HealthAffairs

At the Intersection of Health, Health Care and Policy

Cite this article as:
Peggy A. Honoré, Donald Wright, Donald M. Berwick, Carolyn M. Clancy, Peter Lee, Juleigh Nowinski and Howard K. Koh
Creating A Framework For Getting Quality Into The Public Health System
Health Affairs, 30, no.4 (2011):737-745

doi: 10.1377/hlthaff.2011.0129

The online version of this article, along with updated information and services, is available at:
http://content.healthaffairs.org/content/30/4/737.full.html

For Reprints, Links & Permissions:
http://healthaffairs.org/1340_reprints.php

E-mail Alerts : http://content.healthaffairs.org/subscriptions/etoc.dtl

To Subscribe: http://content.healthaffairs.org/subscriptions/online.shtml

Health Affairs is published monthly by Project HOPE at 7500 Old Georgetown Road, Suite 600, Bethesda, MD 20814-6133. Copyright © 2011 by Project HOPE - The People-to-People Health Foundation. As provided by United States copyright law (Title 17, U.S. Code), no part of *Health Affairs* may be reproduced, displayed, or transmitted in any form or by any means, electronic or mechanical, including photocopying or by information storage or retrieval systems, without prior written permission from the Publisher. All rights reserved.

Not for commercial use or unauthorized distribution

Downloaded from content.healthaffairs.org by *Health Affairs* on April 7, 2011
at NIH Library

By Peggy A. Honoré, Donald Wright, Donald M. Berwick, Carolyn M. Clancy, Peter Lee, Juleigh Nowinski, and Howard K. Koh

Creating A Framework For Getting Quality Into The Public Health System

DOI: 10.1377/hlthaff.2011.0129
HEALTH AFFAIRS 30, NO. 4 (2011): 737–745
©2011 Project HOPE— The People-to-People Health Foundation, Inc.

ABSTRACT The US health care system has undertaken concerted efforts to improve the quality of care that Americans receive, using well-documented strategies and new incentives found in the Affordable Care Act of 2010. Applying quality concepts to public health has lagged these efforts, however. This article describes two reports from the Department of Health and Human Services: *Consensus Statement on Quality in the Public Health System* and *Priority Areas for Improvement of Quality in Public Health.* These reports define what is meant by *public health quality*, establish quality aims, and highlight priority areas needing improvement. We describe how these developments relate to the Affordable Care Act and serve as a call to action for ensuring a better future for population health. We present real-world examples of how a framework of quality concepts can be applied in the National Vaccine Safety Program and in a state office of minority health.

Peggy A. Honoré (peggy.honore@hhs.gov) is director of the Public Health Systems, Finance, and Quality Program in the Office of Healthcare Quality/Office of the Assistant Secretary for Health, Department of Health and Human Services (HHS), in Washington, D.C.

Donald Wright is deputy assistant secretary for healthcare quality, Office of Healthcare Quality/Office of the Assistant Secretary for Health, at HHS.

Donald M. Berwick is administrator of the Centers for Medicare and Medicaid Services, in Baltimore, Maryland.

Carolyn M. Clancy is director of the Agency for Healthcare Research and Quality, in Rockville, Maryland.

Peter Lee is director of delivery system reform, Office of Healthcare Reform, at HHS.

Juleigh Nowinski is special assistant to the HHS assistant secretary for health.

Howard K. Koh is assistant secretary for health, at HHS.

Efforts to define, measure, and uphold quality have shaped health care delivery and medical care for individuals for more than a decade. However, similar improvements have not yet extended to the broader realm of population health.

Extending quality initiatives to include population-based public health programs can improve the overall health of the nation. The need to forge a coordinated approach between public health and health care quality is consistent with the 1998 call to action by the President's Advisory Commission on Consumer Protection and Quality in the Health Care Industry.[1] Emphasis on prevention, health promotion, and population health improvements in the Affordable Care Act of 2010 provide new momentum not only for advancing greater integration between public health and health care but also for building foundations of quality in public health.

Explicit attention to quality in public health can bring a rigorous, systematic approach to addressing a broad array of deficiencies documented over many decades. These deficiencies include insufficient standards for measuring public health practices. The result has been wide variability, limited implementation of evidence-based strategies, lack of a diversified and educated workforce, unsustainable financing, and lack of available and reliable data.[2–9] Laying the foundations for eliminating such deficiencies could benefit the public, governmental public health agencies, tax-exempt hospitals, community health centers, and other organizations that have a responsibility for community benefit.

The Department of Health and Human Services (HHS), charged with protecting the health of all Americans, has acted to establish the foundations to improve quality in public health. In this article we discuss a recent HHS report, *Consensus Statement on Quality in the Public Health System.*[10] This document defines, for the first time, what is meant by *public health quality* and clarifies its associated aims.

We also review priority areas in need of quality improvement as identified in another HHS report, *Priority Areas for Improvement of Quality*

Downloaded from content.healthaffairs.org by *Health Affairs* on April 7, 2011
at NIH Library

in Public Health.[11] Finally, we provide illustrations of applications for these aims and priorities, particularly in the context of implementing the Affordable Care Act.

Historical Perspective

In 1994 the HHS Public Health Functions Steering Committee, which was established to develop national strategies to strengthen the public health system, identified evaluating quality as a key component of one of its essential public health services.[12] Calls for a systems approach to improving quality across all sectors of health (including public health) subsequently arose.

In 1998, under President Bill Clinton, the President's Advisory Commission on Consumer Protection and Quality in the Health Care Industry published *Quality First: Better Health Care for All Americans*.[1] The report recommended a national commitment, in all sectors, to quality improvement in health care, including identifying aims to guide strategic decision making.

Within two years, the Institute of Medicine Committee on Quality of Health Care in America identified strategies for quality improvement through two historic reports: *To Err Is Human: Building a Safer Health System*[13] and *Crossing the Quality Chasm: A New Health System for the 21st Century*.[14] Notably, the latter introduced six aims for the improvement of quality in patient care: to make it safe, effective, timely, patient-centered, equitable, and efficient. It stated that such "performance characteristics, if addressed and improved,"[14(p41)] would result in better health for Americans.

Although the report acknowledged the important role of public health in community health improvements, it concluded that extending efforts into this broader arena was "beyond the purview of the present study."[14(p3)]

Unlike in most health care sectors, a public health response to the *Quality First* recommendations remained slow and ill defined at the national level.[15,16] One notable effort that has made extensive progress, guided by the progressive leadership of the Robert Wood Johnson Foundation, is the development of a system of accreditation for state and local governmental public health agencies, framed by national performance standards.[17] However, an even greater national commitment and framework must be applicable to all sectors to address the recommendations in *Quality First*.[1]

There are a number of deficiencies affecting the broad public health system. There is neither a definition of *public health quality* nor a uniform framework applicable to all sectors of the public health system, which includes federal, state, and local agencies; nonprofits; community health centers; hospitals with community benefit mandates; and organizations engaged in education, research, and policy.

There are also no stated priorities for improving public health quality, or uniformly stated aims to serve as systemwide indicators of quality. The number of public health quality measures is limited, and opportunities for education in public health quality are meager.

Public Health Quality

To begin to address the weaknesses in public health quality, the Office of the Assistant Secretary for Health launched the HHS Public Health Quality Forum. The assistant secretary for health serves as chair of the forum, whose members include directors or designees from all HHS agencies and operating and staff divisions.

Subject-matter experts from major external stakeholder organizations are invited to participate as key informants. Organizations represented include the American Public Health Association, the Association of State and Territorial Health Officials, the Association of Schools of Public Health, the National Association of County and City Health Officials, the National Association of Local Boards of Health, AcademyHealth, and Trust for America's Health.

CONSENSUS STATEMENT In 2008 the Public Health Quality Forum was charged with immediately developing a consensus statement that would not only document a definition of *public health quality* but also document aims that represent systemwide characteristics to indicate improved quality in public health. The initial charge also called on the forum to continue building foundations for quality, specifically through subsequent activities and reports to identify priority areas for improvement of quality in public health.

DEFINITION OF QUALITY IN PUBLIC HEALTH The Public Health Quality Forum reached consensus on a definition and aims using the nominal group technique,[18] an iterative process framed by structured and balanced group discussions. The process, conducted over five months, included a series of two meetings and four conference calls, with each activity followed by written feedback loops. Full agreement by all participants, following discussion of all initial and alternative items generated, defined the parameters for consensus.

The process began with an extensive literature search, which found no existing definitions of *public health quality*. Hence, the Public Health Quality Forum began with the Institute of Medicine definition of *quality in health care* and then

Downloaded from content.healthaffairs.org by *Health Affairs* on April 7, 2011
at NIH Library

expanded on it to convey the notion that safeguarding population health required attention by multiple sectors: health care providers, policy makers, academe, and nongovernmental organizations. External stakeholders not only provided input on topics relevant to their areas of expertise but also reviewed the entire draft *Consensus Statement*.

The consensus definition reads: "Quality in public health is the degree to which policies, programs, services, and research for the population increase desired health outcomes and conditions in which the population can be healthy."

Aims For Improvement of Quality

In defining *quality* as "a set of features and *characteristics* of a product or service that bear on its ability to satisfy stated or implied needs,"[19] the International Organization of Standards noted the need to identify aims and dimensions that ensure uniformity of improvement efforts and implementation. Other industries, such as education, software architecture, and water quality, have followed this path. Similarly, the health care world adopted and measured conformity with the six patient care aims by using tools (that is, a framework or matrix) that aided implementation of these characteristics into quality management systems.[20–26]

Hence, after defining *public health quality*, the Public Health Quality Forum next sought to identify aims for the improvement of quality in public health. A first step was to determine the characteristics of the fundamental tactics necessary to fulfill the mission of public health services.

To begin this process, the Public Health Quality Forum reviewed the following literature: the Institute of Medicine's six aims for improvement of quality in patient care;[14] definitions of *public health*;[27,28] public health vision and mission;[12,27] three core functions of public health;[12] ten essential public health services;[12] and the National Association of County and City Health Officials' operational definition of a *functional local health department*.[29] Literature reviews also provided illustrations of ways to apply the Institute of Medicine's aims to health care quality improvement activities and terms describing characteristics of public health activities.

Ultimately, the Public Health Quality Forum retained three of the Institute of Medicine's six aims while adding six others, for a total of nine (Exhibit 1).

POPULATION-CENTERED Governmental public health agencies have legal mandates to deliver population-based health services and programs (such as data collection, disease control and prevention, and health assessment), distinguishing them from services and programs focused primarily on the delivery of medical care to individuals. Notably, though, the delivery of population-centered practices varies widely across public health agencies, an issue addressed by various components of the Affordable Care Act.[30]

EQUITABLE Health inequities—differences in health that are avoidable, unnecessary, and viewed as unfair[31]—persist despite much on-

EXHIBIT 1

Aims For Improvement Of Quality In The US Public Health System

Public health aim	Definition
Population-centered	Protecting and promoting healthy conditions and health for entire population
Equitable	Working to achieve health equity
Proactive	Formulating policies and sustainable practices in a timely manner, while mobilizing rapidly to address new and emerging threats and vulnerabilities
Health-promoting	Ensuring policies and strategies that advance safe practices by providers and the population and that increase the probability of positive health behavior and outcomes
Risk-reducing	Diminishing adverse environmental and social events by implementing policies and strategies to reduce the probability of preventable injuries and illnesses or negative outcomes
Vigilant	Intensifying practices and enacting policies to support enhancements to surveillance activities (technology, standardization, systems thinking/modeling)
Transparent	Ensuring openness in the delivery of services and practices, with particular emphasis on valid, reliable, accessible, timely, and meaningful data that are readily available to stakeholders, including the public
Effective	Justifying investments by using evidence, science, and best practices to achieve optimal results in areas of greatest need
Efficient	Understanding costs and benefits of public health interventions, to facilitate the optimal use of resources to achieve desired outcomes

SOURCE Consensus Statement on Quality in the Public Health System (Note 10 in text).

Downloaded from content.healthaffairs.org by *Health Affairs* on April 7, 2011
at NIH Library

going national attention. The forum used the term broadly to encompass not only all aspects of health, but also the social determinants of health such as educational attainment and food security.

PROACTIVE, HEALTH-PROMOTING, RISK-REDUCING, AND VIGILANT Nearly a century ago, Charles-Edward Amory Winslow, one of the leading US figures in public health, described the public health mission as preventing disease, prolonging life, and promoting health.[27] Similar terms frequently found in the literature to characterize public health practices include proactive prevention practices, health promotion to advance community well-being, risk reduction to mitigate hazards and adverse events, and vigilance to heighten surveillance and identify emerging threats.

Hence, the Public Health Quality Forum determined that these four aims provide critical specificity about characteristics that can translate into improvements in population health. Together, they contrast with the more reactive interventions (such as treatment for illness already manifested) of health care.

TRANSPARENT, EFFECTIVE, AND EFFICIENT The broader quality movement in industry grew out of a desire to provide better goods and services, with emphasis on eliminating waste. As mentioned earlier, public health often lacks the ability to test for these characteristics, because essential financial, operational, and program data are lacking to measure performance, value, and achievement of desired outcomes.[5,6,32] Hence, transparency, effectiveness, and efficiency are at the heart of successful quality improvement.

Notably, the *Consensus Statement* urged that quality "concepts should be applied in continuity with existing and future quality advancing programs already familiar to the public health community (i.e., Healthy People 2020, Guide to Community Preventive Services, Guide to Clinical Preventive Services, and agency accreditation)."[10]

Priority Areas For Quality Improvement

In early 2010 the Public Health Quality Forum followed a similar iterative consensus process over six months to create the report *Priority Areas for Improvement of Quality in Public Health*.[11] To begin, participants informally surveyed their agencies to develop an initial list of twenty-six priority areas. The list was consolidated to a revised list of twelve priorities.

Six priority areas were then selected based on three criteria: impact, improvability, and practice variability. These priority areas also provide a framework for greater integration between public health and health care in efforts to improve population health.

POPULATION HEALTH METRICS AND INFORMATION TECHNOLOGY Improving population health requires robust capacities to collect, analyze, and transform data into information that can be acted upon. State-of-the-science information technologies to support these capacities are also needed, especially given the critical link between enabling performance and quality measurement.[33]

Also, data must be available on population subgroups and in formats adequate for assessing health at the community level. Such capacity is essential for building interventions that target areas of greatest need,[34] as well as for organizations when interventions to improve quality in health care for populations are being designed and quality is being measured.[35]

EVIDENCE-BASED PRACTICES, RESEARCH, AND EVALUATION Some of the most notable public health interventions, such as vaccination, water fluoridation, and tobacco control, arise from a continuum of activity that involves research, policies supported by research findings, the translation of research into practice, and continuous evaluation. Understanding the research needs of policy makers and making research results available is critical to improving population health.[36]

Evidence of what works, along with organizational capacities for programs and services based on that knowledge, can advance quality improvement in public health.

SYSTEMS THINKING The health of the nation is determined not only by the health of individuals but also by a multitude of interrelated conditions in communities where they live.[37] Disease, illness, and health are influenced by factors beyond individual behavior and biology.[38] This connection between individual health and community health highlights the importance of a systems-based, coordinated approach to public health with knowledge of interactions in the system.

SUSTAINABILITY AND STEWARDSHIP Reports attribute a twenty-five-year increase in US life expectancy over the past century to the public health system.[39] Sustainability—an issue raised repeatedly during the Public Health Quality Forum's aims-development process—is regularly threatened by funding cuts. This threat to sustainability is compounded by the absence of stewardship practices such as valid measures of performance and quality. Ensuring efficient funding methodologies can involve aligning resources with goals, demonstrated need, and results.

POLICY Policies to promote health and reduce risky behavior (such as use of safety belts, smok-

Downloaded from content.healthaffairs.org by *Health Affairs* on April 7, 2011
at NIH Library

ing bans, and reporting contagious conditions) have a major impact on individual and population health and on reducing the burden of disease. The formulation of policies is in fact one of the three core functions of public health.[12]

Population health is improved by strengthening processes for policy development and analysis, such as examinations of how policies in other areas—transportation, education, food—affect health. Examples include the influence of farm policies on improving nutrition and the effects of transportation policies on reducing environmental hazards such as air pollution and noise.

WORKFORCE AND EDUCATION Reports over many decades have documented a crisis in the public health workforce.[8,9,40,41] Public health must develop a competent workforce, align educational content with competencies, and assure that public health education is accessible at all academic levels.

These cross-cutting priority areas also function as primary drivers of quality and outcomes—a concept introduced by the Institute for Healthcare Improvement.[42] In the institute's model, Executing for System Level Results,[43] achieving desired outcomes occurs through both primary and secondary drivers. For example, improvements in population health metrics and information technology (the primary driver) and activities (secondary drivers) aligned with public health aims (such as vigilance) can provide a framework for eliminating health disparities.

The release of this list of priority areas meets the Institute of Medicine's recommendations of a decade ago to focus attention systematically on achieving important improvements in high-priority areas.[14,44]

Achieving Synergy In Public Health Quality Improvement

The *Quality First* report[1] noted that establishing a definition, aims, and priorities creates synergy to achieve common goals for improvement. Achieving a common focus provided by concepts in the *Consensus Statement* and *Priority Areas for Improvement* serves as a framework for a number of interrelated tasks: identifying gaps that inhibit quality; promoting uniformity when designing, implementing, and evaluating programs and quality improvement initiatives; aligning national, state, and local goals; and identifying quality improvement projects that can be implemented using recognized models for improvement, including those promulgated by the Institute for Healthcare Improvement.

APPLICATIONS As a pilot, we applied these public health quality aims to both a federal and a state health office charged with a complex range of activities that reach large and diverse segments of the population. Objectives centered on testing the applicability of tools for implementing the concepts; gaining insight into the strength of various activities used to document conformity with the aims; and examining the ability to identify quality gaps that could be used to develop secondary drivers.

▶ **VACCINE SAFETY:** One potential application (Exhibit 2) relates to national vaccine safety functions. The National Vaccine Program Office, located in the Office of the Assistant Secretary for Health, coordinates federal vaccine activities, including vaccine safety. Established under mandates in the Public Health Service Act of 1944, the National Vaccine Program Office ensures collaboration on a broad spectrum of safety activities conducted by multiple entities in HHS, other federal agencies, and nonfederal partners.[45]

Vaccine safety programs are conducted by multiple agencies within HHS (National Institutes of Health, Food and Drug Administration, Centers for Disease Control and Prevention, Indian Health Service, Centers for Medicare and Medicaid Services, Health Resources and Services Administration) and the Departments of Veterans Affairs and Defense. The new public health quality aims can now provide uniform guidance on characteristics that promote safety across the system. Additionally, the quality characteristics can provide another level of specificity to aid in accomplishing the vaccine safety mission.

Specifically, using the quality framework in template form, as in Exhibit 2, we can gauge how well the nation's vaccine safety system conforms with the aims on vaccine safety–related functions. For each of the nine aims, the National Vaccine Program Office can document conformity with well-established and rigorous program activities.

As an example, the "population-centered" aim is exemplified by routine epidemiological studies and active surveillance for adverse events among large populations. One surveillance system is the Vaccine Safety Datalink, a consortium of eight managed care organizations that covers ten million people (about 3 percent of the US population) and includes inpatient, outpatient, hospital, and pharmacy records.

Similarly, the Post-Licensure Rapid Immunization Safety Monitoring Network is used for active surveillance of vaccine safety by linking medical records from health plans with immunization information from state vaccine registries for about fifteen million people. "Health-promoting" characteristics are documented by

Downloaded from content.healthaffairs.org by *Health Affairs* on April 7, 2011
at NIH Library

EXHIBIT 2

Application Of The Public Health Aims To The National Vaccine Program Office And A State Office Of Minority Health

Public health aim/application	
National Vaccine Program Office	**State office of minority health**
POPULATION-CENTERED	
Conduct routine epidemiological studies and active surveillance	Conduct population-based programs
EQUITABLE	
Assess subpopulations including by sex, race, medical conditions	Target vulnerable populations Conduct statewide cultural competency training
PROACTIVE	
Develop substantial infrastructure to monitor vaccine safety at all stages of vaccine development	Coordinate legislative hearings to educate legislators and promote disparity-eliminating policies Conduct research to assess recovery of health care system and impact on vulnerable populations following a natural disaster
HEALTH-PROMOTING	
Identify people at increased risk for vaccine adverse reactions, develop and implement vaccine contraindications	Conduct community-based diabetes treatment and prevention awareness workshops with high-risk populations Conduct food-labeling education workshops
RISK-REDUCING	
Identify people at increased risk and develop “next-generation” vaccines with improved safety profile (change from whole cell to acellular pertussis vaccine) Develop contraindications for vaccination to prevent adverse events	Implement H1N1 prevention initiative with Latino community Conduct disaster survival training for vulnerable population Implement hepatitis B prevention program in Vietnamese community designed to give state tax credit to providers for conducting screenings, treatment, management of care Conduct assessments to identify environmental hazards during and after a catastrophic oil spill
VIGILANT	
Engage multiple departments and agencies, coordinated by National Vaccine Program Office, in activities to prevent adverse reactions and detect and characterize them when they do occur	Assess inability to adequately conduct surveillance and monitor health status as a result of lack of community-level data and subpopulation data at all levels; outdated information technology and insufficient capacities to support analysis
TRANSPARENT	
Convene National Vaccine Advisory Committee Vaccine Safety Working Group regularly, including public and stakeholder meetings	Data limitations obstruct transparency
EFFECTIVE	
Take prompt action when rare safety problems, such as intussusception following the first rotavirus vaccine, occur Develop next-generation pertussis vaccine	No processes or measures
EFFICIENT	
Provide infrastructure for vaccine safety, via CDC’s Vaccine Safety Datalink and FDA’s Post-Licensure Rapid Immunization Safety Monitoring Network, which benefit from existing infrastructure of health plans	No processes or measures

SOURCE Authors’ analysis of information on program activities provided by the National Vaccine Program Office; and information about the state minority health office provided by its medical director. **NOTES** CDC is Centers for Disease Control and Prevention. FDA is Food and Drug Administration.

processes to identify people at increased risk for adverse reactions to vaccines and ensuring the implementation of systematic ways to avoid vaccination of these populations.

Strategic planning for vaccine safety is a part of the National Vaccine Plan,[46] which reflects current priorities and potential future directions for the next decade in the vaccine enterprise. Developing quality measures for activities such as these will be the next step for the Public Health Quality Forum.

▸ **STATE OFFICE OF MINORITY HEALTH:** Exhibit 2 also illustrates the application of the aims framework to a state office of minority health (based on data provided by the office’s medical director during two interviews). Located in a southern state with a predominantly rural and large minority population, the office has as its mission to eliminate gaps in quality by protecting and promoting the health and well-being of racial and ethnic minorities and all other vulnerable populations.

The office is able to document conformity with many of the aims. However, outdated informa-

Downloaded from content.healthaffairs.org by Health Affairs on April 7, 2011
at NIH Library

Entities beyond governmental public health agencies have a responsibility for quality in the public health system.

tion technology and the lack of subpopulation data in formats to monitor health status adequately are major barriers to the aims of vigilance and transparency. Without the appropriate data sets or health information systems, the office cannot conduct rigorous assessments of current health conditions or identify new or emerging health risks in those segments of the population. This also hinders the ability to disseminate potentially valuable information to others in the system, including the public.

These gaps illustrate the relevance of population health metrics and information technology as a priority area needing quality improvement and as a primary driver. Gaps also exist in the effectiveness and efficiency aims because appropriate processes and measures needed to conduct analysis are absent.

FUTURE ACTIVITIES Future research and quality improvement activities can use the aims framework and priorities to go beyond merely looking for conformity with the aims, to identify quality gaps in existing programs, ensure conformity in the design of new programs, and develop measures to verify improvements. A timely example is the Multistate Learning Collaborative, a project funded by the Robert Wood Johnson Foundation, which focuses on quality improvement in state and local health departments as preparation for agency accreditation.[47]

Lessons learned through this collaborative can aid national efforts by building the capacity needed to advance quality in state and local agencies. Such progress demonstrates the value of quality to improving population-based services and outcomes, and it serves as a foundation to generate evidence-based standards for public health performance.

Discussion

Until now, efforts to improve quality systematically in public health have been sporadic and lacking in uniformity of definitions, aims, and priorities. To fill this void, we offer the first consensus definition of *public health quality*, nine aims of quality in public health, as well as six priority areas for national attention. We also have provided some pilot demonstrations to guide implementation of this quality framework.

BENEFITS OF THE FRAMEWORK The framework offers a number of potential benefits. Across all sectors, organizations with a public health mission should use the aims and priority areas as a starting point to build uniformity in the design of quality improvement processes. Also, decision makers can begin to track the use of the framework as they evaluate existing programs and develop new ones.

The two pilots and Institute for Healthcare Improvement model presented earlier provide guidance on such practices. Establishing quality improvement practices aligned with the quality concepts provides early implementers with valuable knowledge to use in reviewing the rationale for funding policies.

Furthermore, the framework can stimulate research and teaching among academics and practitioners, as well as the development of educational materials[48] to implement the concepts in daily public health practices. Establishing these quality concepts also begins to bridge health care and public health and to spark more-informed analysis about where and how quality can be improved and who should be responsible.

Fundamentally, part of the public health role is to monitor for threats, create awareness, and prevent interventions. Also, the definition of *public health quality* articulates that entities beyond governmental public health agencies have a responsibility for quality in the public health system. Health care institutions with population-based programs and community benefit activities have the opportunity to embrace these concepts as well. Specifically, tax-exempt hospitals can begin to design community benefit programs aligned with the quality concepts, especially given anticipated declines in charity care.

At the state and local levels, the work of the Robert Wood Johnson Foundation has launched initial activities to improve public health quality. These efforts are a notable first step that can now be broadened and accelerated. As recommended in *Quality First*, a coordinated effort with unifying concepts applicable across all levels and sectors can improve the health of the entire nation.

NEXT STEPS Critical next steps include the development of measures in support of the aims and priority areas. Research on the concepts is also warranted, along with the implementation of tools such as those available in health care quality (for example, the Institute for Healthcare

Downloaded from content.healthaffairs.org by Health Affairs on April 7, 2011
at NIH Library

Improvement's Improvement Map)[49] to put uniform processes into action.

Building a common language and configuring uniform implementation models acceptable to public health and health care organizations are priorities for further action. Further attention must also focus on basic skills and training on the quality concepts[48] and leadership education needed throughout the public health workforce.

AFFORDABLE CARE ACT The Affordable Care Act provides opportunities for improved prevention and population health, including a new National Public Health and Prevention Fund.[37] The framework offered here provides public health with valuable tools to use in improving quality through initiatives and funding authorized in the reform law.

Furthermore, the framework offers a structure to use the quality concepts to create and evaluate public health programs authorized under the Affordable Care Act; establish policies to align grants and other funding for public health with programs designed around the aims and priority areas; and use the Affordable Care Act authority for public health systems and services research to build evidence-based measures.

CALL TO ACTION We offer these foundations for quality as a call to action to begin to define, measure, and improve public health quality practices. Quality in public health must be a sustained concept where excellence is measured, acknowledged, and rewarded. We can learn from lessons and models used in patient care, where strong national leadership has made quality improvement practices more prevalent. Anchoring concepts of quality across all sectors of public health should be a goal that can further the health of populations. ■

The authors acknowledge the Department of Health and Human Services' Public Health Quality Forum, executive directors of public health stakeholder organizations—Georges Benjamin, Marie Fallon, Paul Jarris, Bobby Pestronk, Harrison Spencer, and Jeff Levi—and other key informants for contributions to the development of the quality concepts described in this paper.

NOTES

1 President's Advisory Commission on Consumer Protection and Quality in the Health Care System. Quality first: better health care for all Americans [Internet]. Washington (DC): The Commission; 1998 [cited 2011 Mar 9]. Available from: http://www.hcqualitycommission.gov/final/

2 Institute of Medicine. State of the USA health indicators: letter report. Washington (DC): National Academies Press; 2009.

3 Sensenig AL. Refining estimates of public health spending as measured in the national health expenditure accounts: the United States experience. J Public Health Manag Pract. 2007;13(2):103–14.

4 Trust for America's Health. Shortchanging America's health 2008: a state-by-state look at how federal public health dollars are spent [Internet]. Washington (DC): Trust for America's Health; 2008 [cited 2011 Mar 9]. (Issue Report). Available from: http://healthyamericans.org/reports/shortchanging08/Shortchanging08.pdf

5 Honoré PA, Clark RL, Mead DM, Menditto SM. Creating financial transparency in public health: examining best practices of system partners. J Public Health Manag Pract. 2007;13(2):121–9.

6 Gold M, Dodd AH, Neuman M. Availability of data to measure disparities in leading health indicators at the state and local levels. J Public Health Manag Pract. 2008;14(Suppl):S36–44.

7 Institute of Medicine. The future of public health. Washington (DC): National Academies Press; 1988.

8 Institute of Medicine. The future of public health in the 21st century. Washington (DC): National Academies Press; 2003.

9 Lurie N, Wasserman J, Stoto M, Myers S, Namkung P, Fielding J, et al. Local variation in public health preparedness: lessons from California. Health Aff (Millwood). 2004;23:w4-341–53. DOI: 10.1377/hlthaff.23.w4.341.

10 Department of Health and Human Services. Consensus statement on quality in the public health system [Internet]. Washington (DC): HHS; 2008 [cited 2011 Mar 9]. Available from: http://www.hhs.gov/ash/initiatives/quality/quality/phqf-consensus-statement.html

11 Honoré PA, Scott W. Priority areas for improvement of quality in public health [Internet]. Washington (DC): Department of Health and Human Services; 2010 [cited 2010 Dec 30]. Available from: http://www.hhs.gov/ash/initiatives/quality/quality/improvequality2010.pdf

12 Public Health Functions Project. Public health in America [Internet]. Washington (DC): The Project; 1999 [cited 2009 Dec 31]. Available from: http://www.health.gov/phfunctions/public.htm

13 Kohn LT, Corrigan JM, Donaldson MS, editors. To err is human: building a safer health system. Washington (DC): National Academies Press; 2000.

14 Institute of Medicine. Crossing the quality chasm: a new health system for the 21st century. Washington (DC): National Academies Press; 2001.

15 Leonard B. Adapting quality improvement to public health: conference sponsored by the Robert Wood Johnson Foundation, highlights and conclusions [Internet]. Princeton (NJ): Robert Wood Johnson Foundation; 2007 [cited 2011 Mar 9]. Available from: http://www.phaboard.org/assets/documents/AdaptingQItoPublichealth.pdf

16 RAND Center for Domestic and International Health Security. Quality improvement methods can be used to improve public health emergency preparedness [Internet]. Washington (DC): RAND; 2006 [cited 2009 Dec 31]. Available from: http://www.rand.org/pubs/research_briefs/RB9198/index1.html

17 Corso LC, Landrum LB, Lenaway D, Brooks B, Halverson PK. Building a bridge to accreditation—the role of the national public health performance standards program. J Public Health Manag Pract. 2007;13(4):374–7.

18 Centers for Disease Control and Prevention. Gaining consensus among stakeholders through the nominal group technique [Internet]. Atlanta (GA): CDC; 2006 Nov [cited 2009 Oct 26]. (Evaluation Brief No. 7). Available from: http://www.cdc.gov/HealthyYouth/evaluation/

Downloaded from content.healthaffairs.org by *Health Affairs* on April 7, 2011
at NIH Library

pdf/brief7.pdf
19 International Organization of Standards. Terminology [Internet]. Washington (DC): IOS; 1986 [cited 2011 Mar 9]. Available from: http://www.issco.unige.ch/en/research/projects/ewg96/node69.html
20 Burke D, Menachemi N, Brooks RG. Diffusion of information technology supporting the IOM's quality chasm care aims. J Healthc Qual. 2005;27(1):24–32.
21 Solberg LI, Engebretson KI, Sperl-Hillen JM, O'Connor PJ, Hroscikoski MC, Crain AL. Ambulatory care quality measures for the 6 aims from administrative data. Am J Med Qual. 2006;21(5):310–6.
22 Ricupito G. Leverage SPD quality improvements by following the IOM's six aims. Mater Manag Health Care. 2009;18(9):40.
23 Murphree J, Englert J, Koch K, Davis KM, Heer J. North Mississippi Medical Center: a focus on quality, safety, and financial success factors. Jt Comm J Qual Patient Saf. 2005;31(10):545–53.
24 Bingham JW, Quinn DC, Richardson MG, Miles PV, Gabbe SG. Using a healthcare matrix to assess patient care in terms of aims for improvement and core competencies. Jt Comm J Qual Patient Saf. 2005;31(2):98–105.
25 Nethersole S. Applying Institute of Medicine quality domains to measure pediatric community health. Paper presented at: American Public Health Association annual meeting; 2007 Nov 3–7; Washington, DC.
26 Selberg JD. Quality commitment: successful programs reinforce the core elements of the IOM quality aims. Hosp Health Netw. 2006;80(8):80.
27 Winslow CEA. The untilled field of public health. Modern Med. 1920;2:183–91.
28 Department of Homeland Security. Homeland security presidential directive/HSPD21: public health and medical preparedness [Internet]. Washington (DC): DHS; 2007 [cited 2011 Mar 9]. Available from: http://www.fas.org/irp/offdocs/nspd/hspd-21.htm
29 National Association of County and City Health Officials. Operational definition of a functional local health department [Internet]. Washington (DC): NACCHO; 2005 [cited 2009 Dec 31]. Available from: http://www.naccho.org/topics/infrastructure/accreditation/upload/OperationalDefinitionBrochure-2.pdf
30 Koh HK. A 2020 vision for healthy people. N Engl J Med. 2010:362(18):1653–6.
31 Whitehead M. The concepts and principles of equity in health. Int J Health Serv. 1992;22:429–45.
32 Neumann PJ, Jacobson PD, Palmer JA. Measuring the value of public health systems: the disconnect between health economists and public health practitioners. Am J Public Health. 2008;98:2173–80.
33 Conway PH, Clancy C. Transformation of health care at the front line. JAMA. 2009;301(7):763–5.
34 Studnicki J, Fisher JW, Eichelberger CN. North Carolina comprehensive assessment for tracking community health. N C Med J. 2008;69:122–6.
35 Berwick DM, Nolan TW, Whittington J. The triple aim: care, health, and cost. Health Aff (Millwood). 2008;27(3):759–69.
36 Clancy C, Eisenberg JM. Outcomes research: measuring the results of health care. Science. 1998;282:245–6.
37 Koh HK, Sebelius KG. Promoting prevention through the Affordable Care Act. N Engl J Med. 2010;363(14):1296–9.
38 Leischow SJ, Milstein B. Systems thinking and modeling for public health practice. Am J Public Health. 2006;96:403–5.
39 Centers for Disease Control and Prevention. Ten great public health achievements. MMWR Morb Mortal Wkly Rep. 1999;48(12):241–3.
40 Association of Schools of Public Health. Confronting the public health workforce crisis [Internet]. Washington (DC): ASPH; 2008 Dec [cited 2011 Jan 12]. (ASPH Policy Brief). Available from: http://www.asph.org/UserFiles/Workforce%20Shortage%202010.pdf
41 Department of Health and Human Services. The public health workforce: an agenda for the 21st century. Washington (DC): HHS; 1997.
42 A graphical representation of this process is in the online Appendix, which can be accessed by clicking on the Appendix link in the box to the right of the article online.
43 Nolan T. Executing for system-level results: part 2 [Internet]. Cambridge (MA): Institute for Healthcare Improvement; 2007 [cited 2010 Dec 30]. Available from: http://www.ihi.org/IHI/Topics/Improvement/ImprovementMethods/ImprovementStories/ExecutingforSystemLevelResultsPart2.htm
44 The Consensus Statement and *Priority Areas* report, along with illustrations on the Institute for Healthcare Improvement model adapted to public health, can be found at Office of the Assistant Secretary for Health, Department of Health and Human Services. Public health system, finance, and quality program [Internet]. Washington (DC): HHS; [cited 2011 Mar 9]. Available from: http://www.hhs.gov/ash/initiatives/quality/index.html
45 Department of Health and Human Services, Department of Defense, Veterans Health Administration. Comprehensive review of federal vaccine safety programs and public health activities [Internet]. Washington (DC): National Vaccine Program Office; 2008 Dec [cited 2011 Jan 12]. Available from: http://www.hhs.gov/nvpo/nvac/documents/vaccine-safety-review.pdf
46 Department of Health and Human Services. Draft strategic national vaccine plan [Internet]. Washington (DC): National Vaccine Program Office; 2008 Nov 26 [cited 2011 Jan 12]. Available from: http://www.hhs.gov/nvpo/vacc_plan/2008plan/draftvaccineplan.pdf
47 Joly BM, Shaler G, Booth M, Conway A, Mittal P. Evaluating the multistate learning collaborative. J Public Health Manag Pract. 2010;16(1):61–6.
48 Lesneski C, Randolph G, Massey S. Moving beyond quality assurance: continuous quality improvement in US public health organizations. In: Sollecito W, Johnson J, editors. Continuous quality improvement in health care. Sudbury (MA): Jones and Bartlett; forthcoming.
49 Institute for Healthcare Improvement. Improvement map [Internet]. Cambridge (MA): IHI; [cited 2011 Mar 9]. Available from: http://www.ihi.org/IHI/Programs/ImprovementMap/

Downloaded from content.healthaffairs.org by *Health Affairs* on April 7, 2011
at NIH Library