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*Interview of
John Glaser, CIO of Partners Health Care*

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David Harlow: This is David Harlow at HealthBlawg, and I have with me today John Glaser, the CIO at Partners Health Care in Boston. Hello John, thank you for joining us.

John Glaser: It's a pleasure, David.

David Harlow: So Partners Health Care - for those of you who are not familiar with it - is an organization that includes ten hospitals, 7000 physicians, 45000 employees. Have I got that right, John, more or less?

John Glaser: Yes, you do.

David Harlow: And John has been the CIO at Partners for quite some time. He's also been acting as an advisor to the ONC on implementation of the HITECH Act since last spring. We'll try to steer clear of government-related issues today and focus on issues at Partners. So John, moving beyond the numbers, how would you describe Partners Health Care and what it means to be CIO of Partners?

John Glaser: Well, Partners Health Care has got a couple of attributes. One is it's large, so we've got another number to put in there, it's about 7.9 billion in revenue and in addition to its hospitals and extensive array of outpatient clinics, physician practices and 90 key facilities, it's a very large, very complex organization. It's also quite academic given its two founders [Massachusetts General Hospital and Brigham and Women's Hospital, both of which are major teaching affiliates of Harvard Medical School]. So it has tremendous resources, tremendous talent, some world class organizations, and using those assets it can be a challenge at times to line everybody up and have the organization move in a concerted direction. I guess that's true of all large organizations, although we certainly feel that at Partners. And while that can be difficult at times, the fact that there is such talent, and there is such a commitment to the mission of care, research and education makes it worthwhile and enables us to accomplish - from time to time - some very remarkable things.

David Harlow: Would you say that things have gotten easier as the association has lasted longer, or more complex as it's grown larger? You've been with the organization quite some time now and I was wondering how things have changed over the years.

John Glaser: Well I have been for quite some time. I've been the CIO since 1995 and so that's a little over 15 years. And prior to that, CIO at the Brigham for another seven years, so 22 plus years in the family as a whole.

So I think it's very clear that as the organization has matured and has begun to understand how to work together, that it is more effective at working together, bringing together very disparate organizations, large AMC's, small community hospitals, for example, bringing together people who may or may not have a track record of working together. So it is better at moving as an integrated system than it has been in years past.

On the other hand, the challenges it has to address have become more significant so there are greater cost pressures today than there were ten years ago and there are greater quality pressures than there were ten years ago.

The pace of medical innovation and events are more significant. As our community of clinicians and others have become more experienced with the technology, they also become more demanding and more sophisticated. So the demands and the expectations are higher and have been paralleled by a growing ability to work together as a collective.

David Harlow: So going back to a couple of things that you said specifically, I'm wondering if you could tell us, how does the health information technology function within Partners help to enable the organization to deal with some of these issues - whether it's adherence to quality measures; whether it's dealing with payment issues - and, how does your function, your part of the organization's function integrate with the clinical function?

John Glaser: Well, there are a number of ways in which we try - and, at times, succeed - in helping Partners address these challenges. At times we take processes and make them more efficient and save money in addition to having those processes work faster, be less error-prone, etc.

By providing data that comes out of the EHR, the organization's in a much better position to look at variations in care practices and identify those practices that are more efficient than others, that are of better quality than others. I actually have the data to assess quality and to then deal with that variation in whatever manner it chooses to do so. So the fact that you have clinical data, and data that also brings along the cost component of that clinical data, allows us to look at where we need to do some work, where we don't.

So there is for example a monthly report put out on dozens and dozens of quality measures and they are coded red, yellow, green depending where we are relative to the national benchmarks and that again allows us to focus on areas that do need some attention. In addition to that you can use the systems like CPOE or the EHR to introduce logic at the time of care, so to make sure that an order is a safe order or that an overdue health maintenance activity has been noted and followup is occurring.

So through the transactions systems one has the ability to carry out a lot of the guidance and recommended care that comes out of the data activities. So there is a series of analysis capabilities and transaction capabilities that help address this complicated mixture of cost, quality and safety. But also in addition to that is the ability to adapt. So for example it's fairly clear in the next several years - 3 to 5 for example - genetic testing

will be increasingly a larger component of health care because of our greater understanding of your genetic makeup and how it guides treatment decisions, or what disease you really have.

And so the ability of systems to adapt and to capitalize on advances in medical care, to capitalize on advances in care models such as the medical home or accountable care organizations, and also capitalize on the gains that new technology can bring - that we are trying to make sure that our infrastructure and applications are able to move as the collective environment moves.

David Harlow: Now I understand a few years back you established together, Partners established together with Harvard Medical School a center for genetics and genomics and is this what you are talking about, is this informing some of the care management, is there genetic testing data that's included in patient profiles that can be used to guide clinical services?

John Glaser: Yeah, we formed several years ago what is now called the Partners Center for Personalized Genetic Medicine, and it has two major roles. One is to facilitate research into the genomic basis of disease or treatment variability. So for example if you are clinically depressed and given an SSRI, it works well a third of the time, medium well a third of the time and not at all a third of the time, and so helping investigators determine whether there's a genetic underpinning to that.

So we've learned a lot and this will help accelerate research into how genes contribute to our disease and our treatment success for example. In addition to that, that is also not only because of the advances themselves but the knowledge of how do you store genetic test results and what does genetic decision support look like, how do you present genetic test results to the clinician. It's begun to make its way into the clinical systems, largely at this point focused on cancer, but we do have decision support that says before you order this chemotherapeutic agent you should run this genetic test because that will tell you whether the agent will or will not be successful. We do have a piece of software called the patient genome explorer which sits right beside the results viewer for chemistry results, and this allows you to look up genetic test results and understand the ramifications for the patient you are treating.

David Harlow: Is there an overlay now with the GINA legislation on top of HIPAA in terms of privacy requirements and protection requirements, encryption, others, relating to genetic information that's on the system or does HIPAA deal with that sufficiently?

John Glaser: Well, there are clear genetic privacy ramifications for all of this and it gets complicated. I will give you two examples. If a genetic test were to say that you or I were at great risk of a debilitating form of dementia, one would say, well, I ought to keep that private, because of - for lots of different reasons.

On the other hand, a genetic test result that says you will be a slow metabolizer of sulfa drugs, you might say -- jeez, I'm less worried about loss of job or loss of insurance based

on that. But I do want my doctor to know because I do want to make sure they don't inadvertently overdose me on a particular drug. So genetic test results actually span the gamut of those which are highly sensitive to those which I think most people regard as no more sensitive than a blood potassium reading.

And given that, nonetheless, what we have decided to do is to treat any genetic test result as being in the same category as the most sensitive data and so this is HIV data, this is mental health data - we treat that and provide both the policy procedure the consenting processes for example but also the IT controls over that type of data that we would - I think perhaps society may evolve to the point where it categorizes genetic data into different forms or buckets of sensitivity. But until that's the case, we will treat it as the most sensitive.

David Harlow: So you're not looking to get patient consent to disclose certain types of genetic information like for example the way you would...

John Glaser: Yeah just as you would on any sort of highly sensitive set of data.

David Harlow: Okay. One area of interest at Partners is the electronic health record and the use of electronic health records over time, which, I understand, is a home grown system. Is that right?

John Glaser: Yes - the bulk of our, we have approximately 4200 physician users of our outpatient EHR, 85% use the homegrown version and 15% use a mix of GE and a couple of other systems that have been in place for quite a while.

David Harlow: And what would you recommend, having had the experience with both? What words of wisdom would you have for other providers who are looking at implementing EHR systems in this era of HITECH incentives?

John Glaser: Well I think these systems, whether you build them yourself or you buy them from the market - and most people buy them from the market, and most people should buy them from the market - these are a challenge to get in place. They are very invasive to the workflow and so a physician, or a nurse practitioner or any other health care professional who now is documenting on them, writing orders on them, reviewing results, - it's very invasive. It's not something that is kind of off to the side.

And as a result there is a great deal of demand for systems that have a lot of strong features, functions, but also are very usable and quick. It requires that workflow be understood, changed if necessary and that includes where do you place printers and things like that. It requires a good deal of training and some strong support, and I think practices who undergo this should be prepared for several months - and it seems to vary at least in our practices, sometimes it's as long as six months, sometimes it's short as two months - where there is a form of disruption and people just getting their feet wet and getting oriented to this. So there are a lot of demands on the systems, there are a lot of demands on the implementation process and the workflow change process and there are a

lot of demands on support, and obviously there are a lot of demands on the practice who goes through this. Nonetheless once you get through that we have never had any clinician of any form say I wish I could go back to paper.

They clearly see that the care is better, that there have been some efficiencies gained, there's been some challenges. Sometimes it takes longer to do certain tasks. But nonetheless it is a journey that is - both from the care perspective and the cost of care overall but also the ability of the providers to say I'm practicing good medicine, must be able to say that. So I think it is a hard journey but it is a worthwhile journey that the federal government incentives recognize the importance of us collectively moving in that direction.

David Harlow: Part of the issue is the interoperability, the opportunity for free exchange of data from one provider's electronic health record to another, to be able to follow a patient across care settings. Given the size and the scope of the Partners network, I'm wondering how important the development of RHIOs and health information exchanges are to Partners? Are patients who are seen within the Partners' network receiving all of their care within the network?

John Glaser: No and I think that some networks are more closed than others; the VA, Kaiser, are more closed than others. For example, almost 50% of our referrals - remembering we're academic at our core - come from physicians outside of Partners. So we have extensive movement of people in and out of Partners, some stay within the Partners community but a lot don't.

So I think this notion of exchanging data is critical, and it runs a sort of a gamut, it runs a gamut of giving the referring physician access to the core institutional systems, to the gamut of the movement of a structured transaction - maybe it's an operative note, maybe it's a set of chemistry results - from one system to the other. At times we have clinical affiliations which are very strong and we wind up with shared scheduling systems, shared email systems and much more extensive integration and interoperability.

So I think the basic rubric of putting out standards and encouraging the exchange is a very important set of activities. It creates parallel issues, it creates issues of making sure that the privacy and the security steps necessary are put in place, because we now have different privacy and security challenges when this occurs. It also places a challenge on the providers who now may be going into their EHR and seeing lots and lots of data from lots and lots of other providers and saying holy smokes, I have a brief period of time with this patient, but I have 200 notes and 180 of them are not mine. How do I wade through these and determine which ones are the most important? So a knowledge management function, and a decision support function, and a set of guidance using all of the above, might help the physician zero in on the most clinically relevant - becomes a challenge. So there is, there is great gain to be had. It does bring some parallel challenges that we still need to address.

David Harlow: Have you seen some movement in the direction of being able to wade through those kinds of notes, the kind of volume of notes there might be from outside providers, any sort of knowledge management systems that you are using or that is on the market today?

John Glaser: Well, I don't know about on the market. We are, as an IS group, unusually academic in our approach - about 15% of our staff are funded by federal grants or through industry partnerships to explore leading-edge topics in healthcare IT and they run the gamut from what is known as telemedicine, to genetic medicine, to knowledge management – things like that.

But we do have some people who are looking at different techniques to be applied to putting a layer of logic on top of complex and idiosyncratic data coming in, and teasing out that sort of data. So, for example, if you know that there are, let's say, 200 notes and that the patient is being seen by a cardiologist, you just have the system be able to identify that subset of notes that appear to have a bearing on the consultation in question and being able to categorize those notes for the doctor, so that he or she can say jeez, of the 200, there are five that are related to prior cardiac events, there are four that are related to what appear to be cardiac procedures. So anyway to help to filter through and surface that subset of note, or other data, which appears to be the most salient. So we are learning. We are trying to a bunch of different techniques to figure out how to do that.

David Harlow: On a related note, some of the tools and products that have been on display at HIMMS this week or announced at HIMMS this week down in Atlanta – I'm wondering whether there are categories or particular types of tools coming out of that conference and from the exhibitors there that are of particular interest to you, something that catches your interest?

John Glaser: Well, I was at HIMSS for only a day and I was only briefly on the exhibit floor so I didn't get a chance to see what was going on. I think in general obviously the major topic is the federal stimulus funds and how to address those. So I think tools that invariably help providers to meet those meaningful use requirements or the standards and particularly help the smaller physician practice, the smaller hospital, which have very low adoption rates and have in general, not entirely but in general, not been as well served by the market as the larger organizations as technologies that are directed there are of great interest. Anyway I didn't have a chance to personally see a whole lot of the exhibit floor.

David Harlow: Fair enough. What would you identify now as areas of opportunities as well as areas of challenge in adopting not only EHRs but also other health information technology tools across the health care spectrum? Maybe speaking from your experience within Partners but also as you mentioned looking at some of the smaller providers which is where I think collectively we're hoping there will be greater adoption.

John Glaser: Well I think broadly, and across the country, we still have the challenge of getting higher adoption rates and now meaningful use of those technologies so those of you folks listening to this know the rates as well as I – but they're low. So that challenge

which has been with us for a while, it's still with us, and perhaps we'll have a series of factors that will cause us to pursue it more aggressively and I think in particular, as has been mentioned before, it's the smaller provider organizations which need the most innovative approaches to the delivery of these systems in helping those patients, and remembering that two-thirds of all of outpatient visits occur in physician practices of three or fewer docs. That's where the bulk of care occurs in the US. So there is - that challenge is going to be with us for quite some time - several years. And all that implies - the difficult work of implementation and some of the comments mentioned earlier. In addition to that it is also clear that there are some opportunities emerging or at least will be different as result of broad adoption of interoperable electronic health records. One is itself the management of interoperability at scale, protection of privacy, the assurance of standards, helping docs deal with large volumes of information. And so there will be a series of things we'll have to do and understand this is when you have interoperability at scale, what gain really occurs but also what challenges are present or revealed that we still need to develop tactics and tools to deal with.

The other is that there is a clearly going to happen or beginning to happen now, large accumulations of data about patients which can be used for comparative effectiveness research, clinical research, post-market surveillance of medications and devices, public health surveillance, etc. And I think we have a lot to learn about how to manage that data, not only the protection of privacy but also how to distill patterns out of data which is often conflicting, noisy or incomplete.

The third area - we still have a lot of ground to cover - is how best to engage patients; we use the technology to engage patients - personal health records, personally-controlled health records, a lot of targeted applications where you can measure your blood sugar or your blood oxygen saturation, or whatever it might happen to be - people with chronic disease; we have a lot to learn there.

So lots of promise there but still relatively small levels of adoption and very limited understanding of how much of a contribution this will make to the management, let's say, of a chronic disease, or the gradual improvement of health. So there are a couple of big areas.

I guess one other big area is - if we have large bases of knowledge or decision support across wide ranges of systems - is managing this knowledge base. A knowledge base of rules or order sets or templates, it is now quite sizable, which changes from time to time. And I think one of the factors of our growing knowledge of the relationship between the genome and our health is whatever volume of decision support rules you think there are now - it's going to go off the charts as that becomes increasingly incorporated into medical practice, so how best to manage that knowledge base and to ensure that it's effective remains a daunting challenge.

So, as we address the core one, getting these systems in place and used well, and broadly looking at a series of challenges coming up that will result from the broad use of interoperable electronic health records.

David Harlow: Do you see a direct correlation between the advances in the systems and the return on investment, if you will, or is this just part of the infrastructure that has to be in place in the future? Is this just like you need to have a telephone, you need to have this...

John Glaser: Well I think it's a combination of things. One is technology at the end of the day is a tool and, per se, guarantees no ROI and you see that in some of the studies they've done or sometimes great gains in patient safety have occurred, sometimes they haven't, and sometimes the organization runs more efficiently and sometimes it doesn't.

So we have very variable outcomes and partly because it's not the tool that delivers the outcome, it's the way that it is implemented and how effective it is. So we will continue to see that because again it is at the mercy of the skill of change management and leadership and a wide variety of other things so, given that, we also recognize that that the nature of the return is really diverse, at times it is very intangible - I mean, what's the ROI of email? Beats me but, nonetheless, few of us could get through a day without it. At other times the ROI is quite tangible because you could say golly, we are cutting real costs here or making real revenue. At times the outcome is tangible - it may not always be expressible in terms of dollars. You can, but that's not the point. So if you are, if you deliver safer care, you can certainly measure the dollars there but those aren't really the measures that people are focused on - or improved service.

So I think we will see a return broadly speaking - realizing how tangible or intangible, how dollarizable or not dollarizable it is, to the sort of settings in which it's delivered. I think at the end of the day it is one of those things which you say listen, this is a given. It is hard to imagine that we would sit here today and say if ten years from now we ran our health care system on paper that would be okay or a good thing.

I think there are very few people who would stand up and try to carry that argument forward - at a face validity level, and at an empirical level, it just doesn't make sense. So I think the basic idea that if we really want to make extraordinary gains in the care in this country you have to have this foundation in place. The foundation doesn't guarantee it but it's hard to imagine that you would accomplish it without it.

David Harlow: Well, thank you very much.

John Glaser: My pleasure. I hope this is interesting and informative, and I appreciate the time.

David Harlow: It certainly is. I've been speaking with John Glaser, Chief Information Officer at Partners Health Care in Boston on implementation of health information technology and the improvement of health care. Thanks again, John.

John Glaser: All right. Thank you, David.