

Improving Health in the Community: A Role for Performance Monitoring

Jane S. Durch, Linda A. Bailey, and Michael A. Stoto, Editors; Committee on Using Performance Monitoring to Improve Community Health, Institute of Medicine

ISBN: 0-309-52081-9, 496 pages, 6 x 9, (1997)

This PDF is available from the National Academies Press at:
<http://www.nap.edu/catalog/5298.html>

Visit the [National Academies Press](http://www.nap.edu) online, the authoritative source for all books from the [National Academy of Sciences](http://www.nap.edu), the [National Academy of Engineering](http://www.nap.edu), the [Institute of Medicine](http://www.nap.edu), and the [National Research Council](http://www.nap.edu):

- Download hundreds of free books in PDF
- Read thousands of books online for free
- Explore our innovative research tools – try the “[Research Dashboard](#)” now!
- [Sign up](#) to be notified when new books are published
- Purchase printed books and selected PDF files

Thank you for downloading this PDF. If you have comments, questions or just want more information about the books published by the National Academies Press, you may contact our customer service department toll-free at 888-624-8373, [visit us online](#), or send an email to feedback@nap.edu.

This book plus thousands more are available at <http://www.nap.edu>.

Copyright © National Academy of Sciences. All rights reserved.

Unless otherwise indicated, all materials in this PDF File are copyrighted by the National Academy of Sciences. Distribution, posting, or copying is strictly prohibited without written permission of the National Academies Press. [Request reprint permission for this book](#).

Executive Summary

In communities, health is a product of many factors, and many segments of the community can contribute to and share responsibility for its protection and improvement. Changes in public policy, in public- and private-sector roles in health and health care, and in public expectations are presenting both opportunities and challenges for communities addressing health issues. Performance monitoring offers a tool to assess activities in the many sectors that can influence health and to promote both collaboration and accountability in working toward better health for the whole community, especially within the framework of a community-based health improvement process. This report from the Institute of Medicine (IOM) Committee on Using Performance Monitoring to Improve Community Health draws on lessons from a variety of current activities to outline the elements of a community health improvement process, discuss the role that performance monitoring can play in this process, and propose tools to help communities develop performance indicators.

BACKGROUND

The report reflects three important developments: (1) a broadening of our understanding of the nature of health and its determinants, (2) a greater appreciation of the importance of a community perspective, and (3) a growing interest in the use of

performance measurement to improve the quality of health and other services in public and private settings.

A Broader Understanding of Health

There is a wider recognition in many settings that health is a dynamic state that embraces well-being as well as the absence of illness. The committee defined health as “a state of well-being and the capability to function in the face of changing circumstances.” Health is, therefore, a positive concept emphasizing social and personal resources as well as physical capabilities. This definition also underscores the important contributions to health that are made outside the formal medical care and public health systems.

For both individuals and populations, health depends not only on medical care but also on other factors including individual behavior and genetic makeup and social and economic conditions for individuals and communities. The *health field model*, as described by Evans and Stoddart (1994) and discussed further in Chapter 2, presents these multiple determinants of health in a dynamic relationship (see Figure 1). The model’s feedback loops link social environment, physical environment, genetic endowment, an individual’s behavioral and biologic responses, disease, health care, health and function, well-being, and prosperity. This multidimensional perspective reinforces the value of public health’s traditional emphasis on a population-based approach to community health issues.

A Community Perspective

The array of influences on health identified by the field model also suggests that there are many public and private entities that have a stake in or can affect the community’s health. These stakeholders can include health care providers (e.g., clinicians, health plans, hospitals), public health agencies, and community organizations explicitly concerned with health. They can also include various other government agencies, community organizations, private industry, and other entities that may not see themselves as having any explicit health-related role such as schools, employers, social service and housing agencies, transportation and justice agencies, and faith communities. Many of these entities have a local base and focus. Others that may play an essential role in shaping health at the local level such as state health de-

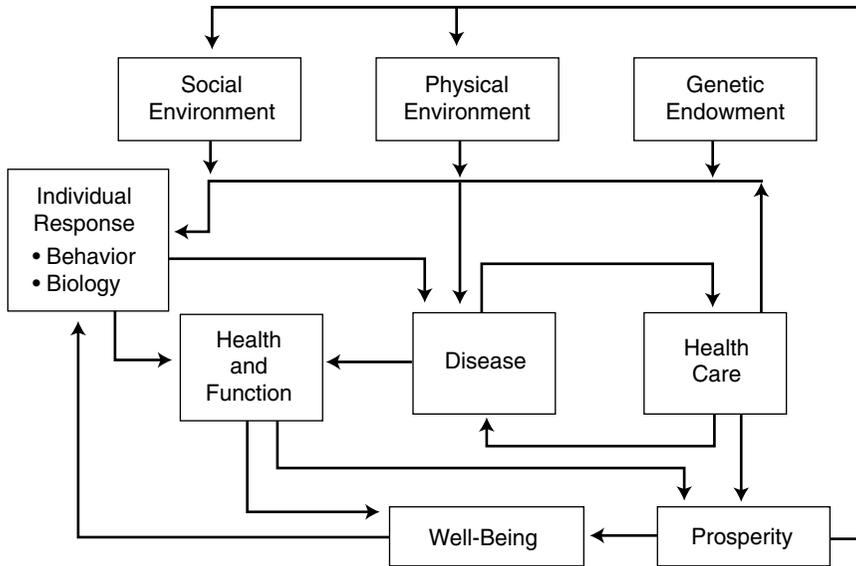


FIGURE 1 A model of the determinants of health. Source: Reprinted from R.G. Evans and G.L. Stoddart, 1990, *Producing Health, Consuming Health Care*, *Social Science and Medicine* 31:1347–1363, with permission from Elsevier Science Ltd, Kidlington, UK.

partments, federal agencies, managed care organizations, and national corporations have a broader scope than a single community.

As communities try to address their health issues in a comprehensive manner, all of the stakeholders will need to sort out their roles and responsibilities, which will vary from community to community. These interdependent sectors must address issues of shared responsibility for various aspects of community health and individual accountability for their actions. They also must participate in a process of community-wide social change that is necessary for health improvement efforts and related performance monitoring to succeed (Green and Kreuter, 1990). Most communities will have only limited experience with collaborative or coordinated efforts among these diverse groups. Effective collaboration will require a common language, an understanding of the multidimensional nature of the determinants of health, and a way to accommodate diversity in values and goals.

Growing Interest in Performance Monitoring

Performance monitoring has gained increasing attention as a tool for evaluating the delivery of personal health care services and for examining population-based activities addressing the health of the public (see Chapter 4 and Appendixes C and D). Although many performance monitoring activities are focused on specific health care organizations, only at the population level is it possible to examine the effectiveness of health promotion and disease prevention activities and to determine whether the needs of all segments of the community are being addressed.

As used by the committee, the term “performance monitoring” applies to a continuing community-based process of selecting indicators that can be used to measure the process and outcomes of an intervention strategy for health improvement, collecting and analyzing data on those indicators, and making the results available to the community to inform assessments of the effectiveness of an intervention and the contributions of accountable entities. Performance monitoring should promote health in a context of shared responsibility and individual accountability for achieving desired outcomes.

The monitoring process will depend on a limited number of indicators that can track critical processes and outcomes. A variety of tools are available for public health assessment. Some set, or provide a mechanism for setting, measurable health objectives and thus have some characteristics of performance measures (e.g., see APHA et al., 1991; NACHO, 1991; USDHHS, 1991). They are not, however, explicitly linked to the performance of specific entities in the community. To address this concern, the committee looked to evolving concepts of performance monitoring from the health services sector (e.g., NCQA, 1993); continuous quality improvement, particularly its application at the community level (e.g., Nolan and Knapp, 1996; Zablocki, 1996); and government reform (e.g., Osborne and Gaebler, 1992).

A FRAMEWORK FOR COMMUNITY HEALTH IMPROVEMENT

As the analysis and examples in this report demonstrate, a wide array of factors influence a community’s health, and many entities in the community share the responsibility of maintaining and improving its health. Responsibility shared among many entities, however, can easily become responsibility ignored or abandoned. It is at the level of actions that can be taken to protect and

improve health that it becomes possible to hold specific entities accountable. The committee proposes that accountability for those actions be established within a collaborative process, not assigned. Performance monitoring is the tool that communities can then use to hold community entities accountable for actions for which they have accepted responsibility.

Based on its review of the determinants of health, the community-level forces that can influence them, and community experience with performance monitoring, the committee finds that a *community health improvement process* (CHIP) that includes performance monitoring, as outlined in this report, can be an effective tool for developing a shared vision and supporting a planned and integrated approach to improve community health. It offers a way for a community to address a collective responsibility and marshal resources of specific, accountable entities to improve the health of its members. The committee concluded, however, that individual communities will have to determine the specific allocation of responsibility and accountability. No universal approach can be prescribed. The committee's recommendations for operationalizing a CHIP are based on a variety of theoretical and practical models for community health improvement, continuous quality improvement, quality assurance, and performance monitoring in health care, public health, and other settings. However, the specifics of the committee's proposal have never been tested, in toto, in community settings. Therefore, attention is also given in this report to ways in which the proposed process can be evaluated.

The committee suggests that a CHIP should include two principal interacting cycles based on analysis, action, and measurement (see Figure 2). This process is described in more detail in Chapter 4. The *problem identification and prioritization cycle* focuses on identification and prioritization of health problems in the community, and the *analysis and implementation cycle* on a series of processes intended to devise, implement, and evaluate the impact of health improvement strategies to address the problems. The overall process differs from standard models primarily because of its emphasis on measurement to link performance and accountability on a community-wide basis.

This process can be applied to a variety of community circumstances, and communities can begin working at various points in either cycle, with varying resources in place. It is an iterative and evolving process rather than linear or short term. One-time activities or short-term coalitions will not be adequate. There must

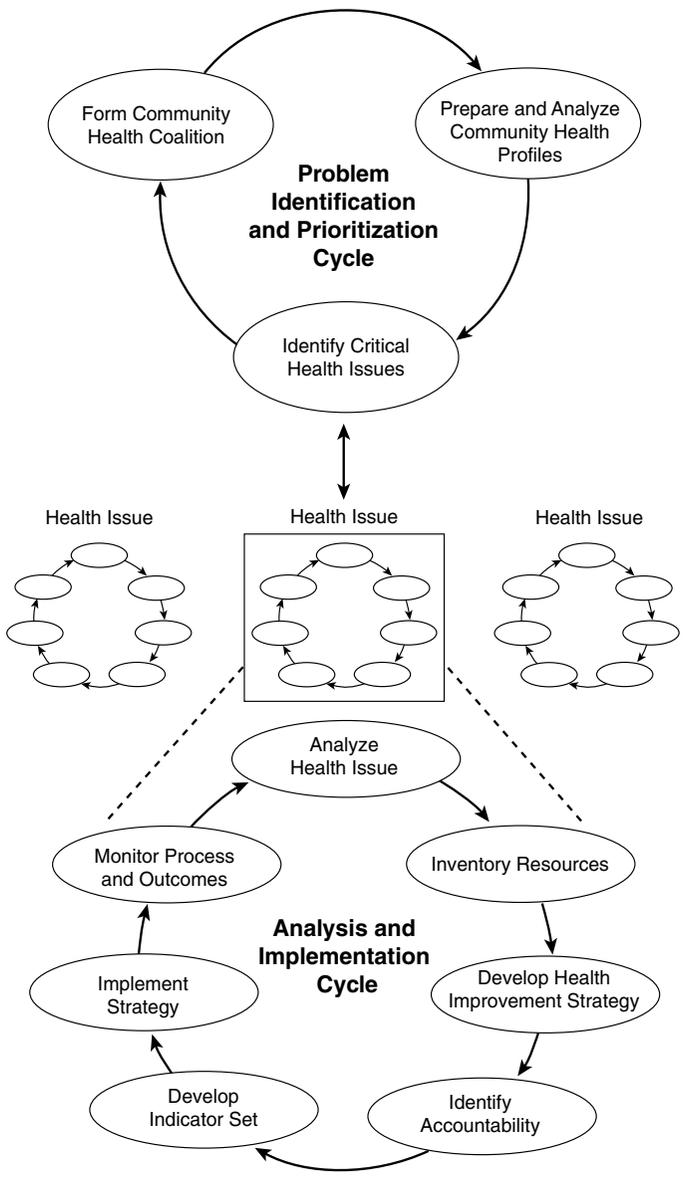


FIGURE 2 The community health improvement process (CHIP).

be support for effective and efficient operation of the accountable entities in the community that are expected to respond to specific health issues. A CHIP must also accommodate the dynamic nature of communities and the interdependence of community activities. It should facilitate the flow of information among accountable entities and other community groups and help them structure complementary efforts. The information provided by health indicators for the community and by performance indicators for specific health issues must feed back into the system on a continuing basis to guide subsequent analysis and planning. That information loop is also a critical element in establishing a link between performance and accountability.

Problem Identification and Prioritization Cycle

As proposed by the committee, the problem identification and prioritization cycle has three main phases: forming a community health coalition, collecting and analyzing data for a community health profile, and identifying critical health issues. Community efforts can begin with *any* phase of the cycle. For example, the availability of data about the community might lead to action on a specific health issue and the subsequent emergence of a more broadly based coalition. Alternatively, a general interest in health might stimulate formation of a coalition, data collection activities, and development of options for strategic actions.

The health assessment activities that are part of the problem identification and prioritization cycle should include production of a *community health profile* that can provide basic information to a community about its demographic and socioeconomic characteristics and its health status and health risks. This profile would provide background information that can help a community interpret other health data and identify issues that need more focused attention. The committee's proposed indicators for a community health profile are listed in Table 1.

Analysis and Implementation Cycle

Once an issue has been targeted by a community, the health improvement process proposed by the committee moves on to a series of steps for analysis, strategy development, implementation, and monitoring the outcome of efforts by accountable entities (see Figure 2). These steps are displayed and described as sequential, but in practice they interact and are likely to be re-

TABLE 1 Proposed Indicators for a Community Health Profile

Sociodemographic Characteristics

1. Distribution of the population by age and race/ethnicity
2. Number and proportion of persons in groups such as migrants, homeless, or the non-English speaking, for whom access to community services and resources may be a concern
3. Number and proportion of persons aged 25 and older with less than a high school education
4. Ratio of the number of students graduating from high school to the number of students who entered 9th grade three years previously
5. Median household income
6. Proportion of children less than 15 years of age living in families at or below the poverty level
7. Unemployment rate
8. Number and proportion of single-parent families
9. Number and proportion of persons without health insurance

Health Status

10. Infant mortality rate by race/ethnicity
 11. Numbers of deaths or age-adjusted death rates for motor vehicle crashes, work-related injuries, suicide, homicide, lung cancer, breast cancer, cardiovascular diseases, and all causes, by age, race, and gender as appropriate
 12. Reported incidence of AIDS, measles, tuberculosis, and primary and secondary syphilis, by age, race, and gender as appropriate
 13. Births to adolescents (ages 10–17) as a proportion of total live births
 14. Number and rate of confirmed abuse and neglect cases among children
-

peated a varying number of times while a community is engaged in a particular initiative. A community may have a portfolio of health improvement activities, each progressing through this cycle at its own pace.

Analyze the Health Issue

A community, through its health coalition or a designated agent such as the health department, must analyze the health issue to understand the contributing factors and how they operate in the community. A framework such as the field model should be used to ensure consideration not only of behavioral risks and health care issues but also of factors in the social and physical environments.

TABLE 1 *Continued*

Health Risk Factors

15. Proportion of 2-year-old children who have received all age-appropriate vaccines, as recommended by the Advisory Committee on Immunization Practices
16. Proportion of adults aged 65 and older who have ever been immunized for pneumococcal pneumonia; proportion who have been immunized in the past 12 months for influenza
17. Proportion of the population who smoke, by age, race, and gender as appropriate
18. Proportion of the population aged 18 and older who are obese
19. Number and type of U.S. Environmental Protection Agency air quality standards not met
20. Proportion of assessed rivers, lakes, and estuaries that support beneficial uses (e.g., fishing and swimming approved)

Health Care Resource Consumption

21. Per capita health care spending for Medicare beneficiaries (the Medicare adjusted average per capita cost [AAPCC])

Functional Status

22. Proportion of adults reporting that their general health is good to excellent
23. During the past 30 days, average number of days for which adults report that their physical or mental health was not good

Quality of Life

24. Proportion of adults satisfied with the health care system in the community
 25. Proportion of persons satisfied with the quality of life in the community
-

Inventory Health Resources

A community must assess the resources available for health improvement efforts. Relevant resources include those that can be applied to required tasks (e.g., organizations, influence, expertise, funding); protective factors within the community that can mitigate the impact of adverse conditions; and support available from public- and private-sector sources outside the community (e.g., funding, technical assistance).

Develop a Health Improvement Strategy

Health improvement strategies should seek to apply available resources as effectively as possible, given a community's specific features. Priority should be given to actions for which evidence of effectiveness is available and for which costs are considered ap-

propriate in relation to expected health benefits. For many health issues, however, evidence for effective interventions will be limited. A community should not ignore those issues but will have to consider carefully what actions will make the best use of its resources. Communities should also consider the implications of not acting on a health issue.

Establish Accountability for Activities

Establishing accountability through a collaborative approach is a key to using performance monitoring in the health improvement process proposed by the committee. Specific entities must be willing to be accountable to the community for undertaking activities that are expected to contribute to achieving desired health outcomes. The committee sees a collective responsibility among all segments of a community to contribute to health improvements, but each entity must accept individual responsibility for performing those tasks that are consistent with its capabilities.

Develop a Set of Performance Indicators

Performance indicators are needed to help community stakeholders monitor whether the health improvement strategy is being implemented as intended and whether it is having the intended impact. These quantitative measures must apply to specific entities in the community that have accepted responsibility for some aspect of the health improvement effort. Because health issues have many dimensions and can be addressed by various sectors in the community, sets of indicators will be needed to assess performance.

Implement the Improvement Strategy

Implementation of health improvement strategies and interventions requires action by many segments of a community. The particular mix of activities and participants will depend on the health issue being addressed and on a community's organization and resources. In most instances, these activities will require the involvement of both public- and private-sector entities and often of entities that may not traditionally be seen as part of the health system.

Monitor Process and Outcomes

Once a health improvement program is under way, performance monitoring becomes an essential guide. Information provided by the selected performance indicators should be reviewed regularly and used to inform further action. In assessing progress, a community coalition or other designated agent should consider whether accountable entities are taking appropriate actions and whether appropriate strategies and interventions have been adopted. The quantitative data provided by performance indicators should be interpreted in combination with qualitative information from the community. As current goals are achieved and new ones adopted, the analysis and implementation cycle of a CHIP should support initiation of new activities and selection of new indicators. Over time, a community, through its health coalition and the broader aspects of a CHIP, should reexamine its priorities and health improvement portfolio, adding new issues as progress is made on others.

OPERATIONALIZING THE CHIP CONCEPT

In developing a health improvement program, every community must consider its particular circumstances (e.g., health concerns, resources, social and political perspectives). The committee cannot prescribe what actions individual communities should take to address their health concerns or who should be responsible for what, but it does believe that communities need to address these issues and that an organized approach to health improvement that makes use of performance monitoring tools will help them achieve their goals.

Given the different perspectives and activities of personal health service, public health, and other organizations that can contribute to the health of communities and given differing views of the meaning of "health" in the community context, the committee recommends that

- **communities should base a health improvement process on a broad definition of health and a comprehensive conceptual model of how health is produced within the community.**

In the committee's view, the field model, as elaborated by Evans and Stoddart (1994), is a good starting point. Drawing on evidence from social and behavioral as well as health sciences,

this comprehensive model of the determinants of health can promote creative thinking about interventions to improve a community's health. The field model perspective makes it clear that most public and private organizational entities in a community, as well as individuals, share an interest in their community's health and are collectively responsible for it. Among these stakeholders in the community's health, those that can influence health outcomes can be thought of as "accountable entities." The field model's multifactorial nature clarifies the need for careful analysis to specify (1) what *individual entities* can contribute and thus be accountable for contributing and (2) where *collaborative action* and shared responsibility are essential.

To operationalize the concept of shared responsibility and individual accountability for community health, stakeholders need to know, jointly and as clearly as possible, how the actions of each potentially accountable entity can contribute to the community's health. Thus, the committee recommends that

- **a CHIP should develop its own set of specific, quantitative performance measures, linking accountable entities to the performance of specific activities expected to lead to the production of desired health outcomes in the community.**

Selecting these indicators will require careful consideration of how to gain insight into progress achieved in the health improvement process. A set of indicators should balance population-based measures of risk factors and health outcomes and health systems-based measures of services performed. To encourage full participation in the health improvement process, the selected performance measures should also be balanced across the interests and contributions of the various accountable entities in the community, including those whose primary mission is not health specific. Selection of performance indicators is discussed in Chapter 5, and prototype indicator sets for several health issues are presented in Appendix A. One example, for vaccine-preventable diseases, is shown in Table 2.

Because stakeholder-level performance measures will generally be unique to a particular community and to the circumstances of stakeholders in that community, the committee focused on developing community-level performance indicators. Such performance measures would permit communities and their health coalitions to ask, "How are we, as a community, performing in assuring the health of our citizenry?" The prototype indicators

TABLE 2 Sample Prototype Indicator Set: Vaccine-Preventable Diseases

-
1. Immunization rate for children at 24 months of age
 2. Immunization rate at 24 months of age for children currently enrolled in managed care organizations
 3. Immunization rate at 24 months of age for children currently enrolled in Medicaid
 4. Existence in the community of a computerized immunization registry that provides automated appointment reminders; if a registry exists, the percentage of children in the community included
 5. Among children with commercial health insurance coverage, percentage with full coverage for childhood immunizations
 6. Percentage of Medicare enrollees who received an influenza immunization during the previous calendar year; percentage who have ever received a pneumococcal pneumonia immunization
 7. Pneumonia and influenza death rates for persons age 65 and older
 8. Existence in the community of an active childhood immunization coalition, involving health service providers, the local health department, parents, and interested community organizations
-

include measures for specific sectors in the community (e.g., managed care organizations, schools, employers, public health agencies), but a community may want measures for individual entities within those sectors.

Communities will need criteria to guide the selection of indicators. Criteria proposed by the committee include consistency with a conceptual framework (such as the field model) for understanding factors that contribute to the production of health, salience to community stakeholders, and support for the social change processes needed to achieve health improvements. Other proposed criteria are validity and reliability, availability of evidence linking performance and health improvement, sensitivity to changes in community health status, and availability of timely data at a reasonable cost. An operational definition should be developed for each measure to determine what data are needed and how (or if) they can be obtained. A review of existing indicator sets may suggest measures that could be adapted for community use and may be a source of tested operational definitions.

Many of the important underlying influences on health that the field model helps identify are often not amenable to change in the short run. For example, interventions aimed at critical developmental periods, such as educational programs in early childhood, may have long-term health benefits but produce little measurable effect in the near term. A desire to make observable

progress could lead a CHIP to focus on other more immediately measurable problems or problems that may be high on the political agenda but of uncertain importance to the community's overall health (e.g., a new renal dialysis unit). A CHIP must also guard against becoming paralyzed by focusing on the undoable. To maintain momentum for community health coalitions, it may be reasonable to select some problems that are amenable to change and success in the short term. Thus, the committee recommends that

- **a CHIP should seek a balance between strategic opportunities for long-term health improvement and goals that are achievable in the short term.**

This balance might be achieved by including interim goals, such as risk reduction strategies, for major health problems. If a community were interested in reducing cancer mortality, for instance, reductions in smoking initiation among teenagers and the implementation of workplace smoking restrictions might be appropriate intermediate goals.

The proposed health improvement process and performance monitoring activities will require that communities have a sustainable system that provides for participation by major stakeholders and accountable entities. Thus, the committee recommends that

- **community coalitions guiding CHIPs should strive for strategic inclusiveness, incorporating individuals, groups, and organizations that have an interest in health outcomes, can take actions necessary to improve community health, or can contribute data and analytic capabilities needed for performance monitoring.**

Participants should assume responsibility for contributing to the health of the community, not just furthering the goals of the organizations they represent.

As described in Chapters 3 and 4, a CHIP focuses on horizontal peer relationships in a community rather than vertical hierarchical relationships. Experience suggests that performance monitoring used as a basis for inspection and discipline of those not producing as expected is less effective in achieving improvements than is monitoring used as a tool for learning and process change (Berwick, 1989; Osborne and Gaebler, 1992). Rather, a CHIP

should use performance monitoring to encourage productive action and collaboration from many sectors. Because the proposed community health improvement process is new, groups that carry it out should be “learning organizations” in the sense that the people, agencies, and community involved are organized to learn from their own experience and improve their operations.

All community initiatives require leadership, which may come from the public or the private sector. To institutionalize the health improvement process as a multiparty effort, the committee recommends that

- **a CHIP should be centered in a community health coalition or similar entity.**

Some communities will have appropriate coalitions in place, but others will have to expand existing groups or establish a workable forum for collective action for the first time. Strategies for improving the effectiveness of community coalitions for health improvement are discussed in Chapter 3.

ENABLING POLICY AND RESOURCES

Federal, state, and local public health agencies and boards of health are all stakeholders in a community’s health and capable of taking action to improve it. Indeed, *The Future of Public Health* (IOM, 1988) implies that public health agencies have a responsibility to assure that something like a CHIP is in place. Thus, the committee recommends that

- **state and local public health agencies should assure that an effective community health improvement process is in place in all communities. These agencies should at a minimum participate in CHIP activities and, in some communities, should provide its leadership and/or organizational home.**

For the CHIP to be effective, communities need data for community health profiles and performance measures. Since all parties share in the goal of improving community health, it is reasonable to combine public and private resources to support the data collection and analysis needed for communities to obtain health profile information, to conduct health status assessments and communicate results, and to sustain performance monitoring pro-

grams. Such resources could include funding, personnel, data, data processing, and analysis.

Both public and private sectors can contribute critical data for performance monitoring. Public health agencies, as part of the public health assessment function called for in *The Future of Public Health*, should promote, facilitate, and—where necessary and appropriate—perform community health assessments and monitor changes in key performance measures. Much of the necessary data and expertise exist at the state health department. Thus, the committee recommends that

• in support of community-level health improvement processes, state health agencies, in cooperation and collaboration with local health departments, should assure the availability of community-level data needed for health profiles.

Currently, most of these data are aggregated by standard geopolitical units such as counties and municipalities. The committee encourages making community health data available in a form that allows communities to prepare health profiles and performance measures according to their own definitions of “community” (e.g., geographic, socioeconomic, cultural). Geocoding of health-related data gathered for other purposes would be an important step toward improving the data for performance monitoring. For data available only at the community level, state health departments should provide models and technical assistance that communities can use in their own data collection activities.

Because data on and from all accountable entities are essential for effective performance monitoring, states and the federal government (in their policy development and regulatory roles) can assist communities by facilitating access to relevant data held by the private sector. In particular, the committee recommends that

• states and the federal government, through health departments or other appropriate channels, should require that health plans, indemnity insurers, and other private entities report standard data on the characteristics and health status of their enrolled populations, on services provided, and on outcomes of those services, as necessary for performance monitoring in the community health improvement process.

Providing these data should be seen as part of the responsibility that these private-sector organizations have to the community

(IOM, 1996; Showstack et al., 1996). Adequate safeguards for privacy and confidentiality must be provided for all CHIP data (IOM, 1994).

The relationship between the CHIP and public or private health service and other community organizations should be reciprocal. In addition to data that these organizations can provide to a CHIP, the organizations can use the other community data that are gathered, and this in turn should reinforce CHIP goals. For instance, state agencies designing publicly funded health services programs such as Medicaid managed care can specify the performance measures to be used in evaluating the contractors and the data that contractors must report. Alternatively, private health service organizations could use CHIP data to assess their contributions to the community's health under "community benefit" guidelines and regulations or in their own service planning and resource allocation decisions.

DEVELOPING THE COMMUNITY HEALTH IMPROVEMENT PROCESS

The community health improvement process and its use of performance monitoring, as laid out in this report, are a work in progress. As noted, the committee's recommendations reflect consideration of a variety of theoretical and practical models from health care, public health, and other settings. The committee also reviewed existing efforts at the national, state, and community levels and found much of value. Not found, however, was a conceptual framework for using performance monitoring concepts to improve community health as a whole (as opposed to monitoring the performance of specific entities such as managed care organizations or public health agencies). The development of a conceptual framework, and the illustration of its application through prototype indicator sets, is the major contribution of this report, but the framework remains largely untested. The overall community health improvement process, its performance monitoring component, and the indicator sets should be tested and improved over time. Thus, the committee recommends that

- **the CHIP concept developed in this report should be implemented in a variety of communities across the country, and these efforts should be carefully documented and independently assessed.**

The assessment process should strive to include sites that vary both in the nature of the community and in the structures and processes used for performance monitoring. The assessment should also include estimates of the full range of public and private costs of carrying out the CHIP and should explore ways to achieve efficiencies in these efforts. These “natural experiments” should be studied to learn how local circumstances affect the way the CHIP is adapted by different communities; to identify the “necessary and desirable conditions” for implementation of the CHIP; and to assess whether or not the CHIP indeed results in a refocusing of attention on root causes of health problems and, ultimately, in important improvements in community health.

The current evaluations of a variety of community health interventions (e.g., Wagner et al., 1991; Elder et al., 1993; Wickizer et al., 1993; COMMIT, 1995a,b; Fortmann et al., 1995; Murray, 1995) can be expected to inform the development of specific interventions to address health problems, the community intervention process itself, and analytic techniques to apply to community studies. The recently established Task Force on Community Preventive Services, organized by the Centers for Disease Control and Prevention, will compile evidence on a variety of community-level activities. The CHIP in its entirety can also be thought of as a “comprehensive community initiative,” and ideas regarding the evaluation of such initiatives can be applied (see Connell et al., 1995).

For the community health improvement process to be effective, appropriate performance measurement tools must be developed further. Thus, the committee recommends that

- **the Public Health Service, in conjunction with state and local health agencies, national professional organizations, and foundations, should develop standard measures for community health profiles and topic-specific model indicator sets that perform well in individual communities and are suitable for cross-community comparison.**

These standard measures would be a resource available to communities, not a set of prescribed measures. The prototype indicator sets described in Appendix A of this report should be viewed as a starting point. Particular attention should be given to issues for which valid measures are not currently available, but the refinement of existing measures should also be addressed. The development of measures of “quality of life” and consumer satis-

faction for use in community surveys is particularly important. Research to develop and improve techniques of measurement and analysis (e.g., small area analysis) that can be applied to community-level performance monitoring should be supported as well.

More generally, technical expertise based on experience with the community health improvement process must be developed and shared. Thus, the committee recommends that

- **the Public Health Service, in conjunction with state and local health agencies, national professional organizations, and foundations, should develop workbooks, seminars, and other forms of technical assistance to catalog and convey to communities information on best CHIP practices, specific model performance measures for a variety of health issues and ways to interpret changes in these measures, and available data resources.**

Universities can, in a variety of activities and through a variety of disciplines, play an important role in helping communities implement a CHIP and in developing and sharing technical expertise. They should also contribute to the effective dissemination of the CHIP concept through their role in the development of a workforce whose attitudes, values, and skills support its implementation. Thus, the committee recommends that

- **educational programs for professionals in public health, medicine, nursing, health administration, public management, and related fields should include CHIP concepts and practices in their curriculum for preservice and midcareer students.**

These programs should introduce the concept of CHIP as a way of thinking about the application of a group of academic disciplines (epidemiology, biostatistics, environmental health, health behavior, and so on) to the practice of community health improvement. Among the other fields in which CHIP might be addressed are maternal and child health, behavioral sciences, and mental health and substance abuse counseling and program administration.

REFERENCES

- APHA (American Public Health Association), Association of Schools of Public Health, Association of State and Territorial Health Officials, National Association of County Health Officials, United States Conference of Local Health Officers, Department of Health and Human Services, Public Health Service, Centers for Disease Control. 1991. *Healthy Communities 2000: Model Standards*. 3rd ed. Washington, D.C.: APHA.
- Berwick, D.M. 1989. Continuous Improvement as an Ideal in Health Care. *New England Journal of Medicine* 320:53–56.
- COMMIT (Community Intervention Trial for Smoking Cessation). 1995a. I. Cohort Results from a Four-Year Community Intervention. *American Journal of Public Health* 85:183–192.
- COMMIT. 1995b. II. Changes in Adult Cigarette Smoking Prevalence. *American Journal of Public Health* 85:193–200.
- Connell, J.P., Kubisch, A.C., Schorr, L.B., and Weiss, C.H., eds. 1995. *New Approaches to Evaluating Community Initiatives: Concepts, Methods, and Contexts*. Washington, D.C.: Aspen Institute.
- Elder, J.P., Schmid, T.L., Dower, P., and Hedlund, S. 1993. Community Heart Health Programs: Components, Rationale, and Strategies for Effective Interventions. *Journal of Public Health Policy* 14:463–479.
- Evans, R.G., and Stoddart, G.L. 1994. Producing Health, Consuming Health Care. In *Why Are Some People Healthy and Others Not? The Determinants of Health of Populations*. R.G. Evans, M.L. Barer, and T.R. Marmor, eds. New York: Aldine De Gruyter.
- Fortmann, S.P., Flora, J.A., Winkleby, M.A., Schooler, C., Taylor, C.B., and Farquhar, J.W. 1995. Community Intervention Trials: Reflections on the Stanford Five-City Project Experience. *American Journal of Epidemiology* 142:576–586.
- Green, L. W., and Kreuter, M. W. 1990. Health Promotion as a Public Health Strategy for the 1990s. *Annual Review of Public Health* 11:319–334.
- IOM (Institute of Medicine). 1988. *The Future of Public Health*. Washington, D.C.: National Academy Press.
- IOM. 1994. *Health Data in the Information Age: Use, Disclosure, and Privacy*. M.S. Donaldson and K.N. Lohr, eds. Washington, D.C.: National Academy Press.
- IOM. 1996. *Healthy Communities: New Partnerships for the Future of Public Health*. M.A. Stoto, C. Abel, and A. Dievler, eds. Washington, D.C.: National Academy Press.
- Murray, D. 1995. Design and Analysis of Community Trials: Lessons from the Minnesota Heart Health Program. *American Journal of Epidemiology* 142:569–575.
- NACHO (National Association of County Health Officials). 1991. *APEXPH: Assessment Protocol for Excellence in Public Health*. Washington, D.C.: NACHO.
- NCQA (National Committee for Quality Assurance). 1993. *Health Plan Employer Data and Information Set and User's Manual, Version 2.0 (HEDIS 2.0)*. Washington, D.C.: NCQA.
- Nolan, T.W., and Knapp, M. 1996. Community-wide Health Improvement: Lessons from the IHI-GOAL/QPC Learning Cooperative. *The Quality Letter for Healthcare Leaders* 8(1):13–20.
- Osborne, D., and Gaebler, T. 1992. *Reinventing Government: How the Entrepreneurial Spirit Is Transforming the Public Sector*. Reading, Mass.: Addison-Wesley.

- Showstack, J., Lurie, N., Leatherman, S., Fisher, E., and Inui, T. 1996. Health of the Public: The Private Sector Challenge. *Journal of the American Medical Association* 276:1071–1074.
- USDHHS (U.S. Department of Health and Human Services). 1991. *Healthy People 2000: National Health Promotion and Disease Prevention Objectives*. DHHS Pub. No. (PHS) 91-50212. Washington, D.C.: Office of the Assistant Secretary for Health.
- Wagner, E.H., Koepsell, T.D., Anderman, C., et al. 1991. The Evaluation of the Henry J. Kaiser Family Foundation's Community Health Promotion Program: Design. *Journal of Clinical Epidemiology* 44:685–699.
- Wickizer, T.M., Von Korff, M., Cheadle, A., et al. 1993. Activating Communities for Health Promotion: A Process Evaluation Method. *American Journal of Public Health* 83:561–567.
- Zablocki, E. 1996. Improving Community Health Status: Strategies for Success. *The Quality Letter for Healthcare Leaders* 8(1):2–12.

