Toward Understanding EHR Use in Small Physician Practices

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This article presents insights into the use of electronic health records (EHRs) by small physician practices participating in a CMS pay-for-performance demonstration. Site visits to four States reveal slow movement toward improved EHR use. Factors facilitating use of EHRs include customization of EHR products and being owned by a larger organization. Factors limiting use of EHRs include system limitations, cost, and lack of strong incentives to improve. Practices in one State were moving more vigorously toward improved EHR use than those in the other States. Many practices also increased use of medical assistants after implementing EHRs.

INTRODUCTION

As part of the 2009 American Recovery and Reinvestment Act, the Health Information Technology for Economic and Clinical Health (HITECH) Act involves a major national commitment to implementing health information technology (HIT). Specifically, the HITECH Act promotes the use of electronic health records (EHRs) —including $30 billion in incentives for Medicare and Medicaid providers—as a means to improve quality, reduce cost growth, and stimulate the economy in the short term (Redhead, 2009; Congressional Budget Office, 2009). Implementers face a number of challenges, however, one of which is ensuring that small physician practices are not left behind (Lohr, 2009).

While there has been some movement toward consolidation, small practices continue to provide a large proportion of physician care in the U.S.; about one-third of physicians still practice in solo and two-physician practices (Liebhaber and Grossman, 2007). At the same time, they lag behind larger physician groups in acquiring technology: in late 2007, only 9 percent of physicians in practices with 1 to 3 physicians had any electronic medical record system, compared with 29 percent of practices with 11 to 50 physicians and 50 percent of practices with more than 50 physicians (DesRoches et al., 2008). Adoption of HIT is occurring more rapidly in medical groups than in independent practice associations (IPAs), and in medical groups the range of IT capability is proportional to the size of the organization (Robert Wood Johnson Foundation, 2009).

The most authoritative evidence of the impact of health IT and EHR systems on quality of care is the systematic review of the literature prepared by Chaudhry et al. (2006). The authors found three major benefits on quality: increased adherence to guideline-based care, enhanced surveillance and monitoring, and decreased medication errors. However, much of the literature reviewed in the article came from the four leading institutions designing and implementing health IT during the last two decades, each of which developed its own EHR system.

EHR system components, such as reminders from guidelines to providers and computerized physician order entry (a process of electronic entry of physician instructions for the treatment of patients, that includes electronic prescribing as well as other types of electronic ordering), are thought to have the ability to improve quality of care; however, literature on these components finds mixed results (Keyhani et al., 2008; Teich et al., 2000; Welch et al., 2007; Kaushal, Shojania, and Bates, 2003; Bizovi et al., 2002; and Bates et al., 1999). The mixed results may in part reflect differences in how EHRs are used. Robert Miller and colleagues (2005) conducted case studies of 14 solo or small-group practices with EHRs during 2004/2005. Although the study reported the extent of use of quality-related functions, its main purpose was to quantify financial costs and benefits, and to be eligible for case study, practices had to be using one of only two EHR vendors. Other studies have used surveys to identify the prevalence of use of various EHR features (DesRoches et al., 2008; Menachemi et al., 2007), but the categorical results do not leave the reader with an understanding of EHR use in practice. Other, larger-scale qualitative work examining the dynamics of EHR use and barriers to greater use in physician practices dates back to the 2000-2002 timeframe, making it relatively dated in a decade characterized by rapid evolution of products and potentially the population of EHR users (Miller and Sim, 2004).

In this article, we offer current insights into the barriers and facilitators of EHR use in small and medium-sized practices based on site visits to 32 small- to medium-sized physician practices in four States selected by CMS. Effective use of EHRs is widely believed to be a necessary means of improving care quality and efficiency; understanding barriers practices face and facilitators they experience is the first step to strengthening use. The selected practices, located in Arkansas, California, Massachusetts, and Utah, were among those that are participating in the Medicare Care Management Performance Demonstration (MCMP), a pay-for-performance demonstration that encourages use of HIT to improve quality of care to eligible chronically ill, fee-for-service Medicare beneficiaries.[1] The site visits were performed as part of the evaluation of practices' first year experience in the demonstration (Felt-Lisk et al., 2009).[2]

Demonstration Background

The 3-year MCMP demonstration was mandated by the Medicare Prescription Drug Improvement and Modernization Act of 2003. Begun July 1, 2007, MCMP provides an annual financial incentive to approximately 640 practices in Arkansas, California, Massachusetts, and Utah if they meet or exceed performance standards established by CMS. The incentive payment is based on performance on 26 clinical quality measures pertaining to diabetes, congestive heart failure (CHF), coronary artery disease, and the provision of preventive health services, with an additional bonus if the data are submitted through an EHR certified by the Certification Commission for Healthcare Information Technology. A practice can earn up to $192,500 over 3 years ($38,500 per physician). In the first year of the demonstration (prior to the site visits), practices received a maximum of $5,000 (depending on the

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[1] For more information on MCMP, see http://www.cms.hhs.gov/DemoProjectsEvalRpts/MD/itemdetail.asp?itemID=CMS1198950.

[2] A second round of site visits is planned for 2010, and the two rounds together will complement a quantitative analysis of program impacts, helping us understand what produced the impacts, or how the program logic intended to produce results did not occur as expected.

number of qualifying beneficiaries) for reporting baseline data. Larger performance-based incentives, which are more likely to have an impact on quality and EHR use, will become available in 2009–2010. Participating practices were recruited from among practices that previously participated in CMS' Doctors Office Quality-IT (DOQ-IT) program, an initiative that operated through 2008 under which the CMS-sponsored Quality Improvement Organization in each State encouraged adoption and use of electronic health records among small-to-medium sized practices that chose to enroll.

Characteristics of Visited Practices

Eight practices in each of the four demonstration States were selected to be geographically feasible to visit and to vary based on urban/rural location, number of physicians, number of fee-for-service Medicare beneficiaries with chronic conditions, and experience with EHRs. By ensuring wide variation in the characteristics of the visited practices, common patterns that emerge from the large variation are of particular interest and value in capturing the core experiences and central,

shared aspects of the program (Patton, 1987). As shown in Table 1, despite the wide variation within the visited practices, on average the study practices were similar to the full set of practices participating in the MCMP demonstration, except that the study practices were somewhat larger on average (although still small, with an average of fewer than six physicians) and served more Medicare beneficiaries.

Method

In summer/fall 2008, a two-person research team met with practitioners and staff from eight practices participating in the demonstration in each of the four States. Three senior researchers led the site visit interviews, each bringing more than a decade of experience interacting with physicians and other health care professionals through research related to health IT and/or quality improvement. Site visit teams met as a group prior to the visits for training by the task leader to ensure a common understanding of the process and protocol. Researchers used an interview guide for the discussions, which lasted one to two hours per practice, depending on the situation.

Table 1
Characteristics of Visited Practices

Characteristics	Visited Practices (N=32)	Other Demonstration Practices (N=608)
Percent urban	72%	85%
Mean number of physicians	5.7	3.8
Percent solo practice	28%	31%
Percent any HIT use	84%	83%
Percent using EHR	72%	62%
Percent using e-prescribing	66%	67%
Percent with registry	53%	44%
Percent with >250 eligible beneficiaries	56%	35%
Percent affiliated with medical group or IPA	63%	73%

SOURCE: Office Systems Survey, Fall 2007; Demonstration and CMS claims data provided by Actuarial Research Corporation; Area Resource File; MCMP application data.

The interview guide served as a checklist during the interview to make sure that all relevant topics were covered. Use of various EHR functions was self-reported; we did not directly observe use on-site. Normally, discussions were held with at least two people per practice—a physician and another person most knowledgeable about the demonstration. Often the other person most knowledgeable about the demonstration was the office manager, but sometimes it was a nurse or administrative staff member who had prepared the data for submission. Topics were (1) experience with the demonstration and physician and staff perspectives on it; (2) response to the demonstration; (3) adaptation of practice operations as HIT is implemented and effects are observed; (4) factors helpful and harmful to adopting and implementing HIT; (5) involvement in other incentives, reporting programs, and HIT initiatives that may affect implementation and participation; (6) adoption of care management; and (7) quality performance awareness and improvement. The more junior site visit team member prepared detailed notes on each interview, organized by topic, which were reviewed by the senior site visitor. Based on those notes, the research teams identified overall themes and coded each practice on relevant themes and facts in order to prepare the counts noted throughout this article. Coding by each site visit team staff was followed by a secondary review of codes against the detailed notes by the lead author prior to analysis, to ensure consistency across sites.

RESULTS

The demonstration is expected to improve quality of care in part by encouraging practices to learn to use HIT proficiently to improve quality of care. To understand whether this is beginning to happen, we first describe practices' reports about what they did in response to the demonstration in its first year of operation. Then, we broaden the view by discussing the extent and type of HIT use, workflow changes with EHR implementation, and factors facilitating and limiting greater use of EHRs. By "implementation" of HIT, we mean the adoption and use of EHRs, chronic disease registries, e-prescribing systems, and any other electronic tools to support improved health care delivery in the practice.

Year 1 Responses to the Demonstration

The most commonly reported response to the demonstration in year 1 was improvement in clinical documentation (18 of 32 visited practices), followed by changes to the EHR itself and/or changes in the practice's use of the EHR [7].[3] Documentation changes reported by practices included obtaining documentation when women received mammograms elsewhere and asking practitioners to document foot exams and heart failure education in a specific way for easier retrieval and reporting under the demonstration. In other cases, physicians demonstrated more awareness of the need for documentation—for example, they began documenting the reasons a patient had not received a colonoscopy. Changes to the EHR or its use included developing new templates for diabetes and CHF and tailoring EHR point-of-service alerts to better support performance on certain MCMP quality measures.[4]

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[3] Numbers in brackets refer to the number of practices that pertain to the text preceding the bracketed number.

[4] Templates standardize key information within the EHR; we considered them to be more than just improved documentation since they should make it easier for clinicians to identify missing or abnormal information.

Extent and Type of EHR Use

Three-fourths of the visited practices (24 of 32) were using an EHR at the time of the visits. All 24 had used their EHR for at least 1 year, since fall 2007, and 10 had first implemented an EHR more than 5 years ago. These practices reported using at least 15 different EHR products (total). Nine of the 24 visited practices currently using an EHR were expecting to implement a new or upgraded EHR either within the next year or at a time to be determined in conjunction with a larger organization or vendor. Of the eight practices without EHRs, two expected to implement one within the next 2 years.

For practices that were part of a larger organization such as a hospital system or large medical group [11], those organizations were a strong influence on which systems and functions that the practice used. Technical support is often provided by larger affiliated or owner organizations [10] and/or by vendors [6], but several practices [5] reported that they had little technical support.

E-Prescribing

Most visited practices (five to seven per State) electronically prescribed medications through their EHR in all States except Arkansas, where only three of the eight visited practices did so. A common method was to select the prescription electronically and then fax it to the pharmacy through the EHR (without printing it) and/ or hand the patient a printed prescription.

Health Information Exchange

Ten of the 24 practices with EHRs reported at least one electronic interface with an entity outside their office. Laboratory and radiology ordering was most common, though limited in scale. The interface was often with a single, affiliated larger system or through an arrangement with one or two laboratory or imaging providers. Three practices that were part of integrated health systems share clinical data and notes with the hospital in the same organization and vice versa, through a compatible EHR system. Six that were part of larger organizations or had multiple sites share medical charts across the primary care sites within the organization, using the same EHR system. In addition, five practices were able to view laboratory results and other claims-based measures for a subset of their patients through an IPA or Physician-Hospital Organization (PHO) Web portal (these practices are primarily located in California and Massachusetts). However, this latter ability was limited in that results must be separately keyed into the EHR and only apply to the subset of patients under that IPA or PHO arrangement. In this respect, it seems little different from the many other practices that receive paper lists of patients who need services or attention from certain payers (such as a list of diabetic patients with hemoglobin A1c above 7 percent).

Use of EHR for Care Management

In general, practices with EHRs were not using them extensively for care management. Thirteen practices (of the 24 with EHRs) reported using some alerts (reminders) at the point of service, although several reported that the alerts activate too frequently. Nine practices have systems that display key data about the patient in a standardized format when the chart is opened (likely facilitating care management), while 7 reported talking with patients about patterns in their EHR data, such as trends in weight

or blood pressure. A few reported more extensive use of the EHR for care management—for instance, to generate exception reports that were used to follow up with patients not meeting clinical guidelines of control or needing preventive services—but such uses were rare. More often (in 15 practices), physicians said they made followup calls based on lists sent to them by health plans of patients whose claims or lab data suggested they may need followup; however, these lists only covered a portion of the commercial part of their practice. In some practices, efforts to improve documentation may also lead to the identification of indicated tests or monitoring visits that had not occurred. Practices' willingness to take on additional care management in the future was often linked to further development of their EHR systems; for about one-half of the practices that were awaiting new or upgraded EHR systems (five of the nine), further improving their care management depends on the more advanced capabilities of the new or upgraded system.

Use of HIT Beyond EHRs

Use of HIT products other than an EHR was rare among the practices except in California, where six of the practices used a variety of HIT, including stand-alone e-prescribing tools, electronic clinical resources, online health care communication programs, and Web-based tools provided by IPAs. Several practices reported using electronic clinical resources; two practices use UpToDate™ to access educational materials, and one practice uses ePocrates™ to access prescription information. In addition, three practices have online communications with their patients. One practice uses a basic e-mail program, and two practices use RelayHealth™, which has secure messaging capabilities.

Regarding Web-based tools, four of the California practices reported that their IPA provides them with a Web portal through which they can view clinical measures data for each patient as well as summary data that show a practice's compliance (overall and by physician) on collected clinical measures used to compute pay-for-performance program scores. IPA-provided HIT has two major differences from HIT available within the practice: (1) it often focuses on chronic/preventive care populations, whereas in these practices the EHR does not, and (2) it focuses solely on IPA patients. While the IPA provides HIT through portals and EHR services, the two types of HIT are not integrated at the practices. In fact, the availability of these IPA portals to facilitate care management may lessen practices' interest in learning to better use their EHRs.

Workflow Change with EHR Implementation

The most common workflow changes made with EHR implementation were transition to a "paperless" system and increased use of medical assistants. Other major workflow changes were rare: only one practice appointed an EHR project manager, while another was working toward systematic diabetes care management.

Fifteen of the 24 practices with EHRs operate a paperless or almost paperless system, whereas 8 routinely use paper charts as well as their EHR. Practices achieved their "paperless" status in various ways. Some entered partial, key information from the paper charts into the new systems. Techniques included asking every patient after the "go-live" date to complete a four-page form as though they were a new patient, hiring temporary staff to help key in vital signs, scanning

in 2 years' worth of records, and keying in certain information for all patients with diabetes. Other practices scanned all records into the EHR.

After implementing their EHRs, about one-third of the practices increased their use of medical assistants to enter data into patient electronic records, interview patients before they see the physician, and/or conduct outreach to patients needing tests or appointments.[5] Medical assistants can be licensed or unlicensed health care workers who perform administrative and clinical tasks that keep the offices of health practitioners running smoothly. They are most often trained on the job, although formal education is offered at many vocational or technical schools and community colleges, and certification can be obtained by taking a test offered by the National Board of Medical Examiners and the American Association of Medical Assistants. According to some physicians and staff we interviewed, medical assistants' jobs were getting more interesting and more important since medical assistants were interacting more with patients prior to their visit with the physician, performing more data entry, and conducting outreach between visits to patients needing tests.

Regarding specific new responsibilities, six practices used medical assistants to perform data entry and improve the completeness of EHRs. For example, one practice hired a second medical assistant for each physician to type information into the EHR during exams. Before this change, two physicians were dissatisfied with the EHR, and their backlog of documentation was growing. In five practices, medical assistants had begun routinely asking patients certain questions prior to

the patient meeting with the physician, including questions about family history, smoking status, and recent receipt of services such as a hemoglobin A1c test or lipid profile. In three practices, medical assistants reach out to patients who need tests or appointments; one does so when an appointment is scheduled, calling the patient to ensure that needed tests are done before the visit, and in at least two other practices medical assistants help call patients who are missing key tests (one list of such patients is generated from an EHR, and one is generated by the affiliated IPA). In two practices, medical assistants' jobs changed as part of a larger shift in practice staffing; in one case, the medical assistant now prepares pending orders before patient visits based on alerts in the EHR, and in another case the medical assistants participate in care teams charged with improving mammogram rates, diabetes care, colonoscopies, and other aspects of care.

Factors Facilitating Better Use of EHRs

Many practices had a physician advocate [13] and/or administrative advocate [9] for improving use of their EHR, and encouragement from these individuals helped the practice move toward greater use.

Practices that were progressing in using their EHRs more fully had devoted considerable effort to customizing the products to facilitate their use for care management. Specifically, 12 practices had someone within the practice or owner organization—usually a physician—with the motivation and skill to customize the EHR product. Customization may involve developing templates that display organized data when each chart is opened and adjusting reminder features to provide

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[5] Since one or two practices without EHRs also increased their use of medical assistants, greater use of these staff may be due to factors other than, or in addition to, adoption of EHRs.

physician prompts related to the relevant guidelines for that practice.

Being owned by or affiliated with a larger organization also facilitated EHR use among the practices. For example, 7 of 11 owned practices visited were paperless (64 percent), compared to 7 of 21 non-owned practices (33 percent). Larger organizations that owned multiple practices tended to have system-wide plans for rolling out EHRs and supporting implementation as they did so.

Logically, several pieces must be in place for a practice to use its EHR successfully—among them, solid product structure, sufficient underlying infrastructure, technical support for implementation, and at least average aptitude on the part of the end user. As is discussed below, when EHR use is not fully successful, it is difficult to determine which piece is missing via interviews like those conducted for this study.

The State provider and payer environment may also facilitate (or hamper) use of EHRs. For example, practices in Massachusetts that participated in pay-for-performance and tiered provider networks appeared to be working more vigorously to improve EHR use than practices in other States.

Factors Limiting Use of EHRs for Care Management

Cost

The high upfront cost of EHRs for small practices was a major factor limiting their use, with six of the eight practices not using an EHR citing cost as a major reason. However, addressing cost alone would not necessarily lead to adoption among all eight practices without an EHR. Such practices usually [4/6] cited cost plus one other factor as a significant reason for not adopting an EHR, such as the age of their physicians and larger financial difficulties in the practice. Also, because MCMP practices were recruited from among practices that previously voluntarily participated in DOQ-IT, they are likely to understate the challenge that cost poses to implementation nationally. That is, practices that participated in the DOQ-IT program (and participated in the demonstration and in our site visits) will likely be, on average, more receptive to, interested in, and financially able to adopt EHRs compared with other practices.

Practices also reported that they weighed cost as they chose their EHR products, suggesting that some practices may have chosen a lower-cost (and lower-quality) system with which they were later dissatisfied. However, practices that chose their own system (rather than having one imposed on them by a larger corporate entity) usually pointed to factors other than cost, such as a product's compatibility with the practice's billing system. Other factors varied widely. For example, two practices mentioned above were attracted by the features that later disappointed them; one was initially attracted to a system that "learns from the doctor" rather than including many standardized templates, and another that envisioned growth in the practice was attracted to a versatile system built for large practices.

System Limitations

Characteristics of the EHR systems themselves were often a factor limiting use of EHRs for care management. Table 2 outlines system limitations mentioned by the visited practices, both those practices that were satisfied overall and those that were not. Some of the limitations

Table 2

EHR System Limitations Mentioned by Visited Practices with EHRs

System Limitation	Number of Practices (Out of 24 with EHRs)
Unable to generate lists of patients with certain criteria	8
Technical bugs in the system; doesn't work as advertised	7
Lack of technical support or adequate training to use the EHR well	6
No condition-specific prompts or reminders	6
Alerts are overpowered, alert the physician too much	4
No standard place to put key data in the chart	4
Takes too many clicks to perform tasks	4
Hard to find things with so many documents attached	3

SOURCE: MPR analysis of detailed site visit notes based on visits during summer/fall 2008

mentioned below undoubtedly could be overcome if the practice received better instruction or assistance. Discussion within the physician community about these limitations may also discourage EHR adoption.

Some system problems described by the practices, such as no standard place to put key data in the chart, inability to generate lists of patients with certain criteria, or no condition-specific prompts or reminders, may be technically possible to resolve.[6] The solutions would require customization of the practice's EHR product along with agreement within the practice to use the feature. Customizing involves a combination of effort and/or financial resources (for example, hiring someone to create the templates the practice wants if the practice does not have someone in-house with the skill). Practices must also find a way, through leadership or incentive, to persuade other physicians and staff to use the feature in a common manner. One of the two owners of a four-physician practice stated that the practice had customized its EHR to a point where it could do significant care management; however,

the two salaried physicians are not using the system consistently because they view it as more work.

Weak Purchase Decisions

The lack of sound information prior to purchase about the practical functionalities of the EHR products may have led to limited use of EHRs since some practices bought systems that did not fit their needs. In several cases, practices were terribly disappointed with them. Some acknowledged not knowing the right questions to ask about the candidate systems. In a couple of cases, practices mentioned that the quality improvement organization (QIO) in their State had steered them toward a product with which they were later disappointed.[7] In another case, the practice was enamored with a product's advertised ability to "learn from the doctor" (the product did not include standardized templates). However, the practice reported that what the system learned from one doctor could not be transferred to other physicians' workstations, leaving each doctor on his or her own in using the system.

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[6] Those interviewed were often uncertain about whether a limitation was inherent in their system or whether a solution was possible.

[7] Other practices mentioned having received positive assistance from their QIO as they purchased and implemented EHR systems.

Another small practice had purchased a system that was geared toward large practices, so many of the system's features and assumptions did not apply.

Day-to-Day Pressures

Day-to-day office pressures also limited the pace of EHR implementation. One solo practitioner designated one day a month as his administrative day, when he makes time to think about the bigger picture of his practice, including EHR issues. An organization that owns one of the practices pays nurses two hours per day in addition to the hours when patients are in the office so that they have time for administrative tasks, such as following up with patients who are overdue for tests. However, the norm was simply for the practice staff to talk about what they would like to do and work in what change they could into their regular schedule. Change appears to occur slowly by this method (and whether it results in measurable quality improvement is open to question); however, it may be easier on existing personnel than a more structured plan. A few practices were in or had recently experienced periods of extreme stress, when they had lost staff and remaining staff were overworked. Such practices are not able to make changes in their operations or EHR use until staffing returns to normal.

Individual Practitioner as Decisionmaker

Many practices share administrative, physical, and support staff resources, but the physicians within them practice autonomously. Therefore, individual practitioners—rather than the practice as a whole—often acted as the decisionmakers about whether, how much, and how to use the EHR. In a few cases, the physician

interviewed could state how he or she used the system, and knew generally that use varied, but could not generalize across the practice about system use.

Lack of Strong Motivation to Increase Use

Overall, practices visited in California, Utah, and Arkansas had relatively weak incentives for system improvement, other than the additional demonstration incentives for electronic reporting after the first year. While Massachusetts practices also did not have direct incentives for EHR system use, they seemed to link better EHR use to either (1) the potential for better performance on the (significant) pay-for-performance programs they participate in or (2) the possibility of enabling their physicians to qualify for the "top tier" for quality in the tiered networks of managed care organizations. California practices were often using IPA-provided online tools to help them achieve pay-for-performance goals; as noted above, these tools may reduce the sense of urgency to use the EHR for similar purposes. In Utah, pay-for-performance programs existed, sponsored by at least one major managed care firm, but the incentives for most practices were relatively small. Arkansas practices were just becoming familiarized with pay-for-performance.

DISCUSSION

The site visits highlighted the effort and organization required to assemble all the necessary pieces to support effective care management in primary care, from establishing EHR system capability to effecting workflow changes across all practitioners in the practice. Even if practices became more motivated to improve care through HIT due to new incentives stemming from the American

Recovery and Reinvestment Act or other payment reforms, this study suggests that it will take them considerable time to incorporate the major operational changes required.

Factors outside the practices and the demonstration, such as EHR product quality, other payers' initiatives (or lack thereof), and the agendas of owner organizations, influenced how quickly practices were able to improve use of EHRs and perform more care management. These factors point to opportunities to encourage EHR use; for example, Federal leadership through certification requirements can help ensure that future EHR products are easier for clinicians to use for the key functions that will improve care. Likewise, Medicare and other payers can increase payment incentives for quality improvement. Considerable leverage can also be gained through leaders of organizations that own many small practices. However, changing these external factors will take time, possibly slowing the pace of change at the practices.

The study also points to another opportunity to accelerate implementation of EHRs and care management: the growing wealth of experience on the use of medical assistants to facilitate care management and improve documentation and EHR use could be synthesized and shared with practices that have not yet attempted to change their workflow.

The CMS pay-for-performance demonstration appears to have prompted positive operational changes in many of the visited practices, although most changes were related to improving documentation and were often inconsistently applied based on practitioner and staff time and interest. Many practices would like to do more if their time and systems permit. A second round of visits is planned for 2010, which should reveal whether new American Recovery and Reinvestment Act incentives, increased financial incentives later in the demonstration, and the system upgrades many are expecting will accelerate the modest changes described here.

The major limitation of this analysis is that we do not know the extent to which the experiences of the visited practices can be generalized. In particular, we expect that because the demonstration practices all previously participated in the DOQ-IT program, they are more interested in using HIT than the average other practice of similar size. In short, while the patterns described here are assumed to be present to some extent in the larger environment, the characteristics and experiences of the practices do not necessarily hold for other practices across the nation.

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