

**HIT Policy Committee
Meaningful Use Workgroup
Care Coordination Panel**

Christine A. Sinsky, MD, FACP*
Dubuque, IA

csinsky1@mahealthcare.com
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First, I would like to thank the Meaningful Use Workgroup for this opportunity to present my thoughts about HIT and care coordination. My name is Christine Sinsky. I am a board certified internist and am part of a multi-specialty physician practice in Dubuque Iowa. Our practice serves about 100,000 patients – including many older Americans and adults with multiple chronic conditions. In 2007 our practice was recognized as a Patient-Centered Medical Home by the National Committee for Quality Assurance. My written comments to you are arranged as a series of ecological field notes, gathered mainly from my experience as a primary care physician, and also informed by my work with physicians around the country on practice redesign (1-4) and the medical home.

Introduction

In 2003 we incorporated an electronic health record (EHR) into our practice. Around the same time the hospital at which I do most of my work implemented an EHR from a different vendor. Each of these EHRs has helped with care coordination in important ways in my practice and I would never go back. Yet I think it is important to note that, unexpectedly, the EHRs have also created some barriers to improving care coordination and patient safety. Truthfully, it has been a bumpy ride on the front lines of implementation.

I want to emphasize that I believe EHRs have the potential to play an unparalleled role in improving care coordination and health care quality. Much of the discussion has focused on physician adoption – as it should. But it has left out one of the key issues. We don't just need more physicians with EHRs, we need better EHRs. When the usability of EHRs improves, I believe physicians will flock to the technology, and use it meaningfully, just as we all do with information technology in the rest of our lives. Promoting interoperable and more usable EHRs, I believe, is among the most important challenges facing the Office of the National Coordinator for HIT.

First – I want to discuss how EHRs are helping my practice coordinate care.

- **Multiple users have simultaneous access to data without the delays associated with paper chart.**

Example: In the paper world it was not uncommon to see patients without access to their medical record. In those cases I would have to rely on my memory and was often in the dark about details of the patient's previous care. This might occur if a patient was seeing two physicians on the same day. The first physician would typically retain the paper record for several hours and thus second

*The perspectives I am sharing are mine and do not necessarily represent the organizations with which I am affiliated.)

physician would have to see the patient without it. Now I have access to the patient's inpatient and outpatient visit at every touch. Now we can actively arrange multiple appointments for the same day for our patients, knowing that each physician will have access to the patient's record.

- **Information is accessible immediately when patient calls in for advice**

Example: A patient with emphysema who was seen recently for a cough calls in to report continued symptoms. My nurse immediately pulls up the last visit, sees my note indicating that if he doesn't improve we will do a chest x-ray, and is able to orchestrate this care immediately during the call.

- **Information from outside sources can be integrated into patient care.**

Example: A patient of mine was seen in the ER with a pelvic fracture. When seen in the office in follow up we could immediately pull up her x-ray and lab results as well as her ER note and pick up the thread of care. This is possible because physician notes, lab and xray results from our hospital, despite using a different EHR, flow directly into our outpatient EHR.

- **Updated medication lists and past medical history can be provided to patients.**

Example: We provide our patients with an updated list of medications when changes are made. We also provide patients with a summary of their past medical history (PMH), procedures, social history, family history and health maintenance summary as needed. We encourage our patients to take this information with them when they travel or when they receive care outside of our system.

But, despite these innovations there have been serious challenges

As I have written previously (5), usability is the Achilles heel of electronic health records. A few examples:

- **Decreased Capacity**

In my experience access and continuity are the cornerstones of the medical home. Patients who have a personal doctor, who can see their doctor the same day they have a problem, and who see their own doctor for the majority of their care over time have better care coordination and I believe lower costs.

Because of usability issues with the EHR I now see approximately 20% fewer patients each week than prior to the adoption of the EHR. If this experience is replicated across the country there are serious implications for access and continuity with primary care physicians.

- **Drowning in Data**

Just as more care is not always better care, more information is not always better. Physicians in many practices are drowning in “dys-organized” data: information overload (too much data), information under-load (missing data), and information scatter (data sequestered in isolated screens). We cannot just assume that if a piece of information is somewhere within the EHR that it will be easily available to the nurses and physicians caring for the patient. It may be buried in an inaccessible location or overlooked because of poor information display.

Example: Problem list

Some EHRs list the medical history in alphabetical rather than chronological order. Effective diagnosis requires synthesis of many details. The point in time a diagnosis was made or a procedure performed has implications for the ongoing care of patients and coordination with other physicians. I have found it difficult, especially for complicated patients, to mentally reconstruct the patient’s chronological history when entries are in alphabetical order. It is easy to overlook a recent procedure buried in a multi-page list of alphabetized entries. Yet not recognizing that a patient recently underwent a cardiac catheterization, for example, compromises interpretation of the patient’s present symptoms. A problem list that can be ordered chronologically would improve our ability to quickly and efficiently comprehend a patient’s medical history.

Example: Medication list

Some EHRs list medications only in alphabetical order, rather than by class or organ system. What is my patient taking for their heart disease? What are they taking for their emphysema? For their diabetes? It is often difficult to construct a mental picture of each of the patient’s chronic conditions because scheduled, as needed and over the counter medications are intermingled, and because medications are not grouped by indication or organ system. The medication list of a patient with multiple chronic illnesses often exceeds 20-25 entries and spans several pages of text and I have found it is distressingly easy, for example, to overlook one of a patient’s four cardiovascular medications scattered throughout such a list. A medication list sorted by organ system would better organize this important information.

Example: Medication dose

Care coordination across sites of service requires unambiguous medication display. For one of my patients the computerized discharge medication list read: “Atenolol 100 mg 2 tabs daily.” Does the home health nurse or the next physician interpret this to mean a total daily dose of 200 mg or 100 mg? (Answer: the dose ordered was 100 mg.) Resolving this type of ambiguity will decrease the risk of confusion and medical errors across settings.

Example: Scanned documents

In our hospital the reports of some in-house procedures, such as cardiac catheterizations, are generated on independent software and then scanned in to the

EHR as pdfs. The user is able to read only a few lines of text at a time through a narrow window. This presents a structural barrier to comprehension.

Similarly some EKGs are scanned in to the EHR and again can be viewed only through a narrow window, allowing only a portion of the tracing to be seen at a time, thus requiring the user mentally knit together the pattern. This is difficult and increases the chance of error in interpretation. On one occasion an EKG had been scanned in sideways, so I had to turn my head 90 degrees while scrolling vertically to see horizontal slices of the EKG.

Is it reassuring to know I am not alone? I recently observed a physician in another city pull up a cardiac catheterization report only to find that it had been scanned in upside down. Interoperability between technologies would ease the work of synthesizing data from multiple sources.

- **Visit-based Framework**

Documentation in the EHR is directed primarily at the individual episode of care: the clinic visit in the ambulatory setting and the hospitalization in the inpatient setting. Yet to do the best job of care coordination I need a clear and concise summary of the key events in the patient's care over time.

Example: A patient with atrial fibrillation had recurrent hospitalizations for arterial emboli when her INR dropped below a therapeutic threshold of 2.5. Unlike most patients with atrial fibrillation she should not have her anticoagulation stopped, even temporarily, before procedures. There is no summary page in our inpatient EHR in which to place such information. I am worried that future physicians involved in the care of such a patient may not readily understand the patient's unique management needs.

Finally I would like to think with you about how the EHRs of the future could decrease the burdens clinicians face, while simultaneously improving care coordination and decreasing downstream resource use.

- **Web portals**

I look forward to the implementation of a robust web portal in our practice that will allow patients to partner more effectively with us in their care. As an example: confusion around medications continues to be a universal challenge. With a web portal patients could begin the process of medication reconciliation from home, allowing them to check their bottles and provide more accurate information. In addition they could access their medication list at any time via the portal if they needed to clarify what medications they have been advised to take.

- **Collaborative documentation**

I have observed that nearly 40-60% of many primary care physicians' time is consumed by clerical tasks. Much of this is spent on visit note documentation.

Activating the patient to record a part of their history before the visit, ideally from home, will help set the agenda and decrease the documentation burden.

As we move to team-based care our workflows and HIT tools need to support a collaborative model. A separate log in for each team member hinders collaborative charting. In one EHR it is a 12 screen, 54 keystroke process to change from one user to the other for shared documentation.

- **Collaborative order entry: COE not CPOE**

I recommend that the ONC use the term computerized order entry (COE) rather than computerized provider order entry (CPOE). COE is more aligned with the goals of enhancing teamwork and efficiency. The most efficient workflows, for example, may entail a team member other than the physician doing the physical entry of an order, allowing the physician to increase her personal interaction with the patient.

An example from a colleague: “My residents have so much less time to spend with patients and can’t get much work done because every morning the nurses hand them a stack of papers with verbal orders from overnight that the residents must now enter into the computer for care that has already been received.”

- **Incorporate “soft” information in summary page**

I try very hard to know the unique experiences, interests, circumstances, goals, and fears of my patients. In the paper chart I would pencil in personal notes on the summary page which would subsequently help me connect back with the patient. There isn’t a good place for this kind of documentation in all electronic charts.

For example, a note such as “family requests patient be managed at the nursing home rather than in the hospital” would alert me or another physician and help us shape the care to their wishes. Families may be reluctant to bring this up in the intimidating emergency room setting. If the physician caring for the patient is reminded of the goals he can better guide the patient’s care.

- **Support EHR implementations that sustain the patient-physician relationship**

Trust is based on relationship. Relationship is based on eye-contact, listening, being attuned to the patient’s non-verbal cues, and knowing the medical and social details of a patient’s life. When I spend much of the visit looking into the computer without really seeing the patient I know an opportunity for relationship building is lost. When I can give the patient my undivided attention I feel trust grow. This trust may come into play down the line and result in earlier care or avoided hospitalizations.

Care coordination and the medical home require more than a physician and an EHR. In addition to improving the IT infrastructure I believe we need a parallel effort to improve the personnel infrastructure and workflows within the medical

home. Practice redesign and EHR software redesign are both urgently needed to improve the care we can provide our patients.

Conclusion

The ONC has the opportunity to improve care coordination in the US, by encouraging the adoption of EHRs, and equally as important, by establishing policies that result in more robust EHRs and more robust practice models into which those EHRs are implemented.

Continuity, access and connectedness between the patient, physician and staff are the foundations of care coordination. We need information tools that help with the broad and deep synthesis inherent in coordinated care. We need tools that allow the physician to see at a glance the important aspects of the patient's medical history, be reminded of the patient's unique psychosocial situation, and inform decision making with point-of-care reference knowledge. And we need to be able to communicate these important pieces of the puzzle to others involved in the patient's care.

Highly functional, usable and efficient HIT will help us meet our best intentions for this level of care coordination.

Thank you again for this opportunity to share these reflections with you.

References

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