

The Meaningful Use of Health Care Data: The Electronic Health Record in the Ambulatory Care and Physician Office Setting



**Continuing Education Independent Study Course for
Health Care Professionals**

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and Physician Office Setting

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Directions for completion of the independent study program:

- Download and print the independent study packet.
- The Zoomerang post-test can be accessed online at www.zoomerang.com/Survey/?p=WEB22992W2SPCM
- Document when you start and when you finish the independent study packet, post-test and evaluation. This information will be requested in the evaluation section.
- Read and study the material.
- Upon completion of the independent study, access the Zoomerang online post-test by clicking on the link or pasting it into your browser, and complete the post-test and evaluation, including entering a unique e-mail address (non-institutional) within the evaluation.
- Submit your responses.
- A post-test score of 80 percent or more is required for successful completion.
- If you do not pass the post-test, you will receive an e-mail informing you of the need to re-take the post-test. Follow the directions closely.
- Successful completion of all requirements will result in a contact hour certificate of completion.
- If you have problems with the independent study packet or Zoomerang post-test link, please contact Kati Bennett at 1.877.346.6180, ext. 7702 or kbennett@wvmi.org.

Objectives

Through participation in this independent study module, participants will be able to:

1. Describe the projected improvement in health care services related to the Health Information Technology for Economic and Clinical Health Act (HITECH), within the Stimulus Package.
2. Identify the nurse's role related to health care and nursing informatics within the ambulatory care and physician office setting.
3. Define common terms relative to language of health care informatics.
4. Recognize the characteristics of a "qualified" electronic health record (EHR) for documenting and reporting aggregate data at the practice level.
5. Discuss the concept of "meaningful use" of an electronic health record as it relates to collection, documentation and reporting of aggregated health data within the HITECH Act.
6. Identify the role of the health care provider in assuring health care data is collected, documented and reported in a meaningful manner.
7. Evaluate the appropriateness of assessment tools for use in the ambulatory care and physician practice settings.

Accreditation

This independent study has been approved for 2.1 contact hours by Quality Insights of Pennsylvania, an approved provider of continuing nursing education by the PA State Nurses Association, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation. 200-3-E-06

Audience

This course is designated for nurses and other health care providers. Continuing education certificates are provided to all participants who read the independent study, successfully complete the post-test, and evaluate the program.

Conflict of Interest

There is no conflict of interest on the part of the presenter/speaker or any member associated with planning, development or evaluation of this independent study program.

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About Quality Insights of Pennsylvania

Quality Insights of Pennsylvania is the Medicare Quality Improvement Organization (QIO) for the state of Pennsylvania.

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Introduction

The purpose of this independent study is to provide an educational overview of the Health Information Technology for Economic and Clinical Health Act (HITECH) portion of the American Recovery and Reinvestment Act (ARRA) of 2009. This independent study was developed for professional clinicians practicing in the ambulatory care/physician office setting and will present a basic description of the ARRA, or the Act, and its impact on health care service and practice as it relates to health care informatics, the electronic health record and collecting, documenting and reporting “meaningful data.” The role of health care providers is explored and related to the assessment and implementation of the electronic health record and modification of work flow processes. Components of the EHR, such as software applications, are discussed in the context of providing comprehensive quality care in the ambulatory care/physician office settings. Tools are introduced for assessment of care management.

Information technology, as with any new emerging field, includes the adoption of a language that describes or defines the intricacies, actions and components inherent in the field’s essential properties, functions and scope. Health information technology (HIT), also referred to as “health care informatics,” manages comprehensive medical information and the secure exchange of that information between health care consumers and providers. The glossary located at the end of the independent study is provided to explain some of the common words, or terms, used today in relation to health care technology in the ambulatory care and physician office setting.

Nursing and Informatics

Although computers and information technology have been a part of nursing for the past three decades, rarely were they seen outside of the higher education university settings until the past decade. With the emergence of computer technology in the 90s, the American Nurses Association (ANA) refined their definition of nursing informatics in 1994 to include information technology within the purview of nursing related to carrying out roles and duties in clinical practice, administration, education, research and the expansion of nursing knowledge. Therefore, information technologies used by a nurse in relation to the care of patients, the administration of health care facilities, or the educational preparation of individuals to practice the discipline is considered nursing informatics (Kaminiski, 2007).

As a nurse practicing in the ambulatory outpatient care or physician office practice settings, you may or may not have been involved in discussion related to the practice’s need for an electronic record, work flow assessment, product evaluation and implementation of an electronic health record (EHR) system. This technology, although not widely used across the nation at this point, will play an important role in the near future across all settings in the health care system, including ambulatory care and physician practices. With the passage and signing of the American Recovery and Reinvestment Act of 2009, multiple financial incentives are earmarked for health care technology, including funding for using electronic health records in physician practices.

Depending on a nurse’s personal comfort level with using technology, this may be an opportunity to expand practice knowledge and skill or a barrier to perform current nursing roles and duties. Either way, it will require nurses practicing in ambulatory care or physician office settings to learn a new set of skills to perform the role of a nurse in a technologically expanding health care system.

Nursing in the Ambulatory Care and Physician Office Setting

Registered nurses (RNs), regardless of specialty or work setting treat patients, educate patients and the public about various medical conditions, and provide advice and emotional support to patients’ family members. RNs record patients’ medical histories and symptoms, help perform diagnostic tests and analyze results, operate medical machinery, administer treatment and medications, and help with patient follow-up and rehabilitation (United States Department of Labor, Bureau of Labor Statistics 2008-09)(DOL).

Nurses in ambulatory care settings provide preventive care and treat patients with a variety of illnesses and injuries in physicians’ offices or in clinics. Some ambulatory care nurses are involved in telehealth, providing care and advice through electronic communications media such as videoconferencing, the Internet or by telephone. Often the liaison between the patient and the practice, hospital, laboratory, clinic, nursing home, home health agency and insurance company, the nurse is critical to communication and care management.

Providing continuity of care across the continuum of years is an essential component of nursing practice in the ambulatory care/physician office setting. It is not unusual for the nurse to combine clinical practice with management of day-to-day operations, especially in a small practice setting. In medium to large practices, the nurse may forego the clinical role and concentrate efforts as the practice/office manager. Regardless of whether the nurse assumes a single or multi-focus role in an office practice, she/he impacts the daily workflow processes.

As the largest health care occupation, registered nurses held about 2.5 million jobs in 2006. Hospitals employed the majority of RNs, with 59 percent of jobs. About 8 percent of jobs were in offices of physicians, 5 percent in home health care services, 5 percent in nursing care facilities, 4 percent in employment services and 3 percent in outpatient care centers. The remainder worked mostly in government agencies, social assistance agencies and educational services. About 21 percent of RNs worked part time (United States Department of Labor, Bureau of Labor Statistics 2008-09).

According to the DOL (2008-09), employment of registered nurses is expected to grow 23 percent from 2006 to 2016, much faster than the average for all occupations. The projected growth rates for RNs in the industries with the highest employment of these workers are:

	Percent
Offices of physicians	39
Home health care services	39
Outpatient care centers, except mental health and substance abuse	34

Employment services	27
General medical and surgical hospitals, public and private	22
Nursing care facilities	20

Although faster employment growth is projected in physicians’ offices and outpatient care centers, RNs may face greater competition for these positions because they generally offer regular working hours and more comfortable working environments. Growth will be driven by technological advances in patient care, which permit a greater number of health problems to be treated, and by an increasing emphasis on preventive care. In addition, the number of older people, who are much more likely than younger people to need nursing care, is projected to grow rapidly (United States Department of Labor, Bureau of Labor Statistics 2008-09).

An understanding of the provisions of ARRA will assist nurses in the ambulatory care or physician office setting to have a basic command of the language, definitions and implications of the electronic health record and the impact it is projected to have in disease prevention and treatment of chronic disease management and care. As an ambulatory care clinician, manager or both, the nurse often plays a significant role in key decisions impacting workflow processes. Understanding the impact of the EHR on workflow processes and the need for redesign of workflow processes will empower the nurse’s role.

Meaningful Professionals

As the largest single profession in the U.S. health care industry and the frontline of patient care, nursing is a critical component of successful HIT adoption. EHR workflow implications for health care clinicians may vary by provider and professional responsibility. However, most EHR systems today provide increased efficiencies and improved accuracy, timeliness, availability and productivity.

Clinicians in environments with EHRs spend less time updating static data and prior health history because this data generally remains constant. Clinicians also have greater access to other information, improved organization tools and alert screens. Alerts are a crucial component of EHRs because they identify medication allergies, interactions and other needed reminders.

Despite their overwhelming advantages, EHRs can present challenges as well for clinicians. Workflow process challenges can include increased documentation time (usually an initial problem that resolves with increased familiarity and experience), decreased interdisciplinary communication and somewhat impaired critical thinking due to the use of checkboxes and other automated documentation. Additionally, to compensate for the decrease in nursing workforce and the resultant increase in workload, EHR implementations should coincide with workflow redesigns and assignment shifts to ensure increased efficiencies, improve the quality of patient care and to realize the maximum benefits of the EHR technology.

The Stimulus Package

Referred to informally as the “Stimulus Package,” ARRA was signed into law on February 17, 2009. The HITECH component of the Act appropriates \$19.2 billion dollars to encourage the meaningful use of electronic health records (EHRs). The Act provides an unprecedented opportunity for physician reimbursement for maximizing the benefits of a modern EHR system and can assist most physicians to invest in an EHR system. For some physicians, incentive payments can be enough to secure the EHR system while also producing a “surplus” of incentive dollars, representing a substantial opportunity for improved efficiencies and patient care.

Pursuant to the legislation, specific health IT provisions include:

1. The Office of the National Coordinator – responsible for standards and certification criteria, coordination of health IT policies and programs and updating the federal health IT Strategic Plan
2. The HIT Policy Committee – an advisory committee responsible for recommending to the National Coordinator the areas in which standards, implementation specifications and certification criteria are needed for the electronic exchange of health information
3. HIT Standards Committee – responsible for recommendations to the National Coordinator of the standards, implementation specifications and certification criteria developed or recognized by the committee for the electronic exchange and use of health information
4. National eHealth Collaborative (NeHC) <http://www.nationalehealth.com/> – maintains the potential for recognition as either the HIT Policy or Standards Committee

The Act provides qualified physicians utilizing a certified EHR in a “meaningful” way with incentive payments through additional reimbursement for either Medicare or Medicaid patient encounters, depending on the individual physician’s payor mix. Beginning in 2011, “meaningful” EHR users can earn an additional \$44,000 under Medicare and \$64,000 under Medicaid over five years. Early adopters will benefit most as about 70 percent of the additional payments occur in the first two years. Physicians participating in the Physician Quality Reporting Initiative (PQRI) and electronic prescribing can earn an additional \$6,000 - \$8,000 per year immediately. Importantly, physicians who do not implement an EHR system by 2015 will be penalized through decreases in Medicare reimbursement rates. Currently, it is estimated that only 20-30 percent of physician practices have implemented EHR systems.

For those physician practices not currently utilizing a certified EHR system, the selection, purchase and implementation of systems can be a lengthy, time consuming process. Typically, the process includes evaluation of needs and workflows, vendor selection criteria, vendor selection, purchase, installation and implementation, training and connection to other providers. With the Stimulus Package, the process will be further impacted by potential vendor availability due to increased physician interest and funding.

The following link to an EHR Implementation Roadmap, developed by the Arkansas Foundation for Medical Care, provides a comprehensive overview of initiatives required in the selection and

implementation of an EHR system:

http://pbrn.ahrq.gov/portal/server.pt/gateway/PTARGS_0_8762_802850_0_0_18/EHR%20Implementation%20Roadmap.pdf

To be eligible to receive full Medicare incentive benefits, physicians will need to demonstrate “meaningful” use of a certified EHR system. Purchase and implementation are not enough to qualify for incentive payments. In the initial legislation, “meaningful” is defined as:

- Use of certified EHR technology including e-Prescribing
- Use of certified EHR technology that allows electronic exchange of health information
- Submission of information on clinical quality measures and other measures selected by the Secretary of the Department of Health and Human Services (HHS)

A “meaningful” user is an eligible physician that demonstrates, to the satisfaction of the Secretary, that the certified EHR technology is connected in a meaningful manner and is capable of the electronic exchange of the health care information listed above to improve the quality of health care. Certified EHR technology must include patient demographic and clinical health information such as medical history, diagnoses, problem lists, decision support tools to support order entry, query and retrieval of information and the ability to exchange and integrate such information with other providers.

The payment schedule for eligible physicians is as follows:

Payment Year	Incentive
First Year	\$18,000 if the first year is 2011 or 2012 \$15,000 if the first year is 2013 \$12,000 if the first year is 2014
Second Year	\$12,000
Third Year	\$8,000
Fourth Year	\$4,000
Fifth Year	\$2,000

If eligible professionals have not become meaningful users of EHRs by 2015, they will not receive full Medicare payments beginning in 2015. The reduction in the fee schedule is as follows:

2015 – 99%

2016 – 98%

2017 and each subsequent year – 97%

These provisions also apply to Medicare Advantage Organizations.

Incentive payments will also be provided for certified EHR technology by Medicaid providers starting, most likely, in 2011. The definition of “meaningful use” must also be in alignment with the definition used for Medicare providers. Eligible Medicaid providers include, but are not limited to:

- A non-hospital-based professional with at least 30 percent of patient volume receiving medical assistance
- An eligible professional practicing predominantly in a federally-qualified health center or rural health clinic with at least 30 percent of patient volume provided to needy individuals.

The states are authorized to make payments totaling no more than 85 percent of net average allowable costs for certified EHR technology, including support services required for the adoption and implementation of the technology.

Unlike the Medicare provisions, no reductions in Medicaid payments are included for failure to adopt EHR technology.

EHR Overview

This document relies on the Healthcare Information and Management Systems Society’s (HIMSS) definition of EHRs, which reads:

“The Electronic Health Record is defined as a longitudinal electronic record of patient health information generated by one or more encounters in any care delivery setting. Included in this information are patient demographics, progress notes, problems, medications, vital signs, past medical history, immunizations, laboratory data and radiology reports. The EHR automates and streamlines the clinician’s workflow. The EHR has the ability to generate a complete record of a clinical patient encounter, as well as supporting other care-related activities directly or indirectly via interface – including evidence-based decision support, quality management and outcomes reporting.”

Health information technology (HIT), also known as “health care informatics” is a relatively new discipline combining computer literacy with information literacy. This knowledge, combined with clinical expertise, can be a valuable asset in providing safe, effective, high quality health care. To achieve these objectives, HIT staff must understand the purpose of data standards and require that those standards are available when selecting an EHR system for their organization. If standards are not used, professional and HIT staff will not be able to “mine” desired data or outcomes and manage the information with required levels of expertise. Lack of knowledge and standards can lead to substandard EHR systems and inconsistent and/or incomplete health care information.

Structured data within the EHR system enhances the flow and retrieval of information, enables computer-assisted coding and speeds the implementation of health information exchange.

Nurses, physicians and HIT staff play a critical role in managing the quality of health information and must be actively involved in the standardization of data content for the EHR system selected.

Clinical decision support tools within EHR systems can assist clinicians by decreasing prescribing errors, improving clinical decision making with evidence-based guidelines and disease prevention through prompts for immunizations, health screenings and education.

EHRs also have the potential to improve the overall quality of health care by making it possible for records to be transmitted electronically between provider settings, which decrease errors in addition to saving time and costs. Electronic prescribing (e-prescribing) can also decrease errors related to “look alike, sound alike” drugs, interactions, allergies, transcription errors and illegible handwriting.

Qualified EHR

The word “qualified” implies meeting the proper standards and requirements and training for a position or task. Registered nurses are qualified to provide professional level nursing care based on meeting theoretical and clinical education required standards and passing a required national level credentialing examination. This qualification assures minimal standards of safe and effective nursing practice. In the world of technology, “qualified” may be defined as having met conditions or requirements set. EHRs are qualified by meeting minimum standardized requirements related to operability and functionality.

One of the main goals of the EHR is to allow providers to aggregate (pull together) information across medical records for reporting on operational performance, compliance with guidelines for quality of care, and metrics for clinical performance, such as those required for participation in pay-for-performance programs. However, not all EHRs are equal and their qualities differ greatly in how they operate and perform functions. In order to assure EHRs are capable of gathering information, data, and sharing and reporting data, certain operational and functional qualities are required. The ability to aggregate information (data) at the practice level, state level and national level provides the ability to view information at the population level. Population level information may be analyzed related to quality as a means to improve health care. For example, if 60 percent of the practice’s population had diabetes, and the majority of the patients had a hemoglobin A1c above 7, the practice may opt to implement an office-based diabetes management and support program.

In the current world of paper medical records, there are many barriers to gathering and sharing/reporting patient information. For instance, if there was a drug recall, quality performance would require the practice to identify and notify all patients within the practice who are currently prescribed the drug and to provide the patient a drug replacement. This would require a dedicated staff member, or members, to develop a formal or informal record review tool to use as each paper record is manually reviewed for specific information. It could literally take weeks, or even months, to go through paper medical records to determine which patients are currently prescribed the drug in order to call or send notices to stop the drug, make an

appointment to see the physician for evaluation and receive a replacement drug prescription. With an EHR, depending on the functionality of the EHR, this information could be gathered and a form letter developed and printed in a matter of hours or days.

The term “qualified electronic health record” originates in the Physician Quality Reporting Initiative (PQRI), as the Centers for Medicare & Medicaid Services (CMS) set forth specifications for physicians to report certain coded information on the care and services provided during a patient visit. Although the information is pulled from individual patient medical records, the information is aggregated at the practice level to protect each patient’s personal identity. An example of this would be the ability of the practice’s EHR to provide a report of all patients in the practice who have received a flu vaccine during the current year.

One of the primary reasons for implementing an electronic health record is to share the centrally stored health information, or “data” in techie terms, among health care providers and consumers of health care. Having a person’s health information in one central place, which could be shared by all health care providers, would increase effectiveness and efficiency and decrease the chance for error. It seems simple at a glance; however, there are over 300 different EHR vendors. The difference between vendors’ products is based on operational and functional components. In order for information to be shared, all electronic health records would need to be able to talk to one another. This ability to talk to one another is called interoperability.

As defined in the American Recovery and Reinvestment Act of 2009 (H.R. 1), a qualified EHR system is one that “includes patient demographic and clinical health information, such as medical history and problem lists; and has the capacity (i) to provide clinical decision support; (ii) support physician order entry; (iii) capture and query information relevant to health care quality; and (iv) exchange electronic health information with, and integrate such information from, other sources.” The Office of the National Coordinator for Health IT (ONCHIT) is expected to convene a standards committee to develop more comprehensive standards for functionality and interoperability.

EHR Certification Benefits

According to the Office of Health Information Technology (2009a), with the emergence of health information technology (HIT) and the demonstrated benefits of the electronic management of health information, purchasers and other users of HIT systems need to be assured that the systems will:

- Provide needed capabilities
- Securely manage information and protect confidentiality
- Work with other systems without reprogramming

HIT certification can provide this assurance, increasing confidence that health care professionals have when they make HIT system purchase decisions and confidence that consumers have that their information is secure and appropriately available. Confidence in HIT systems is an important part of advancing their adoption and allowing for the realization of the benefits of the

national health IT agenda.

EHR Certification Process

According to the Office of Information Technology (2009b) the three leading HIT industry associations – the American Health Information Management Association (AHIMA), the Healthcare Information and Management Systems Society (HIMSS) and The National Alliance for Health Information Technology (The Alliance) joined forces in July 2004 to launch the Certification Commission for Healthcare Information Technology (CCHIT) as a voluntary, private-sector organization to certify health IT products. In September 2005, HHS awarded CCHIT a three-year contract to develop and evaluate certification criteria and create an inspection process for health IT. HHS has now asked CCHIT to advance certification in these areas:

1. Ambulatory Electronic Health Records (EHRs) – for the office-based clinician
2. Inpatient EHRs – for hospitals and health systems
3. Health networks – through which EHRs and other health related systems will share information
4. Components of developing Personal Health Records (PHRs)
5. EHRs for specialty practices and special care settings.

The EHR certification process is not the responsibility of the ambulatory care center and/or the physician practice. The EHR software vendor is responsible for EHR certification through a process established by CMS. However, when selecting an EHR, it is critical to ask if the EHR being considered for purchase is CCHIT-certified and meets the current definition of “qualified” in the American Recovery and Reinvestment Act of 2009 (H.R. 1).

According to the Office of Information Technology (2009a), to accomplish health information technology goals, Health IT certification has established a public-private process to develop specific criteria for health IT systems. Based upon the specific criteria established, each vendor system will undergo a rigorous evaluation to establish that they truly meet the established criteria, including:

- Functionality – ensuring that systems can support the activities and perform the functions for which they are intended
- Security – ensuring that systems can protect and maintain the confidentiality of data entrusted to them
- Interoperability – ensuring that systems can connect to, and exchange information with, other systems

Certification ensures that health care professionals can use health IT on a daily basis to improve the quality of their work. Certified HIT products will help reduce the risks of health IT investment by health care professionals and help advance the national IT agenda.

In 2007, CCHIT was directed to refine its efforts related to areas that can support specific aspects of health and health care. Health care areas in the refined focus, include, but are not limited to:

- EHRs focusing on professional specialties with cardiovascular medicine selected as the first area of specialization
- EHRs focusing on specific populations, including child and behavioral health
- EHRs focusing on specific care settings, including the emergency department and long term care

To date, CCHIT has developed ambulatory and inpatient certification criteria and certified a substantial portion of the ambulatory care EHR market.

EHR Certification Criteria

The criteria required for certification of an EHR are beyond the scope of this independent study. The requirements for 2009 certification will not be available until the summer of 2009. However, final proposed requirements for 2009 are available on CCHIT's Web site at www.cchit.org/files/comment/09/03/CCHITCriteriaProposedFinalAMBULATORY09.pdf

Certified EHR Vendors

This information varies from year to year and is best reviewed via the CCHIT Web site. Vendors may have different versions of the same program and due to annual functionality upgrades, one version may be certified, while another version may not be certified. To access the most current list of CCHIT-certified EHR vendors, visit www.cchit.org/choose/ambulatory/08/index.asp

Data Dictionaries

Data dictionaries promote standardization and are typically developed within the database management system.

A data dictionary is a file that defines the basic organization of a database. A data dictionary contains a list of all files in the database, the number of records in each file, and the names and types of each field. It is important to note that data dictionaries do not contain any actual database data but rather bookkeeping information for managing the data. Without a data dictionary, the database management system cannot access desired data from the database. When evaluating an EHR system, clinical and HIT professionals should confirm that all information required for patient care is present in the EHR. Staff must also know where documentation resides and what type of documentation their practice/organization maintains in order to effectively manage information in an electronic environment and comply with regulatory and legal requirements. Health records contain a wide range of information, but most information can be grouped into two main categories: administrative (or demographic) and clinical. Staff must determine how information should be displayed for patient care, information exchange, outcomes generation and decision making.

Standardizing data content is a key component of an EHR and will effectively enable staff to manage health information for quality patient care. Staff involved in EHR selection should carefully assess each system's capabilities to capture, maintain and report key data elements. For existing EHR systems, staff should evaluate how data is currently captured and analyze any changes/improvements needed.

Improving data quality in an electronic health care environment requires a greater focus on standardized documentation procedures. The need to evaluate and improve health care data quality requires a shift from the traditional retrospective methods of auditing data. EHR data quality and integrity require a front-end acquisition of quality data and ongoing transfer of that data throughout the continuum of care. Ongoing auditing processes improve data confidence, decision making and the ability to identify and correct errors early in the process.

To help the health care industry to assess and improve health care data at the front end, the American Health Information Management Association's e-HIM Workgroup developed a model for implementing an EHR documentation improvement process. The model is based on ten data characteristics and six categories key to front-end quality data and is available at www.ahima.org/dc/positions/documents/MicrosoftWord-StatementonQualityHlthcareDataandInfoRevAppv12-1-2007_001.pdf

Problem Lists

Safe and efficient patient care relies on a clinical workflow that assesses problems, documents interventions and evaluates the effects of treatment. A problem list supports these objectives effectively and concisely. EHR technology offers the opportunity to achieve these goals while retaining health care information across the continuum and reducing redundant processes.

Several definitions of "Problem Lists" exist. For this document, a problem list is defined as a listing of clinically relevant physical and diagnostic concerns and procedures that may affect the care and health status of patients. Problem list items can include: chronic conditions, diagnoses, allergies, symptoms, dates of onset, changes and resolutions. Problem lists are managed over time and allow for documentation of historical information and the tracking of changing problems and priorities. Safe and effective patient care relies on a clinical workflow that assesses problems, documents interventions and evaluates the results of treatments. Problem lists should support these activities effectively and concisely.

Problem lists, however, can come with their own list of challenges. The same forces that make problem lists valuable for patient care and data management can also create barriers to clinical efficiency. Initially, resources and time required to create a problem list can be significant. Search functionality should be geared to specific physician needs with a favorites list. Another barrier facing the clinical end user is problem list clutter. Without careful management, the shared problem list accumulates multiple diagnoses and/or symptoms that may or may not be accurate or reflect the patient's true condition. An effective problem list should provide a clear, descriptive summary of each patient's health history.

Example:

Dr. Smith is a primary care physician with the majority of the patient population age 60 years and older. On average, 50 percent or more of the patients seen have a diagnosis of hypertension, heart failure, and Type 2 diabetes mellitus. In light of this information, Dr. Smith may include “favorites” in her problem list, i.e., those diagnoses most commonly used, for example:

- Hypertension, essential, benign
- Hypertensive heart disease
- Congestive heart failure
- Heart failure, chronic, diastolic
- Heart failure, chronic, systolic
- Type 2 diabetes, controlled
- Type 2 diabetes, uncontrolled
- Type 2 diabetes, with related eye problems (cataracts, glaucoma, etc.)
- Type 2 diabetes, with peripheral circulatory disorders

Problem list functionality should be designed to improve patient care, data quality and timeliness and must also support the interoperable exchange of list content between systems. The best practice is to avoid entering bad data and to audit and remove any bad data found. Clinicians must be committed to entering only appropriate, supported diagnoses and problems and to accept the careful and selected removal of irrelevant or unnecessary data and resolved problems. With careful planning and data selection, EHR systems today can contribute greatly to improved care for both acute and chronically ill patients and to improved functionality and efficiencies for physician practices.

Chronic Care Management

Historically, there has been little coordination of care across multiple settings, providers and treatments of chronic illness care. Separate provider organizations often have been described as “silos” of care. In addition, the treatments for chronic diseases are often complicated, making it difficult for patients to comply with treatment protocols.

Effective medical care for preventive health (such as an annual physical) and chronic care (such as diabetes or hypertension management) usually requires longer visits to the doctor's office than is common in acute care (such as a sore throat). Moreover, in treating chronic illnesses, the same interventions – whether medical or behavioral – may differ in effectiveness depending on when in the course of the illness the intervention is implemented. Fragmentation of care is a risk for

patients with chronic diseases, because multiple chronic diseases frequently coexist. Necessary interventions can require input from multiple specialists that may not normally work together. These interventions, to be effective, require close, careful coordination of care.

Additionally, some problems related to chronic illness are not specifically medical, but involve patients' interactions with families and workplaces. Interventions often require patients and families/caregivers to make difficult lifestyle changes. Patients need to be educated on the benefits of treatment and the risks of not properly following their treatment regimen. Often this education is sporadic or non-existent. Patients also need to be motivated to comply because treatment usually produces an improved state, rather than the results that most patients desire – a cure. Chronic care management helps patients systematically monitor their progress and coordinate with experts to identify and solve any problems they encounter in their treatment. Patient self-management becomes a crucial component of health care outcome improvement. In addition, however, patient self-management support on the part of physicians and nurses is the catalyst for patients improving their own care and health status.

Although we know the essential elements of good care for people with chronic conditions, there is a gap between what we know and what we do. Providers are doing their best, but too often the systems in which they work make it difficult to provide good care.

By changing the way patients are managed, we are closing that gap – and we can prove it. EHR systems today can provide alerts and reminders for patients to foster compliance with prevention goals and treatment options as well as support and education. The role of clinicians is paramount to successful EHR implementation and improved patient care and self management and, most importantly for clinicians, patient self-management support.

Meaningful Data

On Monday, April 27, HIMSS published its definitions of “meaningful use of certified EHR technologies,” as outlined in the American Recovery and Reinvestment Act of 2009 (ARRA). HIMSS sent a cover letter, plus two definitions: 1) meaningful users of certified EHR technologies and 2) meaningful use for hospitals, to the National Coordinator of Health IT and the Acting CMS Commissioner, within the Department of Health and Human Services (HHS).

ARRA calls for multiple years of Medicare incentive payments to hospitals and physicians who meet the requirements of “meaningful use of certified EHR technology” (an electronic health record). To be eligible for the incentive payments, hospitals and physicians must use the technology in a meaningful manner; exchange electronic health information to improve the quality of care; and submit clinical quality measures – and other measures – as selected by the Secretary of HHS. Further, hospitals and physicians must meet the definition within a specified time frame, which as described in ARRA, must be made increasingly stringent over time by the Secretary.

Approved by the HIMSS Board of Directors, the definitions resulted from consensus-building effort with input from HIMSS members (73 percent of which work in end-user settings), and the

public at-large. HIMSS represents more than 20,000 individual members and 350 corporate members.

HIMSS' Definition of Meaningful Users of EHR Technologies

HIMSS recognizes that defining a meaningful user is a complex endeavor. In order for the nation to benefit from the spirit and intent of ARRA, and for physicians to have a reasonable chance of achieving the definition, HIMSS asserts that the requirements must be introduced – and made increasingly stringent – in incremental stages. In the final stage, which must commence in FY15, HIMSS believes the mature definition of “meaningful user of certified EHR technology” includes at least four attributes:

1. Utilization of an EHR certified by the Certification Commission for Healthcare Information Technology (CCHIT)
2. Demonstrated ability to electronically exchange standardized patient summary data with clinical and administrative stakeholders
3. Demonstrated practice of electronic prescribing
4. Demonstrated reporting of quality and patient safety data

Recommendation – Adopt CCHIT as the certifying body for EHRs

HIMSS urges the Secretary to name CCHIT as the certifying body for EHR technology. CCHIT has been in existence for several years; it has demonstrated long-term commitment to an open and transparent process; much of its development was made possible through taxpayer dollars, and it has proven itself to be an effective and reputable certifying body. (accessed 5/7/09 http://www.himss.org/content/files/2009HIMSS_DefUseEHRUsers.pdf)

To read the entire five-page document posted by HIMSS, *Definition of Meaningful Users of Certified EHR Technology*, Approved by the HIMSS Board of Directors April 24, 2009, visit www.himss.org/content/files/2009HIMSS_DefUseEHRUsers.pdf

In summary, HIMSS recommends the following:

1. To ensure continuity, recognize CCHIT as the certifying body of EHRs.
2. To achieve incremental maturation of “meaningful use,” adopt metrics that can be reasonably captured and reported beginning in FY11/2011,* and then made increasingly stringent using intervals of not less than two years. HIMSS’ definitions include specific metrics to enact, in phases, over a multi-year period.
3. To bridge existing gaps in interoperability of health information, coordinate with the Healthcare Information Technology Standards Panel (HITSP) and Integrating the Healthcare Enterprise (IHE) to create new harmonized standards and implementation guides.
4. Reconcile the gap between “certified EHR technologies,” “best of breed,” and “open source” technologies.

As noted in the letter, HIMSS believes that the Act has tremendous potential to improve the quality, safety and cost-effectiveness of patient care.

In order for an ambulatory care center and/or physician office practice to be able to collect and report meaningful data, a certified EHR is required to interface (communicate) with the practice management (PM) system and the integrated functions of both systems must be fully implemented. The implementation phase may take several days to several weeks depending on the number of staff and complexity of the EHR selected. Workflow processes will require modification and are an essential component of a successful implementation. Workflow processes include, but are not limited to:

- Appointment scheduling
- Patient check-in
- Patient check-out
- Prescription refills
- Laboratory orders, tracking, reviewing, and patient contact

A good way to illustrate workflow processes is to literally follow a patient through the office visit. During each workflow process, information (data) is collected. Every person the patient has contact with in a physician office is an information gatherer/data collector. The manner or way a patient schedules /re-schedules an appointment, checks-in and out of an appointment, is assessed by the MA or nurse, is evaluated and treated by the physician, has prescriptions refilled, labs drawn and receives follow-up reports on tests is recorded. The manner in which documentation of information in an electronic health record is entered permits “meaningful data” to be readily accessible for reporting.

How is data collected?

Every interaction with a patient involves collection of information that may be considered data. This is a different perspective on interactions with patients, and may appear cold and reserved if the main objective was just to collect data. However, gathering information is embedded within provider and patient interaction through assessment, exam, and discussion. Data is collected from the moment a patient contacts the office and schedules an appointment until the completion of all services related to the scheduled visit. For some patients, check-out will end the cycle. For patients ordered new medications and/or testing, the cycle will be completed when a prescription is filled and picked up and test results are received, reviewed and discussed with the patient.

Patient level data (individual data) includes, name, age, sex, address, telephone number, social security number, insurance numbers, employer name, occupation, personal health history, past and current medical-surgical diagnosis, treatment of illness/chronic conditions, prevention screening and immunizations, medical and laboratory testing and results, current medications, allergies and more.

How is data documented?

In the non-electronic medical practice, data is documented using a paper medical chart by entering a penned or dictated summary narrative, system review notations, or graph form for things such as blood pressure, weight and immunizations. For patients who have been with a practice for several years, the paper medical record could be in volumes and weigh many pounds.

The EHR provides multiple methods to document patient level data; however, some methods do not permit the data to be mined and pulled into a report form. If you plan to extract data from an EHR system for reporting of quality performance, it's best to store information for reporting as discrete data. Discrete data entry in EHR systems forces users to document an encounter by making choices from preset lists. Depending on the patient's health status, it may be necessary to utilize multiple lists during an office visit. The preset lists may or may not be included in the EHR purchased by the practice. Most EHR software permits the office to build a custom list, or to modify an existing list, based on the practice and/or physician preference. A learning curve is expected in using a preset list, including increased time for documentation. However, in a matter of a few months, this curve should be completed.

How may data be reported?

The most popular manner of reporting data since implementation of the voluntary PQRI program, initiated in 2007, has been to submit data on practice selected measures through claims submitted directly to Medicare or through use of a registry, which in turn reports the data to CMS.

Physicians and other eligible professionals who satisfactorily report data on quality measures for covered professional services furnished between January 1, 2009 and December 31, 2009 will receive an incentive payment equal to 2.0 percent of the total estimated allowed charges for all covered professional services furnished during the reporting period.

There are 153 measures on which physicians and other eligible professionals can report. Of these 153 measures, 131 of them are available to be reported as individual quality measures via claims-based submission.

There are a several reporting options available for the 2009 PQRI program. For reporting through claims, physicians and other eligible professionals can submit data on individual quality measures or measures groups. In addition, many individual measures and measures groups can be reported via submission of data through qualified registries, as determined by CMS.

Many of the measures in PQRI were developed by the American Medical Association (AMA)-convened Physician Consortium for Performance Improvement® (PCPI), in collaboration with the National Committee for Quality Assurance (NCQA) and/or a medical specialty society (AMA, 2009).

Reporting through Claims Data

PQRI data may be reported using claims by adding the specified CPT Category II codes with or without modifiers and G-codes used for submission of PQRI data for measurement calculation of performance. PQRI refers to all diagnoses listed (Item 21 of the CMS-1500 claim form) associated with physician office, outpatient and inpatient visits for reporting in PQRI. A set of supplemental CPT codes is intended to be used for performance measurement. These codes may be used to facilitate data collection about the quality of care rendered by coding certain services, test results or clinical actions that support nationally established performance measures and that the evidence has demonstrated contribute to quality patient care. For a listing of the 153 current PQRI measures available for data reporting, visit www.cms.hhs.gov/PQRI

The American Medical Association has created tools to assist physicians and other eligible professionals who may elect to participate in the Centers for Medicare & Medicaid Services' (CMS) PQRI program. The tools for the claims-based reporting of individual quality measures and measures groups are designed to facilitate the data collection required to report clinical performance data. The 131 individual quality measures eligible for claims-based reporting in the 2009 PQRI program are listed at www.ama-assn.org/ama/pub/physician-resources/clinical-practice-improvement/clinical-quality/participation-tools-individual.shtml. The measures are sorted alphabetically by disease/condition. The six measures groups eligible for claims-based reporting in the 2009 PQRI program are listed in alphabetical order at www.ama-assn.org/ama/pub/physician-resources/clinical-practice-improvement/clinical-quality/participation-tools-measures.shtml. Individual measures comprising each measures group are also listed. [Note: there is an additional measures group for coronary artery bypass graft (CABG) available for 2009 PQRI, including several measures that can only be reported via registry-based submission.]

The AMA has created participation tools for the 131 2009 PQRI measures that can be reported through claims-based submission. Each tool contains three documents, which can be printed out for easy reference, including measure description, data collection sheet and coding specifications. The AMA has also created participation tools for the six 2009 PQRI Measures Groups that can be reported through claims-based submission. Each tool contains two documents, which can be printed out for easy reference, including measure description and data collection sheet (AMA, 2009).

Reporting through a Registry

A registry is an established, systematic collection of data about a particular topic (health, historic, ancestry, etc.). In health care there are many different types of registries such as disease based, prevention, treatment, outcome, etc. that collect, analyze and report health data and statistics upon which decisions may be based. A registry may be established at a local (hospital, physician practice), state, national or international level. The organization that is responsible for the data processes is called a registrar. A registrar applies for approval of the registry based on a set of standardized criteria, which ensure consistency of the technical standard, such as a standard specification, standard test method, standard definition, standard procedure (or practice), etc.

Registry reporting by an ambulatory care center or physician office requires an agreement, or contract, with an outside party, such as a professional, state, or national organization, which provides software and, at times, hardware to an ambulatory care center or physician practice for the definitive purpose of collecting specific information on individual patients meeting specific set criteria. To qualify to submit data on behalf of eligible professionals seeking incentive payments for 2009 PQRI, registries are required to go through a self-nomination and vetting process if they are new to PQRI registry reporting or to notify CMS of their desire to continue PQRI data submission in 2009 if they were qualified in 2008 and successfully submitted their user's quality data. Selected registries must meet certain technical and other requirements specified by CMS.

Reporting through an EHR

Currently, there is no incentive payment available through EHR-based data submission for 2008 or 2009. EHRs that are successful with the 2009 testing process will be "qualified" for possible PQRI data submission via EHRs if this means of data submission is used in a future PQRI reporting year.

In preparation for testing of EHR-based reporting during 2009, ten of the PQRI measures proposed for 2009 have been specified for EHR-based submission. The Measure Specifications for the 2009 EHR test measures are available on the QualityNet Web site by clicking on "PQRI" from the drop down menu under the "Physician Offices" tab at www.qualitynet.org.

Practice Redesign of Workflow Processes

Practice redesigns of workflow processes will result in well organized office systems that produce sound clinical decision making, minimize errors and create an atmosphere that patients, nurses and physicians can enjoy. The practice redesign is a key component in preparing and implementing the successful adoption of an interoperable, highly functional and fully integrated EHR system.

In many physician practices, improved organization structure can be accomplished through relatively simple strategies that together form a powerful force for change. Christine A. Sinsky, MD (2006) has identified the following strategies for office redesign, which improved both patient and physician satisfaction in her busy 10-physician office:

1. Pre-appointment labs – Scheduling and completing these before the visit enhances preventive and chronic care management and enables physician decision making and communication. It also decreases follow-up letters and patient phone calls, improving productivity. Specific instructions should be provided for patients regarding which tests are needed and by what date prior to the visit. Reminder letters and automated phone calls can also be utilized and should be noted in the EHR.
2. Chart preparation – Prior to the scheduled visit, nursing staff members should organize all pertinent information, making sure that all tests, lab results, etc. are displayed in a

clear, concise and consistent manner. This eliminates the potential for physician errors due to missing or incomplete information. Immunization flags and educational handouts should also be available. Studies have shown that primary care physicians with 1.75 nurses resulted in 35 percent more productivity than those with 1.25 nurses.

3. Patient questionnaires – Patients should complete a pre-appointment questionnaire. This enables patients to document the primary reason for their visit and also list any ongoing/additional concerns. It can also help to update patient demographic, medical and family history.
4. Empowered nurses – Nurses should have the power to contribute and play an active role in the practice and perform to the level of their license. Standing orders can be used for identified tests/procedures.
5. Physician preparation – Spending a brief period of time reviewing patient information enables the physician to enter the exam room informed and prepared for a more efficient, effective patient visit.
6. Improved interactions – Good interpersonal skills can greatly improve physician/patient relationships. Shaking hands upon exam room entry and exit, focused eye contact, sharing anecdotal information and interests can solidify the relationship and sense of caring and trust.
7. Prescription management – Refilling prescription requests can consume hours of nursing time. Establishing a practice of renewing prescriptions annually can alleviate much of this time. New prescriptions should be entered into the EHR at the time of the visit. E-prescribing can also shorten unproductive time while, at the same time, creating a transaction record in the EHR.
8. Post-appointment orders – At the visit conclusion, the physician should document any tests or follow-up visits needed. This information can be routed to the receptionist, who can schedule the items needed and confirm dates/times with patients.
9. Organization and education – Each comprehensive annual visit is an opportunity to address and formalize disease prevention and chronic care management and focus on longitudinal care. Care plans should be developed with patients and reviewed with each successive visit. Educational information should be provided, explained and encouraged by nursing staff. Patients with questions and coaching needs should be supported with ongoing information and suggestions.
10. Open access – A patient-centered scheduling system for both acute (same day) and chronic care (previously scheduled) increases patient satisfaction as well as office productivity and efficiency.

By maximizing EHR capabilities and redesigning workflow processes, physicians and nurses can improve patient outcomes and chronic care management while realizing increased profits and productivity in an efficient, cost-effective, patient-centered office environment.

Practice Assessment Tools

The following assessment tool information and direction access links are intended to be reviewed as part of this study packet. If there is a problem accessing the assessment tools, please contact Kati Bennett at kbennett@wvmi.org.

The “Assessment of EHR Features for Care Management” is a short, convenient tool to help practices assess the utilization of care management activities and can be accessed at www.qipa.org/shared/content/Assessment%20of%20EHR%20Features%20for%20Care%20Management.pdf

The “Assessment of Chronic Care Survey” helps practices to quickly assess their performance level with various aspects of care management activities and can be accessed at www.qipa.org/shared/content/Assessment%20of%20Chronic%20Care%20Model%20Survey.pdf

The Chronic Care Model (CCM) originated from a synthesis of scientific literature undertaken by The MacColl Institute for Healthcare Innovation in the early 1990s. Funded by the Robert Wood Johnson Foundation (RWJF), an early version of the Model underwent extensive review and refinement and was published in its current form in 1998. Improving Chronic Illness Care (ICIC), a national program of RWJF, was launched in 1998 with the Chronic Care Model at its conceptual core.

The content of the Assessment of Chronic Illness Care (ACIC) was derived from specific evidence-based interventions for the six components of the Chronic Care Model (community resources, health organization, self-management support, delivery system design, decision support and clinical information systems). Like the Chronic Care Model, the ACIC addresses the basic elements for improving chronic illness care at the community, organization, practice and patient level.

The assessment enables physicians and nurses to assess the level to which their chronic care programs are being implemented and describes optimal practice levels, educating clinicians about where they should be targeting their practice performance. The ACIC can be accessed at www.improvingchroniccare.org/index.php?p=ACIC_Survey&s=35

Summary

The 2009 Stimulus Package provides a unique and, perhaps, one time only opportunity for physician practices to adopt and maximize EHR technology, improve patient care and realize increased profitability. The nurse practicing in the ambulatory care/physician office setting, an essential member of the primary health care team, will be required to be involved in some or all phases of the EHR process, depending on the practice and his/her role, including practice workflow assessment and redesign, evaluation of product (software and hardware), EHR implementation, staff training, practice-specific software modification for reporting, and implementation of care management principles and protocols. Safe and efficient patient care relies on a clinical workflow that assesses problems, documents interventions and evaluates the effects of treatment. Technology offers the opportunity to achieve this goal while retaining information across the health care continuum and reducing redundant processes.

Health Information Technology Web Sites

Agency for Healthcare Research and Quality (AHRQ)

www.ahrq.gov

American Health Information Management Association (AHIMA)

www.ahima.org

Centers for Medicare & Medicaid Services Physician Quality Reporting Initiative (PQRI)

www.cms.hhs.gov/pqri

Healthcare Information and Management Systems Society (HIMSS)

www.himss.org/ASP/index.asp

HIMSS Electronic Health Record Association (HIMSSEHRA)

www.himssehra.org/ASP/index.asp

Health Information Technology (HIT)

www.hhs.gov/healthit

Health Resources and Services Administration (HRSA)

www.hrsa.gov/healthit

Medicare Quality Improvement Community (MedQIC)

www.qualitynet.org/dcs/ContentServer?pagename=Medqic/MQPage/Homepage

National Committee for Quality Assurance (NCQA)

www.ncqa.org

National Quality Forum (NQF)

www.qualityforum.org

Glossary

Discrete Data is also called “structured data entry” in EHR systems. It forces users to document an encounter by making choices from preset lists. For example, by being allowed to select only “No” or “Yes” in the discrete data input, the clinician will clearly indicate whether eye pain is present, if the patient has had a flu vaccination or colorectal cancer screening, etc. Another example would be the ability to select certain history diagnoses from a drop down list. If you plan to extract data from an EHR system, it’s best to store information for reporting as discrete data. (Trachtenbarg, 2007)

An **Electronic Health Record (EHR)** is a secure, real-time, point-of-care, patient centric information resource for clinicians. The EHR aids clinicians’ decision-making by providing access to patient health record information where and when they need it and by incorporating evidence-based decision support. The EHR automates and streamlines the clinician’s workflow, closing loops in communication and response that result in delays or gaps in care. The EHR also supports the collection of data for uses other than direct clinical care, such as billing, quality management, outcomes reporting, resource planning and public health disease surveillance and reporting (HIMSS, 2003)

An **Electronic Medical Record (EMR)** is designed for use at a single health care organization, while EHRs have interoperable functionality and can be used across multiple health care organizations.

E-prescribing is the use of electronic tools to prescribe medications. E-prescribing tools can include both software programs, as well as hardware like personal computers, handheld and wireless devices, and touch screens. E-prescribing is one of the integral steps to achieving broad deployment of the EHR.

Evidenced-based Decision Support provides clinicians, staff, patients and other individuals with knowledge and person-specific information, intelligently filtered or presented at appropriate times, to enhance health and health care. It encompasses a variety of tools and interventions such as computerized alerts and reminders, clinical guidelines, order sets, patient data reports and dashboards, documentation templates, diagnostic support and clinical workflow tools.

A **Favorites List** is a set of physician-specific problems, medications, etc. that is created in a list format either by the physician, or intuitively through the EHR. The purpose is multi-fold and relative to efficiency, including time-saving documentation during the visit and selection of frequent diagnoses, treatments and medication prescriptions common to the practice.

Functionality is the particular set of capabilities associated with computer software or hardware or an electronic device to perform a calculation with variables (patient age, sex, diagnosis, lab report levels, etc.) provided by a program and supplies the program with a single result, such as a report of all patients with diabetes who have an average blood glucose level of 7.0 or above, or below 7.0. The features and functions available from EHRs range from very basic to

sophisticated clinical decision support (current evidence-based standards of care, such as annual dilated eye exam for patients with diabetes) functionality.

Health Care Informatics is interdisciplinary, with focus on the care of the patient, not a specific discipline. Thus, although there are specific bodies of knowledge for each health care profession (nursing, dentistry, dietetics, pharmacy, medicine, etc.) they interface at the patient (Thede, 2006).

HIT is health information technology (Health IT), which allows comprehensive management of medical information and its secure exchange between health care consumers and providers. Broad use of health IT will:

- Improve health care quality
- Prevent medical errors
- Reduce health care costs
- Increase administrative efficiencies
- Decrease paperwork
- Expand access to affordable care

Incentives are any factor (financial or non-financial) that enables or motivates a particular course of action, or counts as a reason for preferring one choice to the alternatives. It is an expectation that encourages people to behave in a certain way (Wikipedia, 2009). Under both Medicare and Medicaid, physicians will be eligible for incentive payouts starting in 2011, but unlike hospitals, which have until 2015 to demonstrate “meaningful use” of health IT, physicians must do so by 2014. Physicians failing to demonstrate meaningful use will see reductions in reimbursements from 2015, just as hospitals failing to do the same will receive penalties in their market-basket adjustment (Advani, P, 2009).

Information Technology (IT) Incentives can be earned by physicians. Those participating in Medicare who demonstrate “meaningful use” of health IT in 2011 or 2012 will receive \$18,000 in their first year of collection, followed by \$12,000 in year two, \$8,000 in year three, \$4,000 in year four, and finally \$2,000 in year five – for a total of \$44,000. For physicians who demonstrate “meaningful use” of health IT for the first time in 2013, their Medicare incentive payout in the first year will be \$15,000 and their total collection across four years will be \$39,000. Similarly, physicians meeting eligibility criteria only in 2014 will collect \$35,000 in Medicare incentives over three years. Physicians practicing medicine in designated health professional shortage areas will get a 10 percent increase to all payouts upon demonstrating meaningful EHR use.

Independent physicians may collect incentive payouts from Medicare or Medicaid only for meaningful EHR use. The Medicaid payouts are more significant than the corresponding Medicare incentives. Across five years, physicians could collect a sum total of \$64,000 – calculated as 85 percent of EHR purchase costs not exceeding \$25,000 in the first year, followed by 85 percent of the annual maintenance costs not exceeding \$10,000 for the next five years. To be eligible for the Medicaid incentive payout, physicians must not only demonstrate meaningful

use of health IT but also attribute more than 30 percent of their cases to Medicaid. The Medicaid case threshold is only 20 percent for pediatricians.

It is yet to be determined how hospital-owned physician practices or faculty practices that are managed, but not owned, by academic medical centers would be treated for eligibility for the physician incentives and whether the payments would flow through the hospital system itself (Advani, P, 2009).

Interoperability is the ability of software and hardware on different computers (electronic health records) from different vendors to share data.

Health Care Interoperability is the ability of different information technology systems and software applications to communicate, to exchange data accurately, effectively and consistently, and to use the information that has been exchanged. (Adapted from the IEEE definition of interoperability, and legal definitions used by the FCC (47 CFR 51.3), in statutes regarding copyright protection (17 USC 1201), and e-government services (44 USC 3601).

Interoperable health IT will improve individual patient care, but it will also bring many public health benefits including:

- Early detection of infectious disease outbreaks around the country
- Improved tracking of chronic disease management
- Evaluation of health care based on value enabled by the collection of de-identified price and quality information that can be compared

Meaningful Use has been interpreted to mean that physicians and hospitals are using certified EHRs to improve patient care quality, including the use of electronic prescribing, quality reporting, and health information exchange for the purposes of care coordination. Since care coordination typically means care between different (and typically independent) clinical settings, solutions that allow the movement of clinical information between these entities is a powerful demonstration of care coordination, and ultimately optimizes the value of any investment in EHRs (Rideout, 2009).

Minable Data is the automated searching of documents for specific criteria to generate custom reports. It has proven extremely valuable in other industries. Within health care, data mining is beginning to be used for self-auditing to ensure that best practices are followed across a range of chronic conditions such as managing diabetes and cardiovascular care (Morris J, 2004).

A **Personal Health Record** is an electronic record of health-related information on an individual that conforms to nationally recognized interoperability standards and that can be drawn from multiple sources while being managed, shared and controlled by the individual.

The **Physician Quality Reporting Initiative (PQRI)** was created in March 2007. PQRI established a financial incentive for eligible health care professionals to participate in a voluntary quality reporting program. By reporting on a minimum of three measures on a specified group of patients, a physician can earn a bonus payment of 2 percent on all Medicare billing for one year.

For 2009, there are 153 quality measures and seven measure groups in the PQRI, which can be reported to CMS by physicians and other caregivers in hospitals or physician practices.

Practice Management is an application used to manage the physician business operations including scheduling, registration and billing

A **Problem List** is a complete list of all the patient's problems, including both clearly established diagnoses and all other unexplained findings that are not yet clear manifestations of a specific diagnosis, such as abnormal physical findings or symptoms. When the data warrant, these findings can be crystallized into a specific diagnosis. The problem list is not static in its composition, but is a dynamic table of contents of the patient's chart, which can be updated at any time (Weed, 1968).

A simple definition is a compilation of clinically relevant physical and diagnostic concerns, procedures and psychosocial and cultural issues that may affect the health status and care of patients. This information should identify the date of occurrence or discovery and resolution, if known (AHIMA, 2008b).

Quality Health Care can be defined as the extent to which patients get the care they need in a manner that most effectively protects or restores their health. This means having timely access to care, getting treatment that medical evidence has found to be effective and getting appropriate preventive care. Choosing a high-quality health plan – and a high-quality doctor – plays a significant role in determining high-quality care (NCQA, 2009).

Registry is a formal or official record of information (names, actions, facts, etc.).

Software is a general term used to describe a collection of computer programs, procedures and documentation that perform some tasks on a computer system. A word processor (more formally known as document preparation system) is a computer application used for the production (including composition, editing, formatting and possibly printing) of any sort of printable material.

An **Economic Stimulus Package** is an attempt by the government to boost economic growth and lead the economy out of a recession or economic slowdown. The two main ways for stimulating the economy are expansionary monetary policy and expansionary fiscal policy (Economic Help Online, 2009) accessed 3/31/09 www.economicshelp.org/dictionary/e/economics-stimulus-package.html

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