Healthcare Quality Reporting: Benefits and Burdens

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Introduction:

Healthcare quality reporting has increased in scope in recent years. With this emergence, there have been many quick moving parts and evolving components that have come from the state and national levels. The purpose of this literature review is to provide an overview of the various healthcare quality reporting programs and provide an overview of the benefits and burdens associated with healthcare quality reporting.

The paper is laid out into two unique sections. The first section, Background, highlights the ambulatory healthcare quality programs including all current federal programs administered by the Center for Medicare and Medicaid Services; all current programs administered by the State of Minnesota; the federal, state and private insurance pay-for-performance programs, and other national and state programs for which health care quality data is reported. This section provides an overview of the history and purpose of these programs, as well as the participation requirements, incentives, and penalties associated with each. This portion of the review contains information gathered from a wide variety of sources including program websites, national and federal registries, program manuals, and other online resources as outlined in the references .

The second section, Benefits and Burdens, outlines the benefits and burdens of the outlined program. For the purpose of this project, the primary themes that emerged in reviewing the literature include provider/professional group buy-in, patient/consumer outcome, payers, purchasers, government, finance, administrative overhead, healthcare model/staffing, and technology. This section of information was gathered from an extensive online search to source supplemental editorial, white paper, professional resources, and governmental documents. Additionally, a literature search and grouping was synthesized from the literature that met the inclusion criteria outlined below.

The following MESH terms were used in a structured combination for the burdens and benefits portion of the literature review: Benchmarking, Forms and Records Control/Organization & Administration, Hospital Information Systems, Quality Assurance, Health Care/organization & administration, Primary Health Care/Standards, Quality of Health Care/Standards, Physician Incentive Plans, Quality of Health Care, Primary Care, Efficiency, Organizational/Efficiency,   Ambulatory Care/Ambulatory Care Information Systems, Quality Indicators, Economics and Legislation/Jurisprudence, Surgicenters Outpatient clinics, Hospital, Ambulatory Care, United States, Humans, and/or English. The several hundred citations that were filed under these, and combination of these, terms were reviewed for inclusion. Articles that were published on or after 2006 were used for primary source and other supplemental sources were referenced as needed due to the rapidly changing nature of the literature and healthcare quality reporting systems. Additionally, articles of key interest were backtracked to original MESH term filing to ensure that the search field was robust and any articles of interest were included for review. At the completion of review, the articles were streamlined to obtain key themes and reduce redundancy, and 24 were included for the purposes of this document.

The overall approach to this review was to combine and synthesize unbiased and factual information into one document highlighting the various programs as well as the burdens and benefits. The

document was developed in such a way that the reader could use the review as a foundation for future programming and various projects, as well as to highlight sources and areas that could be used for supplemental additional work. All attempts were made to find complete information that provided useful and up-to-date information in a synthesized and succinct fashion.

Background

Federal Reporting Programs

The Centers for Medicare and Medicaid (CMS) has several programs that play a role in the government's objectives to improve the quality of care provided, improve the health of individuals and populations, and reduce the cost of health care. There are currently 4 main programs aimed at achieving these goals. Under these programs, eligible healthcare professionals who submit claims to the Medicare Physician Fee Schedule and/or through the Medicaid program can receive incentive payments and avoid financial penalties for successfully reporting quality and functional measures.

Programs and Purpose

- *Physician Quality Reporting System (PQRS)* and *PQRS Group Reporting Option (GPRO)*:   PQRS is a CMS reporting program that uses a combination of incentive payments and payment reductions applied to eligible professionals (EPs) Medicare Part B Physician Fee Schedule (PFS) to promote reporting of quality information by EPs. The program pays incentive payments to EPs for satisfactorily reporting data on specified quality measures or applies payment reductions to EPs who do not satisfactorily report data. To be eligible for the incentive payments, individual EPs or group practices participating in GPRO must either report 9 individual measures across 3 National Quality Strategy domains for at least 50% of eligible patients, or report on all measures in at least one measures group for a sample of at least 20 unique patients.[1, 2]
- *Medicare and Medicaid Electronic Health Record (EHR) Incentive Programs and Meaningful Use*: The Medicare and Medicaid Electronic Health Record Incentive Programs were created to provide incentive payments to eligible professionals (EPs), eligible hospitals (EHs), and critical access hospitals (CAHs) as they adopt, implement, upgrade or demonstrate meaningful use of certified EHR technology to improve quality, safety, efficiency, and reduce health disparities; engage patients and family members; improve care coordination, and population and public health; and maintain privacy and security of patient health information. To demonstrate meaningful use of an electronic health record, EPs, EHs and CAHs must achieve specific objectives over three stages. EPs objectives for stage 1 consist of 13 required (core) objectives and 5 additional (menu) objectives from a list of 9, and objectives for stage 2 consist of 17 required objectives and 3 additional objectives from a list of 5. Additionally beginning in 2014, EPs are required to report 9 clinical quality measures covering at least 3 National Quality Strategy domains no matter what stage. Stage 3 objectives have not yet been established.[3, 4, 5, 6]
- *Medicare Shared Savings Program - Accountable Care Organizations (ACO)*: The Medicare Shared Savings Program was established to facilitate coordination and cooperation among providers with the goal to improve the quality of care for Medicare Fee-for-Service beneficiaries

and reduce unnecessary costs. Providers that form and participate in an Accountable Care Organization can receive financial rewards if the ACO lowers the growth in health care costs while meeting specified quality measure benchmarks based on 33 quality measures spanning 4 National Quality Strategy domains. [7,8]

- *Physician Feedback/Value-Based Payment Modifier*: This program provides comparative performance information to physicians in an effort to improve the quality and efficiency of medical care, and establishes a physician reimbursement system that rewards value rather than volume by calculating and applying a value modifier to Medicare payments. The value modifier is calculated based on quality and cost performance measures, and can result in upward, downward, or neutral adjustments to Medicare payments. The quality performance measure for this program is based on comparison to benchmarks calculated from data submitted to the PQRS program. [9, 10]

<u>History</u>

The PQRS was the first of the above programs to be established. The Centers for Medicare and Medicaid Services (CMS) implemented the Physician Quality Reporting Initiative (now called Physician Quality Reporting System (PQRS)) in 2007 as required by the 2006 Tax Relief and Health Care Act. This initiative built on and replaced the 2006 Physician Voluntary Reporting Program which was the first step toward a pay for performance system for physician services, and it established a financial incentive for eligible professionals (EPs) to participate in a voluntary quality reporting program. [11, 12]

In 2007 and 2008, two acts were passed that extended the PQRS program. The Medicare, Medicaid, and SCHIP Extension Act of 2007 (MMSEA) authorized the continuation of the PQRS program for 2008 and 2009. The Medicare Improvement for Patients and Providers Act of 2008 (MIPPA) made the PQRS program permanent and authorized incentive payments through 2010. [12]

In 2009, The American Recovery and Reinvestment Act of 2009 (Recovery Act) authorized the Centers for Medicare & Medicaid Services (CMS) to award incentive payments to eligible professionals (EPs), eligible hospitals (EHs) and critical access hospitals (CAHs) who demonstrate Meaningful Use (MU) of a certified electronic health record (EHR) technology.   In July 2010, CMS published the final rule for the EHR Incentive Program which established 3 stages of the program, specified payment reductions under Medicare for organizations failing to demonstrate meaningful use, and laid out the criteria for Stage 1 of the program which began in 2011. In August 2012, CMS published the final rule for Stage 2. This rule specified the criteria EPs, EHs, and CAHs must meet in order to continue to participate in the program. The original MU timeline required Medicare EPs to meet the stage 2 criteria in 2013 but this requirement was delayed until 2014. [13, 14, 15, 16]

The Patient Protection and Affordable Care Act (ACA) enacted in 2010 made a number of changes to the PQRS for 2010 and beyond; authorized the establishment of the Medicare Shared Savings Program and Accountable Care Organizations; and mandated that CMS begin applying a Value-based Payment Modifier under the Medicare Physician Fee Schedule. [12, 17, 18, 9]

The changes made to the PQRS as a result of the ACA included authorizing incentive payments through 2014, requiring a penalty beginning in 2015 for eligible professionals who do not satisfactorily report, and adding an additional 0.5% incentive for EPs who successfully participate in and complete a qualified Maintenance of Certification Program. [12]

In November 2011, CMS finalized the rules and regulations for the Medicare Shared Savings Program. The Shared Savings Program was established to encourage providers to create ACOs that agree to be held accountable for improving the care of individuals, improving the health of populations, and reducing the rate of growth in health care expenditures. [17, 18]

The ACA expanded on a physician feedback reporting requirement initially established by MIPAA and directed CMS to provide information to physicians and group practices about resources used and quality of care provided. From this requirement, the Physician Quality and Resource Use Reports (QRUR) program was developed.   The ACA further mandated that by 2015 CMS begin applying a value modifier to claims submitted under the Medicare Physician Fee Schedule and the Value-Based Payment Modifier program was established using data from QRUR. [9]

Participation Requirements

Each of the CMS Programs generally specifies and defines eligible professionals (or eligible hospitals in some cases) as the first criteria to participate in a respective program. Each program has a little different set of professionals included in the program but each program includes physicians in the eligible list. Some programs also include nurse practitioners, physician assistants, and certified nurse midwives; other practitioners such as clinical social workers, clinical psychologists and registered dieticians; and therapists in the eligible list. The Medicare Shared Savings Program also requires the eligible professionals to participate in an Accountable Care Organization (ACO). All programs except the Medicaid EHR Incentive Program require that the EP must be submitting claims for patient services to Medicare under the Medicare Physician Fee Schedule. [19, 20, 21, 9]

The Medicaid EHR Incentive Program requires that the EP must have a minimum 30% Medicaid patient volume (20% for pediatricians) or practice in a Federally Qualified Health Center with a 30% patient volume attributable to needy individuals (receiving medical assistance, furnished uncompensated care, or furnished services at no cost or reduced cost based on a sliding scale). EPs may be eligible for both the Medicare and the Medicaid EHR Incentive Programs and in this case the EP can decide which program to participate in. [20]

Incentives and Penalties

PQRS: EPs who meet the criteria for a satisfactory submission of the quality measures will receive an incentive payment equal to 0.5% of their Medicare Part B PFS allowed charges for covered services during the reporting period. EPs who do not satisfactorily report quality measures during 2014 will be subject to a 2% payment reduction to their Medicare PFS amount for services provided in 2016. [22]

Medicare EHR Incentive Program: Incentives - The incentive payment amount is equal to 75% of an EPs PFS allowed charges for the calendar year subject to an annual limit. EPs could begin receiving incentive payments under this program in any calendar year from 2011 to 2014, and may receive payments for up to 5 years depending on the first year in which the EP first demonstrated meaningful use. Only EPs who successfully demonstrated MU and received a payment in the first or second year of the program (2011 or 2012) are eligible to receive payments for the full 5 years. The maximum incentive amount is $44,000 paid over 5 consecutive years. Penalties - Payment adjustments begin in 2015 for providers who are eligible but do not participate in the program and demonstrate MU prior to the 2015 calendar year. The adjustment is a percentage reduction applied to the Medicare PFS amount for covered professional services furnished by the eligible professional during the year. The adjustment percent is 1% in 2015, 2% in 2016, and 3% in 2017 and each subsequent year. [23]

Medicaid EHR Incentive Program: Incentives – EPs may receive incentive payments for up to 6 years. The last year to begin participating is 2016, and the last year to receive payments is 2021. EPs who successfully qualify for an incentive payment can receive $21,250 in the first year of participation and $8,500 in each subsequent year of participation. The maximum incentive amount is $63,750. Penalties – Medicaid EPs who are not also eligible to participate in the Medicare EHR Incentive Program are not subject to any penalties. However, Medicaid EPs who meet the eligibility requirements for the Medicare EHR Incentive Program are subject to the payment adjustments described in the *Medicare EHR Incentive Program* section above. [24]

Medicare Shared Savings Program: In an initial agreement to participate in the Medicare Shared Savings Program (which is voluntary), an ACO can choose to participate in shared savings only (one-sided track) or to participate in shared savings and losses with an opportunity for a higher share of savings (two-sided track). ACOs receive a shared savings payment if the ACO meets the quality standards and has generated shareable savings as determined by the program regulations. [25]

Under the regulations, CMS uses a 3 step approach to determine if the ACO is eligible for a savings payment and to determine the amount of the payment. The first step establishes an expenditure benchmark. The second step calculates a savings rate and from that determines if there are shareable savings (a savings rate that exceeds a Minimum Savings Rate of 2 percent to 3.9 percent depending on the track chosen and the size of the ACO's population). The third step determines the amount of the payment by applying a shared savings rate (up to 50% for the one-sided track and 60% for the two-sided track), based on the ACO's quality performance, to the overall savings. The payment amount is limited to 10 percent or 15 percent of the ACO's benchmark expenditures depending on the track. [25]

Value-based Payment Modifier: Under this program, a value modifier is calculated based on cost and quality performance measures that can result in a positive, neutral, or negative payment adjustment to claims under Medicare PFS. EPs in group practices of 100 or more will be subject to a value modifier (VM) in 2015 based on performance in 2013. Groups who participated in and met the minimum requirements for PQRS in 2013 will automatically have a neutral (0%) VM in 2015. These groups can optionally have their VM calculated based on quality tiering that evaluates costs and quality data as described below. EPs in group practices of 10 or more will be subject to the VM in 2016 based on

performance in 2014.   Groups in this category who participate in and meet the minimum requirements for PQRS in 2014 will have their VM calculated based on quality tiering where their costs and quality are both classified as low, average, or high. The VM can range from a -2% for groups with low quality and high cost ratings to a +2% adjustment for groups with low cost and high quality ratings. Groups of between 10-99 EPS are eligible for the positive payment adjustments but not subject to downward adjustments in 2016. Finally, groups of 10 or more who do not participate in PQRS will automatically receive a -2% payment adjustment. [10]

Minnesota State Health Care Reform Quality Improvement Programs

In 2008, Minnesota passed a state health reform law with the goals of providing better health care, lowering costs, and improving the health of communities. This law resulted in several initiatives aimed at achieving these goals including the Minnesota Statewide Quality Reporting and Measurement System, the Minnesota Quality Incentive Payment System, and the Health Care Homes initiative.

<u>Programs and Purpose</u>

Minnesota Statewide Quality Reporting and Measurement System and *Minnesota Quality Incentive Payment System*

The Minnesota Statewide Quality Reporting and Measurement System (SQRMS) and Minnesota Quality Incentive Payment System (QIPS) are programs designed to create a more coordinated approach to measuring, reporting and paying for health care quality; to produce consistent incentives for health care providers to improve quality in specific priority areas; and to provide more useful and understandable information to Minnesota health care consumers.

SQRMS is a program under which data about a standardized set of quality measures is collected, reported, and used to assess the quality of health care services provided by health care providers. The overall goal of the program is to provide a uniform approach to quality measurement in order to enhance market transparency. Physician clinics, ambulatory surgical centers, and hospitals are required to annually submit data on a set of quality measures which is collected and publicly reported by Minnesota Department of Health. [26, 27]

QIPS is a program under which quality-based incentive payments are made to providers based on performance and improvement over time. The purpose of QIPS is to identify priority areas for improvement from the payer community, with the goals of aligning and leveraging provider payment incentives, and to accelerate improvement in key areas. QIPS includes quality measures for both physician clinics and hospitals that focus on conditions and processes of care that have been identified as priority areas by the community. The 2014 quality measures for physicians are optimal diabetes care, optimal vascular care, and depression remission at six months. [28]

Health Care Homes

A health care home, also known nationally as medical homes, is an approach to health care in which primary care providers, families, and patients work in partnership to improve health outcomes and

quality of life for individuals with chronic health conditions and disabilities. The Health Care Homes initiative in Minnesota is a joint effort between the Minnesota Department of Health and Department of Health and Human Services. It is an important component of Minnesota's 2008 health reform law and has the goals to put patients and families at the center of their care, and provide the right care at the right time and in the right place. Through this program, primary care providers can receive payment for partnering with patients and families to coordinate care. [29]

History

Minnesota's 2008 Health Reform Law required the State to 1) establish a standard set of quality measures for health care providers across the state and 2) establish a system of quality incentive payments under which providers are eligible for payments based on performance against specified quality targets, and improvement over time. To comply with the first requirement, The Minnesota Statewide Quality Reporting and Measurement System (SQRMS) was developed and the rules governing the system were established in December 2009. Data collection for the program began in January 2010 and the first report was released in November 2010. To comply with the second requirement, The Minnesota Quality Incentive Payment System (QIPS), envisioned as a uniform pay-for-performance system, was released in January 2010.   The measures in these programs are reviewed with input from partners in the community and may be changed annually. [26, 27, 28]

The health reform law in 2008 also included provisions to expand on medical home legislation first passed in 2007 which developed the Primary Care Coordination program for Medicaid fee-for service patients with complex illness. The 2008 law added provisions to include the development of outcome measurements, standards and criteria for certification, and a payment methodology and from this, the Health Care Homes initiative was developed. The law allowed clinics and clinicians to become certified as health care homes and patients to voluntarily enroll, and required publicly funded and private fully insured health care plans to pay a care coordination fee for eligible patients in certified health care homes. [29, 30]

Participation Requirements

All physician clinics, ambulatory surgical centers, and hospitals in Minnesota are required to submit quality data annually to SQRMS. [31]

Currently only the State Employee Group Insurance Program and all state health care programs are required to use and report to QIPS. Other health plans are encouraged to participate or model their programs after QIPS. [28]

To be eligible for the health care home (HCH) program, a provider must be a physician, physician assistant or nurse practitioner and offer or coordinate a full range of primary care services. To participate, the provider or the clinic in which the provider works must obtain HCH certification by meeting the certification standards which consist of measureable criteria within five major categories: patient access and communication, patient tracking and registry functions, care coordination, care plans, and performance reporting and quality improvement. [29]

Incentives and Penalties

Minnesota Statewide Quality and Reporting Measurement System

While there is not a direct monetary incentive for participation nor penalty for non-participation in this program, data collected through this program is publicly reported and can be used to rate the performance of the health care organization. Additionally, to be eligible for numerous pay for performance programs offered by health plans in Minnesota, physician clinics must submit data to this program. [31]

Minnesota Quality Incentive Payment System

The only public information available about the incentives available through this program is simply that quality-based incentive payments are paid to providers based on absolute performance (comparison against specified targets) and improvement over time. [28] There is no information about the amount of these incentives and about how the incentives are calculated.

Health Care Homes (HCH)

Participation in the health care homes program is voluntary and there is currently no penalty for non-participation. HCH certified providers or clinics are eligible to receive monthly care coordination payments per each patient enrolled and based on the complexity of the patient. [29]

Pay for Performance Programs

Bridges to Excellence

Bridges to Excellence (BTE) is a national program designed to recognize and reward clinicians who apply for and meet defined performance benchmarks focused around chronic conditions such as asthma, cardiac care, diabetes, and more. Eligibility for recognition depends on how many patients the clinician treats for a condition. Incentives are offered and paid through health plans and accessible to a clinician if the health plans they contract with utilize the BTE programs to identify eligible clinicians. If recognized, a clinician may be eligible to earn a fixed annual bonus payment for each member patient of the participating health plan, as well as receive preferred network tiering or fee schedule increases. [32]

Minnesota Bridges to Excellence

Minnesota Bridges to Excellence (MBTE) is a purchaser led pay-for-performance program introduced by the Minnesota Health Action Group in 2006. The goals of MBTE are to improve the quality of care of patients, raise the level awareness about variations in quality, and encourage provider competition stimulate clinic improvement through transparency via publicly reported outcomes and financial recognition. It does this by publicly reporting and financially rewarding clinics for meeting or exceeding a set of care measures for patients with diabetes, depression, and vascular disease.   To be eligible for a MBTE reward, a clinic must meet or exceed a specified percentage of patients with these conditions at

optimal levels of care, or significantly increase the number of patients at optimal levels from the previous year. [33]

In 2013, MBTE paid out a total of $253,605 to 122 clinics who either met the diabetes minimum performance measure (51%) or showed significant improvement; $65,900 to 127 clinics who met the vascular measure (63%) or showed improvement; and $326,756 to 198 clinics who met the depression measure (13%) or showed improvement. [34]

MHCP Pay for Performance Program

In 2008, Minnesota Health Care Programs (MHCP) implemented a Pay for Performance Program for MCHP fee-for-service providers. Physicians, Nurse Practitioners, Clinical Nurse Specialists and other providers practicing in clinics, Federally Qualified Health Centers, hospitals, Rural Health Centers, and other care settings can qualify to receive $250 up to two times every 12 months for rendering optimal care to qualifying MHCP recipients (Medical Assistant or MinnesotaCare) with cardiovascular disease or diabetes or both. [35]

Various Private Insurance Companies

In 1997, HealthPartners was the first health insurance plan in Minnesota to establish a pay for performance program named the Partners in Quality program.   Also in the late 1990's, UCare established a program to offer incentives to clinics and care systems that improved quality of care of patients enrolled in Minnesota Health Care Programs and later expanded pay for performance to include Medicare patients.[36] Historical information from the other health insurance plans in the state is not readily available.

Today, HealthPartners and UCare are the most active Minnesota health insurance plans in the pay-for-performance arena. HealthPartners' Partners in Excellence program provides financial rewards to medical or specialty groups achieving high levels of performance as measured by Minnesota Community Measurement or based on an internal measurement set. [37] UCare Pay for Performance program offers financial incentives to primary care physicians demonstrating superior or improved performance against measures based on the Healthcare Effectiveness Data and Information Set (HEDIS). [38]

Other National and State Programs

Healthcare Effectiveness Data and Information Set (HEDIS)

HEDIS is a tool created by the National Committee for Quality Assurance to measure the performance of health plans on a broad range of important health issues. The information is used by purchasers and consumers of health care to compare the performance of health care plans. Health plans use the data to make improvements to their quality of care and service.   As indicated earlier in this paper, at least one of the health care plans in Minnesota, UCare, is currently using HEDIS to measure the performance of primary care physicians in Minnesota for their pay for performance program.

Joint Commission

The Joint Commission's Ambulatory Care Accreditation Program was established in 1975 to encourage safe, high quality patient care in freestanding ambulatory care facilities. Participation is voluntary. There are no direct financial incentives or penalties for participation or non-participation. However, there can be benefits to accreditation that can provide recognition and exposure for the organization, help lower operational costs, and provide tools to help with quality improvement processes.

Benefits and Burdens

Provider and Professional Group Buy-in

Staff and professional group buy-in is frequently referenced and researched within healthcare quality reporting. Within this broad group, there are thousands of providers at various levels and at a variety of systems throughout the country, there are large professional groups that provide advocacy and guidelines on the topic of healthcare quality, there are academic institutions that conduct research on the topic, and there are many smaller fractions and community based groups that provide support and guidance within the professional and public arena. Each of these groups and individuals have unique experiences and belief patterns related to healthcare quality in its entirety.

In many individual cases and for many provider based groups, the focus of the literature is from the perspective of barriers or burdens to healthcare quality reporting. This is critically important within the United States' healthcare system because most metrics are tied to providers and/or health systems and highlights the challenges that exist for consensus building. Additionally, it highlights the lack of broad provider buy-in into healthcare quality reporting as well as broad distrust of various quality reporting systems. Although there are many reasons for this distrust of the system, much research highlights that this distrust can be attributed to the perception of limited provider input into various metrics, lack of system support to implement and understand metrics, limited provider training on the context of healthcare quality reporting, and limited training on healthcare quality methodology. A 2009 study of 59 staff from Veterans Health Administration facilities highlighted that staff find the application of the data into clinical practice to be difficult and that professional consensus on tools and measures is difficult[41]. These concerns, in combination with the perception of an infringement on provider autonomy by healthcare quality reporting systems within a rapidly evolving healthcare system that has shifted from small-group or solo practices focus to larger medical group practices is the perfect storm for broad dissatisfaction with the system as a whole. [39]

There are also reports of healthcare quality programs having a detrimental effect on the provision of healthcare. Providers report that enforcement of various quality initiatives can result in and encourage the overuse and misuse of medical care to meet metrics. They also report that the system changes has resulted in a decrease in person centered medical care aimed at addressing patient needs and instead forces medical staff to address a prescribed rubric of items at each appointment in order to meet standards. [39, 41]

In addition to and in combination with these specific concerns, many groups emphasize a distrust of the data and related methodologies. Groups and providers report firsthand experience with data errors within their healthcare practice and with external bodies. They express concern over small sample sizes for internal monitoring and external reporting, and they struggle with understanding and accepting exclusion and attribution methodology. And consistently express that their suggestions to measure modifications are ignored. A review of CMS comments related to Physician Quality Reporting Initiative/Physician Quality Reporting System indicated that groups continue to believe that there are reporting and validation errors due to limited financial gains associated with pay-for-performance programs, as well as limited professional group buy-in for measures. Additionally, they struggle with the application and use of data, analysis techniques and integrating data outputs into clinical practice. Groups also struggle to find ways to leverage this data given that research has shown that provider based data has little to no impact on healthcare quality. This is even further complicated by research that highlights the complexity of social determinants of health and has found that health status is greatly influenced by factors far beyond that which can be immediately influenced by clinical care. [39, 41, 52, 54, 56, 57]

Furthermore, given that data transparency continues to grow in relationship to healthcare quality reporting, and compounded by the broad distrust of healthcare quality data, many voice concerns about the ways in which data is reported. Review of literature highlights that a portion of this concern is related to provider based reporting. This is an important point given that a survey of more than 2400 physicians who participated in the Physician Quality Reporting Initiative/Physician Quality Reporting System found that on average nearly half of the respondents believed that the program had no impact on quality. This literature has concluded that the programs that target individual providers, which is supported by provider based reporting in a broad sense, is associated with provider perception of limited improvement in healthcare quality. [39, 52] Additional research has drawn somewhat differing conclusions. A report released in June 2014 on research funded by the Robert Wood Johnson Foundation found that provider based pay-for-performance models work modestly effectively at the provider level and also work best when penalties for poor performance are implemented [54]. Yet additional studies show that providers believe that these initiatives are a way for providers who are already providing high quality care to report it [39,44]. These conflicting ways to best approach and optimize healthcare quality pose unique challenges for the fairly young and dynamic arena of healthcare.

Given the wide backlash by various provider groups and individuals, systems have worked to include provider and stakeholder feedback in measure development and also include these individuals in various workgroup compositions. In Minnesota, Minnesota Community Measurement and other groups, have facilitated numerous workgroups and panels to develop and review a wide array of healthcare quality metrics and reporting system. They have worked to standardize measure development and be transparent with stakeholders about this process.[61] A review of CMS reports indicate that CMS has also worked to address the complexity of the reporting system and minimize the knowledge gap for providers and others.   The reports show that they have assisted with successfully enrolling providers and have provided technical support and information on leveraging various programs through website

development, system redesign, informational calls, provider information sessions, professional forums, and toolkit development and distribution. [56, 57]

However, some groups highlighted numerous benefits to healthcare quality reporting. Some providers report that they can gain professional confidence and pride, as well as an arena for increased friendly professional competition. They also report that health care quality reporting provides patients with the sense that everyone is concerned about the quality of care and their health outcomes.[41] Others highlight that these measures are providing the framework for organizations to improve processes in order to support these initial outcome based metrics and that they will be better prepared for future reporting requirements. [44]

Patient/Consumer Outcome

One of the driving forces behind healthcare quality reporting is improved patient outcomes. However there are mixed reviews and views on the current status of this improvement. The results and findings vary widely with each report and by each group. However, there appears to be agreement that there is a very careful balance in setting healthcare quality achievement goals and maintain consensus among all constituents, including patients.

A broadly accepted primary concern is that a patient's healthcare needs will not be met by implementing and expanding healthcare quality reporting. Some research shows that clinicians fear that quality reporting takes away from time needed to care for patients and that electronic systems reduce the amount of time allowed to have meaningful contact with patients. Some believe that increasing quality reporting reduces the comprehensive and complete patient education that is often provided by clinical staff to patients due to the need to cover so much standard material at each appointment. There are also concerns that providers are required to cover non-critical standardized items during a more acutely related office visit and that these systems interfere with patient's right to decline treatment. [41]

Providers also report that the way data is reported is in a detrimental fashion because it often compares participants to each other from an eliminating health disparities approach as opposed to improving an individual's health status. They highlight that this type of analysis seeks to normalize all outcomes instead of pushing everyone, populations and individuals, to improve. [39] However, there are also reported benefits to consumers for reporting. Research is rounded out by reports that highlight that increasing healthcare quality reporting can provide patients with the belief that the healthcare system values their outcomes. [41]

With this knowledge and an overall shift in recent years to redesigning the healthcare system, work is also being done to approach healthcare delivery in a system based approach through care coordination, also known as a Medical Home model. There are a variety of steps and metrics related to providing this model of healthcare and this form of quality improvement work looks to patch together and reimburse providers for evaluation and management of care that happens outside of an appointment, with the hopes of improving patient care and outcomes. [53]

Another important component to improving the quality of healthcare services is the measurement and reporting of patient satisfaction, experience, and engagement. This is a critical component of many initiatives within Minnesota, where access to care, provider-patient communication, courteous and helpful office staff and exceptional provider ratings are measured and reported. Summary reports from these initiatives support that health groups can leverage these findings, along with patient self-reported health status, to improve health outcomes and satisfaction for patients. [43]

Lastly, research supports that health outcomes are highly influenced by many things within a person's environment and community and this general livelihood data is not currently being measured within the existing healthcare quality reporting system. This has led some groups to call for increased functional and livelihood metrics to be developed in up-coming phases and also increased pressure to more effectively merging healthcare quality data with broader public health initiatives. [43]

Payers

A major burden for payers is the overall healthcare system in the United States. Because there are so many parties of interest in this arena, including private and government run systems, it can be difficult to develop streamlined and standard metrics and reporting methods that are approved and agreed upon by all groups.[44] Consensus and buy-in can be complicated by payer adherence to various state and federal laws and statutes, specifically related to reimbursement models including PQRS. These measures are especially challenging for Medicare services due to the limit and constraint in the reimbursement models legally allowed for Medicare providers. [55, 57]

Consensus and buy-in can be further complicated by financial implications of implementing healthcare quality reporting systems. This is in part due to the fact that each payer only "owns" a share of the market, which results in a reduced incentive to support various healthcare quality programs at a system level because each payer will only be able to claim a portion of any gains that might occur. [39]

Payers also struggle to create strategies for health care quality reporting and pay-for-performance that balance customer and/or purchaser choice and allow for appropriate attribution in the healthcare quality data analysis step. One solution to this for many plans is to attribute to a health system, therefore having one system that offers a wide array of services and serves as a gatekeeper both to maintain and/or reduce costs, as well as a system for care coordination. This attribution allows for customer flexibility, gatekeeping management of a primary care system, and also attribution for healthcare quality metrics. [55, 57]

Purchasers

Another key player in healthcare quality reporting are purchasers. A review of the literature for purchasers reveals that some have raised concerns about the healthcare data itself. Some have called for increased assurance that data is valid and desire increased random validation of submitted healthcare quality data by CMS in order to help ensure that public reporting is valid. [51, 55, 57]

Other purchasing groups have asked that work is done to improve reports into more meaningful documents for end users, including purchasers. Those who purchase health plans want to have the tools, in an easy to understand and succinct format. There is also a push to ensure that reports have comparisons that are appropriate and assurance that data is valid and useful. [51]

Additionally, given that purchasers have many plans to pick from in their payer selection. Some purchasers select plans that require a primary care provider or health system designation for all enrollees and others do not require this selection. This variation is an example of how different payer models can influence the ease or complexity in developing quality metrics, specifically pay-for-performance, that are attributed to a provider or system at the payer level. [55]

Government

State and federal government has been tied to a large portion of the healthcare quality reporting systems in the United States. These ties are highlighted in the reporting program section of this paper. For the purpose of this section, the focus will be on literature related to Centers for Medicare and Medicaid Services (CMS) hosted reporting.

CMS has been a driving force of many metrics through the Physician Quality Reporting Initiative (PQRI)/Physician Quality Reporting System (PQRS) programs, as well as other reporting requirements for various health care systems as outlined in the reporting program section. As these metrics have evolved, groups have been vocal about the burdens associated with much of the healthcare quality reporting requirements. Unrealistic timelines for implementation and data collection is a major concern for both CMS and provider groups. Provider groups are burdened with an incredibly short timeframe to "go-live" on a measure once final metrics are announced. There are some reports of systems having less than 60 days from final CMS rule announcement before measure implementation must commence. This short window leaves limited time for critically important employee training, provider buy-in, and data collection system development to occur. [39, 41, 51, 52, 54, 56, 57]

These quick timelines are also highlighted by various CMS reports for CMS itself. As CMS has been charged with developing and implementing these complex systems, they are also working on tight timelines and are also left trying to support various stakeholders throughout the process. A review of CMS documents highlighted that CMS has sought input from a wide variety of stakeholders throughout the entire measurement development and implementation phases. Additionally, CMS has worked to address the knowledge gap for providers and to assist them with successfully enrolling and leveraging various programs through a variety of methods including websites, calls, provider information sessions, forums, and toolkits. [39, 41, 51, 52, 54, 56, 57]

In addition to the quick timelines, there is concern about the appropriateness of the metrics that are developed and implemented. At times some of the metrics are believed to be outside of the scope of care that a facility might provide and therefore the reporting facility can have difficulty obtaining outcome information. For example, providers can be required to report outcome data for services that are not performed within the provider's office (i.e. colorectal and breast cancer screenings), as opposed to process data related to referrals or education. Some groups highlight that this type of measurement

does not directly reflect on the services provided by a facility. On the other hand, groups believe that there are other measures that CMS has failed to adapt that would more adequately reflect care. [39, 41, 51]

Another area of concern by provider groups is CMS's lack of responsiveness to measure modifications suggestions and that the system that has been created is redundant and burdensome. A review of CMS documents highlight the work done by CMS to develop and implement various healthcare quality reporting systems. Some of the reports indicate that there is support by some constituents that CMS has been responsive to the requests and suggestions of various stakeholders and that they have worked to streamline measures with other reporting systems. Additionally, after reviewing methodology and regulations, it is clear that CMS has worked with various national quality endorsement groups to review, approve, gain consensus, and endorse metrics prior to CMS adoption. [39, 40, 56, 57]

The other end of the spectrum in the government area of research is the payer perspective. CMS manages and serves as a payer for more than 50 million people in the United States [62]. Some literature evaluates the way government operated health plans, specifically Medicare, are able to contribute to health care quality reporting as a payer. This literature highlights the struggles that Medicare has in a reimbursement model as a whole, and given that a majority of these plans are not operated in the same way as many private plans due to statute limitations, the reimbursement and reporting methods for quality reporting and pay-for-performance models have potential to have a detrimental effect on providers who accept these government run programs. Researchers have suggested that Medicare has work to do to optimize their programs off of lessons learned by private groups in order to ensure minimal loss and waste. Additionally, some suggest that work should be done to adjust statutes to address the needs of the providers and improve reimbursement methodology to increase incentives for providing care. [55, 56, 57]

Finance

One common theme throughout the literature includes the financial components related to healthcare quality reporting. Research and reviews highlight the additional complexity of the financial implications of quality reporting In the United States. A majority of this research highlighted the burdens associated with healthcare quality reporting, however some research has indicated benefits as well.

Financial complexity was most often referenced as a major burden and specifically highlighted in the literature in regards to reimbursement, and therefore healthcare system financial health and provider compensation, being tied to reporting.   Professional interview based qualitative research has found that providers are slow to accept various healthcare quality reporting initiatives, in part, due to the complex nature of understanding the financial gains associated with various programs and the constantly evolving nature of metrics. And others highlight that there are disproportionate payments between providers of low cost high quality health care within an ambulatory setting and the services provided by hospitals which are further amplified by, at the very least perception of, the burdens of healthcare quality reporting. [39, 51, 54, 56, 57]

 A review of CMS literature has found similar concerns related to lack of payment due to underperformance and not understanding where the breakdown in the performance occurs. Providers

are further frustrated by the belief that as more and more reimbursement money is tied to quality based metrics, the poor performing groups will financially suffer disproportionally and those who are high performers are frustrated because they are not going to be financially incentivized enough to continue improvement. [57, 56, 57]

An added layer to this is that reimbursement is often delayed in dispersal. This delay complicates programs that attempt to tie performance to financial gain and is further complicated by payment by various plans and payers for a wide array of programs many months after services. It also limits the ability to analyze return on investment for any improvement initiative. [44, 56, 57]

Finance is further complicated by provider "bonuses" or incentives at a system level that aim at rewarding, recruiting, and retaining high performers, without any attention being paid to those support staff who carry a burden of the work required for provider performance and also healthcare home model implementation. This is highlighted in the literature that indicates that nursing staff can be frustrated because they are more likely to carry a heavy burden of clinical activity within high performing groups, but yet they receive no compensation for high levels of performance. [41]

A review of literature also highlights the multiple and various requirements by various payer groups as an additional layer of financial burden to the healthcare quality. Review of many indicators specifies that several payers have made strides in aligning various quality reporting metrics and data submission, nevertheless this concern is complicated by limited buy-in opportunities for payers to more robustly financially support systems, resources, and financial incentives to providers when they are not the sole payers of the healthcare services within that system. This mixed payer system results in sharing of financial returns. Additionally, some projects have found limited financial gains on investment, so groups are hesitant to invest too much money in the support of programs without a financial benefit. [39, 44, 56, 57]

There is also some discussion in the literature related to the evolving nature of participation enforcement of various quality reporting programs. Given the limited historical financial gains associated with submitting healthcare quality data and the lack of strong penalty for not reporting, many groups have had limited pressure or incentive to report data. Theory and literature suggests that the current stage of payers moving to a penalty based payment model, which takes a more active approach in withholding funds from non-compliant groups, will help motivate non-conforming groups to begin submitting data. [44, 56, 57]

One last area of financial burden associated with healthcare quality reporting relates to the required implementation of an electronic health records system (EHR). These programs require robust technology support programs embedded within clinical groups, as well as the devices and clinical skill required for a fully functioning health informatics system. A review of the literature indicates that the true financial benefits and burdens of these systems are not fully understood or measurable because many of the groups that are reported have received financial support from various programs. On the other hand, research has shown that better aligning technological financial incentives in a way that supports patient centered care can reap both financial and patient satisfaction rewards. Furthermore,

this alignment could also potentially alleviate the perception that the financial burden of technology implementation is carried by the practice and the payers gain any savings. [48, 50]

Administrative Overhead

The potential administrative burden associated with healthcare quality is also highly debated. The literature varies in topics and approaches, however much of the articles focus on the technology systems that have been implemented in parallel with implementation of healthcare quality reporting. This double implementation makes it difficult to distinguish between concerns and findings.

One example of this is provider self-report and interview based research has indicated that there is an increase in provider administrative time as a result of the increased requirements for data entry and "tick box medicine". With this transition, providers are required to spend more time clicking boxes that allow for documentation that can be easily abstracted from electronic systems for quality reporting purposes. Additionally, providers highlight that they are increasingly spending time doing double data entry and that provider time is being used to complete paperwork that "lower level" staff were able to complete in paper records. [39, 41, 47]

This literature is countered by other reviews that have found that although there is an initial increase in administrative time during electronic system implementation, providers can actually experience decreased administrative burden once workflows are improved and providers become more familiar with electronic programs. Furthermore, some studies have found that increased use of technological systems, which also supports healthcare quality reporting, results in less consumer healthcare utilization and that therefore the true cost of the required increased administrative time must to reviewed more fully within the context of decreased administrative support needs in auxiliary staff and not just among providers. [42, 48]

A 2014 survey of more than 1,000 clinical and non-clinical staff found that many indicate that there is an increased need for administrative resources to manage and maintain technological resources. These services and systems often require new administrative based positions and departments within a healthcare organization and also require additional support to optimize and perform within the healthcare quality arena. This is further supported by literature that has concluded that those facilities with high acceptance of quality reporting have quality managers embedded within the practice to assist with real-time data monitoring. Additionally, a cost review between 2004 and 2009 found that 12% of the monthly costs associated with technology implementation were due to personnel payroll costs. [39, 40, 50]

Research has also looked at the administrative burdens and benefits of technology implementation from a broader perspective. Most research has found that there is an increased ratio of staffing needed immediately following the implementation phase, and that this need decreased steadily at 6 and 12 months following implementation to nearly that of pre-implementation. Additionally, when reviewing the relative value units (RVU's), broadly considered the intensity of the work required to provide services needed during a patient visit, the values of these encounters over the course of implementation found no differences up to 6 months following technology implementation or after 12 months. The

research also found that productivity does decrease immediately following implementation, however nearly all loss is regained by 12 months. [50]

Healthcare Model/Staffing

Overall, staffing models play an important role in effective high quality care. This is outlined in various healthcare home models that are expanding and developing, as well as the evolution of the care team model to include additional responsibilities of supporting roles. These staffing ratios can be highlighted as a burden. Research has shown that the higher performing groups have higher nursing ratios, an increase use of nurse only visits, and established care teams, plus more mid-level providers using EHR's. However, this can lead to conflict as providers also report that they enjoy spending time with patients [3] and that they are increasingly being asked to complete administrative paperwork that had historically been done by support staff. [39, 47]

Additionally, the overall healthcare system can highlight the various healthcare quality reporting barriers that can be embedded within the healthcare model of a facility. One burden that has been highlighted is that some providers do not have an on-site lab with extended hours and/or equipment needed to complete diagnostic testing needed for quality reporting. However, as more and more small groups are being absorbed into larger systems, this concern has started to decrease and is often addressed within the context of the financial and regulatory future of medicine. [39]

Technology

Much additional research is focused on the technology burdens and benefits associated with healthcare quality reporting. To further complicate this topic area, technology related needs and issues have proven to be an interesting intersection between facilitating all healthcare quality reporting and being a healthcare quality metric itself, which is outlined in the various healthcare quality reporting programs in the first section of this paper. Because of this, the technology area of research is closely entwined with all other areas of healthcare quality reporting including but not limited to provider buy-in, financial, and administrative burden.

There are many benefits to adopting high performing technological systems, most commonly referred to as electronic health records (EHR's), for health care organizations. At a very high level, research has found that organizations with robust data collection, disease registries, and reporting systems are more readily prepared for reporting. Furthermore, use of technology and electronic health records has been found to increase adherence to best practice and protocol based healthcare, population based screening based initiatives, and decreased medication errors. [39, 42]

This is further supported by a 2008 case-control study that compared the performance of 466 community primary care providers who practice within an open-access and multi-payer system. This study compared providers with and those without electronic health records and have found that providers who use electronic health records scored higher overall on at least four HEDIS measures than those without EHR's. This was done while also maintaining patient satisfaction scores. [45]

An additional component to EHR functionality is that the system must be able to support healthcare quality reporting. However, to date, the process for healthcare quality reporting has been a hybrid of outcome, survey, and claims data. This "soft opening" has allowed for systems to adjust and work towards improving technology systems to meet the increasing needs of technology for healthcare quality reporting. However, this is further complicated by limited time for optimization and improvement of submission for existing programs because as the technology systems have been phased in, there has been a steady increase in health record data abstraction reporting in addition to claims based. This steady growth in reporting has provided limited time to systems to optimize and revisit technological needs prior to the implementation of additional metrics that require additional resources to facilitate. [44, 56, 57]

In reviewing additional literature, another clear gap has emerged between technology function and reporting needs. Various professional groups have highlighted the ability of electronic health records to "improve quality, safety, and efficiency of clinical practice due to their ability to deliver legible and timely access to patient information to multiple users, as well as the ability to provide users with decision support [49]." However, as with most technology, gaps can arise between technology needs and daily function of systems. A review of various health information sources indicates that there have been great strides in the technological capacity within healthcare over the past years. Firms and systems have worked to proactively maintain patient confidentiality within a virtual world and also develop data breech plans to address any potential breaks in the systems should they occur. [58] Additionally, technology firms and developers continue to develop programming and systems to better meet the needs of clinical care on a short term and long term basis. Groups have used this past few years to learn how to improve and optimize systems and work has been done to shift the focus of technology development towards using technology to support clinical care and proactively plan for adequate support healthcare delivery. [59, 60]

An entirely different set of benefits and burdens emerges as the system transitions from paper to electronic systems. This is highlighted by the method that data is entered into electronic records. One important benefit is that a standardized method of coding health conditions, the International Statistical Classification of Diseases and Related Health Problems (ICD-9), has been created, is widely accepted, and is updated regularly. However, the method that this data that is used for registries and claims, as well as other process related data, is entered into (electronic) health records continues to be a burden for health systems. Some research has shown that the lack of widely approved and utilized standardized nursing documentation is a barrier to effective electronic record use. A survey of nearly 1300 registered nurses in 2011 found that nearly one-third of respondents reported that although they had used standard language during their nursing education, they had not used it since. This is a significant area of concern given that nursing staff are critically important to a healthcare team and also play a major role in documenting care coordination, health education, and interventions that can be tied to various healthcare quality reporting requirements. Without this standardized data entry ability, robust data abstraction is difficult. [49]

Clinical staff buy-in to technology based electronic health records is also a central component to a successful technology system. One major benefit to this initiative is that as systems have longer periods

of electronic records, the buy-in among staff increases. A 2011 survey of ambulatory care providers indicated 74% of those who had implemented an electronic record system believe that electronic health records enrich health care services. However, concern remains that there is limited data to support the efficacy of various programs and that implementing some of the initiatives related to health information technology are being done before all the unintended consequences of doing so are understood. [39, 41, 50]

Lastly, there is some research that indicates that low technological literacy can be a barrier to effectively implementing an electronic health record and can inhibit health professional staff support of various technology based initiatives. Research has shown that nurse practitioners underutilize technology that could improve care. Furthermore, a survey of more than 500 nurse practitioners found that more than 90% of respondents use computers during their work; however a majority indicated that training had been insufficient and that they reported a "low self-perception of information technology competency."[49]

Limitations:

This summary and review is not without limitation. The primary limitation of the review is the quickly evolving and detailed aspect of each program. These contribute to difficulties in succinctly and accurately summarizing various programs. This is especially true for the program review as each program changes at such a rapid pace and is targeted at very specific providers and/or types of systems. Therefore, staying up to date on programs and developing a document that is meaningful for a wide array of audiences is not without challenge. This limitation is also highly applicable to the benefits and burdens section of the paper, however from a retrospective perspective. When this rapidly evolving system is combined with the historically naturally occurring lag-time in the review and publication process, articles can be out of date or of limited applicability by the time the article is published, or soon after publication. Although these challenges exist, the writers of this document worked to integrate future planning knowledge with key themes and conclusions to help guide the reader through the process of understanding each program as well as the benefits and burdens associated with healthcare quality reporting.

An additional challenge with this research is the complex nature of each program across the life course of a measure. Many of the measures are mandated, developed, implemented, and incentivized/penalized from different organizations or branches of the same department. This complexity not only adds to the confusion in understanding, but also challenges the ability to summarize and bundle into one specific program. These concerns were addressed by working diligently to understand the framework and foundation for each program and to match systems for an overview summary.

 Another limiting factor for this review is the "young" and highly variable and political nature of the topic, literature, and data. The quality and quantity of resources and literature that specifically test theories, explore topics and politics, and contain adequate reference benchmark data in relation to healthcare quality reporting are limited. This is especially true for the key areas of technology, finance, patient/consumer outcomes, and healthcare model/staffing. For many of these areas, the "newness" of

the data included in research makes it difficult to robustly prove or disprove outcome, savings, and total decreases in morbidity and mortality. These limitations are even further complicated by the overall economic environment of recent years and evolution of search terms. Even with this challenge, researchers have made great strides in improving the available resources and work was done to include helpful and adequate literature into this document.

Conclusion/Discussion:

The arena of healthcare quality reporting is dynamic and evolving. There have been many twists and turns in the system and a great amount of work has been done to develop and improve the systems in a relatively short period of time. With this evolution, various constituents of the programs have worked to better understand the programs as outlined in the first section of this document and to gain insight into the benefits and burdens associated with healthcare quality reporting.

Overall, much work has been done to streamline and improve healthcare quality reporting as a system. Measures have begun to be more closely aligned for easier understanding and implementation. Furthermore the data submission processes have been simplified and robustly implemented.

The primary areas as outlined in benefits and burden section of this paper have a few common themes that unite each section and these themes appear to be compounded by each other. Each area outlined in the benefits and burdens section (provider/professional group buy-in, patient/consumer outcome, payers, purchasers, government, finance, administrative overhead, healthcare model/staffing, and technology) are closely entwined with each other and cannot fully be appreciated without the context of the other areas. With this in mind, a common theme of the benefits associated with healthcare quality reporting is improved patient/consumer outcome. Much of the literature for each area outlines the desire to improve care while increasing accessibility to and decreasing cost associated with the provision of high quality appropriate health care. The most commonly outlined burden associated with healthcare quality reporting related to the relative "newness" of the programs and therefore is highlighted by all of the associated growing pains, knowledge base development, system support and integration, and buy-in for this increasingly important arena of healthcare. Each of these burdens and benefits themes are explored more closely within the body of this document and play a critical role in better understanding healthcare quality reporting.

In conclusion, the most prominent theme throughout the literature is that the change associated with implementing and expanding healthcare quality reporting can be difficult and challenging for a system that is naturally complex. There are historical strains that will have to be addressed within the research and systems in order for individuals, professionals, and groups to move forward and embrace future growth. Key players must have a complete and better understanding of beliefs, benefits, and burdens in order to more effectively shape future programming to minimize these challenges for all parties and this knowledge is critically important for the evolution of healthcare quality reporting.

Healthcare Quality Reporting: Benefits and Burdens

References:

1. Centers for Medicare and Medicaid Services website: Physician Quality Reporting System – About PQRS.   www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/PQRS/index.html. Accessed on August 20, 2014
2. Centers for Medicare and Medicaid. 2014 Physician Quality Reporting System (PQRS): Implementation Guide http://www.cms.gov/apps/ama/license.asp?file=/PQRS/downloads/2014_PQRS_MeasuresList_ImplementationGuide_12132013.zip. Accessed on August 20, 2014
3. Centers for Medicare and Medicaid Services website: EHR Incentive Programs. http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/index.html. Accessed on August 22, 2014
4. HealthIT.gov website: Meaningful Use Definition & Objectives. http://www.healthit.gov//providers-professionals/meaningful-use-definition-objectives. Accessed on August 22, 2014
5. Centers for Medicare and Medicaid Services website: EHR Incentive Programs - 2014 Definition Stage 1 of Meaningful Use http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Meaningful_Use.html. Accessed on August 22, 2014
6. Centers for Medicare and Medicaid Services website: EHR Incentive Programs – 2014 Clinical Quality Measures. http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/2014_ClinicalQualityMeasures.html. Accessed on August 22, 2014
7. Centers for Medicare and Medicaid Services website: Shared Savings Program. http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/index.html?redirect=/sharedsavingsprogram. Accessed on August 23, 2014
8. Centers for Medicaid and Medicare Services website: Shared Savings Program – Quality Measures and Performance Standards. http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Quality_Measures_Standards.html. Accessed on August 23, 2014
9. Centers for Medicare and Medicaid Services website: Medicare FFS Physician Feedback Program/Value Based Payment Modifier – Background. http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/Background.html. Accessed on August 23, 2014
10. Centers for Medicare and Medicaid Services website: Medicare FFS Physician Feedback Program/Value Based Payment Modifier – Value Based Payment Modifier. http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/ValueBasedPaymentModifier.html Accessed on August 24, 2014

11. MLN Matters: Program Overview: 2007 Physician Quality Reporting Initiative (PQRI), March 9, 2007. https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/mm5558.pdf. Accessed on August 20, 2014.

12. Centers for Medicare and Medicaid website: Physician Quality Reporting System - Statute Regulations Program Instructions.   http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/PQRS/StatuteRegulationsProgramInstructions.html.   Accessed on August 20, 2014

13. Federal Register webite: Medicare and Medicaid Programs; Electronic Health Record Incentive Program; Final Rule, July 28, 2010. https://www.federalregister.gov/articles/2010/07/28/2010-17207/medicare-and-medicaid-programs-electronic-health-record-incentive-program. Accessed on August 22, 2014

14. HealthIT.gov Website: EHR Incentives & Certification. http://www.healthit.gov/providers-professionals/ehr-incentives-certification. Accessed on September 1, 2014

15. Health Resources and Services Administration Website: What is "Meaningful Use"? http://www.hrsa.gov/healthit/meaningfuluse/MU%20Stage1%20CQM/mu.html. Accessed on August 22, 2014

16. Stage 2 Overview Tipsheet, August, 2012. http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Downloads/Stage2Overview_Tipsheet.pdf . Accessed on August 22, 2014

17. Centers for Medicare and Medicaid website: Shared Savings Program – Statutes/Regulations/Guidance. http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Statutes_Regulations_Guidance.html. Accessed on August 22, 2014

18. Department of Health and Human Services: Centers for Medicare and Medicaid Services Medicare Learning Network. Summary of Final Rule Provisions for Accountable Care Organizations under the Medicare Shared Savings Program https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Downloads/ACO_Summary_Factsheet_ICN907404.pdf . Accessed on August 24, 2014

19. Centers for Medicare and Medicaid Services. Physician Quality Reporting System (PQRS) List of Eligible Professionals. http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/PQRS/Downloads/PQRS_List-of-EligibleProfessionals_022813.pdf. Accessed on August 20, 2014

20. Centers for Medicare and Medicaid Services website: EHR Incentive Programs – Eligibility. Accessed on http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/eligibility.html. Accessed on August 22, 2014

21. Centers for Medicare and Medicaid Services website: Shared Savings Program – Frequently Asked Questions. http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/FAQ.html. Access on August 24, 2014

22. Physician Quality Reporting System (PQRS) Overview. http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-

Instruments/PQRS/Downloads/PQRS_OverviewFactSheet_2013_08_06.pdf. Accessed on August 20, 2014

23. Medicare Electronic Health Record Incentive Payments for Eligible Professionals. http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Downloads/MLN_MedicareEHRProgram_TipSheet_EP.pdf. Accessed on August 22, 2014

24. Medicaid Electronic Health Record Incentive Payments for Eligible Professionals. http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Downloads/MLN_MedicaidEHRProgram_TipSheet_EP.pdf. Accessed on August 23, 2014

25. Department of Health and Human Services: Centers for Medicare and Medicaid Services Medicare Learning Network. Methodology for Determining Shared Savings and Losses under the Medicare Shared Savings Program. http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Downloads/ACO_Methodology_Factsheet_ICN907405.pdf. Accessed on August 24, 2014

26. Minnesota Department of Health website: Health Care Quality Measures Home. http://www.health.state.mn.us/healthreform/measurement/index.html. Accessed on September 13, 2014

27. Minnesota Department of Health website: Health Care Quality Measures Adopted Rule – December 9, 2013 http://www.health.state.mn.us/healthreform/measurement/adoptedrule/index.html. Accessed on September 13, 2014

28. Minnesota Statewide Quality Reporting and Measurement System: Quality Incentive Payment System. http://www.health.state.mn.us/healthreform/measurement/QIPSReportupdate2014FinalApril.pdf. Accessed on September 14, 2014

29. Minnesota Department of Health website: Health Care Homes http://www.health.state.mn.us/healthreform/homes/index.html. Accessed on September 25, 2014

30. Health Care Homes: Annual Report on Implementation December 2009 http://www.health.state.mn.us/healthreform/homes/legreport/2009legreport.pdf. Accessed on September 25, 2014

31. Minnesota Community Measurement website: State Reporting. http://mncm.org/submitting-data/state-reporting. Accessed on September 26, 2014

32. Health Care Incentives Improvement Institute: Clinicians – Participate in Bridges to Excellence. http://www.hci3.org/participate_in_bridges_to_excellence/clinicians. Accessed on September 27, 2014

33. Minnesota Health Action Group: Minnesota Bridges to Excellence. http://mnhealthactiongroup.org/wp-content/uploads/2013/10/MNBTE.pdf. Accessed on September 27, 2014

34. Minnesota Bridges to Excellence and State of Minnesota Quality, Incentive Payment Systems Program To Date Results. http://mnhealthactiongroup.org/wp-content/uploads/2013/08/MNBTE-Results-To-Date-Updated-2013-09.23.13.pdf. Accessed on September 27, 2014

35. Minnesota Department of Human Services webite: Pay-for-Performance Program http://www.dhs.state.mn.us/main/idcplg?IdcService=GET_DYNAMIC_CONVERSION&RevisionSelectionMethod=LatestReleased&dDocName=dhs16_142133. Accessed on September 27, 2014

36. Americas Health Insurance Plans. Innovations in Recognizing and Rewarding Quality, America's Health Insurance Plan (AHIP), March 2009. Available at http://www.ahip.org/Innovations-in-Quality.

37. Health Partners. Partners in Excellence Excecutive Summary for Primary Care, Pediatric and Specialty Care 2014. https://www.healthpartners.com/ucm/groups/public/@hp/@public/documents/documents/cntrb_041098.pdf. Accessed on September 27, 2014

38. UCare website: Pay for Performance Program. https://www.ucare.org/providers/Resources-Training/Pages/P4P.aspx . Accessed on September 27, 2014

39. McDonald R, White J, Marmor T. Paying for performance in primary medical care: learning about and learning from "success" and "failure" in England and California. J Health Polit Policy Law. 2009;34(5):747-76.

40. Knight K, Stainbrook C. Benchmarking White Paper: 2014 Information Governance In Healthcare. American Health Information Management Association (AHIMA).

41. Powell A, et al. Unintended consequences of implementing a national performance measurement system into local practice. J Gen Intern Med. 2012 ;27(4):405-12.

42. Chaudhry B, et al. Systematic review: impact of health information technology on quality, efficiency, and costs of medical care. Ann Intern Med. 2006;144(10):742-52.

43. Institute for Clinical Systems Improvement. Measuring Health in Minnesota: Importance, Challenges, and Future Directions. 2009.

44. Zimlich R. The PQRS Challenge. http://medicaleconomics.modernmedicine.com. Accessed on August 10, 2014.

45. Kern L, Barrón Y, Dhopeshwarkar R, Edwards A, Kaushal R. Electronic Health Records and Ambulatory Quality of Care. J Gen Intern Med. 2012; 28(4):496–503.

46. Lovett K, Liang B. Quality Care Opportunities: Refining Physician Performance Measurement in Ambulatory Care. http://www.ajmc.com/publications/issue/2012/2012-6-vol18-n6/Quality-Care-Opportunities-Refining-Physician-Performance-Measurement-in-Ambulatory-Care. Accessed on August 2, 2014.

47. Adler-Milstein J, Jha A. Organizational complements to electronic health records in ambulatory physician performance: the role of support staff. J Am Med Inform Assoc 2012;19:537-540.

48. Chen C, Garrido T, Chock D, Okawa G, Liang L. The Kaiser Permanente Electronic Health Record: Transforming And Streamlining Modalities Of Care Health Affair. 2009; 28 (2): 323-333.

49. Conrad D, Hanson P, Hasenau S, Stocker-Schneider J. Identifying the barriers to use of standardized nursing language in the electronic health record by the ambulatory care nurse practitioner. J Am Acad Nurse Pract. 2012;24(7):443-51.

50. Fleming N, et al. The impact of electronic health records on workflow and financial measures in primary care practices. Health Serv Res. 2014;49(1 Pt 2):405-20.

51. DeJohn P. Critics call quality report changes impractical, pay updates unfair. OR Manager. 2013;29(12):25.

52. Federman A, Keyhani S. Physicians' participation in the Physicians' Quality Reporting Initiative and their perceptions of its impact on quality of care. Health Policy. 2011; 102 (2–3): 229–234.

53. Robeznieks A. 'The right direction'. Primary-care docs see promise in CMS' proposed pay for non face-to-face work. Mod Healthc. 2013;43(28):6-7.

54. Conrad D, Grembowski D, Perry L, Maynard C, Rodriguez H, Martina D. Paying physician group practices for quality: A statewide quasi-experiment. Healthcare. 2013; 1 (3–4): 108–116.

55. RosenthalM, Landon B, Normand SL, Frank R, Epstein A. Pay for Performance in Commercial HMOs. Nov. N Engl J Med.2006; 355:18.

56. Department of Health and Human Services: Centers for Medicare & Medicaid Services. Medicare Program; Revisions to Payment Policies Under the Physician Fee Schedule, and Other Part B Payment Policies for CY 2008; Revisions to the Payment Policies of Ambulance Services Under the Ambulance Fee Schedule for CY 2008; and the Amendment of the E-Prescribing Exemption for Computer Generated Facsimile Transmissions. Federal Register: Rules and Regulations. 2007; 72 (227).

57. Department of Health and Human Services: Centers for Medicare & Medicaid Services. Medicare Program; Payment Policies Under the Physician Fee Schedule and Other Revisions to Part B for CY 2009; E-Prescribing Exemption for Computer-Generated FacsimileTransmissions; and Payment for Certain Durable Medical Equipment, Prosthetics, Orthotics, and Supplies . Federal Register: Rules and Regulations. 2008; 73 (224).

58. Firms confident about IT security even as attacks increase. http://www.modernhealthcare.com/article/20140926/INFO/309269924/firms-confident-about-it-security-even-as-attacks-increase. Accessed on September 28, 2014.

59. IT entrepreneurs rush into healthcare, but will human touch be missing? http://www.modernhealthcare.com/article/20140906/MAGAZINE/309069977/it-entrepreneurs-rush-into-healthcare-but-will-human-touch-be. Accessed on September 28, 2014.

60. How might hospitals prevent Epic EHR implementation mishaps? http://ehrintelligence.com/2014/09/25/how-might-hospitals-prevent-epic-ehr-implementation-mishaps/. Accessed on September 28, 2014.

61. Minnesota Community Measurement: Measure Development Process. http://mncm.org/wp-content/uploads/2013/04/Measure-Dev-Process-High-Level-Overview-2013-web.pdf. Accessed on September 28, 2014.

62. Medicare Enrollment-All Beneficiaries: as of July 2012. http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/MedicareEnrpts/Downloads/12All.pdf. Accessed on September 28, 2014.