

# Deciphering the Imperative: Translating Public Health Quality Improvement into Organizational Performance Management Gains

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## Keywords

performance management, quality improvement, health departments, accreditation

## Abstract

With the launching of the national public health accreditation program under the auspices of the Public Health Accreditation Board (PHAB), health department momentum around quality improvement adoption has accelerated. Domain 9 of the PHAB standards (one of 12 domains) focuses on evaluation and improvement of performance and is acting as a strong driver for quality improvement and performance management implementation within health departments. Widespread adoption of quality improvement activities in public health trails that in other US sectors. Several performance management models have received broad acceptance, including models among government and nonprofits. A model specifically for public health has been developed and is presented herein. All models in current use reinforce customer focus; streamlined, value-added processes; and strategic alignment. All are structured to steer quality improvement efforts toward organizational priorities, ensuring that quality improvement complements performance management. High-performing health departments harness the synergy of quality improvement and performance management, providing powerful tools to achieve public health strategic imperatives.

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### Quality

#### improvement (QI):

in public health is the use of a deliberate and defined improvement process, such as Plan-Do-Check-Act, which focuses on activities responsive to community needs and improving population health

**PHAB:** Public Health Accreditation Board

#### Essential public health services

**(EPHS):** ten essential public health services as defined by the Public Health Functions Steering Committee in 1994

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## INTRODUCTION

For the past decade, governmental and philanthropic organizations have strategically invested in public health department quality improvement (QI) initiatives with the goal of strengthening their performance (6, 13, 28, 29, 34, 35, 39, 59). Although health departments in many jurisdictions have routinely practiced the principles of QI, and utilized QI tools, overall adoption of QI has not been pervasive (8, 9, 20, 31, 33). Recently health department momentum toward QI has accelerated nationally with the launching of the national public health accreditation program under the auspices of the Public Health Accreditation Board (PHAB), which accredited the first health departments in 2013 (53). The voluntary accreditation process is based upon health departments' demonstration of conformance with standards and measures described in 12 domains, based on the 10 essential public health services (EPHS) (50) plus 2 additional areas, governance and administrative/management oversight. Domain 9 focuses specifically on evaluation and improvement of performance and is acting as a strong driver for QI implementation within state, local, and tribal health departments.

The roots of quality in public health date back more than a century, originating with Charles Chapin's assessment of state health department capacity for the American Medical Association (58). During the 1920s, the American Public Health Association (APHA), through its Committee on Municipal Health Department Practice, was actively engaged in precursors to today's quality movement (12, 58). In the immediate aftermath of World War II, a successor APHA committee provided oversight for a voluntary assessment process with metrics that assessed all aspects of health department performance, including capacity, process, and outcomes. However, focus drifted and was not regained until the seminal 1988 Institute of Medicine (IOM) report forthrightly judged public health to be in "disarray" (24, p. 19). Significantly, the IOM committee also offered up a framework to describe the three core functions of public health: assessment, policy development, and assurance. Two decades of introspection were spawned, leading to the development of the 10 EPHS (50); the Mobilizing for Action through Planning and Partnerships tool for community assessment and strategic planning (17, 37); the national public health performance standards (state, local, and governance instruments), which assessed public health via the lens of a system (16, 40); and the Operational Definition of a Functional Local Health Department, which captured the functions a health department should provide its citizenry (38). The subsequent 2003 IOM report viewed these foundations as sufficient scaffolding to support an exploration for potential development of a national accreditation model (26).

The result of this exploration was the formation of PHAB and the development of consensus national public health standards through an iterative process. Determination of a specific definition for QI in public health followed shortly thereafter, a definition that respects the role of the community and the influence of health equity and includes the hortatory goal of improved population health outcomes:

Quality improvement in public health is the use of a deliberate and defined improvement process, such as Plan-Do-Check-Act, which is focused on activities that are responsive to community needs and improving population health. It refers to a continuous and ongoing effort to achieve measurable improvements in the efficiency, effectiveness, performance, accountability, outcomes, and other indicators of quality in services or processes which achieve equity and improve the health of the community. (52, p. 6)

Despite this impressive historical pedigree, the more widespread adoption of QI activities in public health trails that in other US sectors, notably business and health care. Edwards Demming

and others promoted QI as a means to resuscitate Japanese industry following World War II, enabling it to rise Phoenix-like from the smoldering ashes of the conflict. The use of quality teams, quality circles, and other tools enabled their industries to produce better products, having the final say about what the imprimatur “Made in Japan” actually meant—a vast departure from when that term was synonymous with cheaply manufactured products certain to malfunction imminently. Threats from international competition in Japan and Europe and complaints of poor-quality products at home have helped facilitate this transformation toward quality in the United States. Concerns have been especially acute within health care, given the finding that hospitals are often dangerous locations to receive care, placing the most ill at greatest risk of harm (25). Organizations such as the American Society for Quality, among others, have been formed to build capacity and to promote access to QI training. The net result has been greater acceptance of quality approaches as a way to conduct business across entire industries.

## TRANSLATING QUALITY IMPROVEMENT INTO PERFORMANCE MANAGEMENT

QI tools and methods are typically directed toward the improvement of processes. In public health, this concept often translates into changes at the programmatic or administrative level. For practitioners who through experience gained greater understanding and sophistication in use of QI tools, it became evident that there was also an imperative to improve performance of the entire enterprise, rather than focusing exclusively upon improvement of the product, program, or administrative process alone. Viewed through this lens, quality approaches morph into performance management (PM) and strive to advance the full organization, reflecting overall strategic priorities of senior leadership. This conceptual breakthrough led to the further development of new methodologies with greater emphasis on alignment of interests across the organization. Several PM models currently have widespread use in various industries and sectors, including government and nonprofits. Utilizing these generic frameworks, an organization will apply specific QI tools and techniques on the basis of priorities and long-term strategic planning goals. Two of the best known examples are the Baldrige National Quality Program (4, 23), named in honor of former Commerce Secretary Malcolm Baldrige, and the Balanced Scorecard (BSC) (3). Another model, ISO 9000, is widely used in health care domestically and internationally (for more information, see [http://www.iso.org/iso/iso\\_9000](http://www.iso.org/iso/iso_9000)). Below, we describe Baldrige and BSC in further detail, reflecting their prototypic nature as representative examples of several possible PM options that an organization may use.

Most states have mini-Baldrige-like programs; for example, the Lincoln Awards in Illinois and the Sterling Awards in Florida; these provide excellent sources for technical assistance and consultation for health departments. Baldrige consists of seven related domains that must be aligned for organizational performance excellence to be achieved (see **Figure 1**). An organization must focus on its business results (in public health, the chief business result would be community health outcomes), but it also must direct attention to its leadership capacity and business process management. The same intense energy is required for strategic planning and customer/market focus. Emphasis is likewise placed on managing human capital (the primary asset of public health agencies) and on information systems and data analysis. The latter is closely related to epidemiology and to EPHS 1 (monitoring health status) and 2 (diagnosing and investigating health problems and hazards) (50).

The BSC, originally developed by Kaplan and Norton in the early 1990s, has been a common tool for PM in the past two decades, providing valuable lessons for its use in fields other than for-profit corporations. BSC was created because traditional financial measures (i.e., return

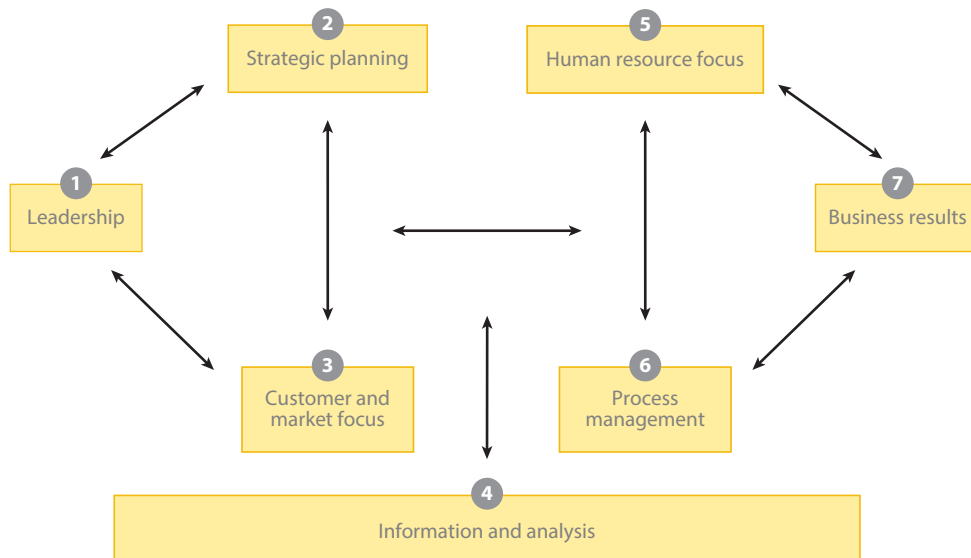
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**Performance management (PM):** the enterprise-wide approach to quality that incorporates organizational strategic imperatives and aligns them to facilitate achievement of priorities

**Baldrige National Quality Program:** one of several widely utilized performance management models consisting of seven related domains aligned for organizational performance excellence

**Balanced Scorecard (BSC):** model that fosters the balanced examination of performance indicators within four areas (financial, customer, internal processes, and learning and growth)

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**Figure 1**

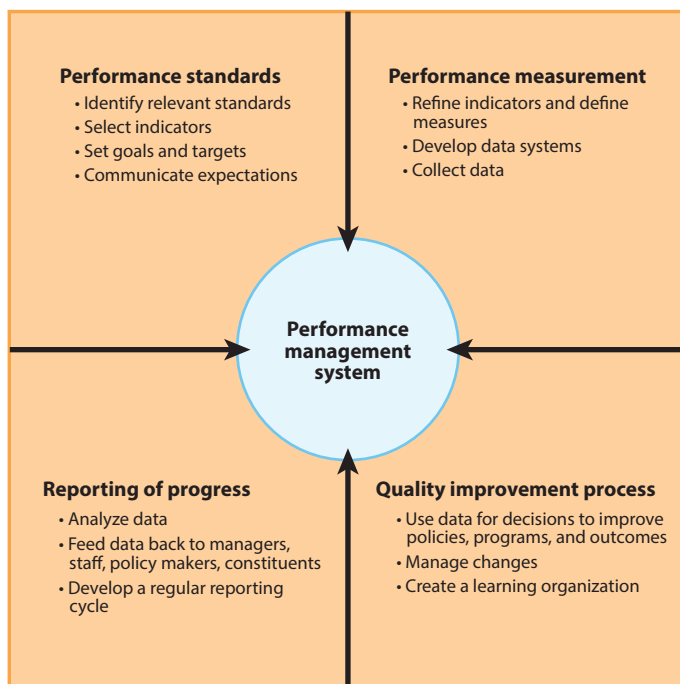
Baldrige criteria for organizational performance excellence.

on investment), commonly used to assess organizational performance, were narrowly focused and did not consider other important perspectives (i.e., customer perspectives) beyond those of shareholders. Instead, the BSC approach fostered the balanced examination of performance indicators within four areas: financials, customers, internal processes, and learning and growth. By examining these four areas together, an organization would not be vulnerable by focusing solely on one type of performance indicator (i.e., internal organizational processes) without regarding other performance indicators such as customer satisfaction or financial profit. The BSC approach also encouraged the examination of performance within the broader context of an organization's strategy and vision.

As noted above, Baldrige and BSC provide well-structured approaches to assess the current status of an organization's overall quality performance. Once areas for improvement are identified, QI tools and techniques can be applied to the area of concern, allowing the PM system to complement the use of QI tools within the organization. One key role that senior management plays within PM is to direct the relatively scarce organizational QI resources where they will have the greatest impact, given the desired strategic direction. When an issue is selected for QI (usually because it has not achieved the desired benchmark or metric), an intervention is planned, frequently by a multidisciplinary team, based on the use of all available organizational data.

In addition to the generic models described, a more specific public health model was developed in 2002 by the Turning Point Performance Management National Excellence Collaborative (Turning Point Collaborative), a group of public health practitioners from Turning Point states, national public health partners, and federal agencies following two years of extensive study and information gathering (41, 42). The original model consisted of four components necessary to deliver organizational PM: (1) performance standards, (2) performance measures to assess whether standards have been achieved; (3) reporting of progress; and (4) a systemic QI process (see **Figure 2**) (49). Performance standards at that time reflected several potential sources, ranging from national public health performance standards, which were oriented to public health *systems*,

**Turning point:** a widely utilized performance management model developed specifically for public health departments, consisting of five components



**Figure 2**

Original Turning Point public health performance management model.

to specific standards adopted within a state (for example, the Washington or Michigan standards). Today, performance standards have been derived from a consensus-based process, and PHAB standards are generally recognized as the accepted national performance standards. Similarly, in 2002, performance measures represented a number of possible sources, from national benchmarks such as Healthy People 2010, to federal grant metrics, to measures reflecting specific local or state objectives. Current performance measures for health departments might be a blend of PHAB measures and those developed by a grantor locally or at the state health department level. Robust measurement systems include metrics that inform leadership/management about an agency's capacity to perform a particular activity (capacity measures), how well it performs the activity (process measures), and the impact or outcome resulting from the activity/intervention (outcome or health status measures). Reporting of progress refers to a systematic and periodic dissemination of data, typically in the form of a report card that informs management, the agency, and stakeholders of the status as compared with key performance standards and measures. Queryable websites often provide such key health data in real time (e.g., Florida Charts published by the Florida Department of Health; see <http://www.floridacharts.com/charts/default.aspx>). Finally, the QI component intends to direct limited health department resources toward priority health problems where performance fell short of measurable objectives, with the intent of driving progress toward higher achievement.

## PENETRATION OF PERFORMANCE MANAGEMENT IN INDUSTRY

Baldrige and BSC are used in various industries that, like public health, can benefit from a holistic system evaluation. Such industries include automobile manufacturing (22), e-business (14, 43),

public works (5, 55), banking (61), academic institutions (1), and health care (63). In fact, given the breadth of examples in the peer-reviewed literature, it is evident that Baldrige and BSC have become commonplace tools for improving performance within the health care industry in national and international settings. Specific organizational settings where these QI tools are being employed include hospitals (21, 32, 51), private dialysis centers (54), academic medical centers (15, 57), and, most recently, national health systems (19, 30, 36, 56).

Early applications of the BSC approach within health care often focused on developing strategies and monitoring performance of those strategic initiatives (60). For example, the implementation of health information technologies is a strategy commonly applied in hospital settings with the intention of improving quality of care. BSC has been used to assess performance associated with such health information technology roll out (62). Another example highlighting the strategic use of QI tools is the National Institute for Health Research (NIHR) in the United Kingdom. NIHR applied PM through the combined use of the BSC and a logic model to control costs and improve the performance of their national health research systems (19). Instead of using the four domains of the BSC model, they adapted the model to fit the strategic aims of the health research system and included financial performance, internal processes, and interactions with external parties as the domains within which they examined performance.

The previous examples draw attention to an important note: that QI tools, specifically BSC, are often modified for application to health care organizations (63). For example, the health care sector has many different stakeholders including physicians and other health workers, insurance companies, patients and their families, employers, and policy leaders. It is essential to identify performance indicators that are relevant for these various stakeholders and that fit within the appropriate domains of the balanced approach. These indicators will inevitably differ across health care organizations and settings. For example, a teaching hospital may focus on training health workers, providing quality services to patients, and improving financial performance, whereas a dialysis network may prioritize adhering to changing insurance policies and health system guidelines, providing quality services, and improving financial performance. In sum, these QI tools for PM within health care organizations can be applied in many ways in order to meet organizational demands.

In general, a number of lessons can be gleaned for public health from the experiences of other industries as these tools were applied. First, there must be agreement among leadership regarding the strategic intent of the organization so that these goals can inform the domains examined and the performance indicators selected within each domain (19). Second, these processes cannot be successful without periodic performance review (progress reporting) and the appropriate allocation of resources and resolutions to areas in need of further improvement (quality improvement) (15). Although indicators themselves becoming the predominant focus is a risk, ensuring that a balanced set of indicators are used (and periodically reviewed for relevance) will reduce this concern (19, 63). Similarly, the need to develop indicators on the basis of multiple stakeholders' perspectives translates directly to public health.

## **QUALITY IMPROVEMENT AND PERFORMANCE MANAGEMENT COSTS AND COST SAVINGS**

There is a system-wide dearth of information related to the cost of conducting QI/PM and the impact of QI/PM on cost or the efficient use of resources. In general, published research on QI/PM does not report direct costs associated with conducting QI/PM. This lack is likely due not to oversight, but to the difficulty in tracking the costs associated with QI/PM efforts, such

as human resources that have been shifted to conduct QI/PM. In some cases, organizations hire external consultants, but these external costs are rarely reported in the peer-reviewed literature.

A second factor related to the lack of discussion of QI/PM costs in the literature is that associated outcomes can be difficult to measure. For example, in health care, QI/PM efforts are commonly conducted to reduce inefficiencies in the organization (inefficiency waste) or to generate lower medical costs by improving medical outcomes (quality waste). Measuring quality waste is complex, and few studies report such outcomes, though a review by James et al. (27) examined studies that had done so in the peer-reviewed literature as of 2000. Although ~50 papers were identified, anecdotal findings indicated that researchers found that major medical journals were not willing to publish cost data or papers that explicitly examined waste mechanisms that drive lower costs (27).

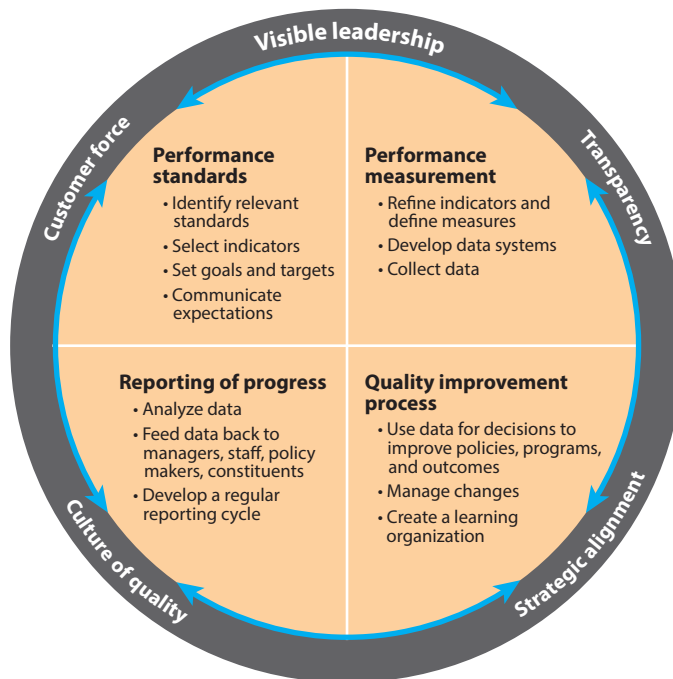
A third complication is the delay in accrued benefits resulting from QI/PM. Measurable cost savings from QI/PM activities often lag behind the intervention. In public health, for example, a current issue is measuring the benefits of voluntary national accreditation. The benefits and possible cost savings may not materialize immediately after a health department is accredited. Thus, early papers published on this QI/PM effort are unlikely to discuss cost savings or benefits.

## **PERFORMANCE MANAGEMENT ADOPTION WITHIN PUBLIC HEALTH**

When the Turning Point Collaborative was conducting research and developing its model, initial assessment revealed that even though state and local health departments frequently had the first two components in place (performance standards and performance measures), their application tended to be centered around specific programs rather than operating department-wide (49). Such narrow efforts likely do not involve a balanced approach to performance. Additionally, early assessments found that progress reporting was underdeveloped and QI processes were rare, meaning that performance assessments were not being used to generate change. More recent membership surveys by the National Association of County and City Health Officials (NACCHO) confirmed the findings, while also indicating general gains in QI implementation (9, 31). Similarly, the Association of State and Territorial Health Officials (ASTHO) is currently studying state health department deployment of QI/PM (33). Additional research has confirmed these findings (11).

In 2013, a decade following its introduction, under the guidance of the Public Health Foundation (PHF), the Turning Point model was refreshed by a team of public health practitioners and national partner organizations. Feedback from focus groups and key informants suggested that although practitioners were familiar with the Turning Point model, they reported uncertainty regarding its implementation (18). Based on this information, the elements of the original framework were validated and retained (18). However, the updated Turning Point model (see **Figure 3**) incorporated a fifth component, previously implicit rather than explicit, which recognized the vital role of leadership and organizational culture in PM (46). Leadership is expected to ensure organizational customer focus (a general lesson learned from Baldrige, BSC, and QI) and to emphasize alignment of strategies (priorities) with activities, measures, and thoughtful resource stewardship. PHF also developed tools to facilitate self-assessment of current PM activities and posted a tool kit on its website to aide PM implementation (45).

Several current examples of state and local implementation of PM systems are highlighted on the PHF website (47). Most are based on a foundation derived from the Turning Point model, although the Baldrige model is also well represented. Currently included on the website are case studies for eight state health departments and two large metro health departments; each describes



**Figure 3**

Refreshed Turning Point public health performance management model.

its PM journey. The Oklahoma PM approach, originally inspired by Turning Point, emphasizes alignment across all levels of public health practice:

The Oklahoma State Department of Health (OSDH) began its performance management process with an adaptation of the Plan-Do-Check-Act method using the Turning Point Performance Management Framework. The Plan step identifies relevant performance standards and setting goals; the Do phase collects data and measures performance; the Check phase uses data for decisions to improve policies and outcomes; and the Act phase analyzes the data, provides feedback to stakeholders, and establishes standardization. In fall 2010, OSDH adapted this information into the OSDH Performance Management Model, which demonstrates alignment of systems and processes from national to state to agency, to service area and community/county health department, and to the individual employee, through a continuous quality improvement cycle. Alignment among all levels is critical to assure that OSDH is moving in the same direction to have the largest impact. More importantly, by aligning the performance management activities, an employee can see how their individual contribution leads to success in their service area, county health department, or community; which then leads to success in impact at the agency, state, and national levels as each area's successes builds upon the other. (48, p. 2)

With the launch of the PHAB accreditation program, health department emphasis on QI and PM has increased substantially (7). Important drivers have been the desire to attain accredited status and to elicit implementation support from funders. The Centers for Disease Control and Prevention through resources allocated under the Patient Protection and Affordable Care Act (National Public Health Improvement Initiative) and the Robert Wood Johnson Foundation

via programs managed by NACCHO, ASTHO, and the National Network of Public Health Institutes (the Multi-State Learning Collaborative and the Community of Practice for Public Health Improvement) have been catalysts. Specifically, PHAB Domain 9 contains standards and measures that call for both QI and PM systems to be in place, operational, and integrated.

Domain 9 focuses on the use and integration of PM and QI practices and processes for the continuous improvement of the public health department's practices, programs, and interventions.

Performance management identifies actual results against planned or intended results. Performance management systems ensure that progress is being made toward departmental goals by systematically collecting and analyzing data to track results to identify opportunities and targets for improvement. Quality improvement is an element of performance management that uses processes to address specific targets for effectiveness and efficiency. (44)

Although, as described herein, several options are available to health departments seeking accreditation under PHAB, PM systems inspired by the refreshed Turning Point model are well positioned to achieve the intent of Domain 9 standards. Regardless of the framework selected, all approaches reinforce several shared central tenets such as customer focus; streamlined, value-added processes; and strategic alignment. Importantly, all are structured to steer QI efforts toward organizational priorities, ensuring that QI complements PM rather than competes with it. Because the PM system provides the superstructure for overall health department management and ultimate alignment of efforts, it is inherently logical to address the intent of Domain 9 by first developing the PM approach and then instituting QI to harmonize with the model. The additional benefit of Turning Point is premised on its development for and by public health practitioners along with the provision of guidance and support materials specific to public health agencies.

PHAB also requires the completion of three prerequisites that are instrumental to the accreditation program. The strategic plan operates in concert with the other two prerequisites: the community/state health assessment and the community/state health improvement plan. By virtue of completing the strategic plan, clear pathways forward for the health department can be mapped, aligning with the health assessment and improvement plans, and providing priority guidance for leadership to follow. All PM models, whether Baldrige, BSC, or Turning Point, will utilize the newly developed strategic plan as the fulcrum for the alignment process.

The foundations of knowledge and uptake of QI tools and processes are significant to the transformation of health departments into quality organizations that operate in a milieu defined by a culture of quality (11). QI operates at three levels within the organization: at the macro or organizational level, at the public health program or administrative process level, and at the individual level. Additionally, external to the health department, but potentially involving public health system partners, QI may encompass an entire sector: the so-called meso QI (10). When health department leadership scans across the organization, using data to make decisions about managing health department priorities, QI becomes PM. Many industries and organizations develop “dashboards” to facilitate rapid feedback to management about the performance of critical areas, guiding further data gathering and intervention (15). Much like the dashboard in a vehicle, these dashboards are typically composed of a small number of indicators that reflect whether key processes or outcomes are meeting expectations. ASTHO has been crafting a public health dashboard with eight focus areas designed to inform public health leaders about the health of the health department (2). Following a pilot with state health departments, this tool will be made available to interested states.

When directed at specific programs or processes, QI employs teams and tools to tackle public health problems, efficiencies, and effectiveness. Although it is ideal for all health department staff

to become knowledgeable about QI tools and processes, and to serve on QI teams to strengthen understanding as adult learners, QI at this intermediate level should be marshaled only to address prioritized problems. The formation of teams and the dedicated time required for a fully developed QI project are resource intensive and, if misdirected, can divert attention from strategic priorities. Some health departments vest authority in senior management to make such allocation decisions, whereas others delegate this responsibility to a QI council. Regardless, resources should be deployed in accordance with an overall QI plan, which need not be elaborate but should set forth a decision-making process for selecting QI projects for the agency.

Individual QI is instrumental to workforce development. It incorporates the concepts of an individual development plan, and it also enables individuals to master QI tools to perform everyday work more effectively and to contribute to QI teams as members.

## CONCLUSION

PHAB accreditation has expedited the historically slow adoption of QI and PM by public health agencies. Trailing other industries and sectors may actually foster opportunities to use the lessons that others have learned for improved models and efforts toward QI and PM within governmental public health. Perhaps the most important lesson from other industries is to foster regular progress reporting so that resources can be appropriately allocated to the most crucial areas in need of further QI. It would also be beneficial to have data on the costs associated with QI and PM whenever possible. Such information will aid other organizations in planning similar efforts and may inform strategic decisions.

Public health's own recent experiences with QI and PM have resulted in experiential learning and the development of new models, which continue to inform the uptake of QI tools, methods, and PM frameworks. PHAB Domain 9 provides a blueprint for implementing a PM system well aligned with QI. Without such alignment, there is an inherent tension between resources devoted to QI and to PM, especially in resource-constrained organizations such as health departments. When the opportunity arises, implementing PM first enables the complementary roles, rather than the conflicting ones, to emerge. Harmonization can be achieved, and QI is more often dedicated toward the improvement of priority public health issues. Given the accreditation program prerequisites, in particular the agency strategic plan, forces are in place to strike a healthy balance and achieve overall organizational alignment of major priorities. This interaction places a greater emphasis on health department performance and marshals resources where they can best be utilized to improve key processes, efficiencies, and overall effectiveness. When QI and PM are implemented fully, they operate at multiple levels within the health department and even externally to strengthen the public health system. Research is necessary to determine the impact that QI and PM have on public health performance and ultimately on the key health department imperative: improving community health outcomes. High-performing health departments harness the synergy of QI and PM, providing powerful tools to achieve public health strategic imperatives.

### SUMMARY POINTS

1. With the introduction of public health accreditation through the Public Health Accreditation Board (PHAB), there is accelerated momentum to adopt quality improvement (QI) and performance management (PM) within state and local health departments. PHAB accreditation is a driver because it seeks to strengthen overall health department performance through its standards and metrics.

2. QI is typically directed toward the improvement of processes within programs or administrative procedures. When practitioners and senior leaders think about quality for the entire public health agency broadly, quality approaches morph into PM and strive to advance the full organization, reflecting overall strategic priorities of senior leadership.
3. PM models share several common features, most notably emphasizing a customer-centric focus; streamlined, value-added processes; and strategic alignment. All are structured to steer QI efforts toward organizational priorities, ensuring that QI complements PM.
4. The Turning Point model, designed specifically for public health has five components: (1) performance standards; (2) performance measures to assess whether standards have been achieved; (3) reporting of progress; (4) a systemic QI process; and (5) visible leadership engagement.
5. Robust measurement systems to assess performance include metrics that inform leadership/management about the status of the agency regarding its capacity to perform a particular activity (capacity measures), how well it performs the activity (process measures), the impact or outcome resulting from the activity/intervention (outcome or health status measures), and costs associated with the activity/intervention.
6. Because the PM system provides the superstructure for overall health department management and ultimate alignment of efforts, it is inherently logical to address the intent of PHAB Domain 9 (one of 12 accreditation program domains) by developing the PM approach first and then instituting QI to harmonize with the model.
7. QI operates at three levels within the organization: at the macro or organizational level; at the public health program or administrative process level; and at the individual level. Additionally, external to the health department, but potentially involving public health system partners, QI may encompass an entire sector: the so-called meso QI.
8. Although all health department staff should ideally become knowledgeable about QI tools and processes, and serve on QI teams to strengthen understanding as adult learners, QI at this intermediate level should be marshaled only to address prioritized problems. The formation of teams and the dedicated time required for a fully developed QI project are resource intensive and, if misdirected, can divert attention away from strategic priorities. Some health departments vest authority in senior management to make such allocation decisions, whereas others delegate this responsibility to a QI council.

## FUTURE ISSUES

1. Will current public health resource constraints delay adoption of QI/PM, or will they expedite its implementation?
2. Does the new public health accreditation program truly foster implementation of QI and PM?
3. Research is necessary to determine whether QI and PM impact public health performance.

4. Do health departments utilizing robust QI and PM systems perform better than their peers who do not use such systems?
5. Is there a relationship between deployment of QI and PM and improvement in community health outcomes?
6. What are the costs associated with specific QI and PM activities? Is it feasible to include such metrics in reports and publications about these activities? Such information may aid other organizations in their planning of similar efforts and may inform future QI/PM decisions.

## DISCLOSURE STATEMENT

The authors are not aware of any affiliations, memberships, funding, or financial holdings that might be perceived as affecting the objectivity of this review.

## LITERATURE CITED

1. Alolah T, Stewart RA, Panuwatwanich K, Mohamed S. 2014. Determining the causal relationships among balanced scorecard perspectives on school safety performance: Case of Saudi Arabia. *Accid. Anal. Prev.* 68:57–74
2. ASTHO (Assoc. State Territ. Health Off.). 2013. *ASTHO's New Performance Dashboard: Measuring the "Health" of your State Health Agency*. ASTHO Accredited Webinar Ser., Sept. 24. <http://www.astho.org/Accreditation-and-Performance/Performance-Dashboard-Webinar-Slides/>
3. Balanced. Scorecard. Institute. 2014. *What is the Balanced Scorecard?* Updated Oct. 16. Balanced Scorecard. Institute, Cary, NC. <http://www.balancedscorecard.org/bscresources/aboutthebalancedscorecard/tabid/55/default.aspx>
4. Baldrige Natl. Quality Progr., NIST (Natl. Inst. Stand. Technol.). 2014. *Baldrige Performance Excellence Program*. Updated March 8, 2013. NIST, Gaithersburg, MD. <http://www.nist.gov/baldrige/>
5. Barnardo C, Jivanni A. 2009. Evaluating the Fraser Health balanced scorecard—a formative evaluation. *Healthc. Manag. Forum* 22:49–60
6. Beitsch L, Carretta H, McKeever J, Pattnaik A, Gillen S. 2013. The quantitative story behind the QI storyboards: a synthesis of 162 QI projects conducted by 234 health departments. *J. Public Health Manag. Pract.* 19:330–40
7. Beitsch L, Corso L, Davis MV, Joly BM, Kronstadt J, Riley WJ. 2014. Transforming public health practice through accreditation (a user guide to the special accreditation issue). *J. Public Health Manag. Pract.* 20:2–3
8. Beitsch LM, Grigg CM, Mason K, Brooks RG. 2000. Profiles in courage: evolution of Florida's quality improvement and performance measurement system. *J. Public Health Manag. Pract.* 6:31–41
9. Beitsch LM, Leep C, Shah G, Brooks RG, Pestronk RM. 2010. Quality improvement in local health departments: results of the NACCHO 2008 survey. *J. Public Health Manag. Pract.* 16:49–54
10. Beitsch LM, Moran J, Duffy G. 2012. Why Don Berwick is almost right: how public health quality improvement operates within complex systems. *J. Public Health Manag. Pract.* 18:70–73
11. Beitsch LM, Rider NL, Joly BM, Leep C, Polyak G. 2013. Driving a public health culture of quality: How far down the highway have local health departments traveled? *J. Public Health Manag. Pract.* 19:569–74
12. Beitsch LM, Riley WJ. 2011. Nothing new under the sun: public health reinventing itself in economically challenging times. *Am. J. Public Health* 101:799–99
13. Beitsch LM, Thielen L, Mays G, Brewer R, Kimbrall J, et al. 2006. The Multi-State Learning Collaborative, states as laboratories: informing the national public health accreditation dialogue. *J. Public Health Manag. Pract.* 12:217–31
14. Bremser WG, Wagner WP. 2013. Developing dashboards for performance management. *CPA J.* 83:62–67

15. Chen HF, Hou YH, Chang RE. 2012. Application of the balanced scorecard to an academic medical center in Taiwan: the effect of warning systems on improvement of hospital performance. *J. Chin. Med. Assoc.* 75:530–35
16. Corso L, Lenaway D, Beitsch L, Landrum LB, Deutsch H. 2010. The National Public Health Performance Standards: driving quality improvement in public health systems. *J. Public Health Manag. Pract.* 16:19–23
17. Corso LC, Wiesner PJ, Lenihan P. 2005. Developing the MAPP community health improvement tool. *J. Public Health Manag. Pract.* 11:387–92
18. DeAngelo JW, Beitsch LM, Beaudry ML, Corso LC, Estes LJ, Bialek RG. 2014. Turning Point revisited: launching the next generation of performance management in public health. *J. Public Health Manag. Pract.* 20:463–71
19. El Turabi A, Hallsworth M, Ling T, Grant J. 2011. A novel performance monitoring framework for health research systems: experiences of the National Institute for Health Research in England. *Health Res. Policy Syst.* 9:13
20. Erwin PC. 2008. The performance of local health departments: a review of the literature. *J. Public Health Manag. Pract.* 14:E9–18
21. Gao T, Gurd B. 2014. Meeting the challenge in performance management: the diffusion and implementation of the balanced scorecard in Chinese hospitals. *Health Policy Plan.* 2014:1–8
22. Hsu YL, Liu CC. 2010. Environmental performance evaluation and strategy management using balanced scorecard. *Environ. Monit. Assess.* 170:599–607
23. Hutton DW. 2000. *From Baldrige to the Bottom Line: A Road Map for Organizational Change and Improvement*. Milwaukee, WI: ASQ Quality
24. IOM (Inst. Med.). 1988. *The Future of Public Health*. Washington, DC: Natl. Acad. Press
25. IOM (Inst. Med.). 2001. *Crossing the Quality Chasm*. Washington, DC: Natl. Acad. Press
26. IOM (Inst. Med.). 2003. *The Future of the Public's Health in the 21st Century*. Washington, DC: Natl. Acad. Press
27. James BC, Falk J, Swinton D, Lloyd W. 2000. *Quality and Inefficiency Waste in the Peer-Reviewed Medical Literature: Cost of Poor Quality or Waste in Integrated Delivery System Settings*. Publ. 08-0096-EF, IHC (Inst. Health Care Deliv. Res.), Salt Lake City, UT
28. Joly BM, Booth M, Shaler G, Conway A. 2012. Quality improvement learning collaboratives in public health: findings from a multisite case study. *J. Public Health Manag. Pract.* 18:87–94
29. Joly BM, Booth M, Shaler G, Mittal P. 2012. Assessing quality improvement in local health departments: results from the multi-state learning collaborative. *J. Public Health Manag. Pract.* 18:79–86
30. Khan MM, Hotchkiss DR, Dmytraczenko T, Zunaid Ahsan K. 2013. Use of a balanced scorecard in strengthening health systems in developing countries: an analysis based on nationally representative Bangladesh Health Facility Survey. *Int. J. Health Plan. Manag.* 28:202–15
31. Leep C, Beitsch L, Gorenflo G, Solomon J, Brooks RG. 2009. Quality improvement in local health departments: progress, pitfalls, and potential. *J. Public Health Manag. Pract.* 15:494–502
32. Lupi S, Verzola A, Carandina G, Salani M, Antonioli P, Gregorio P. 2011. Multidimensional evaluation of performance with experimental application of balanced scorecard: a two year experience. *Cost Eff. Resour. Alloc.* 9:7
33. Madamala K, Sellers K, Beitsch LM, Pearsol J, Jarris P. 2012. Quality improvement and accreditation readiness in state public health agencies. *J. Public Health Manag. Pract.* 18:9–18
34. Mays G, Beitsch LM, Corso L, Chang C, Brewer R. 2007. States gathering momentum: promising strategies for accreditation and assessment activities in multistate learning collaborative applicant states. *J. Public Health Manag. Pract.* 13:364–73
35. McLees AW, Thomas CW, Nawaz S, Young AC, Rider N, Davis M. 2014. Advances in public health accreditation readiness and quality improvement: evaluation findings from the National Public Health Improvement Initiative. *J. Public Health Manag. Pract.* 20:29–35
36. Mutale W, Godfrey-Fausset P, Mwanamwenge MT, Kasese N, Chintu N, et al. 2013. Measuring health system strengthening: application of the balanced scorecard approach to rank the baseline performance of three rural districts in Zambia. *PLOS ONE* 8:e58650
37. NACCHO (Natl. Assoc. County City Health Off.). 2013. *Mobilizing for Action through Planning and Partnerships: User's Handbook*. Washington, DC: NACCHO

38. NACCHO (Natl. Assoc. County City Health Off.). 2005. *Operational Definition of a Functional Local Health Department*. Washington, DC: NACCHO. <http://www.naccho.org/topics/infrastructure/accreditation/upload/OperationalDefinitionBrochure-2.pdf>
39. Natl. Public Health Improv. Initiat., CDC (Cent. Dis. Control Prev.). 2014. *National Public Health Improvement Initiative*. Updated April 8. CDC, Atlanta. <http://www.cdc.gov/stltpublichealth/nphii>
40. Natl. Public Health Perform. Stand. Progr. 2014. *National Public Health Performance Standards (NPHPS)*. Updated March 21. CDC, Atlanta. <http://www.cdc.gov/od/ocphp/nphpsp/>
41. Nicola RM. 2005. Turning Point's National Excellence Collaboratives: assessing a new model for policy and system capacity development. *J. Public Health Manag. Pract.* 11:101–8
42. Nicola RM, Berkowitz B, Lafronza V. 2002. A turning point for public health. *J. Public Health Manag. Pract.* 8:iv–vii
43. Plant R, Willcocks L, Olson N. 2003. Measuring e-business performance: towards a revised balanced scorecard approach. *Inf. Syst. e-Bus. Manag.* 1(3):265–81
44. PHAB (Public Health Accredit. Board). 2014. *Public Health Accreditation Board Standards and Measures, Version 1.5*. Alexandria, VA: PHAB
45. PHF (Public Health Found.). 2012. *Performance management self-assessment tool*. Retrieved May 7, 2014. PHF, Washington, DC. [http://www.phf.org/resourcestools/Documents/Performance\\_Management\\_Self\\_Assessment\\_Tool\\_May\\_2012.pdf](http://www.phf.org/resourcestools/Documents/Performance_Management_Self_Assessment_Tool_May_2012.pdf)
46. PHF (Public Health Found.). 2012. *Turning Point performance management framework 2012 refresh initial recommendations*. Retrieved May 6, 2014. PHF, Washington, DC. [http://www.phf.org/resourcestools/Documents/Turning\\_Point\\_Performance\\_Management\\_Framework\\_2012\\_Refresh\\_Initial\\_Recommendations.pdf](http://www.phf.org/resourcestools/Documents/Turning_Point_Performance_Management_Framework_2012_Refresh_Initial_Recommendations.pdf)
47. PHF (Public Health Found.). 2013. *Performance management applications in public health*. Retrieved May 7, 2014. PHF, Washington, DC. [http://www.phf.org/resourcestools/Pages/Performance\\_Management\\_Applications\\_Public\\_Health.aspx](http://www.phf.org/resourcestools/Pages/Performance_Management_Applications_Public_Health.aspx)
48. PHF (Public Health Found.). 2014. *Performance management toolkit*. Retrieved July 29. PHF, Washington, DC. [http://www.phf.org/focusareas/performancemanagement/toolkit/Pages/PM\\_Toolkit\\_Case\\_Stories.aspx](http://www.phf.org/focusareas/performancemanagement/toolkit/Pages/PM_Toolkit_Case_Stories.aspx)
49. PHF (Public Health Found.), Turning Point Perform. Manag. Natl. Excell. Collab. 2003. *From Silos to System: Using Performance Management to Improve the Public's Health*. Washington, DC: PHF
50. Public Health Funct. Steer. Comm. 1994. *Public health in America*. Off. Dis. Prev. Health Promot., Washington, DC. <http://www.health.gov/phfunctions/public.htm>
51. Rabbani F, Lalji SN, Abbas F, Jafri SW, Razzak JA, et al. 2011. Understanding the context of balanced scorecard implementation: a hospital-based case study in Pakistan. *Implement. Sci.* 6:31
52. Riley WJ, Moran JW, Corso LC, Beitsch LM, Bialek R, Cofsky A. 2010. Defining quality improvement in public health. *J. Public Health Manag. Pract.* 16:5–7
53. Shah GH, Beatty K, Leep C. 2013. Do PHAB accreditation prerequisites predict local health departments' intentions to seek voluntary national accreditation? *Front. Public Health Serv. Syst. Res.* 2(3): Art. 4
54. Stopper A, Amato C, Gioberge S, Giordana G, Marcelli D, Gatti E. 2007. Managing complexity at dialysis service centers across Europe. *Blood Purif.* 25:77–89
55. Tebbutt PJ, Gochin RJ, Lester JN. 2003. Balanced scorecard investment appraisal in the water industry of England and Wales. *Environ. Technol.* 24:845–54
56. ten Asbroek AH, Arah OA, Geelhoed J, Custers T, Delnoij DM, Klazinga NS. 2004. Developing a national performance indicator framework for the Dutch health system. *Int. J. Qual. Health Care* 16(Suppl. 1):i65–71
57. Trotta A, Cardamone E, Cavallaro G, Mauro M. 2013. Applying the balanced scorecard approach in teaching hospitals: a literature review and conceptual framework. *Int. J. Health Plan. Manag.* 28:181–201
58. Turnock BJ, Handler AS. 1997. From measuring to improving public health practice. *Annu. Rev. Public Health* 18:261–82
59. Verma P, Moran J. 2014. Sustaining a quality improvement culture in local health departments applying for accreditation. *J. Public Health Manag. Pract.* 20:43–48
60. Voelker KE, Rakich JS, French GR. 2001. The balanced scorecard in healthcare organizations: a performance measurement and strategic planning methodology. *Hosp. Top.* 79:13–24

61. Wu HY. 2012. Constructing a strategy map for banking institutions with key performance indicators of the balanced scorecard. *Eval. Progr. Plan.* 35:303–20
62. Wu IL, Kuo YZ. 2012. A balanced scorecard approach in assessing IT value in healthcare sector: an empirical examination. *J. Med. Syst.* 36:3583–96
63. Zelman WN, Pink GH, Matthias CB. 2003. Use of the balanced scorecard in health care. *J. Health Care Financ.* 29:1–16