**Interview with Dr. Richard Milani on the
Ochsner Health System Epic EHR – Apple HealthKit Integration**

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David Harlow: This is David Harlow with HealthBlawg and I'm speaking today with Dr. Richard Milani, Chief Clinical Transformation Officer at the Ochsner Health System, which has implemented HealthKit's integration with Epic Electronic Health Record System. I'm very interested to hear about this. Hello, Dr. Milani and welcome to HealthBlawg.

Richard Milani: Well hello back and thank you for inviting us.

David Harlow: Dr. Milani is at Ochsner Health System and as I said he is Chief Clinical Transformation Officer and Vice Chair of Cardiology, and, his experience in cardiology has been an asset to the kick off, of the Healthkit integration. I understand that you have begun with a beta test in congestive heart failure is that correct?

Richard Milani: Both congestive heart failure and in high blood pressure, hypertension.

David Harlow: I wonder if you could describe those briefly, and then we'll talk more about the broader integration?

Richard Milani: Well, I think to understand it we probably have to talk about the broader integration to some extent. We started back in this endeavor pre-HealthKit, early in the year. So, again the focus was on heart failure primarily to begin with, our plan all along was then towards of the end of the year to break into hypertension. We are an Epic client. We began by evaluating heart failure readmission, which is a nationwide problem for patients with congestive heart failure, as you may know it's the number one reason why patients in the United States are readmitted to hospitals. So, it certainly was a good one to go after, and we began by sending patients home -- well even before that we began by actually doing a very detailed evaluation of patients during their hospital stay, and to do this we had to create a variety of algorithms within Epic and some decision support tools.

Ultimately, by the time patients went home they would be going home with a wireless scale, where the data would be transmitted through interfaces into Epic and then in front of a pharmacist that would be managing any changes in their medication necessary to maintain the appropriate weight. So, again for the audience perspective, heart failure is a condition where if it's deteriorating it often can show up as a fluid accumulation with weight gain and so changes in weight can have significant meaning for us. So, it would prompt a phone call, we saw that and it could lead to a benefit. So, we've sort of been in this space already in terms of monitoring individuals. The difference was that we had to create our own interfaces to get that information into our systems and ultimately into Epic. So, when HealthKit, became available the support, that's the opportunity to not only expand into other areas and other modalities, but also to use the interface that HealthKit provides.

David Harlow: My first question then leading out from there is, can you describe the benefits of using the integration? I understand you're saying that you don't have to build it yourself, for each new application, and the question is, what other sorts of applications are available now, do you have a view into the future in thinking about what other kinds of applications you would like to see integrated with HealthKit? I mean the CHF use case is a very good use case and many of the other use cases that we have been hearing about in the general press around HealthKit seems to revolve around fitness trackers and so forth, and I'm wondering how useful that is in the clinical setting, and whether there are other applications that would be more useful in the clinical setting

Richard Milani: Let's move on to high blood pressure as an example. So, it's a common chronic disease, one out of three adults have it, and there are a lot of things that can impact hypertension. So, at the very basic we'd like to get your blood pressure, something we've been asking for for decades, it's not a new thing that we ask patients to buy blood pressure cuffs and take their readings, and having done this for quite for some time, patients then would have to write it down on a piece of paper and that sort of stuff, and then they forget the paper or it'll be very unclear sometimes, or they forget to write it down and they're taking the blood pressure. So, at the very basic, just having somebody go home with a wireless cuff that integrates in the system, that's effortless, it's not, there's no extra steps for the patient, improves compliance in doing so and obviously gives us more robust data to look at. But now we can talk about other aspects of care. So, for instance as you brought up fitness, again exercising more may be losing weight may be not, but certainly exercising more and hopefully losing weight, both those can lower blood pressure. So, a nice thing to be able to do would be to present patients their data and showing them, how when their activity went up, they saw a fall in their own blood pressure, and that's pretty self-reinforcing, so we think that that can lead to a greater level of patient engagement, a greater level of patient adherence, when patients can track the things that can influence their disease state.

David Harlow: That's great, yes and I think the feedback, I mean it's been established that the feedback to some patients at least will be valuable, and will move the needle in terms of adherence, to new regimens and so forth. One question that I have is sort of, whether clinicians are really interested in seeing all of this information and what you are doing on the clinician view end to filter the information, because I imagine my doctor doesn't want to see my step count everyday if I'm wearing a fitness tracker, but might want to see some higher level analytics of some sort. How do you digest this tremendous amount of data so that it yields some actionable information?

Richard Milani: Well, we agree that, data visualization for both provider as well as the patient is very important, in determining whether or not these kinds of programs will be successful. So, just giving back to patients, data like we do for lab reports, lab reports are horrible and I am sure you've seen what a typical lab report looks like. I mean it was built for doctors and poorly designed for somebody to try and understand if you aren't a physician, and then I think you may or may not have seen you know, several years ago Wired Magazine attacked that and came up with their own patient centered lab report, it's fabulous, and so we are strong believers, in how data is aggregated and visualized and there are lots of additional cues that one can provide in the data patients that can alter their adherence rates, and we can't get into that today, but the data

presentation is what your question is about and I think it's very important. Likewise we have been as concerned as you are in term of how the data comes to providers. So, providers can have the opportunity to be able to choose how they want the data received. Do they want to see a monthly report or do they want a weekly report or do they want a quarterly report or that sort of thing, and we can, we put together a sort of report formats or alert, so to speak that alerts the physician in their inbox that there is a report available of Mr. Jones, it's the monthly frequency that they you have to see and here it is, and we try and present the way that's it doesn't take a long time to decipher what the answer is.

David Harlow: So, you're envisioning doing a lot of clinician based individual clinicians' customization of views, I mean, how does that work? You are large organization, a dozen hospitals almost 1000 clinicians, does going there need to be a standard? Would that be established at a department level? How do you see that working?

Richard Milani: I think… Yeah, I feel the way we are building reports will be fairly standard. The frequency by, which a physician wants them, will be determined by the physicians in terms of the frequency of the alert. So, we are not customary, we are not making 1000 different customized reports, it's just the frequency by, which one receives them is customized based on what the physician wants for that individual patient.

David Harlow: Sure, and then through HealthKit and the Epic integration, these data become a part of the EHR?

Richard Milani: Correct.

David Harlow: Okay. Is there a concern, have there been discussions about potential additional exposures to liability due to additional data being entered into the chart that may or may not lead to actions or recommendations on the part of the clinicians?

Richard Milani: Well, we've certainly discussed this like any good steward of health care with our legal department and thus far we have sort of organized ourselves in a way that they're comfortable with, but I mean an alert is an alert -- the physician ought to be able to determine how he or she wants the alert. Obviously most of this data for many of these patients is for instance in our hypertension program. We have an intermediary in between. So, again in the heart failure program we have an intermediary. So, the physician is going to get the data and the physician is going to get the reports, but if there is anything that is a, for lack of better term, a panic value, or something that's very risky to an individual, there is going to be some follow up done through the intermediary whether it be an APC or a Phram D, and that's going to get in front of them first, so that something can get done.

David Harlow: Okay. And do you see any particular barriers to patient adoption? We've talked a lot of about the physician end of things. This has been pushed out previously to patients with certain diagnoses or conditions, and how amenable have patients been to using these devices, what proportion of your patient population have the infrastructure at home, to use these things, or do you send somebody out to set them up.

Richard Milani: The answer is yes. So, let me give you more details. So, the first thing is --
forget HealthKit and forget us -- is this a market that is organically growing? and the answer is,
yeah, by a large degree. So, when you look at first of all apps in general you know, and I think
there is a pretty healthy growth of general apps, and then when we look at health apps it doubles
the growth rate of general apps. So, the point being is that the public is desirous by their actions
of these kinds of activities, number one. Number two is so much so that we opened up a, sort of
a, I hate to use the term 'retail', but that's exactly what is, so, but it's semi retail sort of space in
our new primary care space, we call it the "O" bar, 'O' is Oschner. So, it's the "O" bar and it's
much like a genius bar would be set and up and the concept behind it is simple. Number one is
we offer two things both apps and devices. The apps are downloaded into, we have it's literally a
bar where you can sit down and we have about six of these iPads that are on stands, and we've
downloaded probably two or three hundred of the best apps that we've screened and they're on
there and they can play with them at their leisure and we have a "genius" behind the bar, they can
ask questions to, they can show them, walk them through, show how the apps works. A popular
one just as an example is Fooducate -- I don't know if you know anything about Fooducate, but
it is a great app with regards to knowing what you're eating and what might be better alternatives
and you could just simply…

David Harlow: Yeah.

Richard Milani: I mean you're familiar with it, and so that's a popular one and things like that,
and of course we sell devices too like FitBits and Jawbones and wireless blood pressure cuffs
and scales and wireless glucose meters and so forth. Well, patients love this place, we've had
several thousand visitors, we've only been open since April, we're getting a lot of positive
feedback from patients that this is a wonderful thing and we make it easy, so that if you're
intimidated -- So, let's go back to the patients that may not want to that sort of technology averse,
they don't understand technology perhaps they might be older. This is an easy way where
someone can show them how really simple this is, and they can ask what they think are dumb
questions and not feel bad, and have someone who is very nice and knowledgeable, show them
how they can use this to better themselves or help them understand better their chronic disease
process. So, it's been very positive experience for patients.

So, to help answer your question, do you think patients are going to want to do this? Certainly
not every patient, but many patients have really enjoyed the experience. With regards to the
blood pressure thing as an example, we think that the best way to do this would be if a patient
had a wireless blood pressure cuff and if they took their blood pressure a few times a week or
once or twice a week that would be fabulous and that's way more data than what we're getting
currently, but again back to the story about adherence, if you want to get best adherence, you
can't ask the patient to do much more than that. The moment you asking them now take that
information and go somewhere else and write it down, it drops off. Same thing with weight, I
mean most people don't mind getting on the scale, in the morning, after they go to the bathroom,
but now if you said okay take that number and go enter it somewhere or do something that's
where you see a big drop off. So, we think that obviously starting with the best and working our
way down that the most effective intervention or assessments are going to be where they just do
the thing that they were doing do anyway and nothing else, and then magically you know we get
the "data," but you know, not everybody is going to want to spend the money.

And certainly if they have the ability to text us, we can receive an SMS text using a short code. They can just put in BP and their blood pressure and that information will get to us, but unfortunately again that takes an extra step. The other thing is that one of the advantages of the HealthKit piece is that there's going to be lots of new products and better products that can integrate automatically and get to us. So, we're just looking at the products that are good today, but as you know better than anybody, these products are dynamic and there's new things coming out all the time that monitor various things and some of which could be very helpful to us. I can tell you we're embarking on a project now where we're looking at patients with obstructive sleep apnea and who are getting home CPAP, and the compliance rate is sort of intermediate, but we now have the data that can be transmitted to us directly and into the record that they used it six hours last night or not at all, and so, we can look at that and see how often that the CPAP is being used and it's all being done wirelessly without the patient having to do anything. So, I think more and more of this kind of information is going to be available to us and it could help us in making decisions about our patients and knowing our patients better, but I think the real value is going to be ultimately in being able to present data to patients about themselves, in a way that they can help themselves better.

David Harlow: Great. I think time will tell whether the adoption of these apps and uses will be long-lived, it sounds like you have been doing this for about six months through the "O" bar and so forth, and my understanding is that many users of health apps and other apps will sort of use them for three months or so and then the utilization drops off. So, I suppose if you maintain the level of engagement through some of your staff with the patients on particular uses then they'll be able to maintain that connection over the longer term.

Do you have any concerns about the privacy and security protections of putting health data over what to date has been really a consumer platform?

Richard Milani: Yeah, I mean to say we're not concerned with it would probably be rash, I mean of course we are concerned, and I think the most important thing to remember is that we don't act solely based on that data. We try to validate it independently. So, if we get, for instance back to the weight thing and if we get a weight that's you know, way out of whack, there's not going to be an automatic change in anything it's just going to prompt a phone call to talk to the patient to understand, what's going on. So, I think that that's reasonable, as long as a patient knows that, most patients recognize that there is a potential possibly of a security lapse, but again we are talking about weights, we're talking about blood pressures, we are not talking about a lot of other stuff at this point -- or fitness activity. Not that we should be cavalier about that. We shouldn't be, but at the end of the day I think the benefits currently outweigh what little risk that might be.

David Harlow: Well, thank you very much this has been a terrific education on the way you've rolling this out.

I have been speaking today with Dr. Richard Milani, Chief Clinical Transformation Officer of the Ochsner Health System in Louisiana. We have been talking about the rollout of HealthKit and the integration with the Epic EHR system at his institution. Thank you again, Dr. Milani.

Richard Milani: Thank you.