Local Health Department Effectiveness in Addressing the Core Functions of Public Health

BERNARD J. TURNOCK, MD, MPH
ARDEN HANDLER, DrPH
WILLIAM HALL, DDS, MPH
STEVEN POTSIC, MD, MPH
RAVI NALLURI
EDWARD H. VAUGHN, MS

Dr. Turnock, Dr. Handler, Dr. Hall, Dr. Potsic, and Mr. Nalluri are all at the University of Illinois at Chicago School of Public Health. Dr. Turnock is Professor of Community Health Sciences and Acting Dean, Dr. Handler is Assistant Professor of Community Health Sciences, Dr. Hall is Clinical Associate Professor of Health Resources Management, Dr. Potsic was Clinical Associate Professor of Community Health Sciences, and Mr. Nalluri is Research Assistant. Mr. Vaughn is a Health Systems Analyst with the Division of Public Health Systems, Public Health Practice Program Office at the Centers for Disease Control and Prevention, Atlanta, GA.

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Tearsheet requests to Bernard J. Turnock MD, Acting Dean, School of Public Health, University of Illinois at Chicago, 2121 W. Taylor, Chicago, IL, 60612; tel. (312) 996-6620.

Synopsis

Objective 8.14 of the Year 2000 National Health Objectives calls for 90 percent of the population to be served by a local health department effectively carrying out the three core functions of public health—assessment, policy development, and assurance. To provide a benchmark of local health department effectiveness in addressing the core functions and to assess implications for achieving the year 2000 target, a random national sample (stratified by jurisdiction and population base) of local health departments was surveyed to determine self-reported compliance with 10 public health practice performance measures that operationalize the core functions.

Overall compliance with the 10 performance measures was 50 percent, based on weighted responses of 208 responding health departments. Compliance was highest for the practices related to the assurance function and least for practices related to the policy development function. Compliance was also high for departments serving a population of 50,000 or more and those smaller departments organized at the city and city-county levels.

Using two different definitions developed by the investigators, 19 and 31 percent of the health departments were judged to be effective in addressing the core functions of public health. These data suggest that less than 40 percent of the U.S. population was served by a health department effectively addressing the core functions of public health in 1993. It appears that considerable capacity building within the public health system will be needed to achieve the year 2000 target of 90 percent.

OBJECTIVE 8.14 OF THE YEAR 2000 National Health Objectives calls for 90 percent of the population to be served by a local health department effectively carrying out the core functions of public health (*1*). This objective, in line with "Healthy People 2000's" strategic goal of assuring access to preventive health services for all Americans, presents a formidable challenge in terms of both ascertainment and achievement. At the time this objective was established in 1990, neither measurement methods nor baseline data were available.

To establish a benchmark and track progress toward objective 8.14, a project to develop and test a surveillance strategy based on the assessment of organizational practices was established at the University of Illinois at Chicago School of Public Health through a cooperative agreement between the Centers for Disease Control and Prevention (CDC) and the Association of Schools of Public Health. The 10 organizational practices used as the basis for this surveillance effort have been previously described in terms of their application for surveillance and other capacity building purposes (*2,3*). These 10 practices are presented in the box on page 654. This report describes the extent to which a national sample of local health departments (LHDs) self-reported their

Public Health Practices

1. Assess the health needs of the community by establishing a systematic needs assessment process that periodically provides information on the health status and health needs of the community.

2. Investigate the occurrence of adverse health effects and health hazards in the community by conducting timely investigations that identify the magnitude of health problems, duration, trends, location, and populations at risk.

3. Analyze the determinants of identified health needs in order to identify etiologic and contributing factors that place certain segments of the population at risk for adverse health outcomes.

4. Advocate for public health, build constituencies, and identify resources in the community by generating supportive and collaborative relationships with public and private agencies and constituent groups for the effective planning, implementation, and management of public health activities.

5. Set priorities among health needs based on the size and seriousness of the problems, the acceptability, economic feasibility and effectiveness of interventions.

6. Develop plans and policies to address priority health needs by establishing goals and objectives to be achieved through a systematic course of action that focuses on local community needs and equitable distribution of resources, and involves the participation of constituents and other related governmental agencies.

7. Manage resources and develop organizational structure through the acquisition, allocation, and control of human, physical and fiscal resources; and maximizing the operational functions of the local public health system through coordination of community agencies' efforts and avoidance of duplication of services.

8. Implement programs and other arrangements assuring or providing direct services for priority health needs identified in the community by taking actions which translate plans and policies into services.

9. Evaluate programs and provide quality assurance in accordance with applicable professional and regulatory standards to ensure that programs are consistent with plans and policies, and provide feedback on inadequacies and changes needed to redirect programs and resources.

10. Inform and educate the public on public health issues of concern in the community, promoting an awareness about public health services availability, and health education initiatives which contribute to individual and collective changes in health knowledge, attitudes and practices towards a healthier community.

SOURCE: Adapted from CDC Public Health Practice Program Office, Reference (*12*).

fulfillment of performance measures based on these 10 practices. Implications for achieving the year 2000 target are discussed.

Methods

A stratified random sample was selected using the National Association of County Health Officials (NACHO) data base. The NACHO data base excludes Delaware, Hawaii, Rhode Island, Vermont, and Pennsylvania but includes 2,949 LHDs in the other States. A total of 405 LHDs in Alabama, Maryland, Michigan, New Jersey, South Carolina and Wisconsin were also excluded because CDC was conducting a related survey in these States (*4*). The remaining 2,544 LHDs were sampled to achieve a response from approximately 10 percent. The sample was stratified (10 strata) on the basis of LHD type (city, county, city-county, multi-county, other) and jurisdiction size (population base less than or equal to 50,000 and greater than 50,000). The survey was conducted during April and May 1993 and included a second mailing and telephone follow-up to nonrespondents. Responses were received from 208 of the 425 LHDs surveyed (49-percent response rate).

In the survey, LHDs were asked to report their practice status to obtain baseline data by which to measure progress toward objective 8.14. Performance expectations or measures had been established for each of the 10 practices as part of an earlier project (*3,5*). Of the 10 performance measures, 3 address the assessment function, 3 others focus on policy development, and 4 address the core function of assurance (see box on page 656). LHDs were asked to assess their compliance (Yes or No) with each of the 10 performance measures and to indicate whether their role in the community for that practice was one of lead agency, collaborator, or lesser involvement. LHDs were also asked to evaluate the importance and appropriateness of the performance measures, associated indicators, and potential roles of the State health agency in surveillance and capacity building. A detailed discussion of these findings will be reported separately (*5*).

Table 1. Local health department (LHD) compliance and role with respect to 10 public health practice performance measures, 1993 (weighted national sample of 208 LHDs)

Practices	Percent of LHDs in compliance	LHD role in implementing practices (by percentage)			
		Lead agency	Collaborator	Minimal	Not involved or applicable
Assess	45.4	40.7	32.6	10.6	16.1
Investigate	83.1	60.8	29.0	7.3	2.9
Analyze	27.0	29.9	33.1	11.5	25.5
Advocate	56.3	38.1	40.3	10.9	10.7
Prioritize	55.1	44.4	32.7	6.3	16.6
Plan	24.0	31.1	35.9	7.6	25.4
Manage	33.3	(Not asked, since this is internal to LHD functioning)			
Implement	75.1	48.1	41.0	6.0	4.9
Evaluate	57.7	(Not asked, since this is internal to LHD functioning)			
Inform	59.6	42.6	43.4	8.8	5.2

Analysis included assessment of the self-reported compliance and the health department's role for the various performance measures for all responding LHDs in the aggregate and within each LHD strata. Variable response rates among the 10 strata necessitated the use of a weighting procedure in which health departments in all strata were assumed to have responded with the overall response rate. This weighting procedure insures that the responses of health departments in individual strata are not over- or under-represented disproportionately to their size in the aggregate analyses.

The number of LHDs judged to be effectively carrying out the three core functions of public health was determined by using two definitions developed by the investigators: (*a*) fulfillment of any seven or more performance measures or (*b*) fulfillment of seven or more, including the majority of performance measures for each core function (that is, at least two of the three performance measures for the assessment and policy development functions and three of the four assurance performance measures). Comparisons with the 90 percent target of objective 8.14 were then made by applying LHD strata-specific effectiveness rates to the national population served by each category.

Results

Based on the weighted responses of the 208 participating LHDs, self-reported compliance with the performance measures ranged from a low of 24 percent for practice 6 (develop plans and policies to address priority health needs) to a high of 83 percent for practice 2 (investigate occurrence of adverse health events and hazards) (table 1). Six of the questions regarding practice status instructed the respondents that a "yes" response meant that the LHD addressed all components. For three of these six questions, 33 percent or fewer of the LHDs reported themselves to be in compliance, possibly reflecting the multi-dimensional nature of these performance measures and health departments' reluctance to respond affirmatively when they are only partially fulfilling the practice.

LHDs viewed themselves as the lead agency for implementing these practices somewhat more frequently than they reported collaborative, minimal, or no roles (table 1). For only one practice (investigate occurrence of adverse health events and hazards) did more than half the LHDs characterize their role as that of the lead agency. Health departments were nearly as likely to view their role as collaborative with other agencies for the other seven practices for which this question was applicable and generally self-reported higher levels of compliance with practice measures for those practices in which they viewed their role as the lead agency. Larger health departments were more likely to view their role as lead agency, especially for the assess, analyze, advocate, and plan practices (data not shown).

Table 2 presents data on both practice compliance and overall effectiveness for the various strata of LHDs. Overall compliance with the 10 performance measures was approximately 50 percent; compliance with assurance practices was somewhat higher (56 percent) and policy development practices, somewhat lower (46 percent). Larger health departments generally self-reported greater compliance with the performance measures than smaller health departments, especially for the assessment practices. Small LHDs organized at the city and city-county levels reported compliance levels similar to those of larger LHDs.

Overall, 31 percent of the LHDs (weighted) self-reported compliance with seven or more performance measures while 19 percent reported compliance with the majority of performance measures for each core

Public Health Practice Performance Measures Used in National Survey of Local Health Departments, 1993

Assessment Practices

1. *Assess* — For the jurisdiction served by your local health department, is there a community needs assessment process that systematically describes the prevailing status and health needs of the community?
2. *Investigate* — For the jurisdiction served by your local health department, are timely investigations of adverse health events and health hazards conducted on an ongoing basis?
3. *Analyze* — For the jurisdiction served by your local health department, has an analysis been completed which includes the determinants and contributing factors, adequacy of existing health resources, and the population group(s) most impacted?

Policy Development Practices

4. *Advocate* — For the jurisdiction served by your local health department, is there a network of support and communication relationships which includes health related organizations, the media and the general public?
5. *Prioritize* — For the jurisdiction served by your local health department, has there been a prioritization of the community health needs which were/are being identified from a community needs assessment?
6. *Plan* — For the jurisdiction served by your local health department, are there available a health action plan for the community and a long-range strategic plan for the health department which include the current year, address priority community health needs, and reflect the participation of constituents and other groups in their development?

Assurance Practices

7. *Manage* — Does your local health department have an identified organizational structure, an organizational self-assessment process, and a strategy for identifying and/or securing funding to address the priority health needs which were/are being identified in the community health needs assessment process?
8. *Implement* — For the jurisdiction served by your local health department, are the priority health needs effectively addressed in the community through the health department's implementation of mandated programs and services, or through assurance that other priority services are either provided or are available to the community?
9. *Evaluate* — Are your local health department programs and services delivered in compliance with applicable professional and regulatory standards, do impact and effectiveness standards exist for each of the priority community health needs, are there standards monitored on a regular basis, and are these standards used to redirect programs and resources as appropriate?
10. *Inform* — For the jurisdiction served by your local health department, is the public informed and educated about current health status, health care needs, positive health behaviors, and important health care policy issues?

NOTE: A yes response means all components are addressed.

function—the two definitions of effectiveness developed by the investigators for use in this study (table 2). Very few LHDs (3 percent) reported compliance with all 10 of the performance measures as an even more rigorous definition of effectiveness (data not shown). Extrapolating these findings to the proportion of the national population served by the various strata, it is estimated that only 26 to 38 percent of the population (range using the two different definitions for effectiveness) was served in 1993 by an LHD effectively carrying out the core functions of public health. The U.S. population served by a LHD effectively carrying out the three core functions of public health is estimated to be from 68.4 to 98.0 million, based on the results of this survey.

Discussion

Responses regarding their practice status suggest that LHDs can improve performance in all three of the core functions (assessment, policy development, and assurance). While these findings generally support the contention that the public health system in the United States is not functioning at an optimal level (*6*), the actual level of effectiveness could be somewhat higher or lower than that reported in this paper.

Table 2. Selected indicators of local health department (LHD) effectiveness in addressing the core functions of public health, by LHD jurisdiction and size, 1993

LHD strata	Number	Percent compliance with practices				Effectively addressing 3 core functions	
		Assessment	Policy development	Assurance	All	Definition 1. Percent LHDs fulfilling any 7 practice measures	Definition 2. Percent LHDs fulfilling majority of practice measures for each core function
Small LHDs	88	50.4	43.7	59.0	52.0	30.6	21.6
City	7	57.1	55.6	66.7	58.0	60.0	28.6
County	57	50.7	38.9	55.7	48.3	28.3	21.1
City-County	18	52.9	52.9	65.3	58.8	35.3	27.8
Multi-County	6	25.0	44.4	62.5	40.0	0.0	0.0
Large LHDs	72	62.7	49.7	60.8	58.1	41.7	30.4
City	11	76.7	50.0	72.2	67.1	42.9	27.3
County	35	67.7	53.9	55.3	59.0	43.7	37.1
City-County	17	41.7	37.8	60.9	46.2	30.8	11.8
Multi-County	9	66.7	56.1	69.4	66.3	50.0	33.3
All Other LHDs	16	33.3	26.4	50.0	35.7	7.1	0.0
Jurisdiction unknown	32	50.0	54.7	48.0	48.5	30.0	9.4
Weighted total	208	51.9	45.5	56.3	50.4	31.1	18.6

NOTE: Small = population base of 50,000 or less; Large = population base more than 50,000. All Other LHDs = those whose jurisdiction is town/township, State, other; all populations. Jurisdiction Unknown = all populations.

One major reason for possibly overstating compliance is social desirability bias; however, the high levels of self-reported noncompliance suggest that local health departments have responded honestly and have not grossly overstated their effectiveness. This finding is supported by Miller's recent work (*7,8*). In addition, as part of a 1992 survey of Illinois LHDs using an earlier battery of practice measures developed by these authors, an on-site validation of self-reported assessments for five Illinois local health departments was conducted. This validation effort indicated 85 percent concurrence between the investigators' assessments and those of the five LHDs with respect to practice status, providing additional evidence that local health departments can and will respond honestly to inquiries about their practice status (*9*). Nonetheless, any surveillance strategy to assess LHD effectiveness will probably require clear disassociation of LHD responses from possible sanctions to maintain accuracy and integrity.

Potential factors that may have led LHDs to understate compliance relate to the form and content of the survey itself. These factors will be discussed in turn.

The 10 performance measures used as the basis for this assessment have not been widely adopted or accepted within the public health community as consensus measures of an effective public health presence. Extensive input from local and State health department officials, however, has been incorporated into the development of the performance measures used in this study. A survey by the investigators of local health liaison officials (LHLOs) in State health departments in 1992 demonstrated that LHLOs believed the majority of the performance measures to be appropriate and relevant for the assessment of local public health practice (*5*).

Likewise, consistently high ratings of the importance of the performance measures were also found among this national sample of LHDs (*5*). In addition, the general level and patterns of response for the national sample of LHDs for these 10 practice measures are similar to those reported in Miller's intensive re-studying of sentinel LHDs (*7,8*) and in a 1993 CDC study of LHDs in six States not included in this assessment (*4*). Similar response patterns also were found in the 1992 survey of Illinois LHDs (*9*).

Interestingly, these findings are consistent with an examination of the status of public health core functions conducted as part of the development of President Clinton's Health Security Act. That examination estimated the costs for an essential level of core public health functions nationwide to be $15.4 billion (*10*). Expenditures in 1992 for the core functions were $8.4 billion, or 55 percent of the amount needed to support the essential obligations of public health.

Despite efforts to obtain input from LHDs and LHLOs in State health departments as to the appropriateness of these performance measures for the surveillance of LHD practice, it is possible the practice expectations used in this study are set too high and that actual effectiveness is therefore understated. An agreed upon definition of LHD effectiveness (that is, whether some minimum number

or grouping of the 10 practices are fulfilled) is also lacking and would affect the determination of the current status and progress toward objective 8.14. The multi-component, multi-dimensional nature of several of the performance measures and the survey's convention of requiring that all components be addressed for an affirmative response for some questions may serve to understate the level of performance for those practices. To some extent, these limitations may be addressed in future surveillance efforts by allowing LHDs to report intermediate levels of compliance, such as by using Likert scales or by adding "partly met" to "met" and "not met" as responses.

At 49 percent, the overall response rate among the LHD sample was somewhat lower than anticipated. Possible factors include extensive recent surveying of LHDs by NACHO among others, and low stratum-specific response rates for the groups that include many LHDs organized at the town-township level ("all other") and for which the size of jurisdiction is unknown. These two groups comprise 35 percent of LHDs in the NACHO data base and had a combined response rate of only 32 percent for this survey (in comparison to a 58 percent response rate for the other eight strata combined).

Only LHDs classified as "all other," however, had response patterns with respect to compliance that were substantially different from LHDs in the other strata. This stratum included LHDs organized at the State and town-township levels, many of which are small agencies serving a small population base. Since the definition for LHDs currently used by NACHO in its surveys includes these small town-township-based agencies, this finding suggests that the NACHO definition itself may need to be reconsidered. There may be local agencies that meet the current NACHO definition ("an administrative or service unit of local or State government, concerned with health, and carrying some responsibility for the health of a jurisdiction smaller than the State") but whose primary purpose is not the three core functions of public health (*11*). It appears that special efforts may be needed to encourage these agencies to participate in future surveillance activities.

Finally, the frame of measurement used (the agency rather than the community) may bias the results reported for the various practices toward understatement. With less than half the LHDs assuming the lead agency role in implementing most practices, it is possible that the health departments may be underreporting compliance with these practices because they are "out of the loop" or "not in the know." More elaborate methods to measure public health performance the community and the LHD's contribution to that performance have been reported (*4,7*). Their usefulness in a surveillance strategy to track progress toward objective 8.14, however, has not been established.

Although this study suggests that performance measures established for each of 10 public health practices can be useful in assessing LHD effectiveness, further refinement and validation efforts are needed. Despite their limitations, however, these findings suggest that extensive capacity building efforts will be necessary if 90 percent of the nation's population is to be served by an LHD effectively carrying out the three core functions by the year 2000.

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