Box

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## Learning Objectives

After studying this chapter, you should be able to:

- Define *public health improvement* and describe the challenges for building capacity for public health improvement.
- Describe the utility of having an information system for supporting public health improvement.
- Understand the background and context of the National Turning Point Initiative.
- Describe how the Internet-based "Public Health Improvement Tool Box" is used to enhance capacity, document systems change, and promote dialogue among those doing the work.

## Overview

The National Turning Point Initiative, jointly funded by the Robert Wood Johnson Foundation and the W. K. Kellogg Foundation, is a major project dedicated to improving population health through an investment in strengthening and transforming the public health infrastructure. In this chapter, the methodology of the project and the ways in which the project is helping states and communities to improve public health are outlined. Much of the chapter focuses on changing and improving systems needed to help state and community partners to undertake activities associated with public health improvement. Central to this effort is the Internet-based Public Health Improvement Tool Box, developed by the Work Group on Health Promotion and Community Development at the University of Kansas. The PHI Tool Box provides access to information for supporting, documenting, and learning from the work of public health improvement. Although the initiative is ongoing and the lessons about it will come only later, the initiative and the PHI

Tool Box are exciting developments in the field of public health at the state and local levels.

## Introduction

Public health improvement involves changing health-related outcomes and the conditions that affect them for all the people who share a common place or experience.[1] This is complex work: Different community conditions, such as access to health services or availability of support from community members, may affect distinct outcomes, such as population-level rates of immunization, adolescent pregnancy, or elders living independently.[2] Multiple and interrelated interventions, such as expanded programs or revised policies, may be needed to affect the conditions necessary for population-health improvement. In this dynamic and adaptive work, community and systems changes unfold over time and may adjust to reflect new barriers and opportunities encountered in the work. The task of public health improvement is to create conditions in which local efforts to promote health and well being can be successful.[3,4]

There are some important challenges in building capacity for public health improvement. First, improvement in population-level health outcomes involves bringing about systems changes—new or modified programs, policies, and practices at the state and local levels.[5,6] How can we best support efforts of state and local health departments to create the multiple and interrelated changes needed to make a difference with health outcomes? A second challenge is that the work of public health improvement cuts across disciplinary domains—including health, education, human service, business, and faith communities—and kinds of expertise, from professionals with disciplinary knowledge to community members with experience with local issues and situations. How do we best engage the different actors and organizations that can contribute to the varied and interrelated goals for public health improvement? A third challenge is that there are many different competencies needed for this work—for example, the skills of assessment, leadership, advocacy, social marketing, evaluation, and sustaining the initiative. How can we enhance the skills of a diverse group of professionals and community members needed to create conditions for community health? A fourth challenge arises because the common work of building capacity for public health improvement engages people across distances and over time. How do we connect those engaged in this work within and between states (and countries) and over the months and years required to make a difference? Finally, there is a high turnover among those doing this work. How do we build capacity among the generations of community members and professionals engaged in efforts to improve health outcomes at the population level?

To be useful, an information system for supporting public health improvement should have several attributes.

- It must be *easily available* to the different professionals and community members engaged in providing, retrieving, and using information to effect public health outcomes.
- It should be sufficiently *accurate and secure* to guide decisions and inspire confidence in its use.
- The information and supports should be *compatible* with the variety of goals and problems related to public health improvement.
- The content should be sufficiently *comprehensive* to reflect the varied information and skill building needs (e.g., assessment, strategic planning, leadership, grant writing).
- Gateways into the information should permit its *timely* access for people facing different issues and working on early or later stages of initiatives for public health improvement.
- The information should be *clear and compelling* enough to prompt and support action for public health improvement.
- It should be *friendly and supportive* to people with diverse experiences—including community members and professionals with limited training and those who operate from different domains of practice (e.g., public health, business, faith communities).
- It should be able to *connect people* working across distances and over time.
- Information should be *integrated* in a seamless support system for addressing multiple and interrelated outcomes. Finally, it must help *reduce inequalities* in resources available to support the work of public health improvement.

Public health informatics holds promise for contributing to the work of public health improvement.[7] Dramatic improvements in information technology permit widespread access to the means for building capacity for the work, documenting and evaluating public health initiatives, and learning through exchanges with peers and experts. More specifically, Internet-based systems have the advantages of standardized formats for gathering and reporting information, simplified and efficient ways to update it, and nearly universal access. Additionally, Internet-based systems may enhance the systems-oriented, integrated, and collaborative work necessary for public health improvement. Data systems can help focus attention on systems changes, analyze contributions across a variety of categories of concerns, and enhance collaboration among agents in different sectors, such as business or education, related to public health improvement. Finally, the new information technologies provide capabilities for building capacity in the many and varied people required for this work. Internet-based systems can help people gain access to skill-building information needed for the complex and adaptive work of public health improvement.

The purpose of this chapter is to describe an information system for building capacity for public health improvement as part of the National Turning Point initiative. Funded by the Robert Wood Johnson Foundation and the W. K. Kellogg Foundation, the mission of the National Turning Point initiative is to work with state health departments to enhance the infrastructure for

public health improvement. Using the capabilities of the Community Tool Box (http://ctb.ukans.edu/) and the University of Kansas' Work Group on Health Promotion and Community Development (KU Work Group), we developed an Internet-based support system for this initiative known as the "Public Health Improvement Tool Box" (PHI Tool Box). This chapter describes the context for this work and the information system's several components:

1. *Tools for building capacity for the work*—tailored links to how-to information for a variety of relevant skills (e.g., assessment, leadership, evaluation)
2. *An on-line documentation system*—for entering, retrieving, graphing, and making sense of data on systems changes (i.e., new or modified programs, policies, and practices facilitated by participating state efforts for public health improvement)
3. *An on-line learning community*—for exchanges among peers and experts to guide and support public health initiatives.

We conclude with a discussion of potential challenges, strengths, and future prospects of such information systems for contributing to the work of public health improvement.

## Background and Context: The National Turning Point Initiative

The National Turning Point Initiative (Turning Point: Collaborating for a New Century in Public Health, available at: http://www.naccho.org/project30.cfm) was funded by the Robert Wood Johnson and W. K. Kellogg Foundations and supported by the University of Washington National Office and the National Association of County and City Health Officials (NACCHO). Its vision and mission is to improve population health through an investment in strengthening and transforming the public health infrastructure. The working hypothesis is that strategic changes in the public health system can enhance the success of state and local efforts to promote and protect health and prevent diseases and injury. From January 1998 to December 2000, the two foundations funded 21 states and 41 communities to plan for and carry out public health systems change.

Turning Point began in 1998 with a two-year strategic development process using three primary methods:

1. It created a planning environment at the state and local level where committed stakeholders would plan collaboratively, analyze health issues and challenges, and promote system changes for public health improvement.
2. It developed a strategic planning document in each of the 21 states and 41 communities. The documents included plans to:

   a. assess and address gaps in system capacity;
   b. evaluate the public health workforce;
   c. identify necessary information and communication systems;
   d. develop a framework for stable financing; and
   e. identify strategies for formulating health policy.
3. Turning Point participants established a network of partners who could contribute to a health agenda in each state and community. These partners would collaborate to work on a variety of public health issues including
   a. eliminating health disparities among populations;
   b. assuring access to quality care;
   c. aggressively preventing infectious diseases;
   d. reducing risks for chronic diseases; and
   e. protecting the population from hazards and toxins in the environment.

The partners focused on building the system and infrastructure that could help address these issues. The infrastructure required for population health improvement includes, but is not limited to, (a) a skilled and competent workforce; (b) stable financing; (c) information systems and technology; (d) research and citizen involvement to guide policy development and implementation; and (e) collaboration among and between states, communities, and the multiple public and private organizations and institutions that contribute to health.

Two cohorts of states and one cohort of communities were involved in the planning phase of Turning Point. At the end of the planning phase, states were funded by the Robert Wood Johnson Foundation to implement a specific strategy highlighted in their strategic plans. Over a four-year period (2000–2003), the two state cohorts will collaborate to carry out different planned change initiatives. The communities, with funding from W. K. Kellogg Foundation, have addressed priorities in their strategic plans.

During development of the implementation phase of Turning Point, it became clear that the states and communities faced several common issues in building capacity for public health improvement. Although each state and community is unique in its approach to public health, commonly held areas for improvement included (1) performance management; (2) collaborative leadership; (3) information technology; (4) social marketing; and (5) modernizing public health statutes. To help assure a coordinated approach to these five areas, a third phase of Turning Point was created, The National Excellence Collaboratives. Turning Point states were given the opportunity to join one or more collaboratives to work jointly with state and local Turning Point partners and with national organizations such as the US Centers for Disease Control and Prevention (CDC), the Health Resources Service Administration (HRSA), the National Association of County and City Health Officials (NACCHO), and the Association of State and Territorial Health Officers (ASTHO). Each of the National Excellence collaboratives has created a shared vision, a mission, and a work plan that will culminate at the end of four years in a set of recommendations, products, tools, and pilot demonstrations.

For example, the Information Technology Collaborative had as its mission to assess, evaluate, and recommend to national policy makers innovative ways to improve the nation's public health infrastructure by utilizing information technology. Information technology would be used to improve data access, community participation in making public health decisions, and performance of the public health system. The initial goals of the collaborative were to

1. monitor health status to identify community health problems;
2. diagnose and investigate health problems and health hazards in the community;
3. inform, educate, and empower people about health issues;
4. develop policies and plans that support individual and community health efforts;
5. enforce laws and regulations that protect health and ensure safety;
6. mobilize community partnerships to identify and solve health problems;
7. link people to needed personal health services and assure the provision of health care when otherwise unavailable;
8. assure a competent public health and personal healthcare work force;
9. evaluate effectiveness, accessibility, and quality of personal and population-based health services; and
10. research for new insights and innovative solutions to health problems.

Supporting such a large-scale, multi-site, and multi-method initiative has been a particular challenge of Turning Point. Each funding foundation has created a national program office to provide guidance and technical assistance to the states and communities involved in Turning Point. The National Program Office for the W. K. Kellogg Foundation has been located at NACCHO. The Robert Wood Johnson Foundation's National Program Office is located at The University of Washington School of Public Health and Community Medicine. Several support challenges emerged during early implementation. How do we build capacity among state and local initiatives for the different competencies needed for systems change for public health improvement? How do we document and make sense of the unfolding of systems changes facilitated by state initiatives? And, how do we support learning among the Turning Point communities and states about the work of systems change for public health improvement?

## Emerging Theory of Practice for Public Health Improvement

The model (or framework) for public health improvement used by the National Turning Point initiative is dynamic and interactive. For example, it is assumed that understanding of state and community contexts should guide action and intervention, which, in turn, should affect community and systems

change for public health improvement. Systems changes, such as new programs for workforce development or revised public health statutes, will ultimately affect the context for public health improvement. The work is also iterative or repeating: for example, as time passes and issues change, the new context may beget renewed cycles of planning and action, another generation of systems changes, and further public health improvement.

The parts of this model are: (1) understanding context and collaborative planning; (2) action and intervention; (3) systems change; (4) enhanced infrastructure; and (5) improvements in population-level outcomes. This model integrates public health and community development perspectives.[1,6,8,9]

## *Understanding Context and Collaborative Planning*

Collaborative planning, and related situation analysis, sets the stage for taking action targeted at public health improvement. Studying the context in which public health improvement occurs helps public health leaders and local people see the problems that states and communities face and how they are currently addressing them. The context can be influenced by a variety of factors, such as local people's dreams for healthier communities and disparities in income and health status. By bringing together stakeholders and accountable entities, states and communities can develop a broad perspective on public health improvement and how related issues might be addressed. Partnerships prepare and analyze state and community health profiles. They make available information about the local community's health concerns and analyze that information to help support locally determined plans for health improvement. The resulting agenda of state and community health issues should reflect not only the public health department's interests, but also those of a broader spectrum of community stakeholders, including the general public.

Collaborative planning brings together people and organizations with different experiences and resources to clarify their vision, mission, objectives, strategies, and action plans for bringing about community and systems changes. Partnerships for public health improvement might analyze the critical health issues to determine general underlying causes and contributing factors, how they operate in each state or community, and what interventions are likely to be effective in meeting goals for public health improvement. Partnerships might also develop an inventory of resources available to them that can be applied to selected public health improvement issues. They also develop health improvement strategies, such as social marketing and community coalitions that reflect an assessment of how available resources can best be applied to address locally identified concerns.

## *Action and Intervention*

The planning process is followed by action taken to bring about public health improvement. Implementing strategies and interventions for public health

improvement requires action by many different segments of the community or state (e.g., public and private health organizations, faith communities, schools, government). The particular mix of activities and actors will depend on the health issue being addressed and the local participants and resources. Some courses of actions are commonplace, such as conducting statewide social marketing campaigns against tobacco use, but others, such as changing public health statutes to protect water quality, may receive opposition. Establishing accountability for partners is important to help ensure successful implementation.

## *Systems Change*

The aim of planning and taking action is to bring about community and systems change (e.g., new or modified policies, programs, and practices) related to public health improvement. Illustrative community and systems changes to be sought by a state partnership with a goal of reducing health disparities might include expanded programs (e.g., establishing and supporting peer educator programs in youth organizations and middle schools to encourage healthy living skills), new policies (e.g., reducing delays and waiting time in obtaining health care and preventative services), and modified practices (e.g., establishing city/state policies to create "healthy opportunity" zones that allow a tax credit for establishing neighborhood-based primary health facilities).[10]

## *Enhanced Infrastructure*

When systems changes occur, the environment in which people attempt to effect public health improvement is transformed. By making the work easier and more rewarding, an enhanced infrastructure can influence the behavior of those who can contribute to public health improvement. For example, a systems change, such as a new Internet-based program for enhancing skills for community health promotion, can affect implementation of such efforts in multiple communities. Taken together, locally determined community and systems changes can support relevant behaviors of the many and varied actors needed for public health improvement.

## *Improvement in Population-Level Outcomes*

Improvement in population-level outcomes, such as improvement in the incidence and prevalence of asthma or HIV/AIDS in the state or county, is the ultimate result of public health improvement efforts. It is hypothesized that an enhanced public health infrastructure can contribute to widespread behavior change needed to improve outcomes. It is important to develop a set of public health indicators of goal attainment that are accurate, available, and sensitive to state and community-determined efforts. Improved data systems

can help monitor process and outcome to provide useful, formative information to guide decisions in the work of public health improvement.

## Developing a Public Health Improvement Tool Box

Supporting programs for public health improvement efforts at state and community levels, such as those launched by National Turning Point, can aid implementation of this theory of practice. In collaboration with the National Program Office of Turning Point, we built a prototype Internet-based support system using the infrastructure of the Community Tool Box and other capabilities of the KU Work Group. The Public Health Improvement Tool Box (PHI Tool Box) is designed to promote public health improvement by connecting people with support tools for the work, documenting systems changes, and promoting learning through on-line exchanges.

The PHI Tool Box guides the users in choosing useful tools and pertinent information related to their current work. It also connects users to peers and mentors who can provide guidance specific to local contexts. The objective of the PHI Tool Box is threefold:

1. To *enhance capacity* for public health improvement through "how-to" learning modules and other tools found in the Community Tool Box;
2. To *document* the process of *systems change* related to public health improvement through the KU Work Group's on-line documentation system; and
3. To *promote dialogue* among peers and experts involved in public health improvement through a learning community that communicates through on-line forums.

Supporting and documenting the work, and learning with others, are activities that can enhance the infrastructure for public health improvement.

## Audiences, Core Partners, and Assets in Development

There are a variety of audiences that might use a "tool box" for public health improvement. Leaders and staff of state and local public health departments who are doing the work of public health improvement can use it to seek information, document their efforts, or connect with other public health professionals working on common issues. People involved in health improvement initiatives through other sectors, such as faith communities or business, may also find the PHI Tool Box supportive of their efforts.

Support organizations, such as university-based research and training centers or advocacy groups, are also a primary audience. This information system can amplify their capacity to support national, state, and local public health improvement efforts. The PHI Tool Box contributes to the infrastructure by

providing a framework for guiding these efforts and support materials that can make the work of public health improvement easier and more rewarding.

Similarly, those organizations that provide funds and resources for the work, such as government agencies or private foundations, can also benefit from enhanced support for public health related initiatives. Such information systems can optimize investments by enhancing competencies and shared learning about the work of public health improvement.

The development of the PHI Tool Box is based on the empirical and experiential knowledge of several core partners. The KU Work Group and the National Turning Point Initiative have joined efforts to develop and test an information system that brings together Internet-based technology, research-based learning systems, and deep experience with public health improvement efforts.

The KU Work Group, a research, teaching, and public service organization, has worked extensively with community and health development initiatives since 1990. The KU Work Group has actively developed tools and on-line technology that builds capacity and promotes learning among those doing the work of community health and development.[11–14] The National Program Office of the National Turning Point initiative at the University of Washington has drawn together a broad community of scientists and practitioners involved in public health improvement. By joining the experiential knowledge of the National Program Office and the KU Work Group's support capabilities, we seek to develop a valuable resource for public health improvement.

The PHI Tool Box is undergirded by the Community Tool Box. Operating since 1995, the Community Tool Box is designed to promote community health and development by connecting people, ideas, and resources. With support from the Robert Wood Johnson Foundation and other sources, the Community Tool Box team has created on-line learning modules for the variety of competencies required for the work (e.g., community assessment, strategic planning, leadership development, evaluation). Currently, the Community Tool Box has over 200 how-to sections and over 6,000 pages of useful information. The site received over 1.5 million hits and over 110,000 user sessions during the year 2000. In addition, the KU Work Group has developed an on-line documentation system by which clients can enter data on community and systems change, analyze data according to a theory of change, and produce graphs and private reports of accomplishments.

## Core Components and Information Features of the PHI Tool Box

The work of public health improvement could be enhanced by an integrated and Internet-based system that brings together capabilities for support, such as easy access to how-to information for community assessment or evaluation and systems for documenting changes related to public health improvement

and for learning through exchanges with peers and experts. The PHI Tool Box has three components: (a) a support system; (b) a documentation system; and (c) a learning community.

## *Supporting the Work*

Drawing on the breadth of content of the Community Tool Box, we aim to create more depth of support for core activities in the work of public health improvement. The PHI Tool Box helps build capacity by linking users to how-to information relevant to their work. Hundreds of how-to sections can be accessed as users work on one element or another (e.g., community assessment, collaborative planning, taking action) of their respective frameworks for public health improvement (e.g., the Institute of Medicine's Community Health Improvement Process). Users can access how-to information about core competencies for public health improvement such as community assessment, strategic planning, intervention, advocacy, evaluation of process and intermediate outcomes, and resource generation, celebration, and renewal. Another gateway to tools, the troubleshooting guide, helps focus on the problems public health initiatives may face (e.g., we can't come to agreement on which systems changes to work on). The guide uses clarifying questions to lead the user to understanding the meaning of the situation and to link to "how-to" sections that help users decide the best course of action.

The support feature provides tailored links to on-line support tools in the Community Tool Box related to public health improvement. For example, one gateway to the tools is organized around the core competencies related to the "10 essential health services"[15,16]; another provides links relevant to the tasks of the Institute of Medicine's Community Health Improvement Process.[1] By invoking the Community Tool Box's Workstation feature, users can get outlines, links to how-to information, and examples to help produce products such as a leadership development plan, a strategic plan, a social marketing plan, or an evaluation plan. It provides connections to the National Turning Point initiative's internal structure for personal support and technical assistance. Links to other resources are also available.

## *Documenting Systems Changes*

The on-line documentation system enables leadership in the National Turning Point initiatives to document valued accomplishments such as community and systems change—new or modified programs, policies, or practices related to public health improvement. It can also collect information about other events, such as resources generated for public health improvement and media coverage of the work. In addition, users can document success stories and lessons learned that connect discrete state initiatives in a common community of learners and doers. The database also records information about collaborating partners involved in accomplishing systems changes. Information from the documentation

system can be used by multiple audiences to help them understand the effort, make adjustments, and ensure accountability.

The documentation system also collects information that allows the analysis of the potential contribution of systems change to public health improvement. The database of systems changes can be displayed to show the distribution of changes in the following ways:

- Primary goal/objective (e.g., the 10 essential public health services, monitor health status to identify community health problems, diagnose and investigate health problems and health hazards in the community)
- Primary strategy used to change behavior (e.g., modify access/barriers and opportunities, change policy)
- Duration of the change (e.g., one-time, ongoing)
- Penetration or exposure
  - for primary population (e.g., all, adolescents, African-Americans
  - through primary sector or setting (e.g., health organizations and providers, faith communities)
  - in primary places (e.g., list of specific states, cities/towns)
  - at primary level (e.g., neighborhood, city/town, county, state/tribe)

The on-line documentation system makes data entry easy and information available in real time, instantaneously. Participating state initiatives and support organizations have direct access to their data on systems change. Data collection is done in real time, helping avoid the delays of traditional retrospective reporting. The National Turning Point Office and the funders can also have immediate access to graphs and reporting based on this information. Information is entered through any Web browser (e.g., Internet Explorer, Netscape Navigator) using data entry screens. The information entered is stored on a server at the KU Work Group.

Information capabilities include those of (a) reading on-line and printing reports of selected measures (e.g., systems change) for participating Turning Point state initiatives; (b) FTP (File Transfer Protocol) access to data for the National Turning Point office and state grantees for purposes of data management; (c) preformatted examples for how to use data in reports (e.g., model text, graphs, lists of accomplishments); and (d) on-line "helpful tips" to support how to enter and retrieve data and provide answers to commonly asked questions about documentation.

Information provided by the documentation system helps initiatives and funders to meet their needs for accountability and continuous improvement. It provides for a developmental approach, rather than merely a summative evaluation. The documentation system serves as a foundation for communication between stakeholders and for co-learning within and among state initiatives. The reports generated on-line by the documentation system encourage celebration and renewal of effort. In addition, the data and information on accomplishments produced through the system may be used to help secure further funds and resources.

The documentation system provides the basis for sensemaking.[13,17–19] Information from the documentation system can be used to develop a better understanding of how the initiative is functioning and possible contributions of systems change (an intermediate outcome) to goals related to improving the public health infrastructure (a more distant outcome). Some of the questions that can be answered include:

- Is the initiative facilitating community and systems change related to the mission? (i.e., by examining rates of change over time);
- What factors are associated with increased rates of community and systems change? (i.e., by examining what is associated with discontinuities in rates of change);
- Do public health experts regard the changes as important? (e.g., by using ratings of public health significance by constituents to "weight" the changes); and
- What is the contribution of community and systems changes to goals for improving the infrastructure? (e.g., by examining the distribution of systems changes among the 10 essential services).

### *Learning Through Exchanges with Others*

Using a customized version of the on-line forum capabilities of the Community Tool Box, we created a forum or learning community for participants in the National Turning Point Initiative. Peers and experts can engage each other in dialogue about common issues and options for public health improvement. The forums are structured by topics chosen by the partners (e.g., assessing community health, developing coalitions). The forums create a virtual space where public health leaders can guide and be guided in solving problems that emerge in the work. For example, fine points of developing coalitions or social marketing can be discussed or valued ideas and resources shared. Because exchanges are archived, the forum permits cumulative learning among those doing (and exchanging ideas about) the work. In addition, thematic "conference" or discussion themes can be developed to support focused dialogue about different aspects of the work.

## Plans for Implementation and Ongoing Learning and Improvement

Several strategies will be used to support use of the PHI Tool Box. First, training sessions on how to use the PHI Tool Box are provided for representatives of state initiatives at the periodic conferences for the National Turning Point grantees. These training sessions will include guided tours, tips on navigation, and practice and troubleshooting on using each component of the on-line system. These sessions provide hands-on experience in accessing

relevant support materials in the Community Tool Box and the use of customized gateways, troubleshooting guides, searches, and other useful tools. Training in the use of the documentation system that includes entering data, generating reports, and sensemaking based on the data will also be provided. This training will also offer an opportunity for users to learn about and practice use of the learning community or forums.

The National Turning Point Program office will provide follow-up technical support such as in entering and retrieving data. Consultations with National Turning Point staff will help users interpret the data and possible interrelationships among the data. Annual follow-up consultation and training will be provided at national meetings of Turning Point grantees to enhance use of this support, documentation, and learning system for public health improvement.

The biannual meeting will also be used to assess and improve the PHI Tool Box. Focus groups will be conducted during each of these meetings. In addition, the PHI Tool Box has several user feedback systems built into each of its components. Users can suggest improvements in content and procedures, discuss alternative materials and approaches, and describe what works or does not work for them.

As participating Turning Point partners document the process of community and systems change, there will be enormous opportunities to learn about what works and the conditions under which public health improvement occurs. Ongoing data on systems change across sites can be used to better understand, support, and re-direct efforts for public health improvement. Online exchanges among peers and experts may help adapt state-based programs and practices and make sense of these widely distributed public health improvement efforts.

## Some Potential Challenges, Strengths, and Future Prospects

Any information system to build capacity, such as the PHI Tool Box, should meet several important needs. First, the system should help state and local public health systems do the work of systems changes. How will it reduce the effort and make more rewarding the work of bringing about change within public health systems? Second, the work of population-level health improvement is not restricted to public health workers. The PHI Tool Box must have utility for a variety of users, who have varying levels of expertise. Will an educator, a business person, or a member of a faith community be supported in efforts to change programs or policies related to health improvement?

Third, the system should help users enhance the broad array of skills and competencies related to public health improvement. Does the information system provide access to learning resources for the appropriate and needed competencies? Fourth, a public health information system should connect public health leaders and workers both within and between states so that the sharing of guidance and successes can take place. It should also connect

young practitioners with and help them share the wisdom of more experienced public health leaders. Finally, a public health information system should be a repository of useful information to help with continuity during periods of reduced staffing or gaps in the work force.

The strengths of the PHI Tool Box in supporting the work are numerous. Users can access the vast store of information available easily through any Internet-connected computer. Although not yet ubiquitous, Internet access to such information systems is growing rapidly. The amount of information available through the Community Tool Box is vast; it reflects the broad set of competencies needed for the work of public health improvement (e.g., assessment, leadership, sustainability). Though vast, the information being sought can be accessed through customized gateways, such as logic models, troubleshooting guides, and support links for the 10 essential services. Examples will illustrate application of competencies to specific health goals and problems (e.g., reducing disparities, increasing physical activity). The support material is written in language that is welcoming and friendly, with a limited jargon. Links are provided to connect the user to others who can provide more specialized information.

Through the PHI Tool Box, users can connect with other peers in an on-line forum or learning community or with experts or mentors associated with a national program office that can also provide guidance and assistance. The entire system of support, learning, and documentation is integrated. Users can garner data from the documentation system to help make sense of their initiative's efforts. For example, the data may suggest that systems change is not occurring. Depending on the user's assessment of the situation, it might be determined that the most appropriate partners are not involved. Support information might be accessed to prompt ideas for enhancing collaboration. In applying this information to the local context or situation, the user may seek guidance from peers and experts through the on-line learning community or mentoring component.

Future research and development can help establish and optimize the contribution of such Internet-based information systems to state and local initiatives for public health improvement. With refinement, Internet-based systems can help provide support and guidance, connect participants committed to improving health to each other and to needed resources, and document (and make sense of) comprehensive efforts. By building capacity for public health improvement, information systems can make the work easier and more rewarding. In so doing, it can help assure that all of us experience environments that promote and protect health and well being.

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## Questions for Review

1. Explain why we refer to community-based efforts for public health improvement as complex, dynamic, and adaptive.
2. List and explain the challenges associated with building capacity for public health improvement.
3. List the attributes that an information system for supporting public health improvement should have.
4. Explain how public health information systems can contribute to the work of public health improvement.
5. List the qualities of the infrastructure required for public health improvement.
6. According to the experience of the National Turning Point Initiative, what challenges do states and communities have in common in building capacity for public health improvement?
7. Describe the parts of the model or framework used for public health improvement by the National Turning Point Initiative.
8. Describe the objectives of the Public Health Improvement Tool Box. What are its core components and information features?
9. What needs or challenges should an information system, such as the Public Health Tool Box, address? What are the particular strengths of the Public Health Tool Box?

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