AHRQ Conference on Health Care Data Collection and Reporting

Collecting and Reporting Data for Performance Measurement: Moving Toward Alignment

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Agency for Healthcare Research and Quality
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Health care organizations are faced with increasingly disparate data collection and reporting requirements from a wide variety of public and private organizations. The current array of unresolved data collection issues, including many variations in measures across the various quality reporting and performance measurement systems, results in duplications of effort, increased expense, and lost opportunities. Ultimately, the cost will be uneven monitoring of quality in health care. A conference of 50 leaders from public and private health care organizations convened by the Agency for Healthcare Research and Quality (AHRQ) discussed the opportunities for creating and adopting within 5 years a core set of broadly acceptable standards and rules for health care data collection, aggregation, and reporting of performance data. This process would likely be furthered by a formalized public-private partnership to establish and govern in a transparent manner a core set of national standards and rules for health care performance data collection, aggregation, and reporting.

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Performance measurement data collection and reporting initiatives are accelerating both nationally and locally through an increasing number of public and private partnerships. These initiatives request–and often require–health care providers to collect and report quality, public health, performance, and administrative data. A lack of coordination among these initiatives and the absence of broadly accepted measurement criteria place increasing financial and operational burdens on the provider health care organizations charged with collecting, reporting, using, and ultimately being evaluated by these data.

In response to these challenges, the Agency for Healthcare Research and Quality (AHRQ), in partnership with the Foundation of Research and Education (FORE) of the American Health Information Management Association (AHIMA) and the Medical Group Management Association Center for Research (MGMA CFR), conducted the Conference on Health Care Data Collection and Reporting on November 8 and 9, 2006, in Chicago.

More than 50 leaders from the health care industry's leading public and private organizations attended this invitational conference. Their discussions contributed to a wide range of possible approaches to current problems in data collection and reporting.

This report represents the major themes that emerged from the conference and subsequent discussions; no attempt was made to attain agreement by all of the organizations represented at the conference. Section IX identifies the individuals who were in attendance and the organizations they represent, but does not imply endorsement of the conclusions contained in this document.

Conferees discussed data collection issues that cause unnecessary duplication of effort, excess cost, and other challenges that may ultimately inhibit quality and performance reporting. Too much variation in measures across quality reporting and performance measurement systems causes uneven monitoring of quality in health care. The discussion of how to resolve these issues included suggestions for a core set of broadly acceptable standards that could serve as a starting point for future development. Many suggested that the urgency of the situation required focusing on approaches that could be adopted nationwide within the shortest reasonable period of time–5 years or less. The journey to reach a core set as a starting point must begin immediately through a collaborative process between public and private stakeholders.

Conferees suggested that existing national quality measurement entities had the potential to quickly evolve and take a broader role in overseeing the rationalization of data collection nationwide. In addition to finding consensus among many stakeholders as to which entity—current or proposed—would be most suitable, there also must be sufficient public-private commitment of funding and other support for this entity to get the job done. Such an entity would not merely establish guidelines for developing measures but also include in its scope issues related to data collection and reporting. In doing so, this body would certainly include an appropriate representation of stakeholders in those areas. A national plan of action for such an effort could address opportunities such as:

- Prioritizing and standardizing performance measure sets across medical specialties and care settings. Such an effort must ensure that data gathered support the informational needs of providers as well as payers, public health researchers, policymakers, and others using performance data to make decisions.
- Facilitating a process of obtaining regular input from stakeholders about standards for administrative and clinical measurements of provider performance.
- Developing common definitions and terminology for performance measurement.

- Reaching national agreement on the basic, uniform data set to serve as a starting point from which to measure health care quality, and a standard minimum demographic data set.
- Harmonizing where possible measures between physician and hospital settings and within each setting. Such an effort could further streamline measure development and endorsement, which has been under way through the efforts of the AQA (formerly known as the Ambulatory Care Quality Alliance) and National Quality Forum (NQF).
- Helping define the process of integrating administrative and key clinical data with the aim of promoting full electronic health record (EHR) functionality and efficient data extraction for multiple uses.
- Developing guidelines for establishing, validating, and approving metrics to measure and report quality.
- Defining standards that bring together state concerns so that regional and local performance measurement initiatives can align with national initiatives.
- Designing strategies that can help advance the universal adoption of affordable electronic data systems by all health care data collectors.
- Advising efforts by public and private stakeholders to develop common national standards that outline a national framework for the secondary use of health data with appropriate protections for legitimate secondary use.
- Engaging with Federal, State, and local agencies to work within the data gathering goals that are developed.

As a result of these efforts, it would be possible that:
- All data collection about performance is derived from sources and elements that are of broad use and that these data are collected in the course of primary clinical documentation and/or normal administrative processes.
- A transparent process is created to validate performance measurement systems.
- Vendors of electronic information systems have a clear and consistent set of the functional requirements for data capture and reporting that their products must be able to support the Certification Commission for Health Information Technology (CCHIT) requirements that reflect essential functionality of EHR systems to support quality measurement and reporting,
- Providers and others collecting data using agreed-upon electronic formats collect data once per encounter and do not need to conduct additional recording or abstracting activities.
- Providers have a ready source of guidance, training, and other support and/or advice to help them meet requirements and use the information they gather.

The attendees further discussed how standardizing data aggregation and analysis techniques might produce meaningful, high quality data to inform the development of better quality measurements. This discussion echoed an AHIC Quality Workgroup conclusion that a uniform and coordinated strategy of aggregating physician or group level performance data could more effectively pinpoint gaps in quality and efficiency across the Nation.[1] In addition, the mission of the AQA Alliance was mentioned by several attendees as proposing an efficient and effective method to identify these quality and efficiency gaps. The AQA Alliance mission calls for "…measuring performance at the physician or group level; collecting and aggregating data in the least burdensome way, and reporting meaningful information to consumers, physicians, and other stakeholders to inform choices and improve outcomes."[2] In other words, providers must be able to collect health data at or as close to the point of service as possible, only once per encounter and in a format that has multiple uses by many stakeholders.

Many conferees warned that the numerous duplications, variations, and competing priorities in today's performance measurement and data collection environment might inhibit the broad and swift adoption of EHRs as a performance measurement tool. If not addressed in a timely and coordinated manner, the challenges may reduce the utility of EHR systems to adequately measure performance and improve the health of the American people.

The urgency to develop a standardized core set of performance measurements and resolve other data collection, aggregation, and reporting issues as soon as possible comes from several quarters: patients are becoming more active consumers who want to be fully engaged in their care and payers are demanding performance-based results on which to base reimbursement and utilization decisions. Public reporting of health care measures and incentives based on a standardized core set of measures will lead to increased transparency and better reporting of performance. These efforts could be accomplished through a further evolution of current bodies rather than the creation of a new entity. The coalescence of the AQA and HQA into the Quality Alliance Steering Committee (QASC) is a notable step in the process. Several conferees suggested that with improved infrastructure and an expansion of its scope of measurement-related responsibilities, the NQF could be equipped to meet many of the challenges cited in this report. The conferees mentioned that similar entities have been envisioned, such as the National Health Data Stewardship Entity[1] recommended by the AQA Data Sharing and Aggregation Workgroup and the National Quality Coordination Board described in the Institute of Medicine Report, *Performance Measurement Accelerating Improvement.*[3]

O n August 22, 2006, President George W. Bush signed an Executive Order supporting the promotion of quality and efficient health care in Federal Government-administered or -sponsored health care programs. The President requested Federal agencies to implement health information technology (Health IT) for the direct exchange of health information. He also requested agencies to implement programs to measure the quality of services provided to beneficiaries or enrollees of the Federal health care system. This directive sends a powerful message to the health care community that quality of care and the implementation of Health IT offer a window of opportunity to initiate a dialog among the thought leaders in the quality community.[4]

In today's health system, numerous national and local performance measurement data collection and reporting initiatives are under way. The proliferation of these efforts creates significant burdens for physicians in the form of multiple, uncoordinated, and even conflicting demands for data about quality, public health, performance, and administrative processes. The rapid growth of these initiatives in combination with the already limited financial, staffing, and technological resources of many health care providers has caused them to struggle to meet the increasing demands for health care performance data.

Health IT has great potential to improve the quality of health care, increase patient safety, and enable more efficient health delivery. Health IT also promises to streamline the reporting of data, but examples of successful performance measurement as a byproduct of clinical care are still rare. Even when automated, data tend to be held in silos defined by legacy systems, organizational walls, or other boundaries. Although extracting data electronically from interfaced systems is an improvement over manual extraction, it remains a challenging process because there are few broadly agreed-upon standards for data content. Variations in the taxonomy of terms among performance measurement systems are confusing and difficult to interpret. This climate of variation and confusion may well have a negative impact on the abilities of providers to report and use accurate and timely data about their performance.

In response to these challenges, the Agency for Healthcare Research and Quality (AHRQ), in partnership with the Foundation of Research and Education (FORE) of the American Health Information Management Association (AHIMA) and the Medical Group Management Association Center for Research (MGMA CFR), conducted the Conference on Health Care Data Collection and Reporting.

More than 50 leaders from the health care industry's leading public and private organizations attended this invitational conference and their discussions contributed to the list of opportunities outlined in this report. These participants represented a wide array of stakeholders including physician organizations, hospitals, payers, employers, government agencies, accrediting agencies, quality reporting organizations, public health agencies, and other stakeholders with performance measurement and data management expertise. Conferees held a series of guided discussions during the conference that produced an array of observations and suggestions. They described and suggested a number of reasonable-but-quick solutions to the current challenges associated with the collection, aggregation, reporting, analysis, and interpretation of performance measurement data. A wide range of options were identified and while this report presents many of the topics discussed, it does not include every suggestion made by every individual at the conference.

Many conferees said that data standards used in the health care industry did not always contain definitions and taxonomy for all metrics. For example, while various entities are making progress to harmonize their national quality and patient safety goals they may still propose different statements of intent. Many of these efforts fail to provide sufficient data element definitions and few take into account the staffing requirements for providers to successfully collect and report the requested data. This disconnect between organizations seeking data causes:

- Time-consuming and problematic operations for data acquisition from electronic systems.
- Multiple and disparate systems within health care organizations, which complicate data mining and coordination of efforts.
- Unnecessary barriers in the exchange of health information between health care provider organizations.
- Resource-intensive data mapping efforts on the part of health care providers to link systems and performance measurement data requirements.
- Conflicts or differences between administrative data sets—for example, CPT G-codes do not cross-reference to HCPCS G-codes.[5] The future of patient safety measurement depends in part on improvements related to administrative data, such as linking hospital data with outpatient data.[6]

Many conferees perceived that performance measurement and pay-for-performance (P4P) reporting requirements will likely increase in number, scope, and complexity. For the purposes of this report, a performance measurement system is defined as an organized approach designed to collect health care data for the purposes of measuring performance and reporting results to health care providers, payers, accrediting organizations, and/or the public.

Conference organizers set the objectives of:
- Describing the impact of Federal policies on performance measurement data collection and reporting, including future initiatives that are still under development.
- Identifying data collection problems from the perspective of a variety of stakeholders.
- Establishing methods to gain commitment and consensus from all stakeholders to align performance measurement and data collection initiatives.
- Discussing how the adoption of Health IT can facilitate performance measurement data collection and reporting.
- Developing recommendations for coordinating the various public and private performance measurement initiatives in a transparent manner that maximize value while minimizing inefficiency and expense in data collection.

Conferees broke into focused discussions in which they were asked to discuss and generate solutions and recommendations for (1) fostering collaboration and aligning performance measurement and data collection specifications and (2) standardizing performance measurement data collection, aggregation, and reporting processes.

In these discussions, many conferees stated that the momentum for collecting and reporting of performance measurement data for health care providers and organizations is increasing at a rapid pace and that these demands will place many new economic and managerial pressures on provider health care organizations. Many commented on the volume of demands for accurate and complete collection and reporting of data coming from numerous but disparate and uncoordinated sources. Opinions were voiced that these demands could not be met under the current circumstances. The future may hold more of the same: inefficient collection of performance measurement data, data that are not universally usable and, perhaps, of less-than-optimum quality.

The groundwork for this conference included the findings of a task force formed by AHIMA/FORE and MGMA CFR and composed of stakeholders and experts from the heath care community. This task force sought to address the varied data collection, aggregating, and reporting requirements that all organizations face. The work of that task force was presented in the briefing paper "Health Care Data Collection and Reporting," prepared for AHRQ in November 2006.[7] The conference attendees used that paper and shared their own experiences to generate discussion of solutions that produce coordinated, efficient, and useful performance measurement.

1. Inefficiencies Associated with Performance Measurement Data Collection and Reporting

Data acquisition requirements present a strong challenge for all organizations. Conference attendees frequently cited their concerns that the current scheme of performance measurement data collection and reporting has had a negative impact on consistent data collection. It also has had a negative impact on the quality of documentation and data and on their own organizations' staffing and financial resources. Specific challenges cited were:

- Variations in Data Collection. Collection and reporting requirements that utilize varied taxonomies and data definitions are affecting the quality of data collected, causing difficulty viewing and using data. The variations also create additional costs to validate transmitted data and continually update forms and systems as collection metrics change in uncontrolled and disorganized ways.
- Documentation and Data Quality. Many of the challenges relate to issues within health care organizations. These challenges include incomplete clinical documentation, disparate electronic systems within the same organization, failure to understand coding and performance measurement requirements, dependence on manual data abstraction, and inconsistent policies and practices for using secondary data as a source of quality information.[8]
- Provider Staff Resource Requirements. Staffing resources often must increase in conjunction with reporting requirements due to the differences in reporting requirements set by the various requestors of performance and quality data.[9]

2. Variations Among Performance Measurement Systems

Some performance measurement reporting initiatives are mandatory and some are voluntary. Unfortunately, the variations among performance measurement systems and reporting standards make information difficult to collect, aggregate, report, and interpret. Providers are often asked to collect, process, and report data about the same medical conditions, and perhaps the same populations multiple times in different formats. For example, similar measures may vary across care settings or specialty (AQA and HQA are evaluating this issue through the Quality Alliance Steering Committee (QASC)); or similar measures may vary across disease/condition. An example of the latter would be the several approaches to measuring adult smoking cessation intervention by physicians. These systems may define patients alternately by their disease, the location of the intervention, or other metrics.

3. Organizational and Cultural Issues

Conferees discussed how health care organizations must constantly react to changing requirements placed upon them by accrediting and standards bodies. Stakeholder acceptance, internal structures, and organizational culture determine how well organizations can adjust to externally imposed requirements to provide reliable data. Additional complicating factors are when performance data cannot be reliably linked to individual care providers for accountability purposes when multiple physicians care for the same patient, or when providers perceive the process of analyzing and reporting performance measures is inconsistent, complex, and unstable.[8]

4. Technological Barriers

Conferees agreed that the benefits of using Health IT for performance measurement include facilitating benchmarking activities, providing more timely clinical information for decision support, and collecting data at the point of care in a format that allows multiple secondary uses. Unfortunately, the implementation of Health IT systems has been largely uncoordinated across providers in the same organization and between organizations, regionally and nationally. Technology initiatives, such as the promotion of broad implementation of Health IT, cannot live up to the promise of significantly reducing inefficiencies and waste in the health care industry until they address the need to better coordinate performance measurement. Interoperability among systems also must improve. EHR products must be capable of supporting broadly accepted performance measurement initiatives.

Conferees felt strongly that many health care providers may not understand how their use of and documentation in these electronic systems can have a positive impact on the reporting of performance data on a national scale. The costs and risks—perceived and actual—of implementing Health IT pose an especially significant barrier for small and solo practice physician offices, where a large portion of patients in the United States access their care. Notably, just one in four physicians use any form of EHR.[10] Additional concerns expressed about EHR technologies in relation to performance measurement were the need to:

- Reduce the start-up costs and uncertainties about the technology that present barriers for many providers in using Health IT.
- Manage Health IT security and privacy issues.
- Develop contingency plans to safeguard electronically stored health care data in the event of disasters and emergencies.
- Lead national and international efforts to address ownership issues related to health and administrative data, including determining the minimum common, or public, data set for population health and quality measurement.

5. Economic Pressures

The many economic challenges health care organizations face include higher costs of doing business, declining medical reimbursements, and rising costs to implement information technology solutions. For most health care organizations, the task of addressing the rising tide of performance measurement reporting requirements is further complicated by the costs of collecting data (estimated to represent as much two-thirds of the cost to analyze data).[11] An additional concern is the cost associated with disseminating and interpreting performance data within the organization.

6. Competing Priorities

Conferees frequently cited the variations that occur in measure sets, data metrics, and taxonomies. These variations occur across health care settings and between the reporting deadlines. Health care organizations face the unique challenge of attempting to meet various data collection and reporting requirements that have been promulgated in a mostly uncoordinated manner by private and public entities. Although improvements have been made in some areas, most notably better coordination of hospital measurements, health care organizations still encounter:

- Unclear guidance for prioritizing the reporting of data in response to state and local performance measurement mandates or laws, payer and employer performance measurement initiatives, and national initiatives—few of which are aligned with each other; and
- Absence of a national health care quality data set and report card that can provide defined categories of measures and measurement selection criteria or guidelines, such as defined measure sets.[12]

Providers also have concerns about upholding the privacy and security of patient health information (PHI) that must be shared with performance measurement systems.

Finally, providers must devote considerable attention to keeping up with multiple sets of reporting requirements that mature over time and independently change data elements, data definitions, deadlines, and analytic specifications.

Conference attendees discussed the utility of a public-private effort to oversee efforts to provide clear evaluation policies and procedures for health care measurement. The AQA Data Sharing and Aggregation Workgroup has recommended that such a public/private entity have the primary responsibility of setting uniform operating rules and standards for the sharing and aggregation of quality and efficiency data used in both the public and private sectors for the purposes of performance measurement and reporting.[2] Also discussed was the Institute of Medicine's report calling for creation of a national system supported by sustained adequate funding to exert "strong, independent leadership" to coordinate and guide current efforts and to broaden the scope of measurement to overcome existing gaps.[3]

This public-private effort could take place under the purview of one or more existing entities. Many conference attendees suggest that existing entities may be capable of expanding their scope of measurement-related responsibilities with sufficient support, consensus among stakeholders, and the will to do so. This entity could bring about the:

- Creation of core data content standards as a prerequisite for more reliable data collection and reporting;
- Standardization of performance measurement systems to improve efficiency over time; and
- Coordination and collaboration among all parties in health quality and performance measurement so that the benefits of performance measurement can flow to all citizens.

This entity must look beyond the definition of measures and also include data collection and reporting activities in its purview. In doing so, it must assure representation of the various stakeholders in those activities as well. In envisioning the scope of such an entity, conference attendees discussed that it would be empowered and held accountable to:

- Gather and prioritize the input of the principle stakeholders that use health care data to measure health care performance. This input should be directed to help prioritize and standardize measure sets across medical specialties and care settings through the recognition and support of existing collaborative efforts such those sought by the NQF or the AQA/HQA Quality Alliance Steering Committee (QASC). This input also would ensure that data are gathered to support the informational needs of providers working at the point of care as well as the needs of others in the process.
- Encourage and support field tests aimed at assessing proposed measures, metrics, and core data content standards. An example of this is the work of the Collaborative for Performance Measurement Integration with EHR Systems co-sponsored by the American Medical Association (AMA), the National Committee of Quality Assurance (NCQA), and the Centers for Medicare & Medicaid Services (CMS).
- Facilitate an ongoing representative process of obtaining regular input regarding measurement standards from specialty societies and professional associations that represent providers, measurement developers, payers (insurance companies and employers), national, state and other public health agencies, and vendors.
- Develop a master plan presenting short-, mid-, and long-term measurable goals and accompanying tactics.

- Reach national agreement on a starter set of basic, uniform data needed to measure health care quality and performance and the necessary standard minimum demographic data set—both of which must be capable of being collected at the point of service during the course of providing clinical care. These common standards should be developed using a National Quality Forum- (NQF) like process for the specification of data elements. NQF was cited because it has a proven track record, is highly recognized for endorsing quality measures, and has a formal well-established process. The standards should take into account the needs and capacities of the health care data collectors (including health care providers).

- Harmonize existing measures of health care quality with the proposed national uniform standard, including:
    - Conducting an inventory of all broadly accepted uses of data depositories for clinical and administrative data (e.g., epidemiology, mortality, provider performance, etc.);
    - Setting standards for linking data depositories; and
    - Identifying and convening the stakeholders of these depositories for buy in, advice, and direction.

- Follow the Certification Commission for Health Information Technology (CCHIT) process to define criteria for collecting clinical and administrative data through EHR to promote full functionality across all systems and enable optimum data extraction that can be put to multiple uses. (In its initial work to certify ambulatory EHR products, CCHIT's selection process follows the published standards of the Health Care Information Technology Standards Panel. Criteria, test scripts, and inspection methods are developed and maintained by CCHIT workgroups, publicly vetted by multiple stakeholders, and approved by a Board of Commissioners. The criteria for credibility, reliability, and transparency are used in an inspection process and EHR products meeting the criteria are issued a CCHIT Certified[SM] Certification Document and seal.)

- Guide the development of a model based on professional standards development (such as for accountancy) to guide the setting, validating, and approving of metrics for measuring quality. In addition, this model will be used to gain industry wide agreement on:
    - Acceptable sampling sizes, sampling error, and other data measurement issues.
    - Developing and overseeing the process of beta testing of proposed measures.
    - Assessing, endorsing, and proposing the acceptance (or rejection) of current and proposed measures according to criteria developed and approved by major stakeholders—a role that can be unified among the several quality organizations currently handling such efforts.

- Develop standards that promote and enhance reasonable coordination without delay of health information exchange and quality initiatives. This coordination should take place at the National, State, and local levels with intent of promoting data integrity and responsible use of data but avoiding data "silos."

- Develop specific strategies to promote the universal adoption of affordable EHR and related systems by all health care provider organizations and other collectors, especially small health organizations and rural hospitals.

- Advise efforts by public and private stakeholders to develop common national standards that outline a national framework for the secondary use of health data with appropriate protections for legitimate secondary use. This national framework for the secondary use of health data must aim to facilitate broad and repeated collection, storage, aggregation, linkage, and transmission of health data with appropriate protections for legitimate secondary use.[8]
- Gain public and private sector buy in from Federal, State, and local agencies to work within data gathering goals.

Prior to formalizing this public-private entity, the following actions should be initiated to assure support and success of this important effort.

- Educate and engage consumers regarding the need for a public-private effort to provide and oversee clear evaluation policies and procedures for health care measurement;
- Gather letters of support from key stakeholders, including consumer advocates, to demonstrate support for an entity to serve in this capacity;
- Evaluate the characteristics of the proposed public-private entity and compare the proposed functions to the capabilities of existing organizations;
- Provide existing entities the opportunity to express interest in assuming the role of the public-private entity and to identify restructuring requirements necessary to fulfill this role; and
- Proactively inform existing Health IT industry initiatives of this proposed entity and the need to support collaboration and information sharing upon its implementation.

These steps are necessary because without them Health IT cannot live up to its potential to provide new revelations about performance and quality in health care and improve the health of all Americans.

The desired outcomes of this public/private effort would be that:

- All future measures are derived from data that are in broad use, and which are collected in the course of primary clinical documentation and/or routine health information exchange and administrative processes, including patient demographics and claims data.
- A limited number of entities are authorized to develop and promulgate measure sets. In all cases those entities must have demonstrated a sound process for achieving consensus on policies and practices, including participating in a process that is open and transparent.
- Vendors of electronic information systems have a clear and consistent picture of the functional requirements and standards for capturing data for quality measurement. The process used by the CCHIT will judge conformance with these requirements and standards.
- Data collectors (providers as well as health agencies) that use agreed-upon electronic formats are not required to conduct additional data recording or abstracting activities.
- Data collectors have a ready source of guidance, training, and other support and/or advice to help them meet requirements and use the information they gather.

The overarching goal of all efforts to standardize data aggregation and analysis techniques should be to produce meaningful, high-quality data that will inform the development of high-quality measurements. Meeting this goal requires that providers—individuals and organizations—can collect health data at or as close to the point of service as possible, once per encounter, and in a format that will have multiple uses by many stakeholders.

The urgency to resolve these issues comes from several quarters: patients are turning into more active consumers who want to be fully engaged in their care and payers are demanding performance-based results on which to base reimbursement and utilization decisions. Because of these demands, public reporting of health care measures and P4P based on those measures will lead to increased requirements for transparency, quality reporting, and standardization of data.

Short term (1 year):

- Seek support and input from key private and public stakeholders to establish national coordination of health performance and quality measurement that works in a transparent process with other public-private entities to set Health IT and information exchange policies and standards.
- Develop a sustainable business model to support the goals and desired outcomes of such an entity.
- Charge the coordinating entity to develop a detailed matrix to achieve mid- and long-term goals.
- Seek and gain industry agreement on the minimum data set to be used as a starter set.
- Establish an intermediary entity to be accountable for guiding analysis and reporting of information from data sets.
- Initiate a physician education campaign (including continuing education, medical society information efforts and other means) that communicates physician/provider accountability for collecting and delivering a high-quality data set.

Mid term (3 years):

- Harmonize performance and quality measures across providers within all settings (for example, ambulatory, inpatient, and so on).
- Continue to promote through medical societies, literature, and undergraduate education the necessary changes in culture and clinician training to include quality measurement and improvement as goals.

Long term (5 years):

- Harmonize performance and quality measures for episodes of care across all settings possible.

This report outlines a carefully considered plan of response to the challenges that a diffuse and growing array of performance measurement systems and responsibilities presents to the Nation's health care providers. Left unchecked these challenges will grow and potentially stifle even the best-intended, best-funded Health IT initiatives. This report points to opportunities for resolving the current confusion in collection and reporting of performance measurement data. Because the momentum for greater consumer participation, public reporting of outcomes, and P4P will evolve and grow in coming years, AHIMA/FORE and MGMA Center for Research urge policymakers and stakeholders in the health care industry to promptly address these issues. Otherwise, the problems in performance measurement, data collection, and reporting described in this document will stall the laudable efforts outlined in President Bush's directive to promote quality and efficient health care through the implementation of Health IT nationwide.

AHIMA/FORE and MGMA greatly appreciate the decision by the AHRQ to fund both the invitational conference and the task force's informative briefing paper, "Health Care Data Collection and Reporting, November 2006" that laid the foundation for the conferee's discussions. In addition to serving as a source document that helped guide the conference's attendees, that task force's briefing paper presents more complete information about the many issues raised in this report. Readers are advised to use that paper as a resource to gain deeper knowledge of the many challenges of today's performance measurement climate. A great measure of thanks also must go to the more than 50 individuals—physicians and nonphysicians—who attended the 2-day conference. The contributions and insights provided by these stakeholders in health care performance measurement were critical to this report's conclusions.

AHIMA/FORE and MGMA strongly urge that this report's master plan be considered as both a blueprint and a call to action to forge a new direction in health care performance measurement.

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Conference Attendees

This report represents the major themes that emerged from the conference and subsequent discussions; no attempt was made to attain agreement by all of the organizations represented at the conference. This section identifies the individuals who were in attendance and the organizations they represent, but does not imply endorsement of the conclusions contained in this document.

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II. Executive Summary

Performance measurement data collection and reporting initiatives are accelerating, both nationally and locally and through public/private partnerships. Healthcare providers are asked and often required to collect and report data for quality, public health, performance, and financial measurements. To that end, the Agency for Healthcare Research and Quality (AHRQ) has partnered with the Foundation of Research and Education (FORE) of the American Health Information Management Association (AHIMA) and the Medical Group Management Association Center for Research (MGMA CFR) to address problems with regard to performance measurement, data collection, and reporting. This invitational conference is convening approximately 50 experts in the field of healthcare quality who can contribute to the development of a set of recommendations for effectively coordinating various performance measurement initiatives to maximize value and minimize data collection burden and expense for healthcare providers.

In order to successfully lay the foundation for productive dialog, AHIMA and MGMA formed a task force of stakeholders and experts from the community to address the varied data collection, aggregating, and reporting requirements that all organizations are facing during this time of increased costs and burdens. This briefing report is the result of many weeks of effort and research by professionals who manage the day-to-day challenges of disparate healthcare data collection and reporting initiatives. It describes the challenges associated with the collection, aggregation, reporting, analysis and interpretation of performance measurement data and their impact on provider organizations.

Highlights include:

- Data acquisition and the impacts on staffing resources
- Variations in data collection requirements, documentation and data quality
- Organizational and cultural challenges associated with data collection and reporting efforts
- Economic pressures
- Competing priorities in the healthcare industry
- Technology challenges

The momentum for collection and reporting of performance measurement data for healthcare providers and organizations is ramping up and at a very rapid pace. The notion that patients are passive recipients of information provided to them is no longer true and the healthcare paradigm is shifting toward more active consumers, fully engaged in their care. Because of this shift in consumer engagement, public reporting and pay-for-performance will continue to evolve and become market drivers in increased requirements for transparency, quality reporting and standardization of data.

III. Introduction

On August 22, 2006 President Bush signed an Executive Order supporting the promotion of quality and efficient healthcare in federal government administered or sponsored healthcare programs. The President requested federal agencies to implement health information technology (HIT) for the direct exchange of health information, and programs measuring the quality of services provided to beneficiaries or enrollees of the federal healthcare system. This directive sends a powerful message to the healthcare community that quality of care and the implementation of HIT offer a window of opportunity to develop work in a collaborative environment and to initiate a dialogue among thought leaders in the quality community. The goal is ultimately to come to consensus with recommendations for moving forward.[18]

Many performance measurement data collection and reporting initiatives are underway, both nationally and locally and through public/private partnerships. Healthcare providers are asked, and often required to collect and report data for quality, public health, performance, and financial measurements. The information presented in this report is the result of many weeks of effort and research conducted by professionals within the healthcare community who are directly impacted by the day-to-day challenges of disparate healthcare data collection and reporting initiatives. This volunteer group represents a wide variety of experienced professionals who were able to offer subject matter expertise and insight from their personal experiences. The report presents information regarding the challenges associated with the collection, aggregation, reporting, analysis and interpretation of performance measurement data. Healthcare organizations struggle to address resource constraints, industry changes, and the increasing demand for healthcare data.

IV. Purpose

The purpose of this briefing report is to bring attention to the data and data collection challenges and serve as the basis for structured dialog during the Agency for Healthcare Research and Quality (AHRQ) Conference on Healthcare Data Collection and Reporting. The conferees are thought leaders from throughout the healthcare industry who will use these findings to foster discussion and consensus regarding improved coordination and efficiency of performance measurement initiatives. Performance measurement and pay-for-performance (P4P) reporting requirements will not decline; in fact they will remain steady or even increase as the pressures for reimbursement present themselves to care providers.

For the purposes of this report, a performance measurement system is defined as an organized approach designed to collect healthcare data for the purposes of measuring performance and reporting results to healthcare providers, payers, accrediting organizations, and/or the public.

A task force of health information management and medical group practice professionals collaborated to describe the challenges healthcare providers face when collecting and aggregating healthcare data. The task force generated the information contained in this report based on the following objectives:

- Demonstrate the magnitude of the challenges and inefficiencies associated with inconsistent performance measurement systems.
- Develop an inventory of performance measurement systems that will assist with identifying the variations between performance measurement systems.
- Discuss and summarize the benefits of HIT when used effectively to collect, aggregate, and report performance measurement data, and the current challenges inhibiting its effective use.

V. Challenges and Inefficiencies Associated with Performance Measurement Data Collection and Reporting

Healthcare organizations are faced with increasing and disparate data collection and reporting requirements from a wide variety of public and private organizations. As the industry moves toward widespread adoption of electronic health records (EHRs), interoperability, and P4P, the need to align performance measurement reporting initiatives is vital. As the healthcare industry continues to face staffing shortages, tighter reimbursement, and pressures to accomplish more with less, the ability to meet the demands of various data requirements has become an increasing concern. Some specific challenges and inefficiencies are further explored in more detail.

A. Data Acquisition

Data acquisition requirements present a unique challenge for organizations on several levels as much of this effort is still done through manual chart review. Not only does this have an impact on scarce skilled staff resources, but it creates stressors associated with locating the requisite data from varied types of source documents, making it difficult to avoid duplication and ensure the data are valid and reliable.

1. *Staff Resource Requirement* —Conducting manual data abstraction is a time consuming effort requiring scarce staff resources. It also requires that data abstraction staff possess a level of knowledge and experience that will ensure the data are collected and managed properly. In most cases, staff responsible for abstracting data have other job responsibilities (for example, patient care, coding, practice management, and other critical duties), or are diverted from other tasks to accommodate for the increased workload. Senior leaders within hospitals note that staffing resources increase in conjunction with reporting requirements due to the differences in reporting requirements.[17]
    - Manual data abstraction is time consuming and labor intensive
    - Shortage of a trained workforce with the knowledge and competencies required for clinical performance measurement further compounds the data collection challenges. Some performance measurement systems require specific staff be dedicated to data collection activities (STS National Database), while others require staff with specific

training (surgical care nurse reviewers for the American College of Surgeons' NSQIP activities).

- Varied skill levels of data abstraction staff require ongoing education and validation efforts. Some performance measurement systems require ongoing validation activities for new staff or staff who do not meet minimum validation accuracy rates.
- Education and training materials tend to be specific to each performance measurement system due to variations in data collection, reporting, and analytic requirements

- *Data Collection Variations* —Data collection and reporting requirements vary among performance measurement systems. A range of reporting requirements utilizing varied taxonomies and data definitions effect the quality of data collected and at times, cause confusion.
  - Failure to specify performance measurement metrics (including data elements for capture and measurement at the point of patient care) results in subjective decisions regarding measure compliance by individuals retrospectively capturing the data. The inclination is toward organizational benefit with the professional bias imposed during manual, retrospective data capture. Organizations with advanced real-time, computable data capture have a more accurate portrayal of performance and may notice improved performance measurement results based on improved measurement and implementation of interventions during the clinical process.
  - Retrospective data capture weaknesses (that is, timeliness and subjectivity) may contribute to the lack of organizational improvements in patient care at both the individual case and overall trend levels. Issues include not only data definition and capture but how to utilize real time measurement for the improvement of patient care through clinical process redesign. Retrospective data collection leads to outdated analysis results, with little or no ability to impact quality at the point of care.
  - Concurrent data collection and monitoring provide the opportunity to improve quality at the point of care, but consequently, other challenges surface including:
    – Difficulty accessing the required medical record data (see section C. Organizational/Cultural Challenges, 3. Record Location)
    – Difficulties accessing paper medical records (either within a facility or across multiple locations for facilities within a healthcare system) due to the restrictions that single access patient record imposes
    – Challenges associated with security restrictions when accessing the electronic health record
  - Healthcare providers transmit data to many different performance measurement systems, each requiring specific file formats, submission requirements and data validation. Validation of transmitted data and error reports is time consuming and labor intensive.
  - Changes in data collection metrics require healthcare providers to make changes to medical record forms that are used to accurately capture the data in the medical record. Updating these forms (and reprinting paper forms in a paper environment) is labor intensive and costly.
  - Updated code sets impact performance measure data element field values and definitions. For example, potential changes or updates to existing coding systems (for example, ICD-9-CM, CPT, SNOMED) impact data abstraction requirements

requiring abstractors to be cognizant of these changes and when each performance measurement system will update the data collection specifications and systems.

3. *Documentation and Data Quality* —The absence of complete and reliable information in patient medical records (both paper and electronic) impacts performance measurement data collection and reporting in multiple ways.
    *   Clinical documentation serves as the foundation for code assignments that link patient care and payment. When documentation in the medical record is not complete, timely or accurate, the patient's condition and care will not be coded correctly, and as a result, the accuracy of performance measurement based on claims data can be compromised.
    *   Poor legibility in paper medical records impacts the ability to abstract accurate and reliable performance measurement data. Illegible documentation impedes an abstractor's ability to understand and interpret the information.
    *   Poor documentation is also attributed to cut, copy, and paste functionality in an electronic health record
    *   Manual data abstraction provides more descriptive data that cannot be found in claims, but this process increases costs and the potential for data errors. It also imposes new requirements for ongoing data validation and cleanup activities
    *   Disparate electronic systems increase the potential for data errors
    *   Physicians often lack time or sufficient understanding of the methodology behind coding and performance measurement requirements, and how documentation affects these activities
    *   Limitations of code sets (for example, ICD-9-CM, and so on) lead to inaccurate or incomplete data and analysis results
    *   Secondary use of data brings forth additional concerns. There is a lack of consistent policies and practices regarding the use of secondary data which is needed to facilitate the proper and accurate use for quality information.[19]

B. Organizational/Cultural

Organizations faced with increasing reporting demands are also confronted with meeting the requirements that are placed upon them by accrediting and standards bodies. Organizational culture and stakeholder acceptance and buy-in within an organization can serve as successful facilitators to changes that need to be made; however, they can also serve to impede progress.

1. *Culture* —Healthcare organizations are increasingly being faced with conflicting priorities within the industry. There is the need for patient confidentiality, security, HIPAA compliance, and so on, versus the need for outcomes assessment, performance improvement, and evidence based medical practice.
    *   Culture within each individual organization may contribute to performance measurement challenges. Some organizations foster data collection and improvement initiatives, while other organizations feel threatened by these efforts.
    *   Healthcare providers feel pressured to collect and analyze performance measurement data for a multitude of valid reasons, but with limited resources, they are forced to prioritize

2. *Physician and Stakeholder Acceptance/Buy-in* —In order to ensure the success of any performance measurement and improvement program, it is essential to achieve acceptance and buy-in not only from physicians, but all stakeholders involved in the program implementation process. If key individuals are not integral to the process, challenges to program acceptance will result.
   - Some physicians don't understand certain methodologies used by performance measurement systems
   - Some performance measurement systems lack adequate communication and education tools that can be used to gain physician buy-in and support
   - Some physicians distrust the performance measurement data because of the inability to replicate the analysis results; algorithms are not publicly available in some cases
   - Some physicians are highly competitive and feel they are already providing high quality patient care; they resent being categorized
   - Healthcare organizations find some physicians are resistant to documentation requirements, some of which feed performance measurement data collection and reporting initiatives
   - Some physicians fear current voluntary efforts will become mandatory or made publicly available without their control
   - Some physicians fear judgment based on performance measures that do not include all aspects of the care provided (for example, claims data analysis that does not represent distribution of drug samples, cash payments, and so on)
   - Multiple physicians caring for the same patient complicates attribution of performance measurement data analysis and reporting results
   - Performance measures are inconsistent, complex, and unstable, generating uncertainty among healthcare providers and organizations[13]
   - Financial measures based on healthcare facility costs are outside a physician's control

3. *Record Location* — "Chart chasing" is the added work associated with locating patient information and assimilating the information into the patient's record. In our rushed and complex healthcare system, patients are placed at serious risk by a single access paper medical record. At the very least, the system is bogged down when each person takes his or her allotted time to review and document information, excluding other key personnel and caregivers in the process. Concurrent data collection and analysis provides opportunity for immediate improvement in patient care, but concurrent data collection is difficult in the paper environment (see Appendix A—Concurrent Data Collection from a Paper Medical Record).
   - Duplication or inconsistency of documentation
   - Challenges surrounding locating of the paper medical records when they are not located in the appropriate area defined by the document management system and/or the Health Information Management (HIM) department, for example, "chart stashing" to ensure individual access when needed, and so on
   - Delays in documentation availability due to dictation and transcription processes
   - Loose or misplaced documents from the paper medical record

4. *Performance Measure Maintenance and Retirement*—These are key lifecycle factors that must be considered while maintaining a performance measurement program. This effort necessitates considerable attention as reporting requirements evolve over time. As reporting programs mature and change their data elements, data definitions and analytic

specifications, organizations need to remain agile in their ability to meet modifications to the data collection and reporting requirements.

C. Financial

Economic pressures are just some of the elements that healthcare organizations are addressing in today's healthcare system. Higher costs of doing business, declining reimbursement and the expectation of implementing information technology solutions are all challenges faced in trying to address performance measurement reporting requirements. The task force did not spend a substantial amount of time researching the financial barriers due to other industry efforts underway in this area.

- Limited financial resources
- Costs associated with data dissemination and education, for example, why data is collected, why data varies across performance measurement systems, and so on
- Data collection efforts represent 2/3 of the cost of analyzing the data[8]
- Costs associated with duplicate data collection and aggregation

D. Healthcare Industry

In an industry already stretched for resources there are many initiatives, programs, and requirements that command the attention of healthcare organizations. These mandates or programs have differing requirements and lack coordination needed for a systematic approach towards achieving sound quality measurement criteria. The challenges listed below address the opposing priorities, privacy and security considerations, and highlight the disparities that organizations continue to face in meeting data reporting requirements.

1. *Competing Priorities*—Healthcare organizations must remain accountable to a wide array of local, state and national regulations and standards, including performance measurement requirements for accreditation, licensing, pay-for-performance, and so on. In addition to data collection and reporting requirements, healthcare organizations must maintain patient confidentiality and security.
   - State and local performance measurement mandates or laws, payer and employer performance measurement initiatives, in addition to unaligned national initiatives lead to the need to prioritize
   - Healthcare providers have to assess whether they will publicly report their data to receive and/or maintain payment or refuse to publicly report and lose valuable payment incentives and even competitive position
   - Multiple, varied reporting deadlines across performance measurement systems
   - Absence of a national healthcare quality framework (defined categories of measures) and lack of measurement selection criteria or guidelines (defined measure sets) result in the absence of a national healthcare quality data set and report card[4]
   - National focus on an archiving model rather than a clinical performance model to drive improvement in patient care concurrently

2. *Privacy and Security*—Healthcare providers strive to maintain privacy and security requirements, but often struggle with how much patient health information (PHI) should be shared with performance measurement systems. In addition, healthcare organizations are faced with privacy and security concerns of physicians and when they should or should not report physician specific data.

- Provider rights to privacy
- De-identification of patient data for performance measurement activities results in loss of the ability to track patient experience, treatment, visits and follow-up
- Litigiousness of society versus people trying to do the right thing
- Performance measurement systems understate why the data is needed and why certain efforts are underway
- Fear that data collected may be used/released for unintended purposes

3. *Disparities*—The variations in measure sets, data metrics, taxonomy across settings (that is, G-codes/ICD-9-CM for hospitals, CPT/E&M for ambulatory settings) and reporting deadlines among performance measurement systems increases confusion for staff within healthcare organizations. Specific examples of these disparities are described further in section V. A. Data Acquisition Challenges and VI. Variations between Performance Measurement Systems.

E. Technological

EHRs have the potential to enable improved quality of care and patient safety. They also promise to streamline the reporting of data, but examples of performance measurement as a byproduct are still rare. Even when automated, data is also held in legacy system silos. Extracting data from interface systems may be an improvement over manual extraction but it is still a very challenging process, particularly because there are few agreed upon data content standards. Variations in the taxonomy of terms can be confusing and difficult to interpret if they do not represent the same clinical and non-clinical terminology. This could impact the data reported and certainly have an impact on an organization's performance measurement results.

1. *Data Storage and Retrieval*—Data are stored in multiple subsystems within an electronic health record system.
   - Some EHR systems provide more functionality than others; not all of the systems are standardized
   - Some providers have the EHR capabilities, or other software programs to assist with data collection

2. *Data Standards*—Lack of industry data standards that contain definitions and taxonomy for all metrics, for example, national patient safety goals (Joint Commission, Leapfrog, ISMP, IHI, NQF) each with different statements of intent, absence of data element definition, staffing requirements, and so on. This void in data standards results in:
   - Lack of data standards makes data acquisition from electronic systems very difficult
   - Multiple disparate systems within a healthcare organization, which may not communicate with each other, complicate data mining and coordination efforts
   - Labor intensive data mapping efforts required by healthcare providers to link systems and performance measurement data requirements
   - Disparate information systems within and between healthcare organizations
   - Conflicts between administrative data sets (for example, CPT G-codes do not cross reference to HCPCS G-codes)

VI. Variations between Performance Measurement Systems

Some performance measurement reporting initiatives are mandatory and some are voluntary. Unfortunately, the variations between performance measurement systems make information difficult to collect, aggregate, report, and interpret. Requirements for performance measurement data continues to increase, leading healthcare organizations to make tough decisions regarding resource allocation.

While evaluating the challenges associated with the data collection and reporting variations, the task force reviewed a sample of performance measurement systems. As part of the analysis, a sample of 44 local and national performance measurement systems were evaluated, focusing on a variety of inpatient and ambulatory care performance measures. The review included 125 different performance measurement categories related to disease, condition, treatment and intervention, totaling approximately 900 performance measures.

Conceptually, the sample of performance measures reviewed demonstrates the variety of reporting requirements and complexities concerning healthcare organizations today. The following sections provide some examples of the types of variations that exist between performance measures, and their data collection, reporting and analytic requirements. As illustrated in the sections below, variations between elements as simple as date and gender pose problems for healthcare organizations when attempting to streamline data collection and reporting activities.

A. Measure Variations

- Similar measures that vary across care settings or specialty (for example, AQA and HQA have similar measures for the acute and ambulatory settings; AQA and HQA have recognized the need to evaluate measures across care settings through the recent formation of the AQA/HQA collaboration)
- Similar measures that vary across disease/condition
  - COPD: Percentage of patients with COPD whose physician inquired about smoking cessation (if patient a smoker) at every visit
  - AMI: Adult Smoking Cessation Advice/Counseling
  - HF: Adult Smoking Cessation Advice/Counseling
  - Chronic Stable Coronary Artery Disease: Percentage of patients identified as cigarette smokers who received a smoking cessation intervention
  - Pneumonia: Adult Smoking Cessation Advice/Counseling
  - Diabetes: Percentage of smokers who were recommended or offered an intervention for smoking cessation (counseling or pharmacologic therapy)
- Variations in data sources utilized for collection and aggregation of performance measurement data (for example, administrative data, clinical data manually abstracted from a paper medical record, laboratory data, pharmacy data, patient survey data, state public health data, other special/unique data, and so on)

B. Data Collection and Submission Variations

- Variations in data element descriptive titles and/or field names for the same fields (for example, GENDER versus ADMINISTRATIVE SEX)
- Differences in data element definitions and/or values across measures and performance measurement systems, for example:

Gender – system A	Gender – system B
1—Male	1—Male
2—Female	2—Female
3—Other	
4—Unknown	

- Discrepancies in data element formats for similar fields across performance measurement systems (for example, mm/dd/yy, mm/dd/yyyy, mm/yy)
- Variations in the medical documentation from which measurement data can be retrieved (for example, physician progress notes, physician orders, history and physical, and so on)
- Variations in the care provider whose documentation can be referenced when abstracting data (e.g., some data element definitions only allow the abstractor to collect data from physician documentation, where other systems may allow nursing, physician assistant, and nurse practitioner documentation)
- Discrepancies between software products used for data collection. For example, some data collection software products incorporate system edits that "disable" specific data fields or entire measures based on algorithms, while other software products do not.
- Differences in data abstraction validation requirements (for example, validation rates required, granularity of validation results, frequency of validation measurements, methods for validating the abstraction results)
- Variations in data submission deadlines (in some cases, if a submission deadline is missed, payment is impacted or public perceptions could be impacted).
- Variations in data submission formats (for example, XML format versus comma delimited)
- Variations in the data transmission methods utilized for data submission (for example, secure web portal, vendor upload, file transfer protocol)
- Variations in the granularity of data submitted (for example, patient specific data, aggregated results)

C. Data Analysis Variations

- Differences in sampling methodologies required (for example, some performance measurement systems require 100 percent versus specific sampling methodology, self selected sampling methodology)
- Variations in inclusion and exclusionary criteria (for example, patient ages, diagnoses, procedures, dates of services)
- Variations in data analysis specifications for similar measures across performance measurement systems

VII. Health Information Technology Use in Performance Measurement Data Collection and Reporting

A. Benefits of HIT

The use of HIT in performance measurement is driven, in part, by the healthcare industry's shift toward standardization and increased accountability through public reporting. As healthcare providers move toward EHRs, more data will be available in digital format. Effective utilization of available technology can improve data quality allowing the process of data collection and analysis to become more efficient. Performance measurement data can be a byproduct of patient care. Thus, it can be collected once and available for patient care and population health uses.

1. *Current Benefits*—A number of benefits are associated with the use of HIT for performance measurement, such as the facilitation of decision support and benchmarking activities, and timeliness of clinical information. The process of collecting data can be streamlined, thereby making it less resource-intensive. Many performance measurement systems have capabilities, which enable providers to identify performance issues and provide comparative data for benchmarking purposes.
   - Facilitates improved data quality through system edits
   - Helps automate and standardize some data collection and reporting processes
   - Provides real time clinical process intervention (decision support)
   - Assists with comparison of data from multiple databases
   - Facilitates creation and retrieval of information for ad hoc and special reports and patient reminders
   - Supports fraud detection by automating variance identification

2. *Potential Future Benefit*—As the nation moves forward with EHR initiatives and more providers adopt HIT, it is imperative to focus on achieving the fullest benefit from these investments. For performance measurement these may include:
   - Facilitation of data aggregation and reporting through the use of NHIN/HIE
   - Reduced data collection and aggregation challenges
   - Improved collection of data across the continuum of care to provide a longitudinal view of patient care
   - Improved data tracking (where data goes and who sees it)
   - Integrated data sources (for example, lab systems, radiology, administration)

B. Challenges Associated with HIT

1. *Current Challenges*—Implementation of HIT systems is affected by a number of internal and external issues. For instance, a hospital may have separate systems for laboratory, radiology and administrative documentation, yet these systems are not interoperable to facilitate the flow of data across the continuum of care. The inconsistencies among performance measurement data collection, reporting and analysis requirements necessitate data to be reported in many different ways.
   - Issues associated with ensuring and maintaining high quality data (for example, transmission errors from one system to another are time consuming to evaluate and rectify)

- Retrieving and reporting data consistently from multiple disparate electronic and paper systems
- Absence of metadata standards
- Lack of data standards makes data acquisition from electronic systems very difficult
- Multiple disparate systems within healthcare organizations pose challenges when mining clinical data for performance measurement (for example, legacy systems don't interoperate with newer systems, difficulty locating data within the systems)
- Variations in the aggregation, analysis and reporting capabilities of different performance measurement systems complicate data mapping efforts required by healthcare providers to link disparate systems and performance measurement data requirements
- Lack of communication between hospital and physician office record systems
- Costs and risks associated with HIT systems pose problems for small and solo practice physician offices, as only approximately one in four doctors use some form of EHR.[15] In addition, there is a lack of confidence in current vendor systems which further impedes adoption. Certification of EHR products is beginning to address these issues and further the adoption of EHRs.
- Individuals who gather and report performance measurement data using EHR systems may need to be supported through training. In addition, healthcare providers may not understand how their documentation in these electronic systems will impact the data collection and reporting efforts.
- Budgetary constraints
- Security and privacy issues
- Need to develop a contingency plan to safeguard health care data in the event of an emergency
- Overcoming the mindset that data is "accessible," rather than "owned"

2. *Future Impacts if HIT Initiatives are not Coordinated*—In previous sections of this report, challenges associated with the use of HIT in performance measurement are presented, but we must also explore the future impacts if technology initiatives are not coordinated and leveraged for performance measurement data collection and reporting.
   - Continued manual data collection and disparate systems, which ultimately impact patient care
   - Continued inefficiencies and waste throughout the healthcare industry
   - Continued high costs and inefficiencies associated with variations in data collection and reporting initiatives
   - Inability of software vendors to handle maintenance of systems as changes in industry standards are rolled out
   - Lack of interoperability among systems
   - Lack of version control and system maintenance
   - Lack of consistent and understandable data for consumers
   - Inability for healthcare organizations to keep up with requests for performance measurement data
   - Lack of EHR products that support performance measurement initiatives

VIII. Conclusions and Summary

The information presented in this briefing paper offers a glimpse into some of the challenges that the industry currently faces in trying to meet the needs of performance measurement systems. It highlights today's challenges and discusses how the diffusion of HIT, holds the promise, but not the guarantee, to mitigate some of the inefficiencies in the current approaches. HIT will disappoint if steps are not taken to address:

- Data content standards as a prerequisite for more reliable data collection and reporting
- Measurement system standardization so systems are efficient and can be improved over time
- Active coordination and collaboration by all parties to reap the benefits of performance measurement for all citizens

The momentum for collection and reporting of performance measurement data for healthcare providers and organizations is moving at an increasingly faster pace. The notion that patients are passive recipients of information provided to them is no longer true and the healthcare paradigm is shifting toward more active consumers, fully engaged in their care. Because of this shift in consumer engagement, public reporting and P4P will continue to evolve and become integral as market drivers for value based and safer health care.
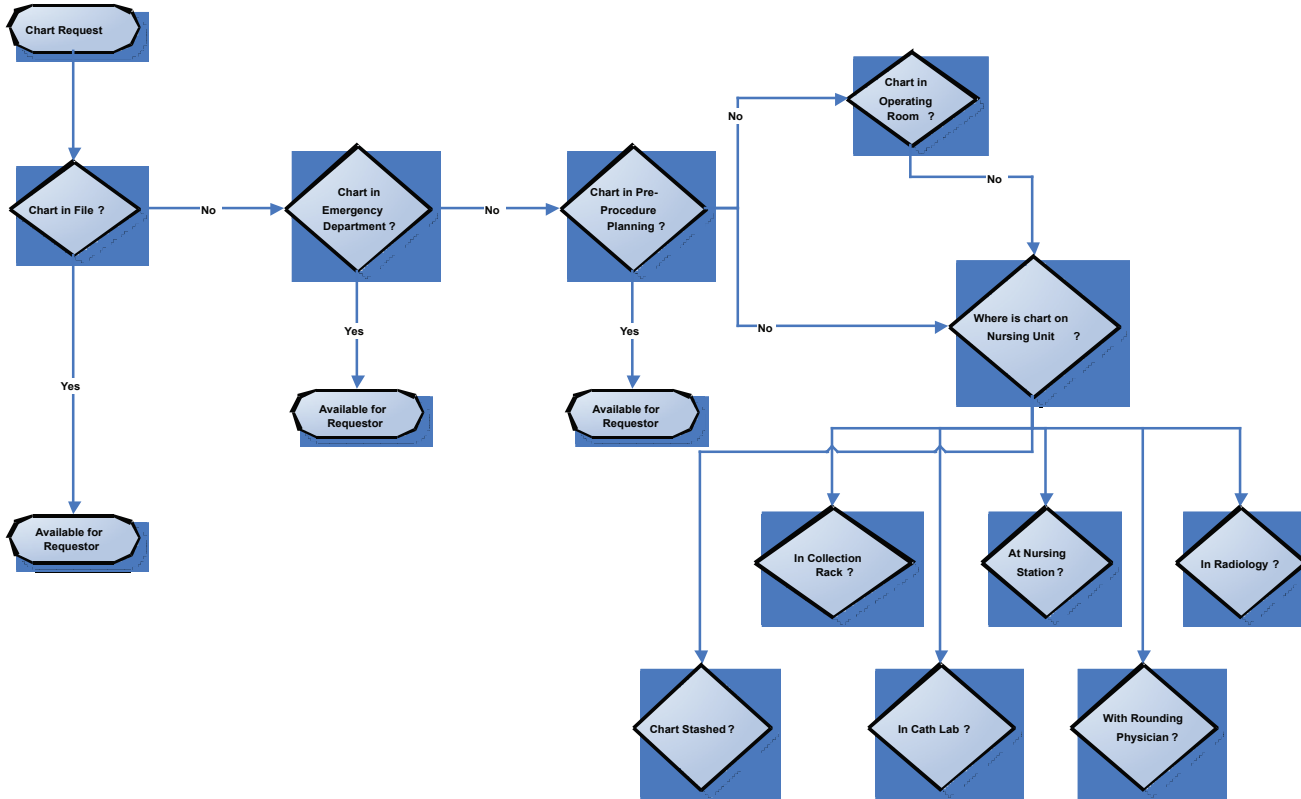
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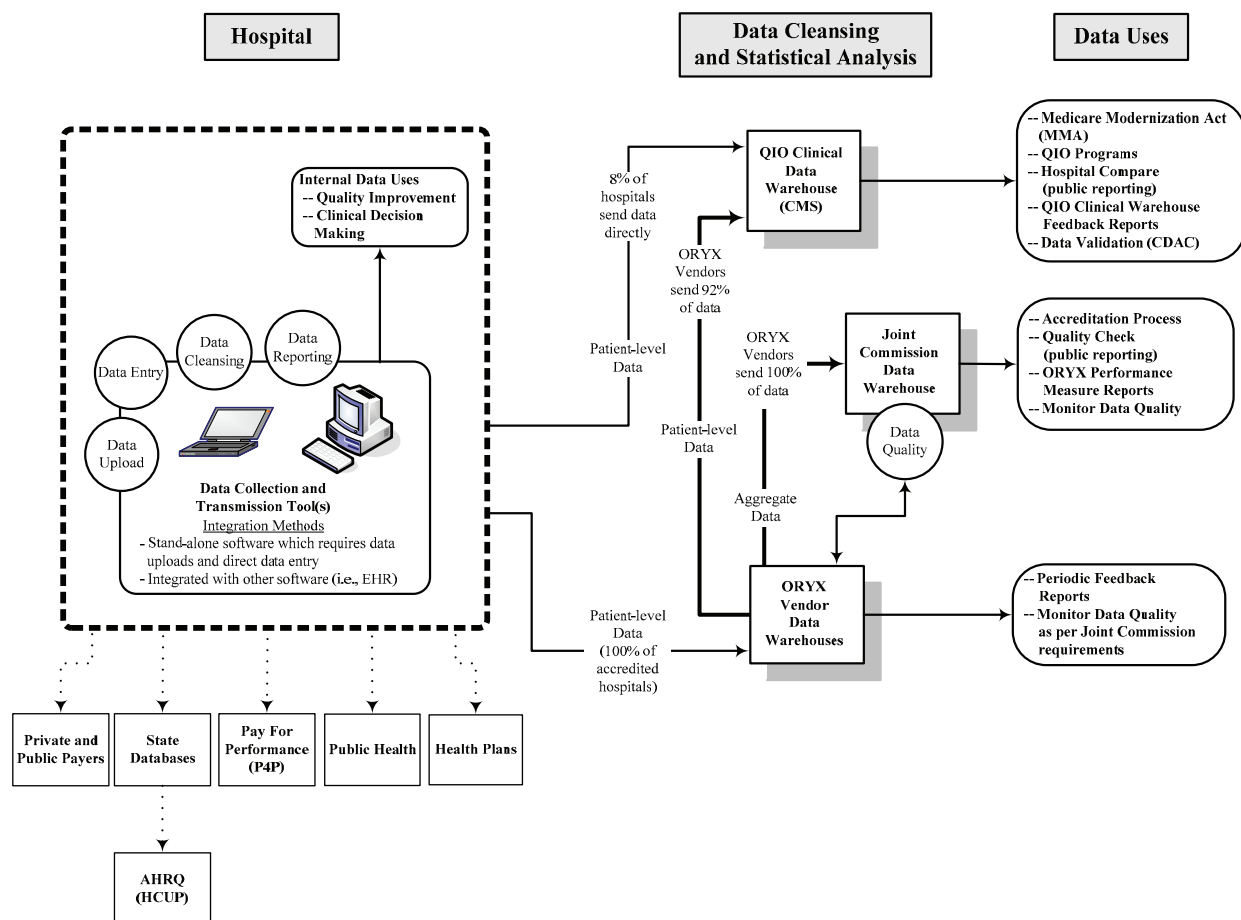Ref ID: 19

X. Appendix

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A. Concurrent Data Collection from a Paper Medical Record—Workflow Diagram

Chart Request

Chart in File ?

No → Chart in Emergency Department ?

Yes → Available for Requestor

No → Chart in Pre-Procedure Planning ?

Yes → Available for Requestor

No → Chart in Operating Room ?

No

No → Where is chart on Nursing Unit ?

In Collection Rack ?

At Nursing Station ?

In Radiology ?

Chart Stashed ?

In Cath Lab ?
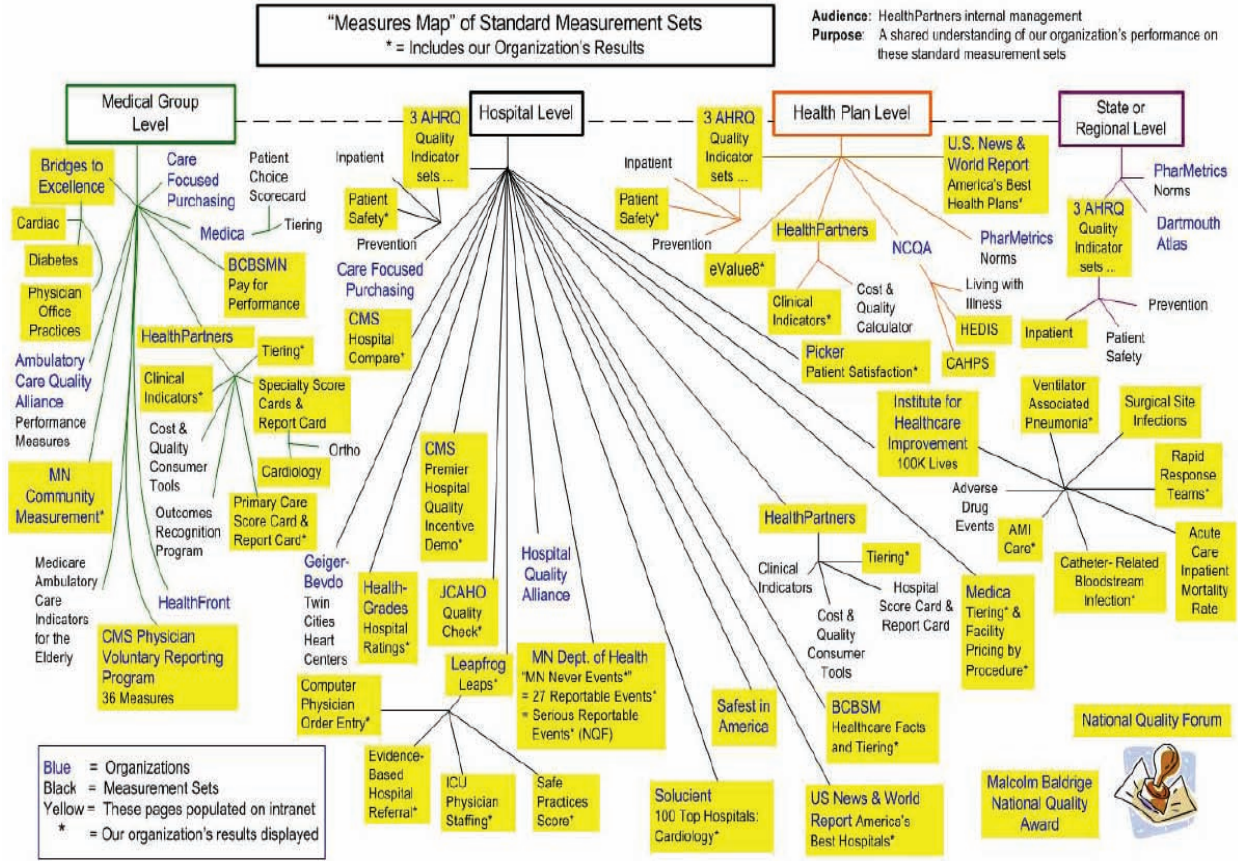
With Rounding Physician ?

B. Hospital Data Process Flow

Hospital Data Process Flow – Circa 2006

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C. Measures Map of Standard Measurement Sets**

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D. Acronym Listing

Acronym	Description
AHIMA	American Health Information Management Association
AHRQ	Agency for Healthcare Research and Quality
AMI	Acute Myocardial Infarction
COPD	Chronic Obstructive Pulmonary Disease
CPT	Current Procedural Terminology
E&M	Evaluation and Management
EHR	Electronic Health Record
FTP	File Transfer Protocol
G-codes	HCPCS codes
HCPCS	Healthcare Common Procedure Coding System
HF	Heart Failure
HIE	Health Information Exchange
HIM	Health Information Management
HIPAA	Health Insurance Portability and Accountability Act
HIT	Health Information Technology
ICD-9-CM	International Classification of Diseases, Ninth Revision, Clinical Modification
IHI	Institute for Healthcare Improvement
IOM	Institute of Medicine
ISMP	Institute for Safe Medication Practices
LPN	Licensed Practical Nurse
LVN	Licensed Vocational Nurse
MGMA	Medical Group Management Association
NHIN	Nationwide Health Information Network
NQF	National Quality Forum
NSQIP	National Surgical Quality Improvement Program
P4P	Pay for Performance
RN	Registered Nurse
SNOMED	Systematised Nomenclature of Medicine
UB-92	Uniform Bill-92
XML	Extensive Markup Language

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