

THE CURRENT STATE OF PATIENT EXPERIENCE SURVEYING AND **FUTURE INNOVATIONS**



California Healthcare
Performance Information System

Relevant literature to support an electronic short form ambulatory care patient experience survey pilot conducted jointly by

Massachusetts Health Quality Partners (MHQP)

and

California Healthcare Performance Information System (CHPI)



ACKNOWLEDGEMENTS

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INTRODUCTION



- ▶ Our long-term goal is to find new and more effective ways to collect data and produce information that can be utilized for high stakes use, such as public reporting and pay for performance, at a lower cost.

Advances in communication technology have dramatically and profoundly changed our culture over the past decade and are challenging well-established protocols for collecting reliable information from patients. With recent rapid technological development there is a great need to modernize data collection and measurement methods. To this end, Massachusetts Health Quality Partners (MHQP), in partnership with the California Healthcare Performance Information System (CHPI), sought to evaluate methods of electronic surveying and testing of a standard but shortened patient experience ambulatory care survey measurement tool. In addition, the two organizations tested the collection of patient comments through electronic modes of survey. To conduct this pilot study, the Center for Healthcare Transparency (CHT) provided an innovation grant, with the overarching goal of moving forward with the modernization of survey methods while promoting broad usage and public reporting of patient experience results by achieving the highest level of scientific validity and reliability possible.

Our long-term goal is to find new and more effective ways to collect data and produce information that can be utilized for high stakes use, such as public reporting and pay for performance, at a lower cost. **The results of our pilot study will be used to help inform the national movement to establish easy to use, statistically reliable, and scientifically valid patient assessment tools in the ambulatory care setting.**

A key deliverable for this grant is a review of the current state of research on topics related to our efforts in this area. This review is a snapshot of the current state of patient experience measurement in the ambulatory care setting today with a focus on the trends influencing and the shifts taking place in this field. The goal of the review is to inform stakeholders and decision makers about what is known and unknown based on the best available evidence. By describing the state of the existing body of literature and identifying important gaps, we aim to identify important avenues for future research. We hope this comprehensive synthesis will usefully guide research, government, and industry agendas.

MASSACHUSETTS HEALTH QUALITY PARTNERS (MHQP)

MHQP is a non-profit organization established in 1995 that provides reliable information to help physicians improve the quality of care they provide their patients and help consumers take an active role in making informed decisions about their health care. MHQP's mission is to drive measureable improvements in health care quality, patients' experiences of care, and use of resources in Massachusetts through patient and public engagement and broad-based collaboration among health care stakeholders, including physicians, hospitals, health plans, purchasers, patient and public advocates, government agencies, and academics. MHQP governance includes a multi-stakeholder Board and a Physician Council, Health Plan Council, and Consumer Health Council. All Councils are represented on MHQP's Board.

A trusted leader in health care quality measurement and evaluation, MHQP is at the national forefront in the development and implementation of valid and reliable measures of the patient care experience. MHQP's early work in developing the Ambulatory Care Experiences Survey (ACES) instrument, with researchers at the Tufts Health Institute, tested core survey content and was instrumental in establishing the feasibility and value of measuring patients' experiences with clinicians and practices.¹ The findings from this work informed the development of the CAHPS Clinician/Group Survey which has become the national standard for ambulatory care patient experience measurement.

Massachusetts was the first state in the nation to publicly report statewide patient experience survey results for primary care. Since 2005, MHQP has overseen a statewide commercial patient experience survey program, fielding a biennial survey at the primary care physician practice site level (for sites with three or more physicians) and publicly reports the results on <http://www.healthcarecompassma.org>. In July 2015, MHQP completed the field period for its seventh round of what has now become an annual statewide commercial survey using the PCMH CAHPS survey instrument with content added for regional pay for performance programs.

This long established program has been supported by the five largest commercial plans in Massachusetts, representing 86% of the commercially insured population in the state and has become integral to quality improvement programs while also providing high quality information to the public. Health plans sponsoring the survey receive datasets of results to support their quality improvement and pay for performance initiatives (e.g., the Blue Cross Blue Shield of MA Alternative Quality Contract (AQC)). A number of physician organizations opt to increase sample sizes to obtain provider level results and elect to include their smaller PCP practices in the survey. MHQP's patient experience survey results are licensed by the state's Health Policy Commission and Center for Health Information and Analysis (CHIA) to monitor health care quality trends in MA. In 2014, MHQP was successful in moving to a multi-stakeholder funding model for the annual patient experience survey with funding from health plans, physician organizations, and the state, demonstrating the value this survey provides to multiple players.

To expand the reach of its public reporting, in 2012 MHQP jointly published the results of its statewide survey with Consumer Reports. The MHQP/Consumer Reports partnership was a pilot project funded by the Robert Wood Johnson Foundation (RWJF) to provide consumers with valid and reliable health information to support informed decision-making. Consumer Reports published a special 32-page print insert of MHQP's 2011 Patient Experience Survey (PES) results along with editorial content for 120,000 Massachusetts subscribers. This report was the first of its kind in the nation and significantly broadened the reach of public reporting of patient experience results. MHQP has subsequently produced a "plain language" version of the report to help patients better communicate with their doctors and better coordinate their care.

In addition to the work that MHQP has done to establish standard public reporting about health care quality, we are pursuing new ways of implementing surveys to provide ongoing feedback about care to practices. MHQP has worked in partnership with a regional physician organization to pilot a program that reaches patients through a patient portal to survey them about their experience of care. This work has given us important insights about how to implement surveys using electronic modes.

¹ Safran, DG, Karp, M, Coltin, K, Chang, H., Li, A, Ogren, Rogers, W. (2005)
Measuring Patients' Experiences with Individual Primary Care Physicians.
Journal of General Internal Medicine.



- ▶ MHQP's mission is to drive measureable improvements in health care quality, patients' experiences of care, and use of resources in Massachusetts through patient and public engagement and broad-based collaboration among health care stakeholders

THE CALIFORNIA HEALTH PERFORMANCE INFORMATION SYSTEM (CHPI)

CHPI is the only Multi-Payer Claims Database (MPCD) currently in operation in California and consists of both insured and self-funded claims from the state's three largest health plans and the Medicare fee-for-service program. CHPI builds on a history of physician performance measurement programs since 2007, involving many of the same collaborators as the California Better Quality Information (BQI) Pilot and the California Physician Performance Initiative (CPPI). CHPI is a public benefit corporation (501(c)4) that is governed by an independent board of stakeholder representatives from health plans, providers, purchasers, and consumers (see Appendix B for CHPI's Board of Directors and Advisory Committees). The Pacific Business Group on Health (PBGH) administers CHPI through a professional services contract. PBGH is a non-profit 501(c)3 coalition of public and private purchasers whose mission is to act as an influential change agent, demanding increased value in the health care system through collaborative purchaser action and support for systemic change initiatives to drive improvement in affordability, quality, and service.

In mid-2013, the Patient Assessment Survey (PAS) program was brought under the governance of CHPI. Incorporating PAS into CHPI added a third, distinct aspect of quality to its performance information work. The PAS survey contains a set of patient experience measures on access, patient-doctor interactions, office staff interactions, coordination of care, health promotion, and overall ratings of care. The survey uses the industry-standard CG-CAHPS® instrument with some customization for topics of local interest.

First fielded in 2001, the PAS is a yearly survey that measures patient experience with medical groups among adult HMO and POS enrollees in California. In 2014, 10 major California health plans and 112 unique physician organizations (reporting on 174 units) collaborated on the PAS project. The 2013 participating groups served 9.9 million commercially insured HMO and POS patients, or almost 95% of the total HMO/POS commercial population in California. The participating health plans in 2013 were: Aetna Healthcare of California, Anthem Blue Cross, CIGNA Healthcare of California, Blue Shield of California, Health Net, Kaiser Foundation Health Plan of Northern California, Kaiser Foundation Health Plan of Southern California, UnitedHealthcare, Western Health Advantage, and Sharp Health Plan.

The PAS information supports patients in choosing and using health care providers and services. Survey results comprise 20% of the pay for performance formula administered by the Integrated Healthcare Association (IHA). The results also are used in medical group quality improvement work and previously have been published online by the California Office of the Patient Advocate. In 2014, the PAS program included two new publishers Consumer Reports (California-specific insert) and CalQualityCare.org (a California based health care ratings web site run by the California HealthCare Foundation). Previous years' PAS results can be found on the results page of the CHPI web site. A number of physician groups also administer the PAS Doctor Survey, whose results are available only to the group, to obtain patient experience results at the individual physician level for performance improvement and recognition activities.



California Healthcare
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SYNTHESIS OF RESULTS OF PATIENT EXPERIENCE LITERATURE SEARCH AND REVIEW



- ▶ **Nationally, as health care markets compete for patients, health providers are compelled to look at the world of health care through the patient lens.**

INTRODUCTION

Patient-centered care has become a common topic in the mainstream media, practitioner-oriented magazines and journals and, increasingly, in scholarly research journals. One fundamental aspect of patient-centered care is the patient experience. Measures of patient experience supply feedback that can shape patient-centric health care delivery systems. Nationally, as health care markets compete for patients, health providers are compelled to look at the world of health care through the patient lens. Patient experience data is therefore integral to discussions of patient-centered care and a primary focus of this literature review.

Collecting information on patient experiences is at a crossroad. While widespread innovation has empowered individuals to use technology to communicate more broadly and flexibly, the substantial change in the way we communicate with one another challenges traditional methods of large scale survey measurement which have relied on mail and landline telephones to reach respondents. Although mail and telephones are still widely used, their use has significantly declined. With other more efficient and less costly options of sending communications available, people are using mail services far less frequently. With regard to landline telephones, a recent National Health Survey² found that 38% of adults live in homes that have only cellular phones and there is growing preference for cellular and smart phones over landlines. With the absence of a mobile phone directory, this means that the survey population is much less accessible to researchers. These trends indicate that it is becoming more difficult to assure that response data is representative of the population being surveyed.

Although it is widely recognized that there is a need to move to electronic modes of survey, best practices for wide-scale efforts are not yet established. In the ensuing literature review, we explore the uses of health technology with patients and barriers and challenges to its use.

²National Health Interview Survey, (2012).
National Center for Health Statistics, Centers for Disease Control and Prevention.

SYNTHESIS OF RESULTS OF PATIENT EXPERIENCE LITERATURE SEARCH AND REVIEW (CONTINUED)

RATIONALE FOR THE REVIEW

A literature review was performed to: 1) understand the current state of patient experience including its value, measurement, and applications, as well as identify where there is a lack of accessible and relevant information on these key components; and 2) identify current health technology use among patients and examine innovative ways for collecting patient experience data. This literature review is intended to provide an overview of the topics and an introduction to the related issues.

METHODOLOGY SEARCH STRATEGY

The methodology used to undertake this review is described with reference to search strategies, inclusion and exclusion criteria, and keywords used.

Sources Reviewed

A variety of literature sources were researched and reviewed; those included peer-reviewed journals, conference papers, government reports, professional trade magazines, popular publications, on-line publications, and organizational websites. Reference lists of selected articles were also screened to identify additional relevant studies for inclusion.

We searched peer-reviewed published papers using PubMed. Searches for non-published peer-reviewed literature, or grey literature, on the topic area were conducted using Google and Google Scholar. This information included reports from government agencies and research groups, working papers from research groups or committees, and white papers.

Search Terms

The terms used for search purposes included, but were not restricted to: patient experience, patient satisfaction, patient-centered care, patient engagement, electronic surveys, health technology, survey instrument, short form survey, survey tools, and patient experience survey methodology.

Exclusion/Inclusion Criteria

This literature review was focused on understanding the current state of patient experience and health technology use among patients in the ambulatory care setting. As the latter has evolved so quickly over the last decade, our goal was to focus on the most current literature. In selecting relevant articles, we concentrated on research published from 2009 to 2015 and excluded non-English language publications. Certain literature that identified key changes to the health care landscape with respect to patient-centered care as well as studies on survey methodology that continue to be relevant are included in the following review. To lay the foundation for the early progression of this content area, we included those articles most frequently cited and considered to be frontiers in the research arena of patient-centered care, regardless of publication date, in the last section of the review. We also selected literature deemed to be of noteworthy relevance to be included in the last section of the review as an additional source of reference.

RELEVANT LITERATURE FROM HEALTHCARE: ANNOTATED CITATIONS

• CURRENT LANDSCAPE •

THE MOVE TOWARD PERSON-CENTERED CARE

The traditional clinician-centered or disease-focused medical model is transforming to a health care delivery system that is person-centered. In a person-centered care (PCC) model, patients are equal partners in planning, developing and assessing care to make sure it is most appropriate for their needs. Person-centered care aims to be user focused, promote independence and autonomy, provide choice and control and be based on a collaborative team philosophy. **Over the past decade, there has been increased awareness about the importance of patient-centeredness as a core pillar of high quality health care delivery.** Measurement and accountability for patients' experiences of care have been at the forefront in guiding such quality improvement efforts.

Institute of Medicine (US). (2001).

Crossing the quality chasm: A new health system for the 21st century [Data File].

Washington, DC: National Academy Press.

This landmark report laid the foundation for increased attention to ensure a health care system dedicated to patient-centered care through its six specific aims that a health care system must fulfill to deliver quality care: Safety, Effectiveness, Patient-Centeredness, Timeliness, Efficiency, and Equity. These principles set forth a specific direction for policymakers, health care leaders, clinicians, regulators, purchasers, and others to improve the US health care system. The report also noted the need to build organizational support for change, use information technology, and align payment policies with quality improvement.

Associated Press, NORC Center for Public Affairs Research. (2014).

Finding quality doctors: How Americans evaluate provider quality in the United States [Data File].

Retrieved from <http://www.apnorc.org/projects/Pages/finding-quality-doctors-how-americans-evaluate-provider-quality-in-the-united-states.aspx>

The Associated Press-NORC Center for Public Affairs Research conducted a nationally representative survey, with funding from the Robert Wood Johnson Foundation, that examined the American public's perceptions of health care quality including factors that people consider to be important in choosing a doctor, what it means to be a quality health care provider in the United States, and how well consumers understand, use, and trust the health care information available to them when making health care decisions, and whether people think public reporting requirements would improve health care in the U.S. Key findings from the study include:

- When it comes to defining provider quality, most Americans tend to focus on certain aspects of quality relating to doctor-patient interactions and doctors' personality traits, rather than the effectiveness of the care provided or the patient's own health outcomes. Most notably, patients ranked how well their physician listens to them as the number one factor that makes a high-quality doctor. Failure to listen or be attentive was the highest ranking factor in a poor-quality doctor.
- Consumers agree with health policy experts in principle that public reporting requirements for doctors would improve health care quality. Overwhelming majorities say requiring doctors to report the effectiveness of their treatments and patient satisfaction with care would improve the quality of care provided in the United States.
- Less than a quarter of consumers are receiving provider quality information. Most people are not very confident they could find provider quality information they can trust on their own, including direct comparisons of physicians.
- Americans report that they would trust word-of-mouth and personal recommendations from doctors far more than provider quality data coming from the government or third parties.

RELEVANT LITERATURE FROM HEALTHCARE: ANNOTATED CITATIONS

• CURRENT LANDSCAPE •

AFFORDABLE CARE ACT (ACA)

The ACA was passed in 2010 and stimulated a shift in the health care system away from its current episodic, fee-for-service payment approach to a coordinated model that is focused on delivering high-quality, low-cost care. This legislation strives to achieve the Triple Aim: (1) improving the experience of care for individuals, (2) improving the health of populations, and (3) lowering per capita costs. **In recognizing the need for care coordination and accountability, the ACA includes financial strategies (e.g., incentives and penalties) to improve care coordination and quality in the hospital and outpatient settings while also reducing health care spending and costs. In order to assure accountability, the Affordable Care Act mandated the use of performance measures of quality of care.** Another prominent feature of the ACA was implementation of health IT in achieving goals related to health care quality and efficiency.

Kocher, R. Emanuel, E.J., & DeParle, N.A.M. (2010).

The Affordable Care Act and the future of clinical medicine: The opportunities and challenges.

Annals of Internal Medicine, 153(8), 536-539.

This paper provides a summary of the goals and opportunities for patient-centered care with the Affordable Care Act (ACA). This overview explains how through the creation of the ACA, physicians will need to re-design their office flow, utilize new practice models, employ technology to track patient data, and more effectively collaborate with other health care professionals to improve patient outcomes.

Millenson, M. L., & Macri, J. (2012).

Will the Affordable Care Act move patient-centeredness to center stage?

Urban Institute Policy Brief.

This paper discusses how the Affordable Care Act (ACA) places new emphasis on measuring patients' experiences of care and using that information to improve care. The paper traces the way in which accounting for the patient's voice has grown from an ethical demand of the patient rights movement into a series of specific, measurable behaviors characterized by use of patient experience surveys. The paper examines patient engagement, patient experience of care, and overall patient-centeredness within the context of the ACA and its mandates. It cites growing evidence of benefits from better communication between providers and patients and involving patients more closely in their care, including greater adherence to medical advice, fewer complaints, fewer malpractice claims, and improvement in patient health is outlined.

Rittenhouse, D. R., Shortell, S. M., & Fisher, E. S. (2009).

Primary care and accountable care—two essential elements of delivery-system reform.

New England Journal of Medicine, 361(24), 2301-2303.

This paper offers a perspective on how the patient-centered medical home model of care and accountability for care can be combined and structured to improve primary care. As both models move through pilot programs toward implementation, the authors have identified several strategies for ensuring that they are mutually reinforcing; accreditation should be aligned, a common set of primary care performance measures should be developed and payment mechanisms must align.

Robinson, C., Coughlin, C., & Palmer, S. (2014).

Health information technology infrastructure to support accountable care arrangements.

The Office of the National Coordinator, 1-39.

This report presents an overview of how health IT is supporting accountable care arrangements and related value-based initiatives, including: accountable care organization (ACO) efforts led by federal and state payers, ACO and other risk-based provider contracts established by commercial payers, patient-centered medical home (PCMH) recognition and gain-sharing initiatives, and other payment models linking quality and payment across populations. The report presents two case studies exploring some of the successes and challenges the communities of Bangor, Maine and Austin, Texas have encountered as stakeholders have sought to develop the infrastructure needed to help providers succeed in an accountable care environment.

RELEVANT LITERATURE FROM HEALTHCARE: ANNOTATED CITATIONS

• CURRENT LANDSCAPE •

PATIENT-CENTERED MEDICAL HOME (PCMH)

Both policy makers and private payers in the United States have begun to recognize that improving care coordination across the fragmented health care delivery system is essential to improve the quality and affordability of care. **One model for transforming the organization and delivery of primary care—the patient-centered medical home—involves enhanced primary care practices as the locus of integration and coordination of care that promote patient-centered care through routine patient feedback and better access.** The model was developed by the primary care specialty societies in 2000 and was a prominent feature of the ACA in 2010. It has been endorsed by a broad coalition of purchasers, payers, providers, consumers, and other health care stakeholders as an important element of reforming the US health care system. The patient-centered medical home model of care emphasizes a robust system of primary care combined with practice innovations and new payment models.

Hoff, T., Weller, W., & DePuccio, M. (2012).

The patient-centered medical home: A review of recent research.

Medical Care Research and Review, 69(6), 619-644.

This article reviews published evaluations of medical home care for the period 2007 to 2010. These evaluations present findings that suggest an association between the provision of medical home care and quality of care, in addition to decreased utilization associated with medical home care in high-cost areas such as emergency department use. Published evaluations reviewed in this article however, showed fewer associations between medical home care and improved patient or family experience. Findings also suggest that there is a fluctuation between how medical homes are being designed and implemented in practice and how researchers are deciding to evaluate PCMH design and implementation. Furthermore, this article sheds light on the lack of evaluative research surrounding medical homes and suggests that additional research be pursued in order to better understand the overall impacts that medical homes have on patient experience, cost savings, quality of care, and more.

Jackson, G. L., Powers, B. J., Chatterjee, R., Bettger, J. P., Kemper, A. R., Hasselblad, V., & Williams, J. W. (2013).

The patient-centered medical home: a systematic review.

Annals of Internal Medicine, 158(3), 169-178.

This study undertook a systematic review to describe approaches to PCMH implementation and summarize evidence for effects on patient and staff experiences, process of care, and clinical and economic outcomes. Seventeen studies with comparison groups evaluated the effects of PCMHs. Moderate-strength evidence indicates that interventions meeting PCMH criteria are associated with small improvements in patient experiences, on both overall measures of patient satisfaction and measures of patient-reported or patient-perceived level of care coordination. These studies included a variety of patient populations, indicating broad applicability of this finding. Given the relatively small number of studies directly evaluating the medical home and the evolving approaches to designing and implementing the medical home model, these findings should be considered preliminary. This review indicated that PCMH is a conceptually sound approach to organizing patient care and appears to hold promise, especially for improving the experiences of patients and staff involved in the health care system.

Kern, L. M., Dhopeswarkar, R. V., Edwards, A., & Kaushal, R. (2013).

Patient experience over time in patient-centered medical homes.

The American Journal of Managed Care, 19(5), 403-410.

In order to measure patients' experiences over time in PCMHs, this study used the CG-CAHPS survey to survey over 715 patients who received care from 120 primary care physicians at 10 ambulatory settings that achieved Level III PCMH. Results of this study found that patients' self-reported experience with access to care improved significantly over time ($P = .02$). Aside from access to care however, no other domains of patient experience showed improvement.

Reid, R. J., Coleman, K., Johnson, E. A., Fishman, P. A., Hsu, C., Soman, M. P., & Larson, E. B. (2010).

The group health medical home at year two: Cost savings, higher patient satisfaction, and less burnout for providers.

Health Affairs, 29(5), 835-843.

This study examined the effects of the medical home prototype on patients' experiences, quality, burnout of clinicians, and total costs at 12, 21 and 24 months after implementation. Among the twelve-month respondents, medical home patients reported better care experiences on six of the seven scales from the Ambulatory Care Experiences Survey–Short Form, after adjusting for age, education, self-reported health status, and baseline status. At twenty-four months, patients at the prototype clinic continued to report better values in three scales (coordination, access, and goal setting) and modestly improved values in two others (quality of doctor-patient interactions and patient activation and involvement).

RELEVANT LITERATURE FROM HEALTHCARE: ANNOTATED CITATIONS

• CURRENT LANDSCAPE •

PATIENT EXPERIENCE MEASUREMENT

Patient experience measurement is designed to focus on those aspects of care that patients tell us matter most to them. It is critical for achieving the Institute of Medicine's aim of patient-centered care and for improving quality of care in outpatient medical offices. **Patient experience surveys are designed to ask questions about aspects of care in which the patient is the best and only source of information.** These fundamental principles are behind the ongoing efforts to design and advance Consumer Assessment of Healthcare Providers and Systems (CAHPS) family surveys, widely recognized as the national standard for patient experience measurement in a variety of ambulatory and inpatient settings.

Agency for Healthcare Research and Quality. (2015). **CAHPS clinician & group visit survey 2.0 [Data File].** Retrieved from <https://cahps.ahrq.gov/surveys-guidance/cg/visit/index.html>

This link provides an overview of the CG-CAHPS survey information on topics such as development and measurement of the survey, improvement guides, reports and case studies, and benchmarking data. In addition, this site provides information and explanations of the different CAHPS surveys (e.g., visit survey and 12-month survey) and the thought process behind their development and intended informational extractions.

Robert Wood Johnson Foundation. (2012). **Measuring patient experience [Data File].** Retrieved from http://www.rwjf.org/content/dam/farm/reports/issue_briefs/2012/rwjf72672

This primer/brief discusses the case for measuring patient experience and why using reliable tools is important. The importance and correlation amongst patient-centeredness, positive patient experience and improved quality of care are also addressed in this article.

Dyer, N., & Smith, S.A. (2012). **Psychometric properties of the Consumer Assessment of Healthcare Providers and Systems (CAHPS®) clinician and group adult visit survey.** *Medical Care*, 50, 28-34.

The CG-CAHPS Adult Visit survey is a publicly available, standardized tool to measure patients' experiences with outpatient medical offices. This study examined the psychometric properties of the survey at the individual level and practice site level. The analyses suggest that the survey items are measuring their intended concepts and yield reliable information.

Fowler, L., Saucier, A., & Coffin, J. (2013). **Consumer assessment of healthcare providers and systems survey: Implications for the primary care physician.** *Osteopathic Family Physician*, 5(4), 153-157.

Patient experience surveys are of growing instrumental value in today's revolutionary patient-centered health care system. This article provides a brief overview of the importance of patient experience surveys and in particular the importance of the CG-CAHPS survey. It discusses how the CG-CAHPS survey would affect primary care practices and physicians in the future, and how it can be implemented. Moreover, CG-CAHPS, which is intended to monitor patient care, patient satisfaction, patient experience, and financial performance in the ambulatory setting, is becoming increasingly important as patient experience measurement is now becoming more instrumental to physician licensing, board certification, practice group recognitions, physician compensation, and consumer choice of physician.

Hays, R. D., Berman, L. J., Kanter, M. H., Hugh, M., Oglesby, R. R., Kim, C. Y., & Brown, J. (2014). **Evaluating the psychometric properties of the CAHPS patient-centered medical home survey.** *Clinical Therapeutics*, 36(5), 689-696.

The goal of this study was to evaluate the reliability and validity of the Consumer Assessment of Healthcare Providers and Systems (CAHPS) Patient-Centered Medical Home (PCMH) survey. This study provides further support for the reliability and validity of the CAHPS PCMH survey.

LaVela, S., & Andrew, S. (2014). **Evaluation and measurement of patient experience.** *Patient Experience Journal*, 1(1), 28-36.

This paper serves as a starting point for various stakeholders to think about how patient experience measurement can impact patient care and an organization's culture, strategy, and care models/designs. In doing this, the article incorporates two objectives: (1) to explore and describe what is already known about measures and measurement of patient experience and (2) to describe evaluation approaches/methods used to assess patient experience. In exploring these avenues, this article identifies difficulties in patient experience measurement due to its complexity, ambiguous concepts, and cross-cutting terms. Successful methods of measurement for patient experience such as mixed methods, quantitative, or qualitative approaches are also identified. Furthermore, listening to patient feedback and engaging patients in their care are recognized as effective ways to address aspects of the care experience that need improvement.

RELEVANT LITERATURE FROM HEALTHCARE: ANNOTATED CITATIONS

• CURRENT LANDSCAPE •

PATIENT EXPERIENCE AND CLINICAL OUTCOMES

Research shows that patient experience correlates to clinical quality processes, patient adherence to treatment, and better health outcomes. However, at this point, published quality metrics and results are limited primarily to inpatient care. The lack of focus on the ambulatory care setting calls for the need to conduct studies that examine the relationship between patient experience results and outpatient clinical outcomes. What we do know is that better doctor-patient communication, a critical domain of patient experience, can lead to positive health outcomes, such as adherence to prescribed treatment plan and following through with self-care.

Doyle, C., Lennox, L., & Bell, D. (2013).

A systematic review of evidence on the links between patient experience and clinical safety and effectiveness.
BMJ, 3(1), 28-24.

This study conducted a systematic review to explore associations between patient experience and clinical safety and effectiveness outcomes. The results show positive associations between patient experience and health outcomes, adherence to recommended medication and treatments, preventive care, and health care resource use. These findings were consistent across a range of disease areas, study designs, settings including primary care, population groups and outcome measures. The study supports the argument that patient experience, clinical effectiveness, and patient safety are linked and should be looked at as a whole.

Levinson, W., Lesser, C. S., & Epstein, R. M. (2010).

Developing physician communication skills for patient-centered care.
Health Affairs, 29(7), 1310-1318.

This article conveys the positive impacts that patient-centered communication has including patient satisfaction, adherence to recommended treatment, self-management of chronic disease such as diabetes, hypertension, and cancer, and a decreased likelihood of malpractice actions. Patient-centered communication is designed to increase health care providers' understanding of patients' individual needs, perspectives, and values; to give patients the information they need to participate in their care; and to build trust and understanding between physicians and patients. The authors point out that patient-centered communication skills can be effectively taught at all levels of medical education and to practicing physicians. They discuss how most physicians receive limited training in communication skills and that there is a great need for policy makers and stakeholders to leverage training grants, payment incentives, certification requirements, and other mechanisms to develop and reward effective patient-centered communication.

Price, R. A., Elliott, M. N., Zaslavsky, A. M., Hays, R. D., Lehrman, W. G., Rybowski, L., & Cleary, P. D. (2014).

Examining the role of patient experience surveys in measuring health care quality.
Medical Care Research and Review, 71(5), 522-554.

This article reviews the literature on the association between patient experiences and health care quality measures. This review found that positive patient experiences are associated with higher levels of adherence to prevention recommendations and treatment processes, better inpatient clinical outcomes and safety, and less health care utilization.

RELEVANT LITERATURE FROM HEALTHCARE: ANNOTATED CITATIONS

• CURRENT LANDSCAPE •

USE OF PATIENT EXPERIENCE RESULTS

Patient experience survey results have a multitude of uses such as quality improvement efforts, incentive payments, recognition awards, consumer-informed provider selections, and transparency through public reporting. Under the Affordable Care Act and other value-based reimbursement models, quality metrics have gained increasing importance. Specifically, CAHPS scores are tied to high-stakes endeavors including physician compensation structures, board certification and licensing, and physician/practice recognition programs.

NCQA Patient-Centered Medical Home. (2014).

PCMH recognition [Data File].

Retrieved from http://www.ncqa.org/Portals/0/Programs/Recognition/PCMH/PCMH-2014_Brochure-web-1.pdf

The National Committee for Quality Assurance (NCQA) PCMH Recognition Program distinguishes practices that have transformed into medical homes by organizing primary care around key principles of care coordination and communication. NCQA provides evidence that medical homes inspire quality in care, cultivate more engaging patient relationships, and capture savings through expanded access and delivery options that align patient preferences with payer and provider capabilities. Some practices are required to complete a PCMH recognition program (e.g., for participation in an accountable care organization (ACO) or PCMH incentive program), but PCMH recognition for many practices is voluntary. Practices that achieve NCQA's PCMH Recognition are positioned to take advantage of financial incentives offered by health plans and employers, as well as federal and state-sponsored pilot programs. Practices earning NCQA Recognition may qualify for additional bonuses or payments. NCQA's PCMH program is fully aligned with federal incentives for 'meaningful use' of health information technology.

Robert Wood Johnson Foundation. (2013).

Forces driving implementation of the CAHPS clinician & group survey [Data File].

Retrieved from http://www.rwjf.org/content/dam/farm/reports/issue_briefs/2013/rwjf72668

This article outlines the emerging national consensus that is motivating interest in and use of the CG-CAHPS Survey across the country, describes various initiatives that will require use of the survey, and discusses the implications for Alliance communities and other survey sponsors. The information provided in this article is intended to inform and support the decisions of multi-stakeholder teams as they move forward to implement CG-CAHPS in their communities. Over the past five years, there has been a steady shift in the health care field away from various patient satisfaction surveys and towards the CAHPS Clinician & Group (CG-CAHPS) Survey, which asks patients about their experiences with care rather than their satisfaction. This article points to the validity of the CG-CAHPS survey due to its consistency throughout different physician practices. The consistency of the CG-CAHPS survey allows for purchasers, payers, and consumers to access and compare patients' experiences with health care providers and physician practices, not only within communities, but also across the country. In addition, it also enables those providers to identify their strengths and weaknesses and measure their progress. Various organizations at the community, regional, and state level are currently exploring ways to make this type of health care quality information available to the public.

Chernew, M. E., Mechanic, R. E., Landon, B. E., & Safran, D. G. (2011).

Private-payer innovation in Massachusetts: The 'alternative quality contract'.

Health Affairs, 30(1), 51-61.

This paper describes the development and purpose of the Alternative Quality Contract launched in 2009 by Blue Cross Blue Shield of Massachusetts. It is a provider payment system that the Affordable Care Act encourages. The Alternative Quality Contract is designed to improve quality and outcomes while slowing health care spending growth. Three major features define the Alternative Quality Contract: a global budget with annual spending growth limits, incentive payments to improve quality, and technical support for participating groups. Patient experience measures are central to this pay-for-performance (P4P) program. Specifically, groups can earn bonuses of up to 5% based on their performance on nationally accepted sets of quality measures for ambulatory or office-based services.

RELEVANT LITERATURE FROM HEALTHCARE: ANNOTATED CITATIONS

• CURRENT LANDSCAPE •

USE OF PATIENT EXPERIENCE RESULTS

Longworth, D.L. (2011).

Accountable care organization, the patient-centered medical home, and health care reform: What does it all mean?
Cleveland Clinic Journal of Medicine, 78(9), 571-582.

This article addresses the United States' poor performance record based on health care system assessments and patient outcomes. In an effort to improve quality of care, cost effectiveness, and patient-centeredness, the US health system has planned to implement and adopt a number of systemic changes since the beginning of the new millennium. More recently, with the implementation of the ACA, the U.S has shifted its health care landscape to a more patient-centered model where better quality and improved outcomes are financially incentivized and are at the forefront of health care delivery. Patient-Centered Medical Homes (PCMH), which are at the center of Accountable Care Organizations (ACO), require CG-CAHPS patient experience survey results before they grant PCMH recognition to any practice. These patient experience surveys encourage providers to invest more attention in their patients' experiences with care and thus ultimately incentivize providers to engage in a more patient-centered approach to health care delivery, which has proven to result in better quality of care, higher patient satisfaction, and cost savings.

Rodriguez, H. P., Von Glahn, T., Elliott, M. N., Rogers, W. H., & Safran, D. G. (2009).

The effect of performance-based financial incentives on improving patient care experiences: A statewide evaluation.
Journal of General Internal Medicine, 24(12), 1281-1288.

Using longitudinal survey data from patients of 1,444 primary care physicians (PCPs) belonging to 27 California medical groups during 2004–2007, this study examines whether the magnitude and nature of medical group performance-based financial incentives are associated with improved patients' experiences of primary care. Results indicate that public reporting and pay-for-performance can potentially improve physician communication, access to care, and office staff interactions as experienced and reported by patients. In the context of statewide measurement, physicians significantly improved performance in physician-patient communication ($p<0.001$), care coordination ($p<0.001$), and office interaction ($p=0.02$) measures.

RELEVANT LITERATURE FROM HEALTHCARE: ANNOTATED CITATIONS

• CURRENT LANDSCAPE •

STATE-LEVEL MANDATES AND INITIATIVES

Many states across the nation are in the process of designing and implementing multi-payer payment reform initiatives. The goals of these initiatives are to address the Triple Aim: improve patient experience, improve the health of populations, and reduce health care costs. **Several states are using provider performance on quality measures, including patient experience measurement, to affect reimbursements for providers and hold providers accountable.**

Massachusetts Health Quality Partners. (2014).

Advancing the ambulatory patient experience measurement and reporting agenda.

[White Paper].

State level mandates and other state initiatives regarding patient experience are in its infancy. In November 2014, MHQP hosted a national meeting, designing a Roadmap for Future Public Reporting of Ambulatory Patient Experience Results. The meeting was attended by national experts in patient experience measurement, consumer representatives, policy-makers, health collaboratives and experts from other industries. To provide background for the discussion, MHQP implemented a web survey of regional collaboratives with existing patient experience measurement efforts. The goal was to illustrate where there were common themes, how efforts differed and what challenges existed. This background knowledge was meant to provide the group with a platform for a discussion about how to sustain and expand existing efforts to report patient experience results to the public. Collaboratives contacted were all members of NRHI, a network of collaborative organizations across the country, and had publicly reported patient experience results. The national meeting was funded by the Robert Wood Johnson Foundation as part of the DOCTOR project and supported in part by the Center for Healthcare Transparency. A detailed description of state efforts can be found in Appendix A. Several key findings include:

Smith, S., & LaFrance A. (2013).

Minnesota conducts nation's largest statewide patient experience survey. Minnesota Department of Health.

Retrieved from <http://www.health.state.mn.us/news/pressrel/2013/patientexpdata081413.html#1>

Minnesota's 2008 health reform law set up Minnesota's Statewide Quality Reporting and Measurement System, which requires clinics to publicly report their performance using CG-CAHPS. The importance of patient experience and the influential impact patient experience measures can have on quality of care are also addressed in this article. In addition, this article offers a brief summary of one patient's experience with cancer treatment and a synopsis of Minnesotans' reported patient experience outcomes.

- Five of six reporting communities are multi-stakeholder non-profit entities, which include all key stakeholders in their governance (consumers, employers, providers, health plans/carriers and, with one exception, public officials).
- All reporting communities used various versions of CG-CAHPS. All six communities measured patient experiences of adults, but only MHQP in Massachusetts also reported on children.
- All communities reported results based on commercially insured populations. Four also reported for Medicaid patients and three did so for Medicare beneficiaries.
- All six communities reported at the primary care medical group and primary care practice levels. Some have also begun reporting at the specialty care level.
- Provider and/or health plan support for patient experience surveying was cited as one of the most common contributors towards the success of the programs.
- Pay-for-performance initiatives were cited as another key factor for success. RWJF funding through AF4Q and alignment with national surveys also contributed to program successes. Creating a sustainable business model was a key concern for several.
- The cost and burden of existing data collection methods, declining response rates, and getting members to use a single standardized tool were also cited as challenges.
- Half of the collaboratives rely on grants to fund their work. Three employ membership fees and the majority also obtain financial support through provider and health plan/carrier contributions. Three reported receipt of government funds to support their effort.
- The number of physician organizations measured and reported ranged from 172 to 651. Limited data was provided on the estimated cost of these efforts, and none of the respondents submitted data quantifying the cost per unit of analysis.

RELEVANT LITERATURE FROM HEALTHCARE: ANNOTATED CITATIONS

• CURRENT LANDSCAPE •

CONSUMER ENGAGEMENT VIA E-HEALTH

Several initiatives are underway that employ electronic means for enhancing patient engagement and improved patient-provider communication including electronic health records, patient portals, Open Notes, PROMIS, Medicare and Medicaid EHR Incentive Program – Meaningful Use, and the Blue Button Initiative. The literature contains many promising examples of e-health use for disease management, health promotion and remote monitoring. Yet, on the basis of published research, there is limited knowledge related to the role that patients play in the health information technology arena, especially as it relates to patient involvement in the delivery, monitoring, and dissemination of information related to their health care.

Ancker, J. S., Silver, M., Miller, M. C., & Kaushal, R. (2013).

Consumer experience with and attitudes toward health information technology: A nationwide survey.

Journal of the American Medical Informatics Association, 20(1), 152-156.

This study sought to understand the relationship between consumer experience with a physician who uses an Electronic Health Record (HER) and consumer opinions about health IT. To determine whether consumers' attitudes toward EHR and Health Information Exchange (HIE) are associated with experience with doctors using an EHR, a nationwide random-digit-dial survey was conducted in December 2011. Consumers whose physicians use an EHR were about twice as likely as consumers whose physicians do not use an EHR to believe that EHR and HIE will improve the quality of health care. However, experience with a physician using an EHR has no effect on privacy and security concerns, which remained strong in all patient groups. These concerns should continue to be addressed through strong policies and controls, as well as public engagement with health IT policy.

Baer, D. (2011).

Patient-physician e-mail communication: The Kaiser Permanente experience.

Journal of Oncology Practice, 7(4), 230-233.

Kaiser Permanente has developed the largest private shared electronic health record system in the world. Consumers have complete or partial access to their records online or via smart phones. They can securely email their doctor, book appointments online, refill prescriptions, access information about their condition and view most medical test results. Secure email messaging is an accepted part of health care provision and doctors and pharmacists see this as an efficient way of handling many routine issues. It has been associated with a decrease in office visits, an increase in measurable quality outcomes, and excellent patient satisfaction. There is significant uptake of the system by consumers, with 63% of those eligible regularly accessing and using the system. Nine out of ten consumers with chronic conditions agreed that the system enables them to more effectively manage their conditions. Consumers also report that the website helps them make informed decisions about their health and makes it more convenient for them to interact with their care teams.

Brennan, P. F., Valdez, R., Alexander, G., Arora, S., Bernstam, E. V., Edmunds, M. & Rosenbloom, T. (2014).

Patient-centered care, collaboration, communication, and coordination: a report from AMIA's 2013 Policy Meeting.

Journal of the American Medical Informatics Association.

The American Medical Informatics Association 2013 Policy Meeting illuminated issues and a vision of the data infrastructure to improve access to personal health information, engage patients, and foster patient-centered care. One emerging vision of the personal health record (PHR) is a participatory care record which allows for storage of clinician-generated data and the creation and display of patient experiences and preferences.

Hogan, T. P., Nazi, K. M., Luger, T. M., Amante, D. J., Smith, B. M., Barker, A., & Houston, T. K. (2014).

Technology-assisted patient access to clinical information: an evaluation framework for blue button.

JMIR Research Protocols, 3(1), 1-13.

This article provides a case study of the VA efforts to make increasing amounts of clinical information available to patients through Blue Button. It provides a framework for the evaluation of patient-accessible clinical information through technology based on the VA's experiences implementing Blue Button and concludes with a specific set of recommendations that are relevant across health care organizations and related to future policies and technologies exemplified by Blue Button.

Hsiao, C. J., Jha, A. K., King, J., Patel, V., Furukawa, M. F., & Mostashari, F. (2013).

Office-based physicians are responding to incentives and assistance by adopting and using electronic health records.

Health Affairs, 32(8), 1470-1477.

Expanding the use of interoperable electronic health record (EHR) systems to improve health care delivery is a national policy priority. This study used the 2010–12 National Ambulatory Medical Care Survey – Electronic Health Records Survey to examine which physicians in what types of practices are implementing the systems and how they are using them. Findings indicate that 72% of physicians had adopted some type of EHR system and that 40% had adopted capabilities required for a basic EHR system. The highest relative increases in adoption were among physicians with historically low adoption levels, including older physicians and those working in solo practices or community health centers. As of 2012, physicians in rural areas had higher rates of adoption than those in large urban areas, and physicians in counties with high rates of poverty had rates of adoption comparable to those in areas with lower levels of poverty. However, small practices continued to lag behind larger practices as they proved to have lower rates of adoption. Finally, the majority of physicians who adopted the EHR capabilities required to obtain federal financial incentives used the capabilities routinely, with few differences across physician groups.

RELEVANT LITERATURE FROM HEALTHCARE: ANNOTATED CITATIONS

• CURRENT LANDSCAPE •

CONSUMER ENGAGEMENT VIA E-HEALTH

The Office of the National Coordinator for Health Information Technology. (2015).

2015 interoperability standards advisory [Data File].

Retrieved from http://www.healthit.gov/sites/default/files/2015interoperabilitystandardsadvisory01232015final_for_public_comment.pdf

The 2015 Interoperability Standards Advisory (the 2015 Advisory) represents the model by which the Office of the National Coordinator for Health Information Technology (ONC) will coordinate the identification, assessment, and determination of the best available interoperability standards and implementation specifications for industry use toward specific health care purposes. The 2015 Advisory's scope focuses on clinical health information technology (IT) interoperability.

The Office of the National Coordinator for Health Information Technology. (2014).

A 10-year vision to achieve an interoperable health IT infrastructure [Data File].

Retrieved from <http://healthit.gov/sites/default/files/ONC10yearInteroperabilityConceptPaper.pdf>

ONC has developed a first draft of a roadmap for interoperability of health care information for the next 10 years. By 2024, individuals, providers and researchers should have an array of interoperable health IT products and services that allow the health care system to continuously learn and advance the goal of improved health care. The three year agenda involves improving the interoperability of existing health IT networks and scaling existing approaches for exchanging health IT across vendor platforms to support transitions of care and public health. The six year agenda calls for individuals to be active participants in their care in ways such as contributing information to their health records, remote monitoring of health status and integrating data from their health records into apps and tools to meet their own health goals. By year 10, the nation's health IT infrastructure will facilitate health improvement through active individual health management, improved information sharing with public health agencies, and the ability for research to generate evidence that is delivered to the point of care. The plan focuses on: 1) requiring standards, 2) motivating use of standards through appropriate incentives, and 3) creating a trusting environment for collecting, sharing, and using information.

Ricciardi, L., Mostashari, F., Murphy, J., Daniel, J. G., & Siminerio, E. P. (2013).

A national action plan to support consumer engagement via e-health.

Health Affairs, 32(2), 376-384.

This article reviews recent evidence in support of consumer e-health and presents the federal strategy to promote advances in consumer e-health to increase patient engagement, improve individual health, and achieve broader health care system improvements. The Office of the National Coordinator for Health Information Technology in the Department of Health and Human Services leads the strategy to increase electronic access to health information, support the development of tools that enable people to take action with that information, and shift attitudes related to the traditional roles of patients and providers.

Turvey, C., Klein, D., Fix, G., Hogan, T. P., Woods, S., Simon, S. R., & Nazi, K. (2014).

Blue Button use by patients to access and share health record information using the Department of Veterans Affairs' online patient portal.

Journal of the American Medical Informatics Association, 21(4), 657-663.

The Blue Button feature of online patient portals promotes patient engagement by allowing patients to easily download their personal health information. This study examines the adoption and use of the Blue Button feature in the Department of Veterans Affairs' (VA) personal health record portal and My HealtheVet.

US Department of Health and Human Services. (2009).

Health Information Technology for Economic and Clinical Health Act Enforcement Interim Final Rule [Data File].

Retrieved from <http://www.hhs.gov/ocr/privacy/hipaa/administrative/enforcementrule/hitech/enforcementiffr.html>

Under the Health Information Technology for Economic and Clinical Health Act (HITECH), which was enacted as part of the American Recovery and Reinvestment Act Of 2009 (ARRA), Medicaid and Medicare programs provide bonus payments to qualified physicians for the adoption and demonstration of meaningful use of certified Electronic Health Record (EHR) technology.

Walker, J., Meltsner, M., & Delbanco, T. (2015).

US experience with doctors and patients sharing clinical notes.

BMJ, 350.

Authors Walker and Delbanco describe the Open Notes movement in the US and how sharing notes with patients has been increasingly spreading. They also underline the case for research to assess the long term effect of sharing notes and the potential to foster improved and truly collaborative care between patients and physicians. Face validity and growing evidence has convinced early adopters to embed open clinical notes into primary and outpatient specialty care. By 2014, 5 million American patients had online access to their medical notes.

RELEVANT LITERATURE FROM HEALTHCARE: ANNOTATED CITATIONS

• CURRENT LANDSCAPE •

CONSUMER ENGAGEMENT VIA E-HEALTH

Weiner, J. P. (2012).

Doctor-patient communication in the e-health era.

Israel Journal of Health Policy Research, 1(1), 33.

This commentary discusses the e-health revolution and how almost all patient-provider contact in the future including those occurring before, during and after traditional face-to face medical visits, will be mediated by health information technology (HIT). It will be important to understand the scope of this issue and its potential impact and future implications. Specifically, this commentary provides a framework for understanding the potential pros and cons that e-health alternatives will have on provider-patient communication. It will be imperative that clinicians, managers, policymakers, and researchers gain insight and increased understanding of this emerging trend so that health care systems across the globe are able to adapt, adopt, and embrace these rapidly evolving electronic technologies.

Wen, K. Y., Kreps, G., Zhu, F., & Miller, S. (2010).

Consumers' perceptions about and use of the internet for personal health records and health information exchange: Analysis of the 2007 Health Information National Trends Survey.

Journal of Medical Internet Research, 12(4).

Personal health records and the sharing of patient information via health information exchange have been advocated as essential components in the effective delivery of modern health care. This study examines consumer attitudes towards personal health records (PHRs) and their providers' use of health information exchange (HIE). Results from this study found that 86% of U.S. adults deemed electronic access to their health records as important. Despite this high level of interest in access to electronic health records (EHRs) however, 9% of respondents actively track their PHRs on the internet. Persons who had confidence in their face-to-face communication with their physicians were less likely to engage in electronic tracking of PHRs compared with patients who expressed concern in their physicians understanding of their health. Concluding findings from this study suggest that despite continued agreement amongst patients and physicians that electronic access to PHRs are important, internet tracking for PHRs remains uncommon.

Williams, C., Mostashari, F., Mertz, K., Hogin, E., & Atwal, P. (2012).

From the office of the national coordinator: The strategy for advancing the exchange of health information.

Health Affairs, 31(3), 527-536.

This article addresses the importance of electronic health records and their ability to improve the over-all quality of health care by lowering the rate of re-admission, improving diagnoses, reducing duplication of testing, and preventing medical errors. The traditional landscape of U.S health care however, does not incentivize such efficient modes of care coordination as physicians have been typically rewarded on a fee-for-service basis where they are incentivized to provide an abundance of unnecessary care. However, with the current transition to a more patient-centered system and a shift in physicians' incentives, EHRs prove to be an efficient and beneficial outlet for health care coordination and communication. Primary Care Physicians (PCPs) are now financially incentivized to be as resourceful as possible, especially with the adoption of bundled payment methods and accountable care organizations. With these new incentives in place, The Office of The National Coordinator for Health Information Technology has led the process of establishing the essential building blocks that will support health information exchange.

Zhou, Y. Y., Kanter, M. H., Wang, J. J., & Garrido, T. (2010).

Improved quality at Kaiser Permanente through e-mail between physicians and patients.

Health Affairs, 29(7), 1370-1375.

The American Recovery and Reinvestment Act identified secure patient-physician e-mail messaging as an objective of the meaningful use of electronic health records. In this study of 35,423 people with diabetes and/or hypertension, the use of secure patient-physician e-mail within a two-month period was associated with a statistically significant improvement in effectiveness of care as measured by the Healthcare Effectiveness Data and Information Set (HEDIS). In addition, the use of e-mail was associated with an improvement of 2.0–6.5 percentage points in performance on other HEDIS measures such as glycemic (HbA1c), cholesterol, and blood pressure screening and control. The study was a follow-up to previous research conducted by Zhou which found that e-mail communication could reduce the need for office visits by up to 10% and reduce the telephone calls to a practice by 14%.

RELEVANT LITERATURE FROM HEALTHCARE: ANNOTATED CITATIONS

• CURRENT LANDSCAPE •

PUBLIC REPORTING AND ACCOUNTABILITY

Since the implementation of the Affordable Care Act, there has been an increased focus on public reporting and transparency of health care quality data. More consumers have access to health care and need to make choices, their choices often have a cost impact for them and they are more interested in having information to support their decisions. Providing easy access to patient experience information can empower consumers to evaluate the experiences of others and to discuss with providers the aspects of care that matter most to them. **Sharing patient experience information with the public is a way to engage consumers in making better informed health care choices and leads to greater engagement in their care. It also holds providers accountable for the quality of care they deliver.** While public reporting of comparative information on health care quality has become an important quality improvement instrument in itself, most research has focused on patients' use of publicly reported information on hospitals and health plans. There is a dearth of scientific information on public reporting of quality in ambulatory care. In addition, there are few state-based initiatives (see Appendix A).

Faber, M., Bosch, M., Wollersheim, H., Leatherman, S., & Grol, R. (2009).

Public reporting in health care: How do consumers use quality-of-care information? A systematic review.
Medical Care, 47(1), 1-8.

The purpose of this study was to determine the impact of public reporting on consumers' behavior. Findings showed that CAHPS information had no effect on the knowledge, attitude, or behavior of consumers. However, a subgroup analysis of this study found that age, gender, health status, education level, and income impact whether and how much consumers valued publically reported performance rates. Consumers with higher incomes and levels of education better understood reported CG-CAHPS information and valued the reported information more than those with lower income and levels of education. Conclusively, this study found that there is limited evidence about the effectiveness of quality information on consumers' choice.

Fung, C. H., Lim, Y. W., Mattke, S., Damberg, C., & Shekelle, P. G. (2008).

Systematic review: the evidence that publishing patient care performance data improves quality of care.
Annals of Internal Medicine, 148(2), 111-123.

This study conducted a systematic review of the literature to synthesize the evidence for using publicly reported performance data to stimulate quality improvement activity, affect selection of providers, and improve clinical outcomes (effectiveness, patient safety, and patient-centeredness). Results indicate that evidence is scant, particularly about individual providers and practices, and that rigorous evaluation of many major public reporting systems is lacking. Evidence suggests that publicly releasing performance data stimulates quality improvement activity at the hospital level. The effect of public reporting on effectiveness, safety, and patient-centeredness remains uncertain.

Ketelaar, N. A., Faber, M. J., Flottorp, S., Rygh, L. H., Deane, K. H., & Eccles, M. P. (2011).

Public release of performance data in changing the behaviour of healthcare consumers, professionals or organisations.
The Cochrane Library, 11.

This study examined the effectiveness of the public release of performance data in changing the behavior of health care consumers, professionals, and organizations. More than 35,000 consumers and 1,560 hospitals were included in the four study sites (three sites were located in the U.S and one site was located in Canada). Certain sites found that the public release of performance data had a slight impact on the improvement of specific episodes of care such as acute myocardial infarctions and cognitive heart failure. However, results from this study found no consistent evidence that the public release of performance data impacts consumer behavior or improves overall quality of care.

Shannon, D. (2013).

Publicly reported physician ratings: Here to stay but not yet ready for prime time.
Physician Executive Journal, 39(1), 14-26.

This article looks at the current impact and the future success of publicly reported physician ratings. The article focuses on both user-generated websites as well as metrics-driven data reports. While both user-generated reviews and metrics-driven data present opportunities to improve care, both have significant flaws. User-generated websites often have few reviews, are based on non-standardized metrics, and have varying policies regarding the posting of reviews. Conversely, use and accepted validity of metrics-driven performance ratings for individual physicians is widespread. However, metric-driven sites are often difficult to navigate and report on metrics selection, analytic methodology and consumer access. While both these methods of physician ratings have flaws, these ratings provide transparency and can be tied to reimbursement and compensation. With cost savings and transparency at the forefront of the current health care landscape, both user-generated websites and metrics-driven data will be around for a while.

RELEVANT LITERATURE FROM HEALTHCARE: ANNOTATED CITATIONS

• CURRENT LANDSCAPE •

CONSUMER-BASED INFORMATION SUPPORT FOR CARE DECISIONS

Publishers who collect and share information to help consumers make comparisons that support informed purchasing decisions have demonstrated that there is public interest in gaining access to this kind of information. These efforts created the foundation for the 21st century information culture of “radical transparency”. Today, the information industry is growing and expanding through the internet and social media. This further demonstrates the public appetite for information to help make informed consumer choices. Consumers continue to show their interest in both providing feedback and hearing from other consumers about their experiences. Presenting this information publicly has become an integral part of the service industry and promoted transparency. For example, Trip Advisor was established in 2000 and claims to have as many as 280 million unique monthly visits to its website. Amazon has also incorporated ratings and reviews to help market its diverse offerings and Yelp uses this model to support its business as an information provider. The growing predominance of the consumer-driven ratings and review model has substantially changed public expectations about what information should be available.

With more and more information available to consumers on the internet, patients are becoming less passive and more active participants in their health care decisions. From researching medical conditions and medications to finding ratings for providers and delivery systems, patients are searching out information that will assist them as they navigate an extremely complex health care system, trying to understand all of the options available to them. Some of the more widely known information sources include Healthgrades, Consumer Reports, RateMDs, Vitals, ZocDoc, Hospital Safety Score, The Leapfrog Group, Healthcare.gov, and HealthInsight, to name a few. There are countless ways for consumers to get information about a doctor or hospital and if coming from different sources, it may not look the same, or even deliver the same message. So with an ever increasing amount of information available, it becomes more difficult yet simultaneously more important to make sense of what is useful and what is not.

To move forward with providing the American public with ambulatory patient experience information, significant emphasis will be needed to adopt best practices from other industries that currently gather and publish similar information in a more efficient, timely, and consumer friendly fashion. For example, current efforts to gather and publish ambulatory consumer experience information in the health care sector generally rely on somewhat costly and time-consuming methods to gather data, such as paper surveys and phone interviews. Other industries use more efficient methods to gather and report this data. Consumers are asked to respond to short and concise survey instruments, often electronically. In many cases, results are available to the public nearly instantaneously.

Sander, U., Emmert, M., Dickel, J., Meszmer, N., & Kolb, B. (2015).

Information presentation features and comprehensibility of hospital report cards: Design analysis and online survey among users. *Journal of Medical Internet Research*, 17(3).

This study analyzed the presentation of risk-adjusted mortality rates for coronary angiography in 10 different public report cards used in Germany. The purpose was to determine which features made this kind of public reporting more comprehensible, utilized, and preferred by users of the information. The researchers' findings reflected several best practices: 1) tables without symbols should be avoided, 2) bar charts with symbols should be used, 3) a high or low value should be explicitly stated, 4) incomplete data should not be reported, and 5) hospitals should be ranked by performance.

Schneider, C.E., & Hall, M.A. (2009).

The patient life: Can consumers direct health care?. *American Journal of Law & Medicine*, 35(1), 7-65.

In the face of a changing health care environment, patients are increasingly being treated as consumers of health care, rather than merely recipients of health care. Consumers are faced with copious amount of data which they are expected to synthesize to make complex decisions. This article surmises that the complexity of information is too much for consumers to make good choices. Whether it is the quality of the information available, the level of understanding of that information, the ability to analyze, or even knowledge of the choices available, consumers are faced with the daunting task of making sound decisions. The authors note that the “consumerist tools” should be made available, but used with discretion, guidance, skepticism, and with the understanding that they are not perfect.

Victoor, A., Delnoij, D. M., Friele, R. D., & Rademakers, J. J. (2012).

Determinants of patient choice of healthcare providers: a scoping review. *BMC Health Services Research*, 12(1), 272.

It is assumed that patients choose their health care providers based on quality and cost, and that providing patients with the tools they need to allow them to do so will inject competition into providers' practice. This study examines these assumptions via an in-depth scoping review of the literature across several countries. Findings describe a much more complex landscape in terms of the factors that play a role in a patient's decision about his or her health care provider. Decision factors usually go beyond cost and quality and extend to past experiences, recommendations, proximity, and other characteristics of the individual health care provider. Patients generally do not make rational decisions based on outcomes data, but rather by the complex interplay of patient and provider characteristics.

RELEVANT LITERATURE FROM HEALTHCARE: ANNOTATED CITATIONS

• CHANGING NORMS IN CONSUMER SURVEY ADMINISTRATION •

Widespread innovation has empowered individuals to use technology to communicate more broadly and flexibly. In addition to using the internet to communicate, many people now have devices that travel with them wherever they go, making these devices their primary means of obtaining and sharing information. **With increased use of mobile devices comes an increased expectation that information be funneled through those devices. This change in expectations has forced a shift in survey research collection and reporting. Electronic surveying must be developed and surveys must be shortened. The multi-page patient experience surveys that have been the standard have become burdensome to consumers who are accustomed to digital exchanges of information through hand-held devices.** In light of these changing norms, values, and expectations, traditional survey administration via mailed paper-based instruments no longer makes sense as the singular mode for surveying. In general, research on the use of the internet mode of surveying consumers has shown that respondents think about the electronic visual presentation of question-and-answer format in a way that is similar to mail. Clicking a button is like checking a box. Both modes are viewed as semi-anonymous, meaning that responses are not immediately judged by an interviewer or connected to the respondent personally, although at some level, a degree of identification is present. A digital solution also addresses an important issue for the surveyors: cost. The traditional paper based method is costly, and requires additional data entry and analysis. Further, patient experience results can be more readily available via electronic surveying. While there are numerous reasons to move towards electronic surveying, there are other issues that need to be considered and addressed such as coverage, response rates, security, privacy, and confidentiality concerns.

The following sections address the ways in which survey administration is evolving and the issues to consider as we move towards electronic surveying.

ELECTRONIC SURVEY ADMINISTRATION

Recent research indicates that 91% of adults report owning a cell phone and 61% own a “smart phone”. In addition 35% of people over 16 years of age own a tablet computer. This substantial change in the way we communicate with one another challenges traditional methods of large scale survey measurement which have relied upon mail and landline telephones to reach respondents. Although mail and telephones are still widely used, their use has significantly declined. With other more efficient and less costly options of sending communications, people are using mail services less frequently. Since 2006, there has been close to a 25% decline in the United States’ mail volume³.

Bergeson, S. C., Gray, J., Ehrmantraut, L. A., Laibson, T., & Hays, R. D. (2013).

Comparing web-based with mail survey administration of the Consumer Assessment of Healthcare Providers and Systems (CAHPS®) Clinician and Group Survey.

Primary Health Care: Open Access, 3.

This study compared web-based data collection with standard mail survey mode of collection of CAHPS® Clinician and Group survey data by evaluating the responses to CAHPS® survey dimensions and individual question responses, response rates, and participant characteristics. The study found that web-based surveys yielded comparable results to mail surveys. Questions addressing access were the only ones that differed significantly by mode of administration. Web-based surveys succeeded in obtaining patient feedback more quickly and less expensively than mail surveys. However, the web-based response rates were lower; therefore strategies to increase response rates will be a key element of web-based data collection.

Kamo, N., Dandapani, S. V., Miksad, R. A., Houlihan, M. J., Kaplan, I., Regan, M., & Sanda, M. G. (2011).

Evaluation of the SCA instrument for measuring patient satisfaction with cancer care administered via paper or via the Internet.

Annals of Oncology, 22(3), 723-729.

This paper describes the development of a novel survey instrument for cancer patients to evaluate the structure, process, and outcome dimensions of patient satisfaction. The survey was administered to patients in both a paper and electronic format. The findings from this study show that both the paper and the electronic versions of the survey demonstrate test-retest reliability, internal consistency, and validity. These findings are further supported by a meta-analysis done by the authors demonstrating that paper and electronic versions yield equivalent results.

Link, M. W., Murphy, J., Schober, M. F., Buskirk, T. D., Childs, J. H., Tesfaye, C. L., & Stern, M. (2014).

Mobile technologies for conducting, augmenting and potentially replacing surveys: report of the AAPOR task force on emerging technologies in public opinion research.

Deerfield, IL: AAPOR.

This report examines the potential impact of mobile technologies on public opinion research – as a vehicle for facilitating some aspect of the survey research process (i.e., recruitment, questionnaire administration, and reducing burden) and/or augmenting or replacing traditional survey research methods. The task force found that emerging technologies provide both opportunities and challenges, and that technology is driving social changes that continue to rapidly evolve. Benefits include the capture of more comprehensive data, more immediate access to consumers, location information and availability of a number of device features which can augment or even replace survey data. Limitations include smaller screen format, shorter survey lengths, errors in use, and privacy concerns. Moreover, these approaches may work best with certain types of respondents.

³US Government Accountability Office; GAO-13-347T: Published: Feb 13, 2013. Publicly Released: Feb 13, 2013

RELEVANT LITERATURE FROM HEALTHCARE: ANNOTATED CITATIONS

• CHANGING NORMS IN CONSUMER SURVEY ADMINISTRATION •

COST BURDEN

As a result of the ease of creating online surveys, the public has become inundated with surveys and fewer paper surveys are being returned through mail, necessitating larger and more expensive sample sizes to gather enough data to report statistically reliable information. **Costs incurred for printing, mailing, return labels, and re-mailing surveys seem minimal on a small scale, however, patient experience surveys are generally distributed to large populations and therefore, incremental costs to obtain adequate sample sizes must be considered.** Similarly, phone surveys also incur high costs in terms of the human resources required to conduct the surveys, are yielding fewer responses as the number of landlines dwindle, and individuals are more and more wary of unknown callers on their mobile devices. The following articles explore cost considerations in selecting survey modes.

Greenlaw, C., & Brown-Welty, S. (2009).

A comparison of web-based and paper-based survey methods testing assumptions of survey mode and response cost.
Evaluation Review, 33(5), 464-480.

This article sought to determine which mode of surveying resulted in better response rates and lower cost by administering a survey by mail, web-based and mixed-mode (email followed by mail) formats. Results show higher response rates for web-based over mail (52% vs. 42%), but an even higher response rate with the mixed-mode administration (60%). A cost per response mode figure was calculated by dividing the costs associated with each administration mode by the number of responses for each mode. Web-based, paper-based, and mixed-mode responses cost \$0.42, \$4.78, and \$3.61 per response, respectively. The authors concluded that while web-based survey administration is significantly less costly, organizations must consider whether additional cost is warranted to increase survey response rates.

Wright, K. B. (2005).

Researching internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services.
Journal of Computer-Mediated Communication, 10(3), 00-00.

This article examines the advantages and disadvantages of using online tools to conduct survey research. Advantages of online survey methods include: reducing cost, reducing time invested, and being able to reach unique populations that otherwise may not be reached by traditional paper survey methods. Disadvantages of online survey methods mentioned include sampling error and access issues. In terms of cost, the authors researched 20 online survey products and listed their names, features, pricing, and limitations in a table for comparison. The authors contend that because online survey tools have both benefits and limitations, researchers need to carefully decide whether or not to use the online medium.

RELEVANT LITERATURE FROM HEALTHCARE: ANNOTATED CITATIONS

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REAL-TIME RESULTS

One of the most noteworthy advantages of using electronic surveys is the rapid turnaround for survey results. A delay in data dissemination has been an ongoing concern for provider organizations. Often, data is too old to make timely decisions, or providers are skeptical about the validity of the information as timeliness of data is critical to perceived quality. **Collecting and displaying data in 'real-time' enables health care leaders and staff to rely on data in a meaningful way that improves the quality of care. In fact, quality improvement efforts that are based on expeditious feedback are uniformly regarded as a top priority.** While the collection of data in real time can be beneficial to survey administrators, caution should be taken when thinking about real-time administration of a survey through on-site methods. The following articles address both benefits and concerns of using real-time results.

Anastario, M. P., Rodriguez, H. P., Gallagher, P. M., Cleary, P. D., Shaller, D., Rogers, W. H., & Safran, D. G. (2010). **A randomized trial comparing mail versus in-office distribution of the CAHPS Clinician and Group Survey.** *Health Services Research*, 45, 1345-1359.

This study examined differences in quality of the data and measurement of patient experience for mailed vs. handout survey distribution protocols. Through a randomized multi-site trial that included 2,477 patients at 15 practice locations in New York, the authors were able to draw conclusions about the effect of the mode of surveying on the results. They found that the protocols for mailed surveys were easier to standardize, and that since the in-office distribution method decreased over time, it may introduce bias into the results. Additional findings showed that satisfaction scores were higher from the patients who received the survey in the office, yet response rates were lower for the handout protocol.

Burroughs, T. E., Waterman, B. M., Gilin, D., Adams, D., McCollegan, J., & Cira, J. (2005). **Do on-site patient satisfaction surveys bias results?** *Joint Commission Journal on Quality and Patient Safety*, 31(3), 158-166.

This study is a side-by-side comparison of surveys completed on site at the physician's office and surveys mailed to the patient's home after a visit to the office. Patients under 45 provided higher satisfaction ratings on site compared to by mail. Patients over 45 provided similar satisfaction levels on site and by mail. Both age groups rated "people aspects" of care higher in on site surveys as compared to mail surveys. Therefore, social desirability pressures of in office surveys can bias the results towards higher ratings of patient satisfaction and not fully expose areas that need to be improved.

Kraetschmer, N., Glazer, A., Green, E., Macdougall, L., Singh, S. (2014) **Improving the patient experience for cancer patients in Ontario through real-time measurement.** *2014 ASCO Quality Care Symposium: General Poster Session.*

The authors of this poster session sought to understand whether an electronic-based real-time patient experience (PE) survey for cancer patients at Cancer Care Ontario (CCO) would be beneficial to the organization and the patients it serves. Their standard retrospective paper based PE survey was perceived to have limitations in terms of the delay in results reporting. In a readiness assessment, of the 800 patients who participated in the real-time survey, 94% thought that measuring in real-time was important and 100% of the organization's Regional Vice Presidents that were interviewed found value in the availability of instantaneous results. With this validation, CCO planned to pilot an abbreviated survey and electronic tool with the intent to roll out to all regions upon evaluation of the pilot.

Singleton, K. W., Lan, M., Arnold, C., Vahidi, M., Arangua, L., Gelberg, L., & Bui, A. A. (2011). **Wireless data collection of self-administered surveys using tablet computers.** *AMIA Annual Symposium Proceedings*, 2011, 1261-1269.

This paper describes the current environment surrounding the use of electronic survey instruments for data capture in health care. The authors also suggest that in a clinic setting a web-based survey administered on a tablet is an ideal tool, in which simple interfaces and touch-screen usability provide an advantage for many patient populations. Tablets also provide even more real-time data than a computer and keyboard based instrument, which participants would be using at home, well after their health care encounter. The paper also provides many technical details on the development of a web-based survey for tablets.

Wofford, J. L., Campos, C. L., Jones, R. E., & Stevens, S. F. (2015). **Real-time patient survey data during routine clinical activities for rapid-cycle quality improvement.** *JMIR Medical Informatics*, 3(1).

This paper describes the use of a real-time web-based data management tool to conduct brief patient experience surveys at the point of care. The authors found that the tool helped accelerate the turnaround of survey data and was feasible to use inside busy office settings. Further, the ability to capture real-time information allowed clinic personnel to utilize the information for quality improvement using rapid improvement cycles.

RELEVANT LITERATURE FROM HEALTHCARE: ANNOTATED CITATIONS

• CHANGING NORMS IN CONSUMER SURVEY ADMINISTRATION •

SHORTER SURVEY INSTRUMENTS

Fielding a long form patient experience survey is increasingly less attractive for a number of reasons, including the complaints that our respective organizations have had directly from recipients citing length of the survey as the reason they did not respond. It is important to consider ways we can reduce burden for mail respondents by shortening the survey. This is particularly relevant as we move to surveying through electronic modes that do not accommodate lengthy surveys. A limited number of questions can appear on the screen at one time, therefore the need to scroll should be minimized in order to reduce the burden of responding.

Previous work has indicated that the length of a survey does not impact the rate of return; however this may be shifting due to the significant changes in the way people communicate. **Longer surveys may induce burn-out or survey fatigue, leading to less careful consideration of responses or not completing the survey. Moving to a one-page, letter-sized survey could reduce mail respondent burden. Additionally, there is a direct impact to the mail cost by decreasing the survey length.** At this time, there is growing consensus among survey researchers and health care policy-makers (including the Centers for Medicare and Medicaid Services (CMS) and the National Committee for Quality Assurance (NCQA)) that due to the changes that have occurred in health care and the communication culture, there is a need to shorten the instrument.

FLEXIBILITY IN SURVEY DESIGN

The use of electronic surveys can be a cost effective method to address a variety of respondent needs. For example, with the growing prevalence of households speaking languages other than English, it is imperative that health care providers receive feedback from a representative sample of their patient population. Translation and distribution of paper surveys can add a prohibitive cost burden to the survey administrator and require additional time for processing response data. **Furthermore, as surveys such as PROMIS (Patient Reported Outcomes Measurement Information System) have shown, creating an “intelligent” survey that alters questions based on patients’ prior responses can result in a dramatic reduction in survey length and subsequently increase patient response rates.** The following papers address these areas in survey design which can have an impact on the accuracy and completeness of results.

Morales, L.S., Puyol, J.A., Hays, R.D. (2003).

Improving patient satisfaction surveys to assess cultural competence in health care.

California HealthCare Foundation.

Based on well-known and documented evidence around the disparities in care based on cultural and linguistic barriers, the authors of this study set out to develop recommendations for the field on the use of assessment surveys to better understand and help address disparity. Among the recommendations included are: 1) making translated versions of the surveys more accessible and available to ethnic and linguistic subgroups, 2) including survey modules that address specific needs and concerns of these subgroups, 3) improving readability for low literacy populations, and 4) implementing these recommendations to allow surveyors to collect useful information in a culturally competent way.

Norman, K. L. (2003).

Implementation of conditional branching in computerized self-administered questionnaires.

This paper describes the benefits of web-based surveys that include automated conditional branching as a medium to tailor a questionnaire to individual respondents based on their answers to specific questions. The author notes that through traditional paper based surveys this is done with “skip patterns” (ex: instructions to skip to ‘x’ if you’ve answered ‘y’). However, the potential for misinterpretation of instructions is more likely, resulting in data collection errors. Automated conditional branching implemented in electronic surveys eliminates human error and can effectively bring respondents to the appropriate questions, collecting more accurate response data. The author further describes survey design options for condition branching, the level of automation needed, and the level of cognitive complexity associated with each design. The author concludes that thoughtful design of surveys results in a more satisfying survey experience for respondents and yields a more complete and reliable data set, which are important and positive attributes of web-based questionnaires.

RELEVANT LITERATURE FROM HEALTHCARE: ANNOTATED CITATIONS

• CHANGING NORMS IN CONSUMER SURVEY ADMINISTRATION •

SECURITY, PRIVACY, AND CONFIDENTIALITY ISSUES

The surge in electronic of patient health poses challenges in the realm of privacy, security, and confidentiality. While guidelines and practices exist, anecdotal and opinion poll data related to privacy and medical information suggest that there is still a considerable amount of concern from the perspective of patients. **The lack of scholarly research on health information privacy and security underscores the need to bring these issues to the forefront.**

<http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Downloads/Medicaid-EHR-Guide.pdf>

The Medicare and Medicaid Electronic Health Care Record (EHR) Incentive Programs provide incentive payments to eligible professionals, eligible hospitals, and critical access hospitals (CAHs) as they adopt, implement, upgrade or demonstrate meaningful use of certified EHR technology. In the 2nd stage requirement, as of January 2014, providers are required to have systems and use secure electronic messaging to communicate with patients on relevant health information.

<http://www.healthit.gov/patients-families>

HealthIT.gov provides an overview of e-health records and their importance in the rapidly growing health care system. This site addresses many common questions surrounding e-health records such as their role in the health care system, their beneficial attributes, and patients' privacy and personal roles in their e-health records. In addressing these concerns, this site explains how e-health records play an important role in community health as they are able to track health trends, such as asthma and obesity, in certain communities at a more current and detailed level than the traditional health care system. In addition, the site provides information on patient rights and privacy, explaining how patients are protected by the HIPAA privacy rules and regulations. Benefits such as patient engagement and patient control in e-health records are also addressed on this site.

<http://www.healthit.gov/providers-professionals/ehr-privacy-security>

This site delineates a 10-step plan for practices to ensure that their EHR meets the privacy and security requirements for Meaningful Use. Security risk analysis and management are foundational to this effort. The importance of the electronic health records is briefly addressed and proclaimed as lifesaving and vital to the improvement of health outcomes, smarter spending, and healthier people.

The Office of the National Coordinator for Health Information Technology. (2015).

Guide to privacy and security of electronic health information [Data File].

Retrieved from <http://www.healthit.gov/sites/default/files/pdf/privacy/privacy-and-security-guide.pdf>

This guide provides information for health care providers – especially Health Insurance Portability and Accountability Act (HIPAA) Covered Entities (CEs) and Medicaid Eligible Professionals (EPs) from smaller organizations - on ways to better understand how to incorporate federal security requirements and health information privacy into their practice. Updated information about compliance with Medicare and Medicaid EHRs Incentive Programs' privacy and security requirements as well as the HIPAA Privacy, Security, and Breach Notification Rules are offered in this guide. In addition, this guide provides educational resources and tools to help stakeholders alleviate privacy and security risks in their practice.

<http://www.hhs.gov/ocr/privacy/hipaa/understanding/srsummary.html>

This link provides an overview on key elements of the Security Rule including who is covered, what information is protected, and what safeguards must be in place to ensure appropriate protection of electronic protected health information. The HIPAA Security Rule establishes national standards to protect individuals' electronic personal health information that is created, received, used, or maintained by a covered entity. The Security Rule requires appropriate administrative, physical and technical safeguards to ensure the confidentiality, integrity, and security of electronic protected health information. The rule is crucial as the trend towards greater utilization of mobile devices to exchange medical information is on the rise.

Farnan, J.M., Sulmasy, L., Worster, B.K., Chaudhry, H.J., Rhyne, J.A., Arora, V.M. (2013).

Online medical professionalism: Patient and public relationships: Policy statement from the American College of Physicians and the Federation of State Medical Boards.

Annals of Internal Medicine, 158, 620-627.

E-communication between patients and physicians with an existing relationship requires discussion and previous agreement before electronic exchange is initiated. Guidelines exist for interactions with patients via e-mail, including the appropriate type of information to share and the expectations about turnaround time. The nature of e-mail communication ensures a written copy of the exchange, but patient confidentiality must be assured. A discussion of the protections in place to ensure patient privacy must also occur. Additionally, documentation of the patient's consent and awareness of the security and risks associated with the use of patient-physician e-mail should be included in the medical record. Physicians should not use personal e-mail accounts for these communications but rather encrypted messages over secure network connections. Web-based portals offer messaging through secure accounts on the portal. Physicians must maintain appropriate boundaries and recognize that electronic communication should serve as a supplement to office encounters. Electronic communication with patients, if done in a systematic and thoughtful way, can improve patient care and outcomes.

RELEVANT LITERATURE FROM HEALTHCARE: ANNOTATED CITATIONS

• CHANGING NORMS IN CONSUMER SURVEY ADMINISTRATION •

SECURITY, PRIVACY, AND CONFIDENTIALITY ISSUES (CONTINUED)

Furukawa, M. F., King, J., Patel, V., Hsiao, C. J., Adler-Milstein, J., & Jha, A. K. (2014).

Despite substantial progress in EHR adoption, health information exchange and patient engagement remain low in office settings.
Health Affairs, 33(9), 1672-1679.

Despite the national push for EHR adoption, the rate of EHR use and the information exchange via EHRs remains low. Using data from the 2009–2013 Electronic Health Records Survey, this study found that 30% of physicians routinely used capabilities for secure messaging with patients and 24% routinely provided patients with the ability to view online, download, or transmit their health record. Persistent gaps in EHR adoption in solo practices and non-primary care specialties were found to lag behind the adoption rate in larger primary care settings.

Peleg, R., Avdalimov, A., & Freud, T. (2011).

Providing cell phone numbers and email addresses to patients: the physician's perspective.
BMC Research Notes, 4(1), 76.

This study was conducted in order to understand physician attitudes towards providing their e-mail address and/or phone number to patients for consultation. Of the 120 physicians who completed the study questionnaire, 73.3% preferred to provide their cell phone number over their email address. Many physicians found emailing more convenient but less efficient. Communicating with patients over the phone rather than by email led to less miscommunication.

Peleg, R., & Nazarenko, E. (2012).

Providing cell phone numbers and e-mail addresses to patients: The patient's perspective, a cross sectional study.
Israel Journal of Health Policy Research, 1(1), 32.

Interviews were conducted with 200 patients insured by Clalit Health Services in southern Israel in order to understand patient attitudes and practices around obtaining their physicians' cell phone number or e-mail address. While less than 50% of patients were "very interested" in getting their physician's cell phone number, and less than 20% were "very interested" in getting their email address, over 70% of all respondents agreed that having this information could improve the relationship with their physician. Additionally, 86% of all patients participating in the study agreed that there should be time budgeted for physicians for phone consultations. Hesitancy around the use of phone or email consultation was attributed to fear of medical errors due to the lack of a physical examination, impinging upon physician's free time, and a general risk of miscommunication. Limitations of this study include the relatively small geographic region in which it was conducted, a lack of general information on Internet use in the region, and potential exclusion of interviewees from differing socio-economic backgrounds who may have different opinions about cell phone and e-mail use.

Van der Haer, R., & Meidert, N. (2014).

Undisclosed privacy. The effect of privacy rights design on response rates.
Survey Practice, 7(2).

This study investigated the impact of the design of privacy and confidentiality assurances on the respondents' probability to participate in or quit the web survey. Three areas were examined in this experiment: 1) emphasis on the privacy rights in the e-mail invitation, 2) placement of the privacy right in bold on the welcome screen, and 3) a checkbox in which the respondents have to indicate that they have read and understood the assurances. It was expected that the more these rights were emphasized, the less likely the respondents were to complete the survey. However, neither the way these assurances were presented in the e-mail invitation nor on the welcome screen had a significant influence on the response rate.

Vodicka, E., Mejilla, R., Leveille, S. G., Ralston, J. D., Darer, J. D., Delbanco, T., Walker, J., & Elmore, J. G. (2013).

Online access to doctors' notes: patient concerns about privacy.
Journal of Medical Internet Research, 15(9).

This study conducted a survey of patients at three sites that use Open Notes to identify patients' attitudes towards privacy when given access to visit notes. One-third of patients had concerns about privacy pre- and post-intervention, but this did not deter them from accessing their notes. While the level of concern among most patients did not change during the intervention, 15.5% of patients reported more concern post intervention while 12.7% reported less concern. This study also found that there is a strong correlation between those who express privacy concern and those who report low levels of confidence in communicating with their physicians.

RELEVANT LITERATURE FROM HEALTHCARE: ANNOTATED CITATIONS

• CHANGING NORMS IN CONSUMER SURVEY ADMINISTRATION •

COMPARABILITY OF EMAIL AND PAPER SURVEY RESPONSE RATES

The internet has greatly impacted the field of survey research as the number of electronically- administered surveys continue to grow. **Cost efficiency and speed, wide availability of survey design and implementation tools, ease of implementation including reminders, and built-in features that facilitate data cleaning for researchers and improve the survey experience for respondents are advantages of the electronic survey.** However, response rates continue to be lower among electronic surveys compared to the traditional mailed survey. Research suggests a mixed-mode approach that incorporates electronic surveys with traditional survey methods as a way to address non-response methodological issues while achieving some of the benefits of electronic surveys.

Lin, W., & Van Ryzin, G. G. (2011).

Web and mail surveys: An experimental comparison of methods for nonprofit research.
Nonprofit and Voluntary Sector Quarterly, 41, 1014-1028.

This study compared web and mail survey response rates and data quality. The results indicate that the mail survey achieved a significantly higher response rate than the web survey, and data obtained from the mail survey produced higher internal consistency than that obtained from the web survey. Overall, the findings suggest that a mail survey, although more costly, may have response-rate and data-quality advantages over a web survey.

Millar, M. M., & Dillman, D. A. (2011).

Improving response to web and mixed-mode surveys.
Public Opinion Quarterly, 75(2), 249-269.

This study conducted two experiments to evaluate strategies that improve response to web and web/mail mixed-mode surveys. The goal of this study was to determine the best ways to maximize web response rates in a highly internet-literate population. Concluding findings suggest that providing simultaneous choice of response modes is not the best way to maximize web mode response rates. However, if web and mail modes are offered sequentially – where Web is offered first and a mail follow-up option is used in the final contact, web response rates improve and are overall equivalent to using only mail.

Shih, T. H., & Fan, X. (2009).

Comparing response rates in e-mail and paper surveys: a meta-analysis.
Educational Research Review, 4(1), 26-40.

This study conducted a meta-analysis of thirty-nine studies published within the last ten years that directly compared web and mail survey modes. Despite considerable variation across the studies, mail surveys tended to have higher response rates than web surveys. Variables, such as age, proved to impact response rates among certain surveys. For example, college students appeared to be more responsive to web surveys while other respondents (e.g., medical doctors, school teachers, and general consumers) tended to be more responsive to mailed surveys. This study found that on average, mailed surveys have about a 10% higher response rate than web surveys.

RELEVANT LITERATURE FROM HEALTHCARE: ANNOTATED CITATIONS

• METHODS FOR CREATING AN UPDATED SURVEY INSTRUMENT (SHORT FORM) •

In developing a short-form survey instrument that has the highest level of scientific validity and reliability possible and is comparable to other results seen through traditional methods of large scale survey measurement, there are a number of factors that must be weighed, alongside any additional business requirements. These may include but are not limited to:

- 1) Brevity – a short form survey should be able to fit on one page or one screen, limiting the number of questions to between 10 and 15. Sharing information on how much time is required to take the survey is helpful as well, and may minimize abandonment rates.
- 2) Alignment – the short form survey should use the same questions that are used in the long form version of the tool. For patient experience, CG-CAHPS, PCMH, and ACO surveys are examples.
- 3) Representation – the short form version of the survey should include items that are representative of the composites included in the standard survey.
- 4) Demographics – there must be demographic questions to allow for adjustment of the responses. These can be a sub-set of the long form assessment tool.
- 5) Inclusion of a Screener – this ensures that the survey respondent has indeed been a patient in the last year.
- 6) Validity of Population – remove any questions that address populations not intended to be measured.
- 7) Technology compatibility – the survey should be easy to complete on an electronic device.
- 8) Usefulness for Quality Improvement – responses should provide actionable results that can be used for quality improvement efforts. The following studies describe various methods and considerations used to create a short form survey in order to approximate a longer instrument to produce data that are statistically equivalent.

Mora, M. (2011).

Why we need to avoid long surveys.

Retrieved from <http://www.relevantinsights.com/long-surveys>

This link provides information about reasons to avoid use of long surveys. Respondents, who are willing to endure a long survey, are at high risk of experiencing high burden and becoming “satisficers”. “Satisficing” occurs when the respondents select the answer options without giving them sufficient consideration. They elect for the most effortless mental activity in an attempt to satisfy the question requirement, rather than work on finding the optimal answer that best represent their opinion. Respondents may start selecting the first choice in every question, straight-lining in grid questions (selecting the same across all options), or simply selecting random choices without ample consideration. This type of behavior renders the data erroneous.

Wong, E. L., Coulter, A., Hewitson, P., Cheung, A. W., Yam, C. H., fai Lui, S., & Yeoh, E. K. (2015).

Patient experience and satisfaction with inpatient service: development of short form survey instrument measuring the core aspect of inpatient experience.

PloS One, 10(4).

This study describes the development of a short-form inpatient instrument to measure patient experience (SF-HKIEQ). The result was an 18-item instrument which covers 4 dimensions of patient care including hospital staff, patient care and treatment, information on leaving the hospital, and overall impression. These were extracted from the original 54-items covering 9 dimensions using a two stage approach: 1) a consensus conference and 2) a cross-sectional validation survey. Upon analysis it was determined that the short form had a high degree of face validity, construct validity and internal reliability. Because of the brevity of the form, it also functioned as a quality improvement tool capable of tracking quality over time.

Chiun-Fang, C., Sherbourne, C.D., Ofman, J., Lee, M., Lubeck, D.P., Paulus, H.E. & Weisman, M. (2004).

Development and validation of Cedars-Sinai Health-Related Quality of Life in Rheumatoid Arthritis (CSHQ-RA) short form instrument.

Arthritis & Rheumatism, 51(3), 356-364.

The objective of this study was to develop a shorter version of a 33-item survey (CSHQ-RA) that would produce valid and reliable results compared with the original instrument using psychometric regression analysis. The paper describes the testing used to determine which questions in each of the 5 domains to keep based on the outcomes of the analysis and expert opinion. It was concluded that an 11-item survey that represented 4 of the 5 original domains had good internal consistency, reproducible responses, and would generally be less burdensome for future large scale studies.

Kosinski, M., Bayliss, M. S., Bjorner, J. B., Ware Jr, J. E., Garber, W. H., Batenhorst, A., & Tepper, S. (2003).

A six-item short-form survey for measuring headache impact: The HIT-6™.

Quality of Life Research, 12(8), 963-974.

This paper describes the process of creating a 6-item short form survey on headache impact for patients suffering from migraines or other severe headaches. The 6 items were derived from a pool of 54 items based on content validity, IRT, internal consistency, distribution of scores, clinical validity, and linguistic analyses. The authors concluded that the item response theory model was useful in creating a valid short form for screening and monitoring patient outcomes.

RELEVANT LITERATURE FROM HEALTHCARE: ANNOTATED CITATIONS

• METHODS FOR CREATING AN UPDATED SURVEY INSTRUMENT (SHORT FORM) •

ADDING PATIENT COMMENTS

The inclusion of open ended questions that elicit comments from survey respondents can add meaningful information to quantitative data. **Patients often want to elaborate on their particular experiences of care and this forum enables them to delve into personal and specific issues that may not be elicited from a standard survey protocol. Unstructured narrative commentary is a rich source of information and known to provide useful insights.** Today's patients have begun to report their health care experience on the internet in blogs, social networks, and on health care rating websites. However, as this is largely unstructured, non-standardized free-text information, it is not captured in a systematic way. This qualitative data could be routinely collected, processed, and interpreted by health care providers to monitor performance and to use as a valuable tool for quality improvement. In the patient experience measurement realm, this has been a largely untapped source of data. The following articles provide insight into the use of open ended questions with descriptions of question design, approaches to interpretation, possible uses for the information, and how the responses relate to their quantitative counterparts.

Curry, L., Nembhard, I., Bradley, EH. (2009).

Qualitative and mixed methods provide unique contributions to outcomes research.

Circulation, 119, 1442-1452.

This paper describes in-depth the difference between qualitative and quantitative approaches in research and highlights the potential value of utilizing qualitative methods to help illuminate complex phenomena. It also elaborates upon issues that are not clear with quantitative data alone and illuminates causal mechanisms. The authors summarize that qualitative approaches can be successfully integrated with quantitative methods when adequately designed, deployed with rigor and an understanding of the methodologies, and a systematic incorporation of the techniques.

O'Cathain, A., & Thomas, K. J. (2004).

"Any other comments?" Open questions on questionnaires-abane or a bonus to research?

BMC Med Res Methodol, 4(25).

This article supports the notion that inclusion of patient comments sections have the potential to increase response rates, expand on responses to closed questions, and highlight new issues not represented in the closed questions. The authors conclude that open ended questions can be extremely valuable as long as researchers are aware of the data they are trying to capture and design questions specifically to meet their objectives.

Riiskjær, E., Ammentorp, J., & Kofoed, P. E. (2012).

The value of open-ended questions in surveys on patient experience: number of comments and perceived usefulness from a hospital perspective.

International Journal for Quality in Health Care, 24(5), 509-516.

This article examines how likely patients are to respond to open-ended questions as well as how useful the answers to these questions can be in improving the quality of care in hospitals. The study used surveys with quantitative measures as well as open-ended questions. Researchers worked with hospital staff and leadership to review the open-ended responses in semi-structured interviews to understand the perceived usefulness of this response format. The researchers concluded that patient comments can provide insights into what lies behind quantitative results and are valuable tools for quality improvement. The wording of the questions and the appeal to the respondent to answer them are also important factors that should be considered.

Santuzzi, N. R., Brodnik, M. S., Rinehart-Thompson, L., & Klatt, M. (2009).

Patient satisfaction: How do qualitative comments relate to quantitative scores on a satisfaction survey?

Quality Management in Healthcare, 18(1), 3-18.

This study seeks to understand how patients answer quantitative questions based on their responses to open ended questions. Patients who answered positively to open ended questions were more likely to provide higher ratings on quantitative questions than patients who responded negatively to the open ended questions.

Schlesinger, M., Grob, R., Shaller, D., Martino, S. C., Parker, A. M., Finucane, M. L., & Rybowski, L. (2015).

Taking patients' narratives about clinicians from anecdote to science.

The New England Journal of Medicine, 373(7), 675-679.

This article addresses the importance of patient narratives and their power to influence consumers' decisions as well as physicians' reputations. While most publically reported patient experience surveys do not include patient comments, consumers and physicians are often left to rely on commercial websites such as Yelp and Angie's List in order to read patients' comments. By 2013, 31% of Americans read patient comments online, and 21% used them when selecting a clinician. While it seems that the future of publically reported patient experience measures will include patient comments, experts worry about the clout of these comments and have predicted that patient comments may interfere with consumers' use of other metrics and undermine clinicians' confidence in patient feedback. In order for experts to feel comfortable including patient comments in their public reports, guidelines would need to be developed to decide what is considered a legitimate source for feedback.

Tsianakas, V., Maben, J., Wiseman, T., Robert, G., Richardson, A., Madden, P., & Davies, E. A. (2012).

Using patients' experiences to identify priorities for quality improvement in breast cancer care: patient narratives, surveys or both?

BMC Health Services Research, 12(1), 271.

This study sought to understand the value of patient narratives in terms of their usefulness for quality improvement efforts. Findings indicate that patient narratives tended to provide information in terms of the 'relational' aspect of their experience while the priorities identified by a survey were more 'functional'. The authors concluded that a qualitative analysis of the patient experience in tandem with a quantitative method should be considered in order to deliver the most improvement to both functional and relational aspects of patient care.

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Appendix: SUMMARY OF EARLY ADOPTER CASE STUDY SURVEY RESULTS⁴

⁴Massachusetts Health Quality Partners. (2014).
Advancing the ambulatory patient experience measurement and reporting agenda.
[White Paper].

| | California Healthcare Performance Information System | Maine Quality Forum | Massachusetts Health Quality Partners | Minnesota Community Measurement | Washington Health Alliance | Wisconsin Collaborative for Healthcare Quality |
|---|--|---|--|---|---|---|
| About the Organization | | | | | | |
| Market served | California | Maine | Massachusetts | Minnesota & border communities | Five counties (King, Kitsap, Pierce, Snohomish, Thurston) | Data reported for about 60% of Wisconsin providers |
| Type of organization | Multi-stakeholder non-profit | Government | Multi-stakeholder non-profit | Multi-stakeholder non-profit | Multi-stakeholder non-profit | Multi-stakeholder non-profit |
| Years of public reporting | 12 | 2 | 9 | 3 | 2 | 2 |
| Sustainability and Key Priorities | | | | | | |
| Most significant factors contributing to success | Statewide P4P program Provider support Alignment with national surveys Multi-stakeholder governance | Growing recognition of importance of assessing and improving patient experience (e.g., Links to Medicare VBP) Multi-stakeholder support for patient experience surveying | Insurer P4P program Health plan and provider engagement and support Alignment with national surveys | Use of measures by payers Provider commitment and recognition of value Government mandate | Provider support and cooperation RWJF AF4Q funding Health plan support and cooperation Purchaser sees value Good vendor support (CSS) | RWJF AF4Q grant |
| Greatest challenges so far | Survey responses rates Administrative costs Ensuring relevant topics are included | Funding for repeated rounds of statewide surveying | Keeping consumers engaged - declining mail survey response rates Sustainable business model (concerns that costs not fairly shared) High costs of surveying Barriers to embracing the value of consumer feedback, confusion about terminology (i.e., pt. satisfaction vs. pt. experience) | Data collection burden using mailed or phone survey Lack of alternative methods for safety net providers Delay in reporting results | Sustainable business model Broadening provider participation to support statewide implementation | Getting all members to use a single standardized tool (CG-CAHPS) |
| Highest priorities to meet greatest challenges | Evaluating more cost effective methods Stay abreast of the latest research Maintaining alignment with national standards Expanding test questions | Finding support/ options for funding future rounds of surveying | Better use of technology to have greater flexibility in surveying and reduce survey costs Developing a sustainable and fair business model Survey alignment Articulate value proposition to all key stakeholders | Increasing use by all payers including Medicare Trying to improve efforts Addressing data collection burden Increasing use by payers and the public - including Medicare - to incent data collection | Developing a sustainable business model | Demonstrating value of public reporting results Creating synergy to maximize value for internal provider CQI (integrate patient experience into other condition-specific improvement areas that it's working on) |

| | California Healthcare Performance Information System | Maine Quality Forum | Massachusetts Health Quality Partners | Minnesota Community Measurement | Washington Health Alliance | Wisconsin Collaborative for Healthcare Quality |
|--|--|---|---|---|---|--|
| Survey Design and Administration | | | | | | |
| Survey instrument | CG-CAHPS 12-Month | CG-CAHPS Patient-Centered Medical Home | CG-CHAPS Patient-Centered Medical Home | CG-CAHPS Visit | CG-CAHPS 12-Month | CG-CAHPS Visit |
| Population(s) measured | Adults | Adults | Adults and children | Adults | Adults | Adults |
| Number of questions | 53 | 52 | 61 adult, 68 pediatric | 37 | 52 | 37 |
| Unit of analysis | Primary care medical group (2 or more practices) Multi-specialty medical group (2 or more practices) Individual primary care provider Individual specialty care physician | Primary care practice Specialty care practice | Primary care medical group (2 or more practices) Primary care practice Individual primary care provider | Primary care medical group (2 or more practices) Multi-specialty medical group (2 or more practices) Primary care practice Specialty care practice | Primary care medical group (2 or more practices) Primary care practice | Primary care medical group (2 or more practices) Primary care practice Specialty care practice |
| Criteria for publicly reporting results | Statistical reliability | Minimum number of completed surveys for each unit of analysis | Statistical reliability | Minimum number of completed surveys | Minimum number of completed surveys Statistical reliability | Minimum number of completed surveys |
| Survey response rate | 34.4% | Not reported | 26% | 35% | 29% | Not reported |
| Data source for sampling | Single source (from provider sites or entities) | Centralized data aggregation from multiple sources | Centralized data base using multiple sources | Single source (from provider sites or entities) | Centralized data using patient sample from multiple health plans | Single source from providers using external vendors |
| Payer populations included | Commercial | Commercial Medicare Medicaid | Commercial | Commercial Medicare Medicaid | Commercial Medicaid | Commercial Medicare Medicaid |
| Data collection method(s) | Paper mailed to home with online option Telephone interview Email invitation with online option | Paper mailed to home Telephone interview | Paper mailed to home with online option | Paper mailed to home with online option Telephone interview | Paper mailed to home | Paper mailed to home with online option Telephone interview |
| Data collection frequency | Annually | Annually | Annually | Annually | Bi-annually | Continuous |
| Public Reporting Methodology | | | | | | |
| Entities represented on governing body | Website Printed insert in Consumer Reports | Website Social Media | Website Printed insert in Consumer Reports Social Media | | Website Social Media Printed results by collaborative Printed results by employers | Website |

| | California Healthcare Performance Information System | Maine Quality Forum | Massachusetts Health Quality Partners | Minnesota Community Measurement | Washington Health Alliance | Wisconsin Collaborative for Healthcare Quality |
|--|---|--|--|---|--|--|
| Governance and Business Model | | | | | | |
| Entities represented on governing body | Consumers Employers Providers Health plans/carriers | Consumers Employers Providers Health plans/carriers Public officials | Consumers Employers Providers Health plans/carriers Public officials | Consumers Employers Providers Health plans/carriers Public officials | Consumers Employers Providers Health plans/carriers Public officials Union trusts | Consumers Employers Providers Health plans/carriers |
| Who owns the raw data? | Our organization Participating providers | Our organization | Our organization Participating providers Health plans/carriers Government agency | Our organization (with limited license to raw data) Participating providers | Our organization | Participating providers |
| Methods used to encourage providers to participate | Financial incentives or penalties Results shared with physicians and plans | Good faith cooperation Requirement for practices in Maine PCMH Pilot and Health Homes initiatives | Participation is involuntary; practices with 3 or more providers included Certification/recognition requirements Financial incentives and penalties Condition of participation in insurance offerings | Government mandates Financial incentive and penalties Condition of participation in insurance offerings Good faith cooperation | Participation is involuntary; practices with 3 or more providers included | Good faith cooperation |
| Revenue sources | Provider fees/contributions Carrier/health plan fees/contributions | Government funds | Provider fees/contributions Carrier/health plan fees/contributions Government funds | Membership fees Government funds Grants | Membership fees Provider fees/contributions Grants | Membership fees Grants |
| Estimated annual cost | \$2 million | \$1 million | \$1 million | Internal annual cost to aggregate and report results was about \$200,000, provider costs for data collection about \$1 million | \$250,000 | \$20,000 |
| Number of practice sites/medical groups measured and reported | 173 | 267 practices | 480 | 651 | 46 medical groups in 185 clinic locations | 12 organizations; 86 clinic sites; 45 specialty practices |