**Testimony on the Meaningful Use of Health Information Technology**
**Before The HHS National Committee on Vital and Health Statistics**

**By**
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This testimony is presented on behalf of the physicians and staff of Marshfield Clinic, who thank you for conducting this hearing to help define and clarify the term "Meaningful Use" in the American Recovery and Re-invention Act (ARRA). We appreciate your concern regarding the appropriate functional criteria for "meaningful use" of health information technology (HIT), and how it will support improvements in the quality, efficiency and safety of health care. We believe that HIT has the potential to revolutionize health care and provide the necessary decision support to incorporate evidence-based decision making into clinical care processes. We recognize, however, that there is a large public and clinical education gap that must be bridged for both patients and providers to make full use of HIT resources.

The conference report of the ARRA statute describes "meaningful use" as 1) the use of certified EHR technology; 2) including electronic prescribing; 3) conforming to laws and standards governing the exchange of health information to improve quality and care coordination; and 4) the eligible professional submits information on clinical quality measures. As a vendor of HIT we believe that HIT products should facilitate meeting the Institute of Medicine's aims for health care delivery assuring that care is safe, timely, efficient, effective, patient centric and equitable.

After nearly 40 years of IT development work and expenses equal to three to four percent of its annual budget Marshfield Clinic has completely converted to an electronic record format and is paperless in all of its 45 facilities. Marshfield Clinic invested in the technology because we firmly believe that the pace of scientific discovery, the pressure for increased productivity, and the intellectual demands of practicing medicine vastly exceed any individual's capacity to timely process all of the pertinent clinical information about a patient. Not making this IT investment would compromise patient safety and high quality care. Through participation in the CMS Physician Group Practice Demonstration, we have shown that our electronic health record and the associated databases empower our physicians and their staff to improve patient care outcomes and reduce costs to the Medicare program.

Health information technology has the potential to significantly increase clinical care efficiency by reducing costs and increasing value (defined as quality divided by cost). To the extent that a provider can manage what he/she can measure, meaningful HIT must enable performance measurement and the improvement of patient care outcomes. In many, but not all avenues, improvement in patient care also leads to efficiencies and savings, primarily through reductions in hospitalizations, readmissions and the utilization of intensive services.

Marshfield Clinic has long used information systems to facilitate care process redesign for patients with chronic illnesses. As the Congressional Budget Office and the Office of Management and Budget have recently shown, 85 percent of Medicare expenditures are concentrated among 25 percent of beneficiaries. According to CMS, this population is predominantly individuals who have four or more chronic conditions. We recommend that the appropriate functional criteria for "meaningful use" of health information technology initially promote rapid assimilation of the skill sets that are associated with the management of chronic disease.

There are other appropriate functional criteria for "meaningful use" of HIT. Measures of patient and physician satisfaction can guide the implementation of meaningful innovations. Marshfield Clinic is unusual in that is has developed its own electronic health record and ancillary reporting systems over the last 30 years. Called CattailsMD, it was the first internally-developed system to gain Certification Commission for Healthcare Information Technology (CCHIT) certification. With CCHIT certification, CattailsMD more easily complies with data transfer guidelines, patient requests for their individual patient health information and second opinions.

Marshfield Clinic's experience with recent HIT innovations may be instructive: Beginning in 2003, Marshfield Clinic deployed portable wireless tablet computers that led to a chartless medical environment by the end of 2007. All physicians and their support staff now use the tablet computers, which are linked to the Clinic's electronic health record. With wireless computers, providers can instantly access confidential medical history, radiology reports and images, test results and expert opinions. They can take notes, enter orders and write prescriptions electronically. Our physicians say that their practices are much more organized and efficient with the use of the tablet computers, bringing to the exam room what previously was only available at the desktop.

The innovations have enabled our physicians to spend more time with their patients. When a provider can take the time to educate patients about diseases, risk factors and recommendations to improve their health, patients are more likely to comply. Providers can instantly print out patient educational materials rather than leaving the exam room to search for information. The ability to quickly retrieve information clearly improves the quality of the patient visit.

To further enhance the quality of care, Marshfield Clinic developed a comprehensive package of initiatives. HIT was leveraged to redesign care for chronically ill patients by identifying improvement opportunities, collecting needed information at the point of care, and reporting performance back to physicians.

For example, our PreServ (Preventive Services) System is able to alert physicians when preventative services are due for a patient during a primary care visit. The EMR generates a PreServ list on the dashboard of each electronic patient record. This box compares the patient's clinical profile with evidence-based clinical practice guidelines formed from a number of sources, including the ADA, and input from endocrinologists at Marshfield. It highlights (in red) gaps in care related to preventive services, immunizations, routine screening, and diabetes care needs. Eventually, this functionality will be expanded to manage additional diseases. The system prompts the physician to provide or schedule needed preventive services

during the patient visit. In contrast to disease-specific programs and care registries, this list allows physicians to proactively plan and coordinate needed preventive care, screening, treatment, monitoring, and education across a spectrum of diseases for each individual patient.

Our EHR also includes an Intervention List which shows our providers a list of their patients with chronic conditions who are not meeting quality measures. This list allows providers and staff to intervene and address any issues that indicate a health care concern. For example, quality measures for patients with diabetes include annual eye and foot exams and blood tests to see if hemoglobin A1c is at goal. High-risk patients with serious gaps in care (such as diabetes patients who have not made appointments for annual eye or foot examinations and whose hemoglobin A1c level is above goal) top the list. Physicians and staff use this list to provide or schedule needed patient care immediately. Physicians receive reports showing selected quality measures, such as the percentage of foot exams performed with diabetes patients. Since starting to measure and report these key quality areas, we have seen increases in percentage of patients who meet goals. These goals are specified by several public reporting organizations and efforts such as the CMS demonstration project for chronic diseases such hypertension, diabetes, heart failure, and coronary artery disease.

Marshfield Clinic has also implemented electronic prescribing to enhance safety. Physicians use tablet PCs for electronic prescribing, with prescriptions printed by computer, thus reducing the potential for medication errors.

We have implemented a 24-hour NurseLine telephone service. Clinic nurses listen to the patient's concerns, refer to the EHR for background data and care plan, offer advice and triage patients for physician appointments using physician-approved guidelines. An automated e-mail system notifies physicians whose patients have called the NurseLine and provides a hyperlink to the patient's medical record.

The Clinic is also utilizing the system to facilitate ongoing quality improvement efforts, such as continuing medical education, online provision of care guidelines, feedback and education by quality improvement medical directors and clinical nurse specialists, and sharing of comparative data on performance and best practices. The EHR facilitates many of these efforts by allowing physicians to collect data on quality thereby providing timely, actionable feedback on individual performance.

Marshfield Clinic has also developed additional reporting mechanisms to identify patients at risk of hospitalization (for example, heart failure patients) who qualify to be added to the disease management program. Once a patient is identified through criteria-driven data-mining, care management staff review the patient's health record and determine if the patient meets criteria to be added to the disease management system. This system provides a worklist and documentation capabilities for the clinical staff to monitor at-risk patient populations, and refer patients to a physician if required.

Summary

A robust HIT system enhances physicians' ability to take care of populations of patients without losing sight of the individual needs of patients. This is why it is vital to adopt a policy and standards to ensure electronic health record systems are meaningfully usable for physicians and patients. These systems will be the foundation for essential improvements in quality and access to care, progress toward evidence-based medicine and value-based purchasing.

In considering whether a system is meaningfully usable, we encourage you to ask the following: In caring for patients, is the system used for the majority of care activities or only a small subset of activities? Is the system used at the point of care or is data entered after the fact in the background? Does real-time alerting actually affect the process of care? Is the system integrated into the process of care or simply a bolt on documentation tool? Is communication among providers done electronically through the electronic health record, or are providers forced to go outside of the electronic health record to coordinate care? Although it may be relatively simple to select criteria that are easy to measure when defining meaningful use, the criteria may not be meaningful to the patient. For this reason, Marshfield Clinic would consider use meaningful only after considering the questions noted above.

Another vital link to consider is between EHR's and health information exchange. EHR's must have the ability to interoperate with other systems in order to improve overall population health. It is important, however, to keep in mind that change in a culture of autonomy takes time. The use of an electronic health record is necessary but not sufficient to affect change.

Considering the rapid expansion of new medical knowledge occurring today, it might be reasonable to expect continuing variability in care. The accelerating growth in new medical knowledge, coupled with the birth of new sciences, such as genomics and personalized medicine, suggests that physicians, nurses, and other health care professionals will invariably continue to fall further behind in their ability to keep up with the latest discoveries and approved treatments. As information technology has sparked this explosive growth in knowledge, only information technology can provide an adequate response. By using evidence-based knowledge embedded in clinical decision support deployed within a well-designed workflow, physicians can manage the ever changing and growing knowledge base critical to the delivery of effective and efficient healthcare.

Health IT on a broad basis is in its infancy and is expensive, perhaps cost-prohibitive for small practices. Physicians and providers are expected to fund and maintain the infrastructure of systems that utilize population-based information to improve patient health. There is a very small return on the investment in HIT to the physician, which is a return in efficiency and time. The significant benefits accrue to the patient and the payor, whether it be employers or the government. Health care organizations have not developed IT to its full potential. Start up costs will always be high, but the potential for improved patient outcomes and reduced costs far outweigh the initial investment. We need to maintain focus on looking at what can be achieved in the future through EHR implementation. For this reason, when defining meaningful use, we encourage you to leverage existing experience of organizations like Marshfield Clinic and others that have developed an electronic health record already meaningfully usable for physicians, with proven outcomes in quality care for patients.