



Summary Report

Closing the Quality Gap: Revisiting the State of the Science



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Summary Report

Closing the Quality Gap: Revisiting the State of the Science

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Preface

The Agency for Healthcare Research and Quality (AHRQ), through its Evidence-based Practice Centers (EPCs), sponsors the development of evidence reports and technology assessments to assist public- and private-sector organizations in their efforts to improve the quality of health care in the United States. The reports and assessments provide organizations with comprehensive, science-based information on common, costly medical conditions, and new health care technologies and strategies. The EPCs systematically review the relevant scientific literature on topics assigned to them by AHRQ and conduct additional analyses when appropriate prior to developing their reports and assessments.

In 2004, AHRQ launched a collection of evidence reports, *Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies*, to bring data to bear on quality improvement opportunities. These reports summarized the evidence on quality improvement strategies related to chronic conditions, practice areas, and cross-cutting priorities.

This Summary Report is part of a new series, *Closing the Quality Gap: Revisiting the State of the Science*. This series broadens the scope of settings, interventions, and clinical conditions, while continuing the focus on improving the quality of health care through critical assessment of relevant evidence. Targeting multiple audiences and uses, this series assembles evidence about strategies aimed at closing the “quality gap,” the difference between what is expected to work well for patients based on known evidence and what actually happens in day-to-day clinical practice across populations of patients. All readers of these reports may expect a deeper understanding of the nature and extent of selected high-priority quality gaps, as well as the systemic changes and scientific advances necessary to close them. This Summary Report is an introduction to the Executive Summaries of the eight reports in the series and summarizes elements across the series for readers.

AHRQ expects that the EPC evidence reports will inform consumers, health plans, other purchasers, providers, and policymakers, as well as the health care system as a whole, by providing important information to help improve health care quality.

We welcome comments on this report or the series as a whole. Comments may be sent by mail to the Task Order Officer named in this report at: Agency for Healthcare Research and Quality, 540 Gaither Road, Rockville, MD 20850, or by email to epc@ahrq.hhs.gov.

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Summary Report

Closing the Quality Gap: Revisiting the State of the Science

Structured Abstract

Background. The United States devotes significant resources for the provision of health care, yet quality is often elusive or lacking. In 2004, the Agency for Healthcare Research and Quality launched a collection of evidence reports to bring data to bear on quality improvement (QI) opportunities. This new series, *Closing the Quality Gap: Revisiting the State of the Science*, consists of eight reports that continue the focus on improving the quality of health care through critical assessment of relevant evidence for selected settings, interventions, and clinical conditions. This report is an introduction to the Executive Summaries of the eight reports in the series and summarizes elements across the series for readers.

Overview. The topics are effectiveness of bundled payment programs, effectiveness of the patient-centered medical home, QI strategies to address health disparities, effectiveness of medication adherence interventions, effectiveness of public reporting, prevention of healthcare-associated infections, QI measurement of outcomes for people with disabilities, and health care and palliative care for patients with advanced and serious illness. The overview describes the scope of the eight reports; describes the scope of the series by summarizing the quality levers, populations, interventions, outcomes, and other features across the reports; and discusses key messages by audience (patient/consumer/caregiver, health care professional, health care delivery organization, policymaker, and research community).

Conclusions. The series covers many important aspects of quality improvement in health care. This Summary is intended to show how topics relate and complement each other, and how together they provide a picture of the state of the science. It will help readers, as they read the Executive Summaries for the individual topics, to gain a deeper understanding of the nature and extent of quality gaps across health care, as well as the systemic changes necessary to close them.

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Background

The United States devotes significant resources for the provision of health care, yet quality is often elusive or lacking.¹ No matter the aspects of the health care system or population studied, research consistently demonstrates shortfalls in health care quality and patient outcomes in the United States.²⁻⁶ For every patient who receives optimal care, the evidence suggests that, on average, another patient does not.^{2,3}

In its seminal report on quality gaps and strategies for improving quality, the Institute of Medicine (IOM) defined six key dimensions of high-quality care: that it be safe, effective, patient centered, timely, efficient, and equitable.⁷ Although most patients have an intuitive sense of what constitutes high-quality care, quality is conceptually complex because it must encompass many different features of context and perspectives (e.g., patient, family, provider, health system, society). In addition, the health care system is a complex web of people, organizations, technologies, and processes. Complex systems entice and vex researchers, but ultimately they need to be understood to facilitate effective interventions and improvement.

There are three core approaches (“3 I’s”) to achieving improvements. These come from a quotation from Victor Fuchs, who said that real reform “requires changes in the organization and delivery of care that provide physicians with the *information, infrastructure, and incentives* they need to improve quality and control costs” (italics provided by Summary authors).⁸ In today’s complex health system, these leverage points for improvement apply beyond the physician to include other clinicians, systems managers, and patients themselves.

In 2004, the Agency for Healthcare Research and Quality (AHRQ) launched a collection of evidence reports to bring data to bear on quality improvement (QI) opportunities identified by an IOM study, *Priority Areas for National Action: Transforming Health Care Quality*.⁹ AHRQ’s 2004–07 collection of reports—*Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies*—summarized the evidence on QI strategies related to chronic conditions, practice areas, and cross-cutting priorities.¹⁰⁻¹⁶

This new *Closing the Quality Gap (CQG)* series of eight reports continues the focus on improving the quality of health care through critical assessment of relevant evidence for selected settings, interventions, and clinical conditions. As before, this CQG series aims to assemble the evidence about effective strategies to close the “quality gap,” which in simple terms refers to the difference between what is expected to work well for patients based on known evidence and what actually happens in day-to-day clinical practice across populations of patients.

This Summary is intended to show how topics relate to and complement each other, and how together they provide a picture of the state of the science. This information will help readers, as they proceed to the Executive Summaries of the individual topic reports accompanying the Summary, to gain a deeper understanding of the nature and extent of quality gaps across health care, as well as the systemic changes necessary to close them. The Summary is a companion to a *Methods Research Report*¹⁷ that describes the methodology for the CQG series, synthesizes lessons across topics, and presents implications for future systematic reviewers and the state of the science of QI. Together, these summative documents provide readers high-level views of the series.

Series Overview

In this section, we introduce each topic and present the scope across the Closing the Quality Gap series. We conclude this section with messages for key audiences across the eight topics.

Topics

The eight topics selected for this series are relevant to ongoing initiatives in health care reflected in the Patient Protection and Affordable Care Act¹⁸ and are consistent with previously identified national priority areas on health care quality.⁹ The methodology for delineating the scope and organizing topics, as well as details of the scope of each report, are described in the methods report.¹⁷

1. **Effects of bundled payment systems on health care spending and quality of care (Bundled Payment).**¹⁹ Bundled payments refer to paying for a defined episode of care, as opposed to a single medical encounter. The report on bundled payment examines the influence on organizations of changing the approach to paying for care and how organizational response to such new incentives either enhances or deters health care quality, including efficiency. Although alternatives have been proposed and piloted, fee-for-service remains the predominant method of paying for health care in the United States. As health care costs have continued to rise dramatically, even while major quality gaps remain, interest has grown in alternative payment methods, including bundled payment programs, which aim to reduce health care spending while maintaining or improving quality of care.
2. **Patient-centered medical home (PCMH).**²⁰ The PCMH model aims to improve both care and patient experience across the full care continuum, from prevention through treatment of chronic and acute illness. It also holds promise for improving providers' experience and potentially reducing costs through greater efficiency. Widely endorsed by professional societies, payers (e.g., Medicare), and large health systems, PCMH-based interventions have been implemented in many different health care organizations. Studies of these interventions have shown that individual elements of the PCMH model are associated with improvements for some specific conditions and outcomes, but much remains unknown about whether implementation of comprehensive PCMH improves care overall for the full population of patients served by a health care organization.
3. **Quality improvement interventions to address health disparities (Disparities).**²¹ There is abundant evidence of health care disparities in the United States. The 2011 National Healthcare Disparities Report found that disparities related to race, ethnicity, and socioeconomic status are widespread throughout the U.S. health care system, that disparities are not decreasing over time, and that lack of health care insurance is an important contributor to these disparities.⁵ However, despite these well-known health disparities, evidence is lacking about how they might be reduced through QI interventions.⁵ This report focuses on the benefits and harms of QI interventions to specifically close the gap in health outcomes for those who suffer disparities in care.
4. **Comparative effectiveness of medication adherence interventions (Medication Adherence).**²² Although pharmacotherapy is available to treat an astounding array of health conditions, even efficacious medications cannot be effective if not taken according to the timing, dosage, frequency, and duration prescribed by health care providers. Yet research suggests that between 20 and 30 percent of prescriptions are never filled and that

half of medications prescribed to treat chronic disease are not taken appropriately.²³⁻²⁶ This review addresses both the efficacy and effectiveness of interventions designed to improve medication adherence for adults with chronic conditions. It updates a previous systematic review completed in 2008,²³ further expanding the scope of that review to include interventions at the health system and policy levels.

5. **Public reporting as a quality improvement strategy (Public Reporting).**²⁷ Public reporting is an important way to motivate delivery of high-quality care. In particular, it provides incentives for engaging in QI activities.^{7,14} Public reporting initiatives have expanded greatly in recent years, as have the availability of health data and the ability to aggregate these data in meaningful ways.²⁸ The amount of publicly reported health care quality data is likely to continue to increase substantially in tandem with a growing focus within the U.S. health care system on transparency and patient-centered care. This report focuses on how public reporting of such information affects behaviors of people and organizations in ways that potentially improve the quality of care received by patients.
6. **Prevention of healthcare-associated infections (HAI).**²⁹ Healthcare-associated infections are widespread and costly in the U.S. health care system. According to an estimate by the Centers for Disease Control and Prevention, in 2002 there were 1.7 million HAIs and 99,000 HAI-associated deaths in hospitals. More than 80 percent of these HAIs were caused by the four most common categories: central line-associated bloodstream infections (14 percent), ventilator-associated pneumonia (15 percent), surgical site infections (22 percent), and catheter-associated urinary tract infections (32 percent).³⁰ Evidence-based strategies to eliminate HAIs are known and endorsed by many professional societies,³¹ but these preventive interventions have not been fully implemented into clinical practice throughout the United States. Information is needed about QI strategies that lead to effective adoption of these preventive interventions. In light of much recent research on the topic, this review updates a previous review published in 2007¹² and expands that review to include additional settings (e.g., ambulatory surgical centers, dialysis centers, and long-term care facilities) in addition to hospitals.
7. **Quality improvement measurement of outcomes for people with disabilities (Disability Outcomes).**³² This report identifies available measures pertinent to people with disabilities for the purpose of improving the quality of their health care and their experiences with the health care system. Measures shed light on areas in which more work is needed. Evaluating care through outcomes well matched to the population of interest is critical to QI efforts, as ultimately those efforts are aimed toward improvements that directly and meaningfully benefit patients.
8. **Interventions to improve health care and palliative care for advanced and serious illness (Palliative Care).**³³ Evidence abounds that there is room for much improvement in the quality of palliative care for patients with advanced and serious illness. Pain remains undertreated for many patients despite effective therapies and clinical practice guidelines to facilitate pain management;^{34,35} patients with terminal cancer frequently are not offered alternatives to chemotherapy, are not educated about the uncertain benefits of such treatment, or are unaware of their prognosis;³⁶ and in 2009, fewer than half of patients who died in the United States received any hospice care.³⁷ Furthermore, a previous systematic review of hospice care reported that family members experienced unmet needs for family support (18.2 percent) and emotional support (9.8 percent).³⁸

These gaps highlight the need for QI interventions that improve outcomes for patients with advanced and serious illness and their caregivers. The review authors specifically target evidence regarding palliative care in hospice, an area for which a previous systematic review had identified quality gaps,³⁸ and in nursing homes, an area for which prior systematic reviews related to end-of-life care are lacking.

Scope

In addition to the relevance of individual reports to audiences interested in individual topics, the reports also have relevance as complementary components of this series to give a fuller picture of QI. In this section, we summarize the scope of the CQG series in terms of the quality levers; selected scoping elements (termed “PICOTS” for population, intervention, comparator, outcomes, timeframe, setting); diversity of focus; and level of analysis.

Three levers can impact the quality of health care: information, incentives, and infrastructure.⁸ The topics in the series each relate to a primary lever (Table 1), with the other two levers often playing a supporting role. For example, Bundled Payment is an incentive lever; by grouping payments to health care providers into a single prospective payment for services over a period of time, it can influence spending. By virtue of bundling these payments, it can also encourage coordination among providers and establish changes in care organization (infrastructure), and encourage the use and uptake of harmonized measures (information).

Table 1. Summary of selected elements across the Closing the Quality Gap series

Topic	Quality Lever (Information, Incentives, or Infrastructure)	Population	Intervention	Outcomes
Bundled Payment	Incentives (influencing quality)	Delivery organizations	Topic = Intervention	Patient-centered outcomes: quality of care Harms: average risk/disease severity of patients treated Economic outcomes: health care spending per episode, utilization rates for specific services, provider cost/resource use to deliver episodes of care
Patient-Centered Medical Home	Infrastructure (improving quality)	Adult primary care patients Children with special health care needs	Topic = Intervention	Patient-centered outcomes: patient experience, staff experience, clinical outcomes Intermediate outcomes: processes of care Economic outcomes Unintended consequences/harms
Disparities	Infrastructure (improving quality)	Patient population with established disparity in health care quality	Quality improvement strategies	Topic = Outcome Patient-centered outcomes Unintended consequences and harms

Table 1. Summary of selected elements across the Closing the Quality Gap series (continued)

Topic	Quality Lever (Information, Incentives, or Infrastructure)	Population	Intervention	Outcomes
Medication Adherence	Infrastructure (improving quality)	Patients with self-administered medication for chronic diseases	Includes original CQG quality improvement strategies ^a (provider reminders, patient education, organizational changes, etc.) Directed at patients, providers, systems, and policy	Topic = Outcome Patient-centered outcomes: biomarkers, clinical outcomes, quality of life, patient satisfaction, quality of care Economic outcomes: health care utilization Harms
Public Reporting	Incentives (influencing quality)	Individuals and organizations that deliver care Patients and their representatives, and organizations that purchase care	Topic = Intervention	Patient-centered outcomes Intermediate outcomes: processes, delivery structures, changes in patient or purchaser behavior Economic outcomes Unintended consequences/harms
Healthcare-Associated Infections	Infrastructure (improving quality)	Patients in diverse settings Clinicians Health care leaders	Includes original CQG quality improvement strategies ^a Directed at providers and systems	Topic = Outcome Process outcomes Clinical outcomes Economic outcomes Harms
Disability Outcomes	Information (measuring quality)	People with disabilities (except those with severe and persistent mental illness)	Context: medical (cure), rehabilitative (restore), and adaptive (support)	Topic = Outcome Person-centered outcomes
Palliative Care	Infrastructure (improving quality)	Topic = Target Population and Service	Includes original CQG quality improvement strategies ^a (provider reminders, patient education, organizational changes, etc.) related to domains, targets, and settings	Patient- and family-centered outcomes related to targets such as pain, distress, coordination Health care utilization

^aThe Closing the Quality Gap taxonomy from Shojania et al. Series Overview and Methodology. Vol. 1 of: Shojania KG, McDonald KM, Wachter RM, Owens DK, editors. Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies. Technical Review 9 (Prepared by the Stanford University-UCSF Evidence-based Practice Center under Contract No. 290-02-0017). AHRQ Publication No. 04-0051-1. Rockville, MD: Agency for Healthcare Research and Quality. 2004.
Note: CQG = Closing the Quality Gap.

While all of the reports in the series supply information that is potentially actionable for improving quality, only the report on Disability Outcomes focuses exclusively on information development.

Two of the reports in the series target incentives to foster high-quality care (care that is safe, effective, patient centered, timely, efficient, and equitable)⁷ and improvements that lead to better care, healthy people and communities, and affordable care.³⁹ These are the Bundled Payment and Public Reporting topics.

The remaining five reports in the series examine interventions that directly alter parts of the delivery system: the infrastructures undergirding health care provision. Disparities, HAI, and Medication Adherence each address ways in which organizations can implement changes to improve these issues, and the types and characteristics of interventions that are successful in making improvements. The Palliative Care report focuses on ways to intervene in the delivery system to improve the care of a specific population, those who face serious or advanced illness with few to no prospects for cure. Finally, the PCMH is itself an intervention focused on changes in infrastructure.

Topics generally are approached broadly and include a wide range of populations, organizations, clinical conditions, and settings (with the exception of Palliative Care, which focuses on a particular population). For example, the Medication Adherence topic includes patients with a variety of common clinical conditions in an effort to synthesize evidence across conditions whenever possible. Similarly, the HAI topic includes hospitals, outpatient surgical centers, dialysis centers, and long-term care facilities. This affords the opportunity to look across settings and to improve relevance to a broader arena of interested stakeholders.

Three topics focus on a particular intervention for improving quality (PCMH, Bundled Payment, and Public Reporting), while four other topics (Disparities, Palliative Care, HAI, and Medication Adherence) include a broad array of QI interventions based on the original CQG taxonomy (provider reminders, patient education, organizational changes, etc.).¹⁴ These four reports take various approaches to synthesizing and presenting the evidence about single-component and multifaceted interventions.

The outcomes included across the series reflect elements of quality care: patient-centered outcomes, economic outcomes, harms and/or unintended consequences, and process and other intermediate outcomes (Table 1). Each topic includes an array of outcomes intended to assist stakeholders in making decisions, and all follow a patient-centered approach. All topics include patient-centered outcomes, and six (excluding Disability Outcomes and Palliative Care) present evidence about harms and unintended consequences. Five include economic outcomes (Bundled Payment, Public Reporting, PCMH, HAI, and Medication Adherence). The focus of four topics is a particular outcome (Disability Outcomes, Disparities, HAI, and Medication Adherence), but these reports also include other outcomes important to decisionmakers.

The aim of this series is to provide actionable evidence for audiences and a deeper understanding of how QI interventions can improve care. Topics across the series also include questions to better understand the underlying mechanism of other impacts on outcomes. These questions relate to the impact of context (Bundled Payment, Public Reporting, HAI), implementation (PCMH, HAI), subgroups (Disability Outcomes, Disparities, Medication Adherence), and intervention characteristics (Medication Adherence, Public Reporting, PCMH, Bundled Payment). These analyses further focus the lens of inquiry to improve our understanding of how to improve quality.

The questions asked must be relevant and sufficiently focused to yield the information needed. For this reason, Key Questions address specific areas in greater detail, reflecting the scope and the state of the science for a topic. For example, in addition to assessing the evidence for patient-centered outcomes and harms, the Public Reporting topic also includes intermediate outcomes specifically related to behavior change and changes in health care delivery structures and processes for different audiences. Similarly, the PCMH topic assesses both clinical and process outcomes, and also includes questions about implementation strategies and financial models to better understand how this intervention has been supported across settings. The Palliative Care topic examines models of care to assess how the organization of care impacts outcomes.

Topics also vary in the level of granularity in analysis. The Palliative Care topic focuses on interventions more broadly; it organizes and synthesizes the evidence along care-related targets, such as pain, continuity, and communication and decisionmaking. In contrast, other topics focus on intervention components in more detail (Medication Adherence, HAI, Disparities, PCMH). Some define intervention by its components and assess the impact of various bundles on outcomes (HAI, PCMH). All seek to include information of sufficient detail to be useful to audiences, although with varied approaches to organization and analysis tailored to each topic.

Findings

The Executive Summary for each of the eight topic reports, which accompany this Summary report, provides findings for Key Questions addressed in the full report. A more comprehensive summary of key findings may be found in the methods report,¹⁷ and complete details may be found in each of the topic reports.^{19-22,27,29,32,33}

As in the previous Closing the Quality Gap series, these reports target multiple audiences and associated uses. For example, policymakers may be interested in the range of topics and convergence of the research evidence for strategies to improve quality of care. Research funders may be most interested in the gaps in the evidence base for QI. Those at the helm of health care delivery organizations may care most about what works and what does not within a particular topic area, as well as evidence on resource implications. Meanwhile, clinicians and patients (including patient advocacy organizations) may find these reports useful as an introduction to the broad spectrum of approaches to improving quality of care and may consider implementing those approaches that fall within their control.

In this section, we organize the key messages across the series by perspective: patient/consumer/caregiver, health care professional, delivery organization, policymaker, and research community. Detailed crosstopic synthesis and lessons are presented in the companion methods report.¹⁷

Consistent with the Effective Health Care principles for systematic reviews,⁴⁰ the reports in this series include the assessment of circumstances and outcomes of importance to patients, consumers, and caregivers (Table 2). Although not directly targeted by some interventions in this series, this audience has a role in improving health care quality by advocating for specific changes, engaging in future research, and understanding the current evidence about the impact of QI efforts on outcomes.

Table 2. Messages for improving quality for the patient/consumer/caregiver perspective

Topic	Take-Home Messages Motivating Potential Actions
Bundled Payment	The impact of bundled payment on quality of care is unknown.
Patient-Centered Medical Home	Small positive effects on patient experience were associated with patient-centered medical homes.
Disparities	Little research has focused on quality improvement strategies to reduce health care disparities.
Medication Adherence	Reducing out-of-pocket medication costs improved adherence.
Public Reporting	Slight improvements in quality were associated with public reporting. It is unclear whether public reporting limits patient access. Public reporting had little impact on patient choice.
Healthcare-Associated Infections	Little evidence is available about patients' roles in reducing healthcare-associated infections.
Disability Outcomes	There is a need to advocate for more inclusive research and engage in consensus efforts.
Palliative Care	Interventions targeting continuity, coordination, and transitions of care improved patient and caregiver satisfaction. Interventions targeting communication and decisionmaking did not improve patient satisfaction. Little is known about interventions to decrease patient distress.

QI interventions addressed in the series were often directed at health care professionals (Table 3). An understanding of the benefits and harms, as well as unintended consequences and potential contextual influences, will facilitate application of findings to professionals' circumstances. With evidence, this audience can better engage in, support, and improve QI initiatives among colleagues and organizations; understand their contribution to QI; and ultimately improve the health of patients.

Table 3. Messages for improving quality for the clinician/health professional perspective

Topic	Take-Home Messages Motivating Potential Actions
Bundled Payment	Providers' response to bundled payment programs is largely unexplored.
Patient-Centered Medical Home	PCMH had small positive effects on staff experience. The extent of unanticipated consequences of implementation is not known. Various organizational learning and implementation strategies were used. Various financial models have supported PCMH implementation.
Disparities	Evidence about effective quality improvement strategies is inconclusive.
Medication Adherence	Evidence for effectiveness varied considerably by patient condition. Interventions improved medication adherence in most vulnerable populations studied. Choosing interventions for many patient populations will require extrapolation.
Public Reporting	Limited evidence suggests that individual clinicians make positive changes in response to public reporting. Potential harms of public reporting were not confirmed. Improvements were more likely among providers with lower scores in initial public reports.
Healthcare-Associated Infections	Methods to prevent HAIs are known, but reducing HAI rates requires that providers consistently use those methods. Some combinations of quality improvement strategies focusing on provider behavior work.
Disability Outcomes	When working to improve quality of care for disabled patients, professionals from different specialty contexts may have different perceptions and knowledge of potentially applicable outcomes measures.
Palliative Care	Provider-centered interventions are not effective for continuity, coordination, and transitions.

Note: HAI = healthcare-associated infections; PCMH = patient-centered medical home.

Health delivery organizations (Table 4) not only consider the impact of interventions on patients but also consider the impact across systems. Often they balance health outcomes, harms, and resource utilization with other factors of implementation and sustainability, and determine the applicability of evidence to their circumstances.

Table 4. Messages for improving quality for the health delivery organization perspective

Topic	Take-Home Messages Motivating Potential Actions
Bundled Payment	Bundled payment programs lower utilization slightly, with greater effects seen with for-profit providers and hospitals under greater financial pressure compared to those under less financial pressure.
Patient-Centered Medical Home	The jury is still out about the impact of PCMH interventions on clinical outcomes and care processes. High variability in PCMH implementation confounds research conclusions.
Disparities	Evidence about effective quality improvement strategies is inconclusive.
Medication Adherence	There is no single “silver bullet” for improving medication adherence. The evidence base points to some starting places for choosing an intervention. However, little is known about which intervention characteristics are likely to lead to success.
Public Reporting	Health delivery organizations make positive changes in response to public reporting. Limited evidence exists of “gaming” of public reports in the long-term care setting. Few patients used public reports to select health care providers. Public reporting had greater impact in competitive markets.
Healthcare-Associated Infections	Moderate strength of evidence exists for audit and feedback with or without provider reminder systems as an effective quality improvement strategy. Key questions remain unanswered.
Disability Outcomes	Access is a key concern for patients with disabilities.
Palliative Care	Patient-focused quality improvement interventions can be used to improve patient-centered outcomes. Some evidence supports both integrative and consultative palliative care models.

Note: PCMH = patient-centered medical home.

Policymakers (Table 5) are also concerned with health care quality and the systems-level effects of interventions. They are able to implement widespread change. Important considerations in decisionmaking to improve health care quality include the balance of benefits and harms, impact of context, implementation strategies, and resources.

Table 5. Messages for improving quality for the policymaker perspective

Topic	Take-Home Messages Motivating Potential Actions
Bundled Payment	Bundled payments reduce spending and utilization slightly. The impact of bundled payment programs on quality of care is unclear. Potential unintended consequences of bundled payment programs remain unexplored.
Patient-Centered Medical Home	Not much is conclusive yet regarding the impact of PCMH on clinical outcomes and care processes. PCMH as a quality improvement approach is still in its infancy. From studies to date, the medical home is not a magic bullet to solve America’s high cost of providing health care. The amount of data that we have to bring to bear on this issue is expected to more than double in a few years.
Disparities	Additional study is warranted for collaborative care and patient education strategies.
Medication Adherence	Decreasing out-of-pocket costs can improve medication adherence for patients with cardiovascular disease and diabetes. Improved medication adherence does not necessarily mean improvement in other outcomes.

Table 5. Messages for improving quality for the policymaker perspective (continued)

Topic	Take-Home Messages Motivating Potential Actions
Public Reporting	Current public reporting efforts are poorly matched to patient needs. Health care delivery organizations are more responsive to public reporting than patients or clinicians are. Little evidence exists that public reporting leads to harm.
Healthcare-Associated Infections	Meaningful reductions in HAI rates are possible through quality improvement.
Disability Outcomes	Consensus around a core measure set is needed. Collaboration among researchers from the medical (curative), rehabilitation (restorative), and social services (supportive) perspectives is essential for advancing the field of disability research. The choice of outcomes and populations can contribute to disparities.
Palliative Care	Few intervention targets decrease health care utilization. The effectiveness of policy-focused interventions is unknown.

Note: HAI = healthcare-associated infections; PCMH = patient-centered medical home.

The systematic reviews of the series identify potential areas for action as well as evidence gaps. In addition, they provide insight into the reasons for these gaps, the gaps that are crucial to fill, and how research can move the field forward. Researchers and research funders (Table 6) can improve research design, continue the focus on outcomes of interest to patients and other decisionmakers, harmonize research, develop theory underlying logic models, and focus on critical gaps.

Table 6. Messages for the research community

Topic	Take-Home Messages Motivating Potential Actions
Bundled Payment	More frequent use of robust evaluation designs is needed. For synthesis of primary studies, cost and quality outcomes need to be harmonized. Measures of program design and context should be incorporated into evaluations. Unintended consequences should be assessed.
Patient-Centered Medical Home	There is a need to describe and support more consistent nomenclature, outcomes, and measures related to PCMH. The relative impact of PCMH components is key for applications of evidence. Impacts on mortality should continue to be investigated.
Disparities	More robust studies that specifically address effectiveness of quality improvement interventions in reducing disparities should be designed and supported. Additional study is warranted for collaborative care and patient education strategies. Additional disparities beyond a limited set thus far (mostly race/ethnicity) should be investigated. Potential harms resulting from efforts to reduce disparities need exploration.
Medication Adherence	Medication adherence interventions are a “black box.” Greater consistency in outcomes would strengthen the evidence base. Mechanisms of effectiveness should be examined. Additional outcomes beyond medication adherence should be included in evaluations.
Public Reporting	The reporting format and context should be specified in research publications. The full range of public reporting programs should be investigated.

Table 6. Messages for the research community (continued)

Topic	Take-Home Messages Motivating Potential Actions
Healthcare-Associated Infections	Effective strategies outside the hospital setting are unknown. Preintervention data are critical to strengthen the evidence base. Contextual factors should be included in reports; investigations of the role of context are needed. Information on the impact of quality improvement strategies on economic outcomes is urgently needed.
Disability Outcomes	More focused searches are needed for comprehensive review. Measures identified in this review are a starting place for choosing research instruments. Further efforts are needed to assemble and assess measurement tools. Multidisciplinary and inclusive research should be conducted and supported
Palliative Care	Broader populations should be included. There should be a focus on key research gaps. Quality improvement should be integrated into palliative care interventions.

Note: PCMH = patient-centered medical home.

Conclusion

This report summarizes key features across the topics of the Closing the Quality Gap series. Each of the topics concerns a distinct set of questions that reflect the state of the science and address the priorities of key stakeholders. Collectively, these reports cover a broad range of populations, interventions, and outcomes, and additionally explore the impact of other factors on outcomes. Guided by a common methodology,¹⁷ this series provides opportunities for synergy and synthesis across topics. This Summary highlights selected elements and messages for readers as they delve into the Executive Summaries of individual topics.

Each topic offers potential steps for action for various audiences. While interventions do not target all levers for potential action, each audience has an important role in improving quality. Each audience will consider the evidence in light of its values and available resources. Audiences will also have to consider how to best apply the evidence to their specific circumstances.

All audiences have the same aim: to improve health by improving health care quality. These reports are intended to inform action to achieve this aim. Ultimately, the overarching hope for the series remains the same as that of the earlier collection: “To become an essential source of accessible and critical analyses of the evidence supporting techniques for implementing state-of-the-art best practices (related to each topic), while stimulating ideas for ongoing quality improvement activity nationally, in individual health systems, and among individual caregivers” (p. 3).¹⁴

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