IT Podcast for Health IT and Quality of Care Homework

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Health IT in Hospitals: How it can Help
Podcast from the Commonwealth Fund's New Directions in Health Care Series

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Sandy Hausman: In the early 1990s the Veterans Administration began a dramatic transformation of its medical records system. From paper charts to electronic orders, test results, images and notes. Today Dr. Katherine Gianola, chief of Clinical Informatics, can access the records of any VA patient.

Dr. Gianola: Mr. Edwards, good morning. This is Dr. Gianola at the VA Hospital in Richmond. I wanted to follow up with you, I see you were in the emergency room this weekend. Yeah, I got an alert this morning you were in there with some shortness of breath and leg swelling...

Sandy Hausman: It's a godsend, in part because Richmond sits on a major north/south highway and Dr. Gianola works in the emergency room.

Dr. Gianola: I may be seeing snowbirds who summer in Florida and are coming up 95 needing medical care but there home is in NH. I know so much about that patient rolling through the door because I've been able to access his allergies, his advanced directive, all his medical history at all the other VAs he's been treated at. I'm not relying on his memory or that of his spouse who may be very upset given the circumstances. I have accurate information and it's timely information. In the past we would have to make numerous phone calls and hopefully catch someone from another facility and hope they could fax us some things and this just takes hours and hours, and now with the click of a button I can immediately see what I need to know without those phone calls and without the lengthy fax procedure. It's really heightened patient satisfaction, too, the waiting, the endless waiting can be eliminated or minimized.

Sandy Hausman: Since implementing electronic record keeping the VA has improved nearly every benchmark of quality in health care. It increased the pneumonia vaccination rate among at risk patients to 94% up from just 29%, saving an estimated 6,000 lives and 40 million dollars a year. Overall the VA claims cost per patient are 32% lower using inflation adjusted dollars then they were a decade ago while the medical consumer price index has increased fifty percent nationwide. But would electronic records save money for major medical centers outside the VA, or for community hospitals? Until recently, we had limited data to answer those questions.

Dr. Bates: Most of the data that we've had in the past about IT and hospitals has either been models which projected how much benefit one might get from putting in IT or single site studies where someone looked at how much benefit there was but it just came from one place.

Dr. David Bates is chief of the Division of General Internal Medicine at Brigham and Women's hospital and Medical Director of Quality Analysis for Partner's Health Care in Boston. He says the lack of Data to support the shift to electronic records in hospitals put federal funding at risk.
Dr. Bates: Congressional budget office last year went over the available evidence on this topic and they suggested that some of the studies were significantly overstating the savings to the health care system as a whole.

Sandy Hausman: But at the Center for Knowledge Translation and Clinical Innovation, Dr. Ruben Amarasingham, was convinced that electronic systems were needed.

Dr. A: Medicine is just extraordinarily complex and getting more complex. The number of treatment possibilities, number of guidelines that are available to physicians and nurses in the care of the patient, particularly in the hospital, are increasing every day. There’s newer studies that are coming out so I think decisions for patients are very complex, decisions for physicians are very complex, you know good information systems that provide knowledge at the point of care can help with managing this huge stream of information. I think that's the first point. The second point is that in addition to the information explosion in medicine you have increasing fragmentation of care and multiple providers. So in the hospital setting you may have a team of physicians and you could have several teams of physicians from different specialties, You can have multiple teams of nurses, physical therapists, nutritionists, social workers, case managers. Increasingly hospital work is performed in shifts and so you have a lot of these actors within the theater of medicine that are working on different schedules and may not have a lot of face-to-face communication and there's just simply many people to communicate with and a good electronic information system may provide a coordinating influence and certainly could aid in communication between all these different players within the medicine sphere.

Sandy Hausman: So with support from the Commonwealth Fund the assistant professor of medicine at the University of Texas Southwest Medical Center set out to show that electronic information systems would allow hospitals to provide better care at a lower cost.

Dr. A.: We initially wanted to ask the question how would safety net hospitals fare in creating electronic systems that could provide health care and report outcomes. We realized that there was few instruments to measure IT in the first place and it would be very difficult to say from one hospital to another to compare their information systems and determine what they put into place. So we started five years ago developing an instrument called the clinical information technology assessment tool which is designed to measure the degree to which a hospital is paperless, and by that I mean the normal functions that a physician carries out, how many of those functions are electronic or automated. I’ll give you a very clear example, if I was a physician ordering a blood culture on a patient, the first question is, can I order that blood culture completely electronically without talking to anyone or writing anything in a manual way. We looked at all the processes in a hospital like that and selected what we thought by consensus and with other experts what were the most key with respect to patient outcomes. We graded on the scale as whether or not the process was electronic in that hospital versus being on paper. That would be the first part. The second part, we wanted to set a very high bar for IT because the feeling that we have in reviewing the literature and examining the literature and talking to other physicians is that you could purchase an expensive piece of technology but it may not be very effective, and so our instrument is designed to first to address, for that given information process, let's say the blood culture that you're ordering, is that process available electronically and then second if it's been installed and if it's available, do the physician's know how to activate it, and then third, do they choose to use that electronic process over other alternatives. To score highly on this instrument, a hospital would have to be able to satisfy all three criteria for any given information process.
Sandy Hausman: Using this new research tool, Dr. Amarasingham and his team began rating 41 medical centers in the state of Texas. Large academic hospitals, community-based centers, and private hospitals. They looked at notes and records, order entry, decision support and test results in patients who had myocardial infarction, cardiac bypass surgery, pneumonia, and heart failure.

Dr. A: we picked those conditions because there's been extensive study on those conditions already and they're thought to be sensitive to guidelines in general.

Sandy Hausman: Their findings showed a clear clinical advantage for medical centers using electronic IT.

Dr. Bates: Having order entry in place, patients who had a heart attack had a 9% lower mortality. Those who had bypass surgery had a 55% lower mortality. If hospitals had decision support in place, decision support is things to help doctors make better decisions there was a 21% lower overall risk of complications and most interesting to me actually was that automated notes were associated with a 15% lower risk of death for all causes which is pretty impressive. There are very few hospitals nationally that have gotten around to automating all their notes.

Sandy Hausman: One reason, switching to electronic records is expensive.

Dr. Bates: It varies a lot depending on how big the institution is and exactly what they're getting. Institutions spend as little as one million dollars to automate for a really small hospital to on the order of 100 million dollars. An average for a 700 bed hospital would be in the 30-50 million dollar range so it is quite expensive so put it in context it's one of the single largest expenditures that most hospitals make over a 5-10 year period.

Sandy Hausman: But Amarasingham found that hospitals could offset their investments with substantial cost saving especially in the area of testing.

Dr. A.: I might be seeing the patient in the emergency room late at night and they might say that I'd been tested for this condition, I received these series of tests at another hospital or a clinic, but those tests aren't available to me at that moment and I'm not able to as a physician get that information from an outside hospital or from an outside clinic and if the situation clinically is urgent enough I'll have to proceed and I'll have to repeat the test. Sometimes repeating tests is not always positive for the patient because tests carry their own risk and then second for health care costs it repeats a lot of perhaps unnecessary testing. Prior scores on test results, order entry, and decision support had reductions per hospitalization of $110 per hospitalization for test results, $132 for order entry, and $538 for decision support for every ten point increase in the score. Those are pretty significant, if you multiply that across many institutions and many hospitalizations there could be significant savings. We also noted that higher scores in order entry were associated with 9% and 55% reduction in the odds of death for myocardial infarction and coronary artery bypass graft procedures and surgery.

Sandy Hausman: Cost savings came by in spite of the fact that IT systems made no difference in patients length of stay. Amarasingham speculates on why that might be.

Dr. A.: The length of stay in the hospital industry has been reduced to some of its lowest level in 30 years. A recent study that showed that the last 30 years length of stays decreased substantially because of multiple external pressures including scrutiny by payers and the federal government. We speculate in our article that maybe any of the efficiencies that are brought by IT are washed out by these enormous
pressures to discharge patients within a short period of time. But, within the hospital stay, the intensity of services that need to be provided may be reduced by a strong information system. If you have more information on what’s been done as an outpatient for your patient or if you know more about the patient’s condition or you’re given better guidance about what to do with decision support then you may not need to do as much testing and so the cost per hospitalization may decrease even though length of stay may not.

Sandy Hausman: Armed with this important data and money from the new economic stimulus package passed by Congress, many medical centers may now move forward more quickly to implement electronic information technology. As they do the VAs Dr. Gianola hopes the federal government will issue guidelines steering the nation's medical centers toward a common platform for electronic records.

Dr. Gianola: There are standards but primarily they’re focused on architectural or security standards, encryption standards and protecting the medical information, but it's the interconnectivity that still is the challenge. There are discussions in our area about how to make some of the major hospitals more interconnected in that regard so that as patients move perhaps from one hospital to another outside the VA system they get care at a community hospital and then come back to us we're still having to resort to the old methodology of OK now fax us the discharge summary.

Sandy Hausman: The new economic stimulus law which directed 19 billion dollars to HIT requires that the government oversee the development of standards to enable the national exchange of electronic information by 2010. For now Drs. Amarasingham and Bates say hospitals should take their time and choose the right program for them, then quickly identify and eliminate the inevitable errors that occur when new systems are put in place.

From the Commonwealth Fund, I’m Sandy Hausman.