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Content and Criterion Validity Evaluation of National Public Health Performance Standards Measurement Instruments

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SYNOPSIS

Objective. The Centers for Disease Control and Prevention's National Public Health Performance Standards Program (NPHPSP) has developed instruments to measure the performance of local and state public health departments on the 10 "Essential Services of Public Health," which have been tested in several states. This article is a report of the evaluation of the content and criterion validity of the local public health performance assessment instrument, and the content validity of the state public health performance assessment instrument.

Methods. Health department performance is measured using a set of indicators developed for the 10 Essential Services of Public Health and a model standard for each indicator. Content validity of each model standard in the local instrument was addressed by community partners along the following dimensions: the importance of each standard as a measure of the associated Essential Service, its completeness as a measure, and its reasonableness for achievement. All standards for each Essential Service were then judged in terms of their completeness in measuring performance in that service. Content validity of the state instrument was evaluated in a group interview of health department staff members from three states. Criterion validity of the local instrument was assessed for a sample of eight public health departments in Florida and six in New York by examining documentary evidence for selected responses. Criterion validity was also evaluated for a sample of Florida local public health departments and one Hawaii public health department by comparing state health department staffs' judgments of performance against the instrument score.

Results. Criterion validity was upheld for a summary performance score on the local instrument, but was not upheld for performance judgments on individual Essential Services. The NPHPSP standards based on the Essential Services have validity for measuring local public health system performance, according to community partners. The model standards are valid measures of state performance, according to state public health departments in three states.

Conclusions. Within the scope of the validity evaluations completed, the NPHPSP state and local performance assessment instruments were found to be valid measures of public health performance.

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In the 1990s, the Centers for Disease Control and Prevention (CDC) and a number of national public health partners, including the American Public Health Association, the Association of State and Territorial Health Officers, the National Association of City and County Health Officials, the National Association of Local Boards of Health, and the Public Health Foundation, worked together to develop the National Public Health Performance Standards Program (NPHPSP). With staffing from CDC's Public Health Program Practice Office, the partners created and oversaw field testing of state and local public health systems performance measurement instruments. The University of Kentucky Center for Health Services Management and Research undertook evaluation of the validity of the local and state instruments, under a cooperative agreement with CDC. In a previous article, the results of an evaluation of the content validity of the local instrument, as judged by local public health departments in Florida, were reported.¹ In the current article, we report the results of further validity evaluations of the local instrument by external judges and by community public health partners. We also present the results of a validity examination of the state instrument.

Local public health system performance measurement instrument

The local instrument is designed as a self-assessment tool to be used by local public health agencies and their community health partners to measure the performance of the local public health system. The NPHPSP defines the local public health system as the public health agency and all the community agencies, providers, and other organizations that contribute to public health activities in the jurisdiction. For instance, assuring access to care may be within the purview of a number of private and public health agencies and providers in a community, some of which may be partners of the public health agency, that would be invited to engage with the public health agency in the assessment of performance. Likewise, environmental groups, regulatory agencies, schools, and other organizations may be included in the local public health system and can be engaged in the performance assessment.

For the local instrument, CDC and its partners developed one or more public health performance indicators for each of 10 "Essential Services of Public Health."² Each indicator was described by a model standard, which is a detailed statement of activities required for optimum health system performance on the indicator, based on expert opinion. The development of the Essential Services and model standards is

described elsewhere.² Under each model standard, a set of questions pertains to the performance of that standard. The most recent version of the assessment instrument can be viewed on the CDC website at www.phppo.cdc.gov/nphpsp/index.asp.

The instrument has undergone a number of iterations. From 1999 to 2001, versions of the local instrument underwent successive field tests in Texas; Florida, Missouri, and Ohio; Hawaii, Minnesota, and Mississippi; and, finally, New York. Using information from field tests of the performance assessment instrument and validity evaluations, NPHPSP partners reworded indicators, model standards, and indicator questions to improve clarity and understandability. In addition, response categories for questions were made more sensitive, from a dichotomous "yes/no" in the first version to "yes/high partially/low partially/no" in the last version. Researchers at the University of Kentucky Center for Health Services Management and Research evaluated the validity of the local instrument after the Florida test and again after the New York test.

State public health system performance measurement instrument

The state NPHPSP instrument has been similarly tested and refined over time. Test states included, among others, Florida, Hawaii, Minnesota, Mississippi, and New York. The structure of the state instrument also follows the 10 Essential Services, with indicators, model standards, and performance measures. In contrast to the variable number and types of indicators in the local instrument, however, five indicators in the state instrument are consistent across all Essential Services: Planning and Implementation; Technical Assistance and Support; Evaluation and Quality Improvement; Professional and Technical Expertise; and Resources. The most recent version of the state instrument can also be viewed on the website cited above.

Types of validity

Validity is the degree of confidence that the measure being used is capturing the intended phenomenon of interest.³ The need to establish the validity of the instruments stems from the need to make inferences about the performance of public health systems. In contrast to simpler health-related concepts such as temperature, height, or weight, validity is difficult to establish when measuring broad and complex ideas such as public health performance, which must be measured along a number of dimensions of performance. Good performance measures should distinguish between well functioning and poorly functioning pub-

lic health systems. Therefore, establishing that the instruments are valid measures of performance is crucial to public health system improvement.

Content validity pertains to whether all the domains of public health performance are tapped by the instrument. Generally, content validity is established primarily by reviews of the literature and expert judgments about the facets that constitute the domain of interest, in this case public health performance.⁴ The Essential Services of Public Health were developed based on the input of public health experts.² Subsequently, the expert judgment of national public health partners who took part in developing the indicators and model standards based on the Essential Services was the first step in assuring content validity for the local and state performance measurement instruments.

Criterion validity establishes the degree to which the instrument being used correlates with other known and validated measures, either concurrent (“concurrent validity”) or future (“predictive validity”).³⁻⁵ Ideally, there is a “gold standard” against which the instrument can be compared to establish its validity. In the case of public health performance, no such gold standard exists, thus making criterion validity evaluation less straightforward. The case may be made that the health of the target population is the ultimate criterion against which to measure public health system performance. However, the complexity of health status measures and the difficulty of directly attributing variation in community health status to public health performance precluded the use of those measures. Instead, we sought measures of public health system performance from an unbiased external judge who would have sufficient knowledge about the performance of the local system to give a valid measurement score, but who had not been involved in completing the local public health system’s instrument. It is possible that local public health agencies may be held to objective state criteria based on performance standards for their funding for certain activities, to ensure accountability.

METHODS

Content validity

The content validity of the NPHPS local and state public health performance assessment instruments was operationalized as follows:

- Completeness of each standard in reference to its indicator—whether the model standard (*a*) contains the key elements for measuring the indicator, (*b*) is a complete description of the indicator, and (*c*) is not missing any element.
- Importance of model standard elements—determination of which of the elements of the model standard are most important in measuring the indicator.
- Achievability of model standards—whether model standards are achievable from the users’ perspective. (If standards are not realistic, they lose validity as measures of performance. Should few or no public health systems be able to achieve a standard, it cannot distinguish among varying levels of performance.)
- Completeness of all the model standards in reference to the Essential Service—whether any indicators/model standards are missing in the overall measurement of the Essential Service.

Content validity of the local performance assessment instrument was first evaluated in a written survey of 67 Florida local public health departments that had completed a test version of the instrument. This Florida survey was based on the bulleted points above, addressing completeness, importance, and achievability, and the results demonstrated the validity of the performance assessment instrument.^{1,6}

In the New York test of a more recent version of the local instrument, community partners of each local public health system were engaged in the assessment process, representing the first formal test of community partner involvement in the local performance assessment process. This was the first opportunity to obtain feedback from community partners on the validity of the instrument. Using the same content areas (completeness, importance, achievability) as in the survey completed by the Florida public health departments, a written survey was designed for the New York community partners who had previously participated in New York local public health department performance assessments.⁶ Each of the six health departments that had engaged more than two partners in its performance assessment and that agreed to the survey of its partners was asked to provide a list of participating partners. Questionnaires were sent to these partners by mail or electronic mail and resent as needed by the researchers at the University of Kentucky with a cover letter from the principal investigator.

Content validity of the state performance assessment instrument was also evaluated. Hawaii, Minnesota, and Mississippi state health departments had earlier pilot-tested the same draft of the state instrument on which the validity evaluation was made. Because there were only three departments to survey, too few to conduct a formal paper-and-pencil survey, a qualitative approach was taken. A group interview was con-

ducted with five state public health department representatives who had participated in the performance assessment tests in those three states. Using a semi-structured interview, the content validity of the instrument was assessed with respect to the facets of public health performance described above. The group interview method was chosen over individual interviews to provide the state staff members a forum in which to share their experiences and to come to consensus about aspects of the instrument's validity.

Criterion validity of the local instrument: documentary evidence

Local public health departments in Florida and New York that had previously tested the performance assessment instrument provided documentary evidence for selected responses as a measure of the local instrument's criterion validity. In consultation with CDC staff, selected indicators were chosen on the basis of being amenable to validation through this method. To have used all the indicators would not have allowed for timely completion of the validity evaluation. Before the validity evaluation, the research team proposed the types of evidence to be used to validate health department responses to each of the indicators. Appropriate evidence includes:

- Health promotion and education materials used in campaigns and programs (Indicator 3.1, Health promotion activities directed toward community health concerns, and 3.2, Public health education activities);
- Emergency preparedness plans (Indicator 2.2, Emergency response plan);
- Reports, community health plans, and minutes of health coalition meetings (Indicator 4.1, Constituency building);
- Regulatory review materials (Indicator 6.2, Involvement in the improvement of laws and regulations); and
- Evidence of leadership development activities (Indicator 8.5, Public health leadership development).

Three indicators from this list were chosen for each health department, and each department was asked to provide documentary evidence to support its response. The number of indicators was limited to three for each department so that the project could be completed in a timely manner. Two members of the research team made site visits to eight Florida public health departments, including five rural departments and three larger, more urban departments. Health

departments were notified several weeks in advance of the visits and were asked to make available written documentation or other evidence supporting their responses to the selected performance assessment indicators for review by the research team. In New York, site visits that had been scheduled for September 2001 were rescheduled as conference calls later in the fall. The conference calls were attempted with seven local health departments that had tested the latest version of instrument; however, one health department refused to participate. During the conference calls, the health department staff were asked to describe the documentary evidence they used for three of the same indicators used in the Florida evaluation. Prior to the scheduled phone call, the health departments were notified as to which indicators would be discussed, and were asked to be prepared to discuss the documentary evidence that would validate their response to each indicator, and thus the instrument. The researchers had obtained each health department's responses on these indicators from CDC, and were able to question the health departments specifically on qualitative and quantitative aspects of their documentary evidence.

Criterion validity of the local instrument: external judges

Because of the public health impact of the attack on the World Trade Center in September 2001, further criterion validity evaluation of the local instrument using external judges was not possible in New York State. However, criterion validity evaluation using external judges was accomplished in Florida and Hawaii. State health department staff were identified who would be able to score the performance of local public health departments using the assessment instrument. In both Florida and Hawaii, the researchers worked with the state public health department leadership and the CDC to select state staff members who were most knowledgeable about local health department performance, such as deputy commissioners responsible for local public health departments. Governmental public health agencies have been used as key informants on public health contributions made by other organizations, since they are likely to be the best single source of this information. However, the reliability of this type of measurement is contingent on the agency's access to information on the activities of the other organizations. Reporting biases may develop where there are differences in perceptions or information gaps between the government agency and the local organization.²

In Florida, a stratified sample of 20 local public

health departments was chosen. Assuming that the size of the local department's jurisdiction may influence the state staff's ability to accurately rate performance, small (<50,000 population; $n=9$), medium (50,000–250,000 population; $n=6$), and large public health departments (>250,000 population; $n=5$) were sampled in proportion to their distribution in the population of Florida local health departments. To reduce the respondent burden on the seven state health department staff members, they were asked to provide performance scores on only five of the 10 Essential Services for the 20 health departments. Ten health departments were scored on the even-numbered Essential Services and 10 on the odd-numbered Essential Services. In Hawaii, state health department staff were asked to score the performance of all local health departments ($n=5$) on all 10 Essential Services.

RESULTS

Content validity of the local instrument

The written survey of New York local health department community partners generated responses from 33 of the 74 partners (44.6% response rate). Those partners' names had been provided by the six county public health departments, both urban and rural. Two other partners, both of whom were laypeople, returned questionnaires without responding, indicating that they did not understand the process well enough to give good judgments about the validity of the performance measurement instrument.

Table 1 shows descriptive statistics of community partners' responses to the survey questions on whether the indicators were a complete description of the Essential Service, and whether the model standards were achievable by public health systems.

- Essential Public Services were felt to be complete by the majority of respondents. "Partially" and "no" responses were given by slightly more than one-third of respondents for Essential Services 2, 3, 4, 5, 7, 8, 9, and 10. These may have been public health activities that partners were likely to be involved in and therefore know about more types of activities than those involving the public health department.
- Partners overwhelmingly agreed that Essential Public Health Services were achievable by local public health systems. Those where one-third or more disagreed ("partially" or "no") were Essential Services 4, 6, and 10. Workforce (#8) and Research (#10) received the largest percent of "no" responses on achievability, but this was only 12%.

A question was also asked about those indicators that partners felt were most important within each Essential Service, and respondents could identify as many indicators as they wanted. However, no one indicator received more than 45% of responses as most important within its Essential Service. The indicators rated as most important by 33% to 45% of respondents were: 4.2 Community Partnerships; 2.2 Emergency Response Plan; 1.1 Community Health Profile; 3.1 Health Promotion Activities; 5.2 Strategic Planning; 7.1 Identification of Health Resources; and 7.3 Coordination of Linkages.

Content validity of the state instrument

The feedback from the group interview with five state public health department staff members from three states was remarkably similar to the feedback received during validity evaluation of the local instrument in Florida.⁶ The topic areas discussed and the most important findings from this group interview include:⁷

- Aspects of the process that may affect validity: States learned about the Essential Services of Public Health by using the assessment form; however, more orientation to the Essential Services was recommended.
- Reliability of questions/responses that may affect validity:
 - The format of the instrument was very well received. Participants found particularly useful the consistent set of indicators used throughout all the Essential Services: Planning and Implementation, Technical Assistance and Support, Evaluation and Quality Improvement, Professional and Technical Expertise, and Resources. They commented that the indicators helped to focus on areas of performance that were strong or weak across all Essential Services.
 - A glossary of technical terms should be provided, and better orientation of participants to performance assessment is needed. User-friendly Web-based instruments were recommended.
 - Direction is needed on the best processes and methods for implementing the assessment.
- Completeness of the standards: While the instrument and the Essential Services have content validity, staff need better linkages to the activities and programs of state public health departments for more clarity about what each Essential Service might include.

Table 1. Local public health system partners' validity judgments of the Local Public Health System Performance Assessment Instrument, New York State (n=33 respondents)

	<i>Does this model standard contain a complete description for this Essential Public Health Service?</i>			<i>Is it reasonable to expect public health systems to achieve this standard?</i>		
	<i>Percent of respondents</i>			<i>Percent of respondents</i>		
<i>Essential Public Health Service and associated indicators</i>	<i>No</i>	<i>Partially</i>	<i>Yes</i>	<i>No</i>	<i>Partially</i>	<i>Yes</i>
1. Monitor health status to identify community health problems.	0	30.3	66.7	0	12.1	81.8
1.1 Population-based community health profile						
1.2 Integrated information systems for personal health and related services						
2. Diagnose and investigate health problems and health hazards in the community.	0	33.3	63.6	0	18.2	75.8
2.1 Identification and surveillance of health threats						
2.2 Emergency response plan						
2.3 Investigate and respond to public health emergencies						
2.4 Laboratory support for investigations of health threats and diagnosis of disease and injury						
3. Inform, educate, and empower people about health issues.	0	39.4	60.6	0	15.2	81.8
3.1 Health promotion activities directed toward community health concerns						
3.2 Public health education activities						
4. Mobilize community partnerships to identify and solve health problems.	3.0	33.3	63.6	3.0	33.3	63.6
4.1 Constituency building						
4.2 Community partnerships						
5. Develop policies and plans that support individual and community health efforts.	3.0	33.3	57.6	0	27.3	69.7
5.1 Community health improvement process						
5.2 Local public health system strategic planning						
5.3 Public health policy development						
5.4 Local public health system governance						
6. Enforce laws and regulations that protect health and ensure safety.	0	27.3	60.6	3.0	30.3	54.5
6.1 Review and evaluate laws and regulations						
6.2 Involvement in the improvement of laws and regulations						
6.3 Enforce laws and regulations						
7. Link people to needed personal health services and assure the provision of health care when otherwise unavailable.	3.0	33.3	60.6	0	30.3	60.6
7.1 Identification of health resources or capacity for populations with barriers to the health care system						
7.2 Coordinating community roles and responsibilities in linking people to the provisions of personal health care services						
7.3 Coordinating the linkage of people to personal health services						

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Table 1 (continued). Local public health system partners' validity judgments of the Local Public Health System Performance Assessment Instrument, New York State (n=33 respondents)

	Does this model standard contain a complete description for this Essential Public Health Service?			Is it reasonable to expect public health systems to achieve this standard?		
	Percent of respondents			Percent of respondents		
<i>Essential Public Health Service and associated indicators</i>	No	Partially	Yes	No	Partially	Yes
8. Assure a competent public and personal health care workforce.	6.1	27.3	51.5	12.1	12.1	60.6
8.1 Workforce assessment						
8.2 Public health workforce standards						
8.3 Continuing education, training, and monitoring						
8.4 Diversity management and training for public health workforce						
8.5 Public health leadership development						
9. Evaluate effectiveness, accessibility, and quality of personal and population-based health services.	3.0	33.3	51.5	0	30.3	57.6
9.1 Evaluation of community health care system						
9.2 Evaluation of local public health services; evaluation of client satisfaction						
10. Research for new insights and innovative solutions to health problems.	15.2	24.2	39.4	12.1	21.2	45.5
10.1 Fostering innovation						
10.2 Linkage with institutions of higher learning and research						
10.3 Internal capacity to initiate or participate in timely epidemiologic, economic, and health services research						

NOTE: Column percentages may not total 100% due to missing responses.

- Relevance of the standards: Accountability for Workforce Standards (#8) and Research (#10) did not seem feasible to the state representatives.
- Extent to which the state performance measurement instrument meets its objectives:
 - Tool for a means of accountability of the public health system: The instrument was judged to be a good tool to educate state legislators about the role and functions of public health and gaps in public health capacity and performance.
 - Tool for improving the quality of state public health system activities: The instrument was deemed useful for stimulating discussions for improving public health system quality, but more training is needed to be able to use the information effectively.

These findings related to use of the instrument, as well as content validity, and were useful findings for the developers of the instrument.

Criterion validity of the local instrument: documentary evidence

The site visits to a sample of eight small, medium, and large Florida local public health departments, and conference calls to six New York local health departments that had completed the latest revision of the instrument, resulted in rich data about the assessment process. Overall, the requested documentation was easily obtained and showed that it would be possible to have an outside reviewer validate responses.^{6,8} A number of general suggestions were received from the site visits and conference calls, which were also provided as feedback to the NPHPSP partners.

Most significant was the discovery that the indicators addressing assessment and evaluation of health education and health promotion activities were interpreted differently by different health departments within and between New York and Florida. The primary interpretation was that the indicator questions asked whether formal evaluation of programs was carried out, in which case health departments tended to

respond that they did not formally evaluate health education programs and campaigns. However, if the indicator questions were interpreted to measure performance on informal assessment of health promotion and health education programs, such as the number of individuals receiving a program's services and their satisfaction, then the response was that the health department did perform assessment. This example demonstrates the importance of clear, standardized definitions of the terms used in the assessment instrument in order to achieve valid results.

Also of interest, the regulatory functions of public health departments and their partners were variously interpreted to have been accomplished in Florida, due to split responsibilities for some regulatory activities across health and other agencies. In the later test of the instrument in New York, which formally included other public health partners, health departments tended to have "yes" or "high partially" responses for the indicators associated with Essential Service 6: Enforcement of Laws and Regulations. The assumption from this result is that the performance instrument responses were more valid when the perspectives of all partners were included in the assessment process.

Criterion validity of the local instrument: external judges

The results of the criterion validity evaluation using state health department staff as third-party judges were disappointing. Use of a government public health agency as a key informant on public health contributions made by other organizations is an expedient approach; however, the agency's access to information and clarity of perception may lessen the value of this method.² While in theory the staff members selected were familiar with the general performance of individual local public health systems, in reality they commented that they were not confident in their knowledge of local system performance for some specific Essential Services. The comparison between the Florida local public health system self-assessment scores with the state staff's scores showed many differences (comparison of mean of state staff scores and instrument score using a two-tailed *t*-test).

The overall results in Florida, across the 10 Essential Services, indicated that only 35.0% ($n=100$) of the mean scores from seven state staff agreed with the local public health agency's score. Small departments had somewhat better agreement, with 57.7% of scores agreeing. Agreement was 26.7% for medium local public health departments and 32.0% for large departments. The most agreement occurred in the summary performance scores. For eight of the 20 local

departments (40.0%), state staff mean scores differed from the self-assessment. The state staff scores were higher for six departments and lower for two.

In the case of Hawaii, only one local health department's results could be used, due to misunderstanding about identifying the local health department being scored. Five state raters scored all the Essential Services. The same result as in the Florida evaluation was found, with state staff scoring half of the Essential Services differently from the local assessment score. In four of the cases, the state staff gave a lower score than the local public health department's self-assessment.

DISCUSSION

As a result of the feedback from the written survey of Florida local health departments,¹ the Florida site visits, and the New York conference calls, the NPHPSP partners made a number of changes to the local instrument:

- Providing a glossary of definitions of technical terms used on the instrument;
- Changing the dichotomous yes/no response to a three-point ordinal scale (Florida) or a four-point ordinal scale (yes/high partially/low partially/no);
- Providing more direction for the definition of the local public health system;
- Developing a user-friendly Web-based assessment process.

These changes were directed at achieving greater consistency in interpretation of terms and in determining scores on the indicators, and thus increasing the validity of the performance assessment results.

Content validity

The written survey of Florida local health departments¹ and the group interview with state health department leaders converged on the same issues of validity. The multiple agencies involved in some regulatory functions and the differences among states in the breadth of responsibility of local public health departments for different regulatory functions will mean that each state should interpret those performance measures that apply within their scope of accountability. The national instruments, by virtue of needing to apply across the states, cannot spell out each jurisdiction's programs and activities in detail, and it will always be left to states and their local health departments to interpret certain sections of the instrument for their own situations. Because of this variability, the agencies that are responsible for an Essential Service in a community cannot be identified nationally. It is the re-

Table 2. Criterion validity evaluation of local public health department performance assessment scores, by size of local jurisdiction:^a comparison of self-rating and assessment by state public health department staff,^b Florida

Essential Public Health Service	Ratio of significantly different mean scores ^c to number of scores, by size of jurisdiction			
	Small (n=9)	Medium (n=6)	Large (n=5)	Total (n=20)
1. Monitor health status to identify community health problems.	1/5	3/3	2/2	6/10
2. Diagnose and investigate health problems and health hazards in the community.	3/4	2/3	1/3	6/10
3. Inform, educate, and empower people about health issues.	3/5	2/3	2/2	7/10
4. Mobilize community partnerships to identify and solve health problems.	1/4	3/3	2/3	6/10
5. Develop policies and plans that support individual and community health efforts.	3/5	3/3	1/2	7/10
6. Enforce laws and regulations that protect health and ensure safety.	2/4	3/3	2/3	7/10
7. Link people to needed personal health services and assure the provision of health care when otherwise unavailable.	3/5	2/3	2/2	7/10
8. Assure a competent public and personal health care workforce.	2/4	1/3	1/3	4/10
9. Evaluate effectiveness, accessibility, and quality of personal and population-based health services.	5/5	2/3	2/2	9/10
10. Research for new insights and innovative solutions to health problems.	3/4	1/3	2/3	6/10
Total	26/45 (57.7%)	22/30 (73.3%)	17/25 (68.0%)	65/100 (65.0%)
Summary score	2/9 (22.2%)	4/6 (66.7%)	2/5 (40.0%)	8/20 (40.0%)

^aSmall <50,000 population; medium 50,000–250,000 population; large >250,000 population

^bMean of self-assessment scores compared with mean of scores provided by seven state public health department staff members.

^c $p < 0.05$, two-tailed t-test

sponsibility of the local public health agency to know which partners to include to assure that the local public health system has achieved the standard.

The most important result of the content validity evaluation was that both state and local public health departments that tested the performance standards agreed that the Essential Services, as used in the performance assessments, were valid measures of performance. They broadly capture the most important aspects of performance and were judged to be complete and not redundant. However, state and local departments voiced the need for more orientation on the

Essential Services, so that those completing the performance assessment would know where their state/local public health programs and activities fit into the Essential Services scheme. This “translation” of programs into the Essential Services language should be a subject for technical assistance and materials offered prior to any state or local public health agency engaging in the performance assessment. The NPHPSP, including CDC and its national partners, are developing these materials and technical assistance mechanisms for national use.

Criterion validity

Documentation to support agencies' responses to the local instrument was easily provided, and validated their responses. As in other forms of self-assessment, systematic response bias can occur when respondents are overly optimistic or pessimistic about their performance. This bias can be easily detected by examining documentation, as was detected in two public health departments, one in Florida and one in New York. A glossary of terminology for use with the instruments has been developed to maximize clarity, understanding, and interpretation of indicator questions.

Finding a criterion measurement for reference in validating a local health department's performance scores is an ongoing research agenda item for CDC. At this time, no gold standard measure of public health system performance exists. Research to validate the instrument against other correlates of public health performance, such as health outcomes, program effectiveness, and correlates of capacity such as staffing and budget, is now being carried out.

It is quite possible that the NPHPSP instruments themselves will be used as gold standard measures in the future to predict performance in other areas of public health, such as bioterrorism preparedness. Other instruments measuring performance in a particular facet of public health activity, program-specific performance measures, and state-specific accreditation or certification, are also measures against which the NPHPSP instruments can be assessed in the future.

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