MPROVE Selection Criteria for Public Health Service Delivery Measures

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Domains of Measurement: MPROVE seeks to measure public health service delivery at the local level in three core domains of activity: communicable disease control; chronic disease prevention; and environmental health protection

Dimensions of Measurement: MPROVE seeks to measure key dimensions of service delivery for selected public health activities delivered at the local level. These dimensions may include availability, volume/intensity, capacity, reach, and/or quality of service delivery. Dimensions of quality may include appropriateness, effectiveness/fidelity, timeliness, community centeredness, efficiency, and equity. See below for further descriptions of these measurement dimensions.

Draft Selection Criteria for Candidate Measures

(1) **Domain**: Degree to which the measure falls within one of the three core domains of activity for this study: communicable disease control; chronic disease prevention; environmental health protection

(2) **Dimension**: Degree to which the measure addresses one or more of the key dimensions of service delivery for this study: availability, volume/intensity, capacity, reach, and/or quality.

(3) **Relevance/Control**: Degree to which the measure reflects an activity that local public health agencies and/or their partners have the authority (law) and organizational responsibility (mission) to implement

(4) **Expected Health Impact**: Degree to which improvements in the measured activity are expected to result in improvements in population health. Following Siu et al.,[1] this criterion can be calculated based on: (a) proportion of the population currently exposed to the risk factor addressed by the measured activity [risk exposure]; (b) proportion of the exposed population that is expected to be reached by the measured activity [reach]; (c) the relative risk of the health outcome comparing the exposed to the unexposed target population [preventable fraction]; and (d) relative risk of the health outcome comparing the population reached by the measured activity to the population not reached [efficacy].

(5) **Expected Economic Impact**: Degree to which changes in the measured activity are expected to result in changes in the cost of delivering public health services, changes in the cost of delivering other health care or social services (spill over), and/or other changes in the direct and indirect costs of preventable illness/injury/disability.

(6) **Expected Variation**: Degree to which the measured activity is expected to vary across local public health settings, vary across states/PBRN networks, and vary over time.

(7) **Feasibility**: Degree to which it is economically and logistically feasible to obtain the data needed to construct the measure at the level of the local public health practice setting[1] for all/most/many practice settings in each participating PBRN.

(8) **Expected Validity**: Degree to which the measure fully and completely characterizes the public health activity of interest.

(9) **Expected Reliability**: Degree to which the measure characterizes the activity consistently across different local public health settings and over time

Measurement Dimensions for Local Public Health Service Delivery

Availability/scope: this dimension consists of a range of dichotomous measures that indicate whether or not specific services and activities are produced or performed by the public health agency or delivery system. Examples include the service delivery variables used in the NACCHO Profile of Local Health Departments.

Volume/intensity: this dimension consists of measures that count the absolute or relative frequency of service delivery over a given period of time, such as the amount of vaccinations dispensed or the proportion of restaurants inspected.

Capacity: this dimension often is operationalized as a measure of staffing level in a particular service line, and could be expressed as ratio of staffing to size of target population or risk (e.g. sanitarians per 1000 septic tanks, food safety inspectors per 1000 licensed food vendors).

Reach: these measures typically require a denominator so as to indicate the percent of the target population reached by the service. These measures can be constructed by using volume as the numerator and the relevant population size as denominator, such as the proportion of smokers in a community reached by tobacco cessation services. Such measures provide an assessment of the extent to which activities are implemented at a sufficient scale and targeted appropriately to the population groups most at risk.

Quality: The Institute of Medicine defined quality in health care as "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge," and identified six important dimensions of health care quality that included safety, effectiveness, timeliness, patient centeredness, efficiency, and equity.[2] The Public Health Quality Forum of the U.S. Department of Health and Human Services recently identified priority areas for quality improvement in public health practice based on these constructs.[3] Key measures of quality in public health include:

[1] Local practice setting may be defined as a local public health agency, a jurisdiction or area served by a local public health agency, or a relevant sub-division of such an area.

- **Appropriateness**: Does the public health agency and/or system act based on objectively measured health needs and risk profiles of the population served? What is the degree of concordance between a community's documented health needs/risks and the scope of public health activities performed by the public health agency or the system as a whole?

- **Effectiveness/Fidelity**: Does the public health agency and/or system implement its activities based on available scientific knowledge and fidelity to evidence-based guidelines? To what extent are programs and services concordant with evidence-based guidelines and professional consensus standards?8

- **Timeliness**: Are public health activities implemented at the appropriate points in time to maximize health protection and minimize the risk of disease transmission or injury?

- **Community Centeredness/Engagement**: To what extent are relevant stakeholders engaged in planning, priority-setting, selection, and implementation of public health activities undertaken by the public health agency and/or system? To what extent are public health activities tailored appropriately to at-risk population groups based on the groups' values, preferences, needs, knowledge, skills, and resources?

- **Efficiency**: To what extent are public health activities implemented in ways that optimize the use of financial and human resources? To what extent do implementation processes avoid waste and delays in service? To what extent do the benefits of public health activities justify their costs?

- **Equity**: Are there disparities in the reach of public health activities to different population sub-groups defined by personal characteristics such as race, ethnicity, geography, or socio-economic status? Are there disparities in effectiveness, timeliness, community-centeredness, and/or efficiency?

References

1. AL Siu, EA McGlynn, H Morgenstern, MH Beers, DM Carlisle, EB Keeler, J Beloff, K Curtin, J Leaning, BC Perry Choosing quality of care measures based on the expected impact of improved care on health. *Health Services Research* 1992; 27(5): 619–650. (This is the selection method used by HEDIS, RAND, and many other quality measurement and improvement applications in the health care field).

2. Institute of Medicine. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: National Academies Press; 2001.

3. Office of the Assistant Secretary for Health, U.S. Department of Health and Human Services. *Priority Areas for the Improvement of Quality in Public Health.* The Public Health Quality Forum. Washington, D.C.: U.S. Department of Health and Human Services; 2010.