Health IT and Workflow in Small Physicians' Practices

This Question and Answer Brief addresses basic issues that arise in discussions of health information technology (HIT) and workflow in small physicians' practices. We acknowledge that cost and interoperability take the main stage of many HIT discussions; however, we find that the significance of workflow issues is often overlooked.

What is health information technology, and what does it do?

Information technology (IT), particularly electronic computers and computer software, is used for information processing to convert, store, protect, process, transmit, and retrieve information.[2]

Health information technology (HIT) is defined by the Government Accountability Office (GAO) as "technology used to collect, store, retrieve, and transfer clinical, administrative, and financial health information electronically."

- HIT is used for: documentation and medical records; ordering tests, labs, procedures, and prescriptions; imaging; managing care and follow-up; analysis and reporting; messaging and e-mailing; billing and scheduling; and providing patients with resources and information.[3]

- Examples of HIT include electronic health records (EHR), electronic prescribing, and practice management systems. HIT can bring new tools and capabilities that would dramatically expand the ability of clinicians to deliver the best care.

What does workflow mean?

In general, workflow is defined as a series of tasks undertaken to produce an outcome.[1]

In health care the meaning of workflow is often assumed. For example, in 16 articles published in *Health Affairs* in the last two years, the word workflow is used 25 times, but never defined.

We offer the following working definition of workflow in small physicians' practices:

> *Workflow refers to how a practice organizes its staff and resources to conduct defined tasks to produce outcomes.*

> *An important part of workflow is the interactions among staff as they fulfill their tasks using available resources.*

> *Also critical is how information is (or is not) exchanged.*

Tasks can be *administrative* or *clinical*, leading to parallel workflows.

- Examples of *administrative tasks* include: scheduling, recording patient information, medical record retrieval/storage, billing and claims processing, and answering the telephone.

- Examples of *clinical tasks* include: triage, documentation of patient history, examination and assessment, development of a treatment plan, prescription, lab and procedure orders, and clinical follow-up.

QUICK FACTS

- The U.S. lags behind other nations in HIT adoption.

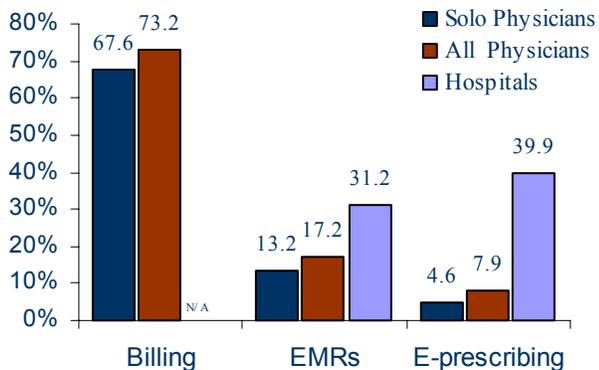**Computer-Based Patient Record Adoption Rates, 2002**
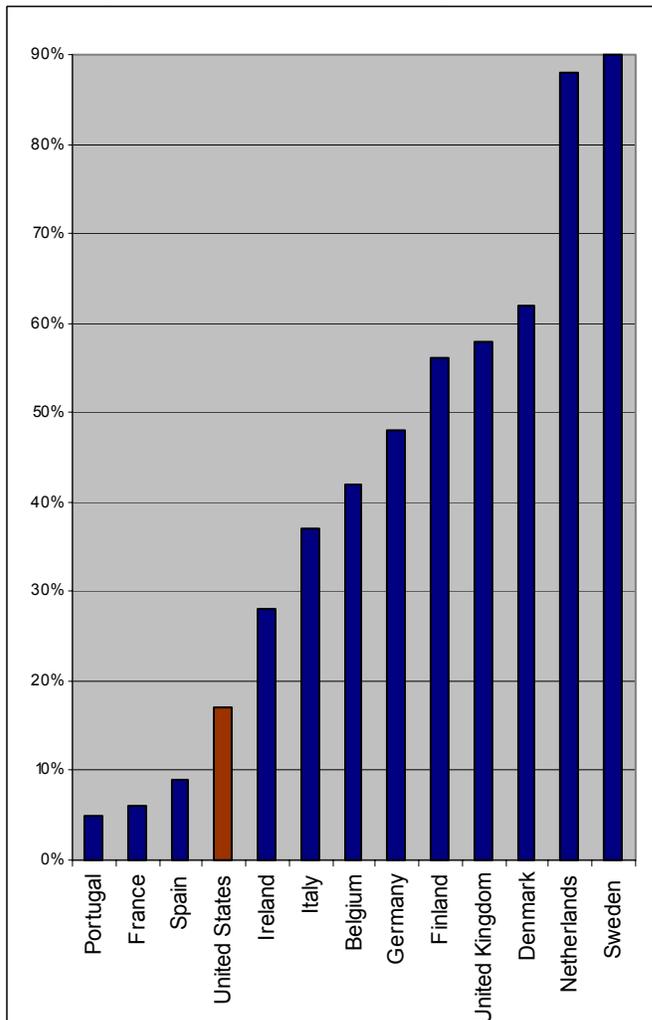
Based on: Chin T. "Americans Trail Much of Europe in Adopting Electronic Medical Records" *American Medical News* Sept. 2, 2002.

QUICK FACTS (continued)

- HIT adoption varies by practice setting and size as well as by type of HIT. The low take-up of HIT in small physicians' offices indicates an "adoption gap."

Use of Computerized Clinical Support Systems

Legend: Solo Physicians, All Physicians, Hospitals

Billing: Solo Physicians 67.6, All Physicians 73.2, Hospitals N/A
EMRs: Solo Physicians 13.2, All Physicians 17.2, Hospitals 31.2
E-prescribing: Solo Physicians 4.6, All Physicians 7.9, Hospitals 39.9

Source: Burt C.W. and Hing E. "Use of Computerized Clinical Support Systems in Medical Settings: 2001—2003." National Center for Health Statistics at the Centers for Disease Control and Prevention, Advance Data #353. March 15, 2005.

- Most physicians (81%) are in practices with fewer than nine doctors, and most care is delivered in physicians' offices.

Distribution of Physicians by Practice Size, 2000—2002

9 or more Physicians 19%
4-8 Physicians 18%
2-3 Physicians 18%
Solo Physicians 45%
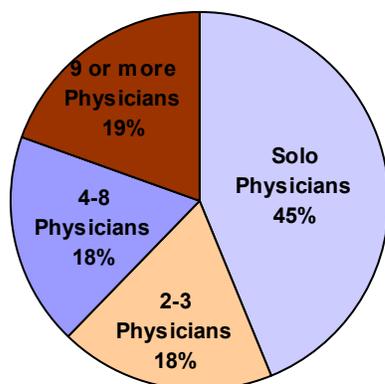
Source: American Medical Association, "Physician Socioeconomic Statistics," 2000—2002

How can we identify and improve workflow?

The National Resource Center for HIT at the Agency for Healthcare Research and Quality (AHRQ) suggests using the following steps to identify workflow:

1. List all the stakeholders in a process
2. Document all activities occurring, including data exchanges among stakeholders
3. Document times and costs for activities
4. Develop a prioritized list of activities
5. Relate all activities to a desired goal
6. Define redundant/unnecessary steps
7. Define necessary but inefficient steps

How can HIT enhance workflow in small physicians' practices?

By automating manual processes, HIT can make complex tasks simpler, more efficient and less costly. A non-random survey conducted in 2004 by The Medical Records Institute found that most responding practices adopted an electronic medical record to improve clinical processes or workflow efficiency.[4] For example, practices reported that:

- Time spent explaining illegible handwritten prescriptions to a pharmacy is eliminated through the use of web-based or typed prescription orders.
- Dictation time can be reduced or eliminated because the patient history is entered directly into the medical record during the visit.

How can HIT disrupt workflow in small physicians' practices?

HIT may require that a small physicians' practice reengineer work processes and learn new technologies, both of which consume time and resources. Typically, smaller physicians' practices have fewer organizational resources to manage HIT adoption and diffusion.

- A study of primary care internal medicine practices found that computerized order entry systems required more time per patient initially, but that with experience, these systems can save physicians time.[5]
- Time spent managing and implementing new IT products may detract from time spent providing patient care.
- Excessive alerts and pop-up screens can be frustrating, slow down tasks, and lead to work-arounds.
- HIT may change how clinicians communicate with each other and with their patients.

Why is this issue important now?

As small practices move to adopt HIT, we need to have candid dialogues among stakeholders regarding the promise and limitations, not only of technology, but how HIT affects clinical work.

[1] See www.webopedia.com accessed on March 29, 2005.
[2] See www.searchCIO.com accessed on March 28, 2005
[3] Miller RH and Sim I. "Physicians' Use of Electronic Medical Records: Barriers and Solutions" *Health Affairs* 23(2):116-126.
[4] Medical Records Institute. "Sixth Annual Survey of Electronic Health Record Trends and Usage for 2004". available at http://www.medrecinst.com/uploadedFiles/resources/EHR%20SURVEY%20RESULTS-2004-Web.pdf
[5] Overhage JM et al. "Controlled trial of direct physician order entry: effects on physicians' time utilization in ambulatory primary care internal medicine practices" *Journal of the American Medical Informatics Association* 8(4): 361-371, 2001.