

CARLSON: Welcome and thanks for tuning in. You are listening to DotMilDocs, the Military Health System's official podcast. I'm Russell Carlson and it's Thursday, February 4th, 2010. Today we are joined by Lt. Commander Steve Steffensen, Chief Medical Officer at the Telemedicine Technology Research Center and coordinator of Virtual Lifetime Electronic Records.

Lt. Commander Steffensen is here to talk about the Nationwide Health Information Network, its creation, its importance to the Military Health System and the Department of Defense at large.

Lt. Commander Steffensen, welcome DotMilDocs.

STEFFENSEN: Thank you, good to be here.

CARLSON: Sure. I guess first of all for all the listeners, could you just talk a little bit about your background?

STEFFENSEN: Yeah. I'm actually a clinical neurologist, active duty in the Navy, and I have quite a bit of extensive health IT background, which really started probably at the age of eight. I think I was programming at the age of eight, and actually paid for most of my way through college with various programming jobs. And then in my fourth year of medical school, I actually started an electronic health record company, or co-founded a health record company where I was the lead programmer for that, and then went into residency in neurology. Did my neurology residency at Walter Reed Army Medical Center and National Naval Medical Center in Bethesda, before going on to be the command neurologist at Pensacola Navy Hospital for three years. And then into my current position, which is at TATRC.

CARLSON: Oh, so you really have a really strong computer programming background?

STEFFENSEN: Yes. I guess I've been on computers, like I said, forever. I sort of grew up with a lot of the programming languages over time, and as the Web came into existence, learned a lot of the Web programming. But really started much before that.

CARLSON: OK. Well what is the Nationwide Health Information Network?

STEFFENSEN: The Nationwide Health Information Network – it goes by many names, and you'll hear all of them sometimes. So it's sometimes pronounced as NHIN, or the NN, or the NIN. So I use all three terms interchangeable sometimes. But the NHIN was a network that is out of the Department of Health and Human Services. It was actually started in 2004 under a Presidential Executive Order by President Bush – then President Bush. And it was that Presidential Executive Order that a mandate was made that most Americans should have access to digital healthcare information in 10 years, by 2014. And that Executive Order is what resulted in the creation of an office under the Department of Health and Human Services known

as the Office of the National Coordinator for Health IT. That's often abbreviated ONC. But the Office of the National Coordinator was responsible for executing this Presidential Executive Order to grant most Americans access to digital health care in 10 years. And the vehicle by which they would do that was the NHIN.

So the Nationwide Health Information Network was sort of born out of that 2004 presidential mandate. And it really seeks to establish a network for health information exchange in a similar analogous fashion as what you would see in a financial industry with the exchange of financial information. And it was accomplished in a number of ways, which I can elaborate on if you'd like.

CARLSON: Yeah. I was wondering if you had – I mean, you call it digital health care. What does that really mean?

STEFFENSEN: Well in the same way that you have – you know, prior to digital finances you would have to carry either cash with you, or checks, or written checks. Now very few people actually rely on that, especially when they travel, or when they're mobile, they're relying more on ATMs or on their credit card. And in much the same way health care is sort of moving in that direction, where right now we rely fairly heavily on paper records for the exchange of health information. So that if you go see a civilian practice, a provider of health care, typically you will have a patient record. And there's been a real trend to try to convert that into some sort of a digital format to allow for easier exchange, which implies a lot of other things, like standards. Well what are the standards by which you exchange that information, and what are the legal implications and privacy regulations around that? So there's been a lot of things that have sort of been – have come about as a result of trying to think through all of the issues of digital health care.

CARLSON: OK. And I didn't mean to cut you off, but you were talking about the NHIN, and you can keep on elaborating on that.

STEFFENSEN: Yes. So within the NHIN, or within I should say within the Office of the National Coordinator, three separate groups were established to articulate what the NHIN would be. And this is getting a little bit of past history here. Some of the names of these groups have changed now, but the intent is still there. So the first group that was established – or one of the first groups – was something known as AHIC, or the American Health Information Community. And what AHIC was charged with doing is trying to create use cases, or business cases, where a nationwide health information network would be used.

For example, when Hurricane Katrina came in and devastated parts of New Orleans, you had a mass exodus of humans, or people, to the Houston area, as an example. And one of the stories that is often told is that you can almost guarantee that every single one of those people that went to Houston had immediate access to their banking information through any ATM that existed in Houston. But you can't say the same thing for their healthcare. Right?

CARLSON: Right.

STEFFENSEN: Their health care information probably was still in New Orleans. But even if it existed in a digital format in New Orleans, it was probably inaccessible in the Houston area. And so an example of a business case that AHIC – this group AHIC, would work on would be disaster response. How can a nationwide health information network be used in a situation of a disaster – disaster response, where we can actually send information in that type of a scenario. So AHIC was charged with developing out use cases for how a NHIN would be effective.

And then the second group that was created is a group known as HITSP, or H-I-T-S-P. And what HITSP is, is the Health Information Technology Standards Panel. What they do is they look at the use cases being developed by AHIC. So in this case disaster response. And they try to – they look at all of the existing standards, not only in the United States, but international standards, and try to find a standard which can address that particular use case. So for example, in disaster response is there a standard out there that actually talks about how information should be handled in a disaster response? And if so, let's adopt that standard and actually apply that to this AHIC use case. Right?

CARLSON: Right.

STEFFENSEN: And then the third group that was created is a group called CCHIT. And the C stands for Certification. It's the Certification Commission, I think. And what CCHIT does is it says OK, you as an organization – so let's say the Military Health System – you now say that you are implementing these HITSP standards, or these HITSP specifications that apply to the AHIC use cases. We will now certify you, that yes indeed you are doing that. And so the big push over the last couple of years has been to gain CCHIT certification to actually claim as an organization that you are in compliance with the HITSP use ca – or the HITSP specifications and supporting the AHIC use cases.

So I know that was sort of a mouthful, but it sort of gives you an idea of how this was sort of orchestrated. And this was really dating back, you know, shortly after the 2004 mandate is when a lot of this really got started up. But one of the key things to understand is what the Office of the National Coordinator was facing at the time that this executive order came out. And the best way to articulate that is to sort of give an example that's not necessarily real, but it sort of makes the point.

If you think about a given city, like Austin, Texas, let's say – Austin, Texas may have five different hospitals that all have a need to exchange health information. So let's say these five hospitals – and I usually represent this when I give lectures on this with the fingers on my hand, on my left hand. So there are these five hospitals that all have a need to exchange health information. So for example, you may see your primary care at one hospital. You may see your oncologist at a second

hospital. And you may have a car accident outside the gate of the third hospital and be seen in their emergency room. But unfortunately, it's to their competitive disadvantage to actually share information, because when they start sharing information, they potentially lose you as a customer. So you're not only a patient to them, you're a customer.

So what has been happening over the last 10 years or more is that there have been these governance bodies that have been stood up, that sort of sit on top of these hospitals in these various regions, like Austin, to actually govern how information can be exchanged without giving preferential treatment to one hospital over another, to actually try to create a business case for how information should be exchanged. Because again, they all have a need to exchange information, it's just it could be to their competitive disadvantage to do so.

Well these governance bodies that sit over these hospitals, that's also known as a RHIO, or a health information exchange. The word RHIO is R-H-I-O, and that's a Regional Health Information Organization. It's otherwise known as an HIE, or Health Information Exchange. These health information exchanges not only exist in places like Austin, but let's say now you have another health information exchange in San Antonio. Well now when the patient goes from Austin to San Antonio – say they're visiting the River Walk and have something happen to them that they have to be seen in a hospital. How does the information from the Health Information Exchange in Austin get to the one in San Antonio?

Well not only that, there are approximately – and it's been estimated anywhere between 400 and 475 of these health information exchanges scattered across the United States. And they have a really hard time maintaining a good business model to stay afloat. So the situation that the Office of the National Coordinator was faced with was we have all of these different health information exchanges going on – how do we start to articulate standards of communication? And what they decided was that rather than trying to dictate how information is exchanged between the hospitals in a given area, like Austin, instead the NHIN will be how information is exchanged between these health information exchanges. So between the Austin and San Antonio health information exchange, in the example I gave.

And so the NHIN is often described as a network of networks for that reason. So you have a network in Austin that's exchanging information under that health information exchange. You have a network in San Antonio. The NHIN sits on top of that and is often considered a network of networks, and that's where that phrase comes from.

CARLSON: All right. And without any standardization you really couldn't have a network.

STEFFENSEN: That's right. Yeah. The big issue – you know the joke about standards, is the great thing about standards is there are so many to choose from. And what

HITSP and the Office of the National Coordinator have helped us to do – and now there’s actually a standards committee that’s actually been formed under the ARRA grant, that was put out with the stimulus package. But they have been able to help us do is to really get down into the weeds and start to articulate what should the standard be for a particular use case? So you have an emergency room patient that comes wheeling in your door, and there is no – they don’t have their paper medical records sitting on their chest. So what information, if you absolutely had to whittle it down to just a few data elements, which information would be particularly relevant to take care of that patient in that particular situation? And that’s what AHIC and HITSP have helped us to find, is they’ve developed these use cases or these examples. And then they said OK, well now let’s actually try to identify a standard to apply to that.

CARLSON: OK. So how do you represent the DOD within the NHIN?

STEFFENSEN: That’s sort of an interesting question because it’s been developed over time. My major role is – I think I alluded to earlier – was as Chief Medical Information Officer for an organization known as TATRC, which is the Telemedicine and Advanced Technology Research Center. And we do a lot of health IT projects. And I think I talked about some of those. But in that capacity, I was asked by the Military Health System Chief Information Officer, Mr. Campbell, to help early on with NHIN work. When the NHIN was first getting started, I was asked to help participate and coordinate NHIN activity on behalf of the CIO, Mr. Campbell. And that role really evolved over time to where now I’m recognized as the Department of Defense lead for NHIN activity, but still maintaining my hat and position at TATRC. So I do wear a lot of hats within MHS, but I think most of them are all synergistic, or at least that’s the hope.

CARLSON: We are going to take a quick break for the DotMilDocs Health Beat, news and information from the Military Health System. When we come back we’ll talk to Lieutenant Commander Steffensen about the future of the Nationwide Health Information Network, and the impact it stands to have on service members and their families.

WOMAN’S VOICE: DotMilDocs Health Beat.

LOCKWOOD: Don’t gamble with your heart. This week kicks off Heart Healthy Month, and the Military Health System is providing you with the resources to keep your heart strong. Check out the Web page dedicated to heart health at health.mil/hearthealthy.

The Military Health System plans to help its patients engage more actively in their healthcare by way of the forthcoming online MHS patient portal. The portal will activate patient participation in his or her healthcare experience, support patient healthcare team interaction, and provide efficiencies for the enterprise. The MHS

patient portal will be more than a personal health record. It will provide multiple ways for patients to obtain care within the MHS and aggregate data to one central location, providing benefits to patients, providers and military treatment facilities.

And finally, Ellen P. Embrey, formerly performing the duties of the Assistant Secretary of Defense for Health Affairs, closed the 2010 MHS Conference with remarks reflecting more than 30 years of federal service. Above all, she stressed that the most important priority for the entire Military Health System is to provide the utmost quality of care to soldiers, sailors, airmen and marines throughout the system. She specifically thanked each lecturer, whether senior military advisors, private sector leaders, or academics at the forefront of their research, for helping the MHS achieve that goal. Embry said, "My takeaways from this week can be boiled down to three things: relevance, recognition, and renewal". Embry retired from her position on January 29th. Allen W. Middleton (sp?) is currently performing the duties of the Assistant Secretary of Defense for Health Affairs.

All these stories and more are available at health.mil. Logon to stay up to date. This has been your DotMilDocs Health Beat. For the Military Health System, I'm Elizabeth Lockwood.

CARLSON: Welcome back to DotMilDocs. Today, Lieutenant Commander Steve Steffensen, Chief Medical Officer at the Telemedicine Technology Research Center is talking with us about the Nationwide Health Information Network.

Now what does NHIN mean for DOD and the MHS? I mean we already have an electronic health record, right?

STEFFENSEN: Right. Right. So this is a very classic question. And the beauty behind it is that there's a really good answer for why the Department of Defense should be interested in this, and that is because it's two statistics. The first statistic is that the majority of our beneficiary care is actually done in the civilian sector. So the statistics that are thrown out are anywhere from 60-70% of our nine and a half million beneficiaries within the Military Health System are actually seen in the civilian sector. So 60-70% of all of our patients are actually seen in the civilian sector.

An example I usually give is my son, for example, was born in a civilian hospital here in Austin. So that's sort of statistic number one. Number two is that we are the largest most mobile patient population. We move on average every three years. The statistic is that in any given year one in four of our families within the Military Health System are on the move. So the question is how can you guarantee continuity of care when the majority of your patients are being seen in the civilian sector where you have no visibility? Right?

CARLSON: Right.

STEFFENSEN: And the answer for us has been the NHIN. Because prior to the NHIN what we were faced with was OK, if we want to exchange information with our civilian partners who are seeing the majority of our patients, one of the strategies that has been employed in the past on certain pilots that have been done, actually out of TATRC, was let's create an individual data use agreement with that civilian health information exchange. So the example is in Pensacola, Florida, this was actually tried, where we actually give an Individual Data Use Agreement with a local health information exchange to exchange information on our patients. And the problem is that that's non-sustainable, because now if we have to do that in each of the 400 plus health information exchanges that exist in the country, that becomes very cumbersome to try to maintain. So what the NHIN does is it provides a common set of standards, and a common legal framework for actually doing that exchange.

And one of the things that I left out previously is that the NHIN is actually governed by a strict legal framework known as the DURSA. The DURSA is D-U-R-S-A, and that stands for Data Use and Reciprocal Support Agreement. And it's basically the legal framework by which we are allowed to exchange information with other people on the NHIN. It's actually a legal document. So when the Department of Defense signs that legal document we become a citizen of the NHIN. That's sort of the joke that's often quoted, is we are a trusted partner on the NHIN. And that means that anybody else who wants to join the NHIN has to abide by the same legal framework that's in that document. And once they sign that document, and from a legal perspective, we can begin exchanging information with them. And then it just comes down to what standards are we going to use, and that's where HITSP and AHIC have actually articulated those for us, and we actually have that common framework.

CARLSON: So then you're going to have all these military people all connected on this network. It seems like there's no population that would be better served by the NHIN than the military population.

STEFFENSEN: Yeah, I think we actually do have one of the better business cases for actually joining the NHIN. If you – one of the things to highlight is how we've gone about doing this within the Department of Defense. How did we actually start building out this infrastructure? How did we actually start to participate? And the NHIN has actually gone through – it's in its third phase right now. So since 2004 we're now in phase three of the NHIN. Phase one was just getting an understanding of the basic architecture, which is sort of what I have described up to now. Phase two was a trial implementation, where we actually got together and we decided that we're going to actually do a demonstration using test data just to prove that this concept can work, that the architecture which we've been talking about can actually work.

And the way that phase two was done is that the Department of Health and Human Services awarded grants to 15 civilian health information exchanges to actually

participate in a pilot demonstration using test data. Well on the federal side we can't take grants from the Department of Health and Human Services. So what the federal side decided to do is we said that we will pool our money and pool our resources together, and rather than the Department of Defense building out their own NHIN architecture and the VA building out their own NHIN architecture, we'll pool our money into a common pool and that money will be managed by a group known as the Federal Health Architecture Group, or FHA. And FHA will actually build out the components necessary for each of us independently to join NHIN, the actual technical architecture. And that became known as the connect solution.

So let me sort of back up a little bit and describe FHA, if I could. So the Federal Health Architecture Group, or FHA, is actually managed by the Office of the National Coordinator. So they actually fall under ONC. But they also have – they have sort of dual parentage, because they also are an e-Gov initiative under the OMB, the Office of Management and Budget. And so they are actually directed to execute federal requirements in health information exchange. And we actually – so it was a vehicle that we already had in place even before the NHIN, where we could contribute money to FHA as federal partners to actually develop out federal requirements for health information exchange and other technologies.

So the initial four for the phase two, that trial implementation that I was talking about, there were four federal partners that decided to come to the table. That was the Department of Defense, the Department of VA the Indian Health Service, and the Social Security Administration. So the four of us actually got together, and in December of 2008 we created our own business case for doing a demonstration on the NHIN. And we contributed to FHA to actually help us build out the architecture to help us do that.

The use case, or the business case, that we developed among the federal partners, among the four of us, was a wounded warrior business case. So we actually took the example of a wounded warrior from birth, you know, who grew up in New Mexico on an Indian reservation, was seen in the civilian sector, joined the Marine Corps, was deployed and unfortunately was involved in a roadside explosion and had to be medically boarded. Was sent to the V.A., was also seen in the civilian sector, and eventually required Social Security Disability evaluation. So you can see that from the entire life cycle of that individual we were able to demonstrate how using the NHIN, we could pass very useful clinical information all along the continuity of care for that patient. And that was the wounded warrior use case, and we successfully demonstrated that in December of 2008.

And by the time of that demonstration action – this was on a national stage at the Department of Health and Human Services. And by the time of that demonstration we actually added two additional partners, two additional federal partners. The National Cancer Institute, who had been working on other projects known as caGrid, and we had sort of integrated some of that, as well as the Centers for

Disease Control – CDC. Now at FHA there re 26 federal partners, and we are all – I mean, quite literally we sit around the table and we talk about how can we collaborate in a way to actually create something that – to leverage economies of scale to actually create something that’s better than any one of us could have created on our own.

All of that effort has been under FHA, which is under the Office of the National Coordinator again, and has contributed to the a set of codes known as the Connect Solution, which I alluded to earlier. And the Connect Solution is actually software that allows you to connect to the NHIN. Of course there’s a lot of security constraints, and you have to sign that DURSA document, and all that kind of stuff. But it is a set of software that permits you to connect to other people’s NHIN, or the other people’s gateway.

So we actually talk about something called a gateway, or an NHIN Gateway. And it’s that set of code that is necessary to communicate with other people on the NHIN. So for example, DOD will have our own gateway, and the VA will have their own gateway. Well that gateway is actually the Connect code that was developed at FHA. Now we just install it inside our own firewall, if you will, but it’s the same code. That code, under the terms of the FHA agreement that we reached, was released into the open source community. So we actually took that code and we made it available to the community. And people ask us well why are you doing that? And it’s simple. If the federal partners get together and we build this gateway, this nice little software stack, it doesn’t make any sense for us to hold onto it. Because if we’re waiting for the other side of the fence, for the civilian partners to build their own gateway, why wait? Why not contribute what taxpayer dollars have actually paid for back to the civilian community, and actually give that as open source?

So the idea and the analogy I use, it’s sort of like building a fancy fax machine, right? The federal partners have all built this really nice fax machine, but we’re all sitting there waiting for other people to build their fax machines, right? Well why do that? Why not just give them a copy of the fax machine? And that’s essentially what we did with the Connect Solution, is we are enabling the civilian sector to more rapidly join the NHIN by lowering that threshold of adoption, by giving them codes to start with.

CARLSON: It must make them more likely to buy into the system.

STEFFENSEN: That’s right. Especially given the fact that they know that the federal partners contributed to this, that the Department of Defense, the Department of the VA., CDC, CMS, NCI, all these different people are actually contributing to the security implications of that. So if you can say, well this is passing the security requirements of the Department of Defense, then you can be fairly rest assured that it’s going to work in your organization. And so you’re more willing to adopt that.

And it's sort of a starting point for innovation, too. Some of the criticism I've heard of putting things into open source is that, well is it really the federal government that is now competing with the civilian vendor community? And I say no, all we're doing is raising the bar for where innovation should start. We're just creating a more common platform upon which we want the vendor community to actually come in and innovate on top of the Connect Solution. We want them to show us how to make it better. And in fact, the Open Source license for the Connect gateway is what's known as a BSD, or Berkeley Standard Distribution license. And what that enables you to do, quite literally, is you could go today to the Website, which is Connectopensource.org. You could go to the Website, download the Connect gateway, turn right around, create your own Website, and turn around and sell it to people. It's actually legal to do that because of the type of license that it was. So we actually are trying to encourage and foster innovation in the vendor community by basically just giving a common platform upon which to start innovation.

CARLSON: Now taking it down to the level of the physician, what's the biggest advantage to participating in the NHIN from a physician's perspective?

STEFFENSEN: Well this is really why I got involved, right? Because at the end of the day, I'm a neurologist, a clinical neurologist who sees patients. And one of the more frustrating things that I had to deal with on a fairly routine basis, in particular when I was at Pensacola, was when a patient would come to see me who had been sent to the civilian community for a consult or for care, and for me to try to gain access to that record, unless the patients themselves brought it in to me, typically I would have to personally call the external clinic, the clinic in the civilian community, to have them fax over a copy, which would require me to get a written consent from the patient, who hopefully is already there. And you can see the delay in care that that would likely cause in a 30 minute appointment, where I'm trying to chase down paperwork.

And so what the NHIN really provides to a clinician is a more expedient way of gaining access to the information you need to deliver effective care, so that I can, with the patient's consent, actually more quickly get information on that patient that will enable me to make clinical decisions at the point of care within the already shortened timeline of the appointment that is being – that all of us physicians actually have to deal with. I mean some physicians are seeing patients in 10 and 20 minute appointments. Well if you have to spend half that time trying to find their patient record then that's obviously not time well spent.

The other component of this is from the patient perspective. You know, in the analogy or the story I just used there is an example where the patient brings in their paper record. Well what you're doing there is you're, in my mind, unfairly burdening the patient to be the health information exchange. The patient becomes the health information exchange. They are responsible for having a copy of that

MRI, or a copy of that lab report from the civilian community that they personally bring in the trunk of their car into the appointment.

And that's really unfair I think to demand that of our patient population, especially when you start looking at special patient populations, like the wounded warrior community, which may have traumatic brain – and in my case, as a neurologist, where I was treating patients with traumatic brain injuries who already are burdened with cognitive deficits that would prevent them from being able to be their own health information exchange. So then the burden was not on the patient, but was oftentimes the family, or the case managers. So what the NHIN enables to the physician is to expedite that process and actually remove that burden from the patient and the physician of gaining access to that health information.

CARLSON: And the bottom line is it's all benefiting the patient, and that's what you're doing it for anyway, right?

STEFFENSEN: I think at the end of the day that's really what we're driving at, because ultimately you're able to do deliver more efficient, better quality care because of the information that you're able to receive on the NHIN.

CARLSON: Well we're almost up on time. But Commander Steffensen, what if somebody out there is interested to know more, where could they go to find more information on this?

STEFFENSEN: I think the primary site right now is the one I alluded to earlier, and that's the FHA Website, which is under the Office of the National Coordinator again. But it's Connectopensource.org. And at that site you'll find a tremendous amount of information on codeathons that are going on. You can actually download some of the source code, or some of the documentation on NHIN. The Department of Health and Human Services actually has a section for the Office of the National Coordinator too, which would be useful to the listeners.

I think another thing to recognize is that we're in phase three right now, which is productization of the NHIN, actually moving this from a test phase, which is what we demonstrated in December, and actually moving it into a productions phase. We're actually going to start using production data. And we're still getting started. I mean this is still getting our feet wet, still trying to understand the implications of digital health care. So I don't want to give the wrong impression that we're able to fully exchange every bit of health information on every individual. But we're certainly trying to move in that direction. And for those that are interested I would highly recommend going to that Website.

CARLSON: All right. And then maybe as things progress you might come back on the show and we could talk some more about how things are going.

STEFFENSEN: Sure. I'd love to.

CARLSON: All right. Well thank you so much for being on the show today.

STEFFENSEN: Thank you.

CARLSON: That does it for us this week on DotMilDocs. You can join us next week when DotMilDocs returns with a visit from Marian Tanofsky-Kraff, Ph.D., Assistant Professor in the Department of Medical and Clinical Psychology at the Uniform Services University of the Health Sciences. She'll be joining us to discuss psychotherapy for the prevention of excessive weight gain in teenage girls deemed at risk for obesity. Until then, see you on Health.net.

ANNOUNCER: This program is a product of the Office of the Assistant Secretary of Defense for Health Affairs Military Health System. DotMilDocs features the most relevant military health topics important to you and your family. If you have questions or topics you'd like to see on an upcoming episode, send us an e-mail at DotMilDocs@tma.osd.mil. That's D-O-T-M-I-L-D-O-C-S@tma.osd.mil. Visit health.mil for more episodes.

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