By Jon Stewart, Associate Editor

CIS is Coming: Dr Andy Wiesenthal talks about KP's Clinical Information System

Kaiser Permanente is setting the national standard for clinical information systems and the electronic medical record, says Dr Andy Wiesenthal in the following conversation with Associate Editor Jon Stewart. He notes that a small but very experienced core of CIS experts in Oakland is assisting the Regions in a deployment process that is very much driven by regional planning. Dr Wiesenthal is the Associate Executive Director of the Permanente Federation for Clinical Information Support and is the lead physician on the national CIS implementation team. He helped implement Colorado's IBM clinical information system, on which KP's national system is based.

TPJ: *What is CIS? Is it a medical record, or is it something more?*

Dr Andy Wiesenthal: "If you ask the doctors and nurses in KP Colorado and Northwest who use CIS, they will tell you it is a superior medical record in terms of its content, clarity, organization, and availability. But CIS is much more than that; it's a way of organizing your work so you can do more. At a minimum, it is a way of managing the flow of information into clinical practice, to doctors and to nurses, such as results from laboratory and imaging studies or messages from members, other physicians, staff. CIS also manages the flow of information going out from the doctor and nurse. And it organizes it all in a way that can be customized, that allows you to work with the data and to engage other members of your team in helping you manage and communicate that information."

TPJ: *Where is this going to position Kaiser Permanente in terms of competitor organizations that are moving in this direction?*

AW: "Nobody has anything like this. There was a national conference on health informatics in San Francisco this past year and the keynote speaker, who was not from KP, said, 'If you want to see the state of the art for electronic health record keeping, you have got to go to Kaiser Permanente in Colorado.' And what we're about to implement nationally is actually an enhanced version of the KP Colorado system."

TPJ: *This system promises a lot in terms of greater efficiency and quality. Have we had enough experience with this or similar systems in KP Colorado and Northwest to be confident that the promised benefits are really there?*

AW: "They really are. Now having said that, I think if you look at the amount of time doctors and nurses spend at work, for most of them using CIS probably hasn't changed very much. But they are doing things differently, and what they are doing is more directed toward the care of the patients than it used to be. This is especially true for nurses, who will tell you that they spend 10 to 20 percent of their day in the old paper world, getting information—charts, test results, etc—together to put in front of the doctor. In the new world, they find better ways to use their time to take care of patients and to assist each other. They are still working a full day, and they work very hard, but the work they are doing feels more like nursing than it did before. The same thing is true for physicians; they are not searching for things. They have what they need, and they can spend more time using that information to take care of patients."

TPJ: *What you say is a reminder that this system is not just for physicians. Virtually all clinical staff will be affected, won't they?*

AW: "Most users are not physicians. And it will affect almost everybody in the whole organization. Think about it: People in a variety of business functions use medical records a lot; their access is now dramatically enhanced. Furthermore, they are now shared contemporaneously: doctors, nurses, and whoever else needs access can all have it at the same time. In the electronic world, the record is available all the time and in multiple places at once. If somebody is entering something into a record in one location, that fact is clearly indicated to the person who may be looking at it simultaneously in another place. By hitting a refresh button, the information one person has just entered becomes available to anyone else accessing that record. In fact, it's very common for two people to be looking at the same information about a patient at the same time and discussing it over the telephone."

TPJ: *When you implemented the IBM system in KP Colorado, did you get much resistance from the users?*

AW: "Sure, but I think we ran into very justifiable concerns. The concerns fell into several categories: First, many people were concerned about their ability to use computers at all. They didn't feel their computer skills were up to the task. So there are lots of things that must be done in the way of training as we implement CIS to help people address those concerns.

"The second thing people were worried about was that it was going to decrease their efficiency. We recognized at the beginning that there is a learning curve and it absolutely will decrease efficiency initially. When you first start using the computerized record, you are not going to be as fast as you were with the old paper record system. So a lot of backfilling is necessary, which is expensive but a very important investment in our people. It takes six to eight weeks for the average person to get up to speed, but we do everything we can to help.

"And there is a lot of support. In the beginning, there is hand holding, quite literally. Somebody just like you, a nurse or a doctor, who is also an expert in the system, is available right there to help you work through what you need to do, right then."

TPJ: *You've said that this is the first time that our organization has ever installed a software program across the entire*

organization, affecting virtually everyone. And this is an incredibly complex clinical information system, not just some word processor. With such a massive undertaking, it must require a large national infrastructure to carry off the deployment.

AW: "Yes, we are hiring thousands of psychologists for major group therapy (laughter).

"In fact, the core Implementation Team in the national office, which is the major interface that the users will notice in any KP region, is only about 10 or 12 people. It's their job to help regions develop rollout plans and structures, to identify the talent and the folks in a region who are necessary to carry this forward. Then we will work collaboratively with them and give them whatever support they need and the wherewithal to get the job done. We can't implement this nationally. This is an operational issue, and all operations are local.

"Consequently, all implementation plans are being made at the regional level. We have models, and we have suggested ways to do things, based on our accumulated experience from KP Colorado and Northwest. We will be learning more from Hawaii and Southern California. So we will propose models that have been successful. The Regions don't have to reinvent the wheel. This is a collaborative effort."

TPJ: *Is the CIS content being developed on the same kind of national/regional partnership level that characterizes the implementation?*

AW: "Yes, it is, and the word content means many things to many people. It falls into several categories as far as CIS is concerned:

"First, there's the guts of the system— the content that is largely going to be invisible to doctors and nurses but is very important. This is something called the 'convergent medical terminology.' This is a big library catalogue of coded terms, about 400,000, that we hope will be an emerging national standard. For example, as doctors or nurses create a diagnosis, it will have an underlying code and logic.

We can then use that for all of the obvious purposes, including fulfilling our obligations to HCFA; for producing coded material for learning about what we do; for mining our data; and for understanding what outcomes relate to what interventions and so on."

"Second, the parts users will see are what the software calls 'baselets.' These are templates that are used in creating clinical progress notes. They can be everything from a big template that includes every part of a progress note, including all the historical data, to a kind of fragmentary baselet, something that just covers a physical examination for a person with a particular kind of problem. This is also the way in which we will embody national practice guidelines from the Care Management Institute, for example, or regional guidelines.

"Another kind of content is 'formularies.' These are inventories of various courses of action doctors can take. They include not only drugs but laboratory tests, disposition of patients, diagnoses—a wide variety of possibilities. Again, we will provide starter sets of these formularies, so clinicians do not have to start from scratch. We will have sets for pediatricians, sets for internists, sets for specialists, and so on. However, there is a lot of flexibility for individuals because they create their own custom formularies.

"Another area of content is 'flowsheets.' These let doctors review the progress that patients with chronic conditions make over a series of visits. A great asset is that the data you enter into the notes automatically populates the flowsheet, so you don't have to do double entry.

"Finally, there will be medical drawings. This will be a library of medical drawings you can call out and put on your screen to illustrate, for example, where a rash is or where something is on somebody's eye."

TPJ: *What's the timetable for deployment?*
AW: "There are currently two releases of CIS being developed and managed by the National CIS team. The first version

(Release 1.0) will be implemented in KP Hawaii in 2001. Then we'll focus on rolling out Release 1.5 (R 1.5) in KP Southern and Northern California, Hawaii, and Colorado. In Hawaii, R 1.5 will be an upgrade from R 1.0, and deployment in KP Colorado will actually be a conversion from their current CIS product. The other Regions will follow soon after."

Thank you, Dr Wiesenthal. ❖

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