Non-Clinical Career Opportunities for Physicians Health Informatics and Information Technology

Edited Transcript from SEAK's 2025 Virtual Non-Clinical Careers for Physicians Program

Moderator: Okay, welcome back. Our next talk is going to be on **opportunities in health informatics and information technology**, and we're very pleased to have as our presenter, Dr. Jonathan Lovins.

Dr. Lovins is an assistant chief medical officer at Duke Regional Hospital, part of the Duke University health system down in North Carolina.

He's also a practicing hospitalist. His information technology experience includes implementing a billion dollars EHR system and being the lead physician for EHR adoption, training, content creation, and optimization.

Dr. Lovins earned his BA at Clark University and his MD At UConn and completed a Master's of Management in Clinical Informatics at Duke University School of Medicine.

Dr. Lovins is board certified in clinical informatics and is a senior fellow in hospital medicine. So a warm welcome back to Dr. Jonathan Lovins.

Dr. Lovins: Thank you, James, so welcome everybody. I want to talk about **informatics careers for physicians. It's something that I've been involved with for quite a while now.**

So again, I am the Associate Chief Medical Informatics Officer for both Duke Regional Hospital and Duke Raleigh Hospital, which are hospitals in the Duke health system, and **it's been a very rewarding career.** It was a very good move, and I encourage anybody who is interested in a non-clinical clinical career, or an informatics career to pursue it -if it's something that interests you.

So what is medical informatics? Well, **it's a very, very broad field**, and it encompasses a lot, you know, **basically the application of information technology to the medical field.** And as you can imagine, that's very, very broad. And **most people who work in medical informatics are working with the EHR. There are some that do other stuff behind the scenes with big data and prediction rules and things like that. But I would say, most of us, particularly the MDs are involved in the electronic health record.** Whatever it is, we are involved. And so this would include **documentation and notes, orders, order sets, test results which include labs radiology. We do a lot with alerts to try to kind of nudge people to do guideline-based care evidence-based care. We do a lot of analytics**. We do reports to get data to justify changes to the EHR flow sheets, which is a really a big part of how nurses document things - we're

involved with that and calculators and many, many other things. **So the first question I think a lot of people have is, how much does [a non-clinical career in medical informatics] pay?** Well, the great thing about being a doctor is that almost anything that you do as a doctor outside of the medical field, you get paid at least as much as you get paid as a doctor. That is true for generalists, for internal medicine doctors, primary care doctors. **We had one cardiologist that was a physician champion for Epic. When we transitioned to the epic EHR he took a big pay cut as you can imagine, because cardiologists just make more, and they were not able to bring up his salary. So that's a consideration**. **As a hospitalist I made exactly the same amount doing the informatics work,** and the reason for that is that is because the value that a physician brings and your ability to work with physicians and other providers. There are analysts who are doing informatics who don't have an MD who make the same amount.

Unless you're a very high, highly paid specialist, you don't necessarily have to worry about a pay cut [when transitioning to a non-clinical role in medical informatics]. There's other benefits which I'll go into, which some might consider, even if it pays a little bit less. So I just want to talk a little bit about my journey, which was, you know it wasn't an easy journey, but I got to a good place. So when I was in college I always thought I was going to be a psychologist because my father was a psychologist. My mother was a psychological clinical, social worker. I knew a lot about it. I found it very interesting, but when I went, but as college progressed I was encouraged to go into medicine from different people for a few reasons. It's a profession where you really get to help people, and that's very satisfying. You get to earn a very good living while you're doing that which is kind of rare, I think.

One of the reasons that medicine was an attractive field is because you can go in, you can do many other things with an MD. If you don't want to work with patients, you could do radiology as long as it's not interventional. You could be a pathologist. And then, if you really love working with people, you could do clinical medicine. If you love talking to people, you could be a psychiatrist if you choose to do therapy, and then on top of all that, you can do things on the side, including informatics and many other things, and finally, it's very intellectually stimulating to do medicine and be a doctor. So I was very tempted. So I was pre-med in college.

So I was starting to take some basic science courses. But I was so into my graduate level psych coursework at college that I just I just wasn't ready. So I dropped out of a couple of my science classes and I continued on with my psychology and I was a research assistant in psychology for a few years after graduation. But the more I thought about it I just wasn't sure that this was the right path for me. I actually did apply to graduate school, got into one, but I didn't get any financial aid. And so at some point, I was like, Okay, well, I kind of like computers. And I kind of like medicine. **I took a course in C+ just to see if, hey, maybe computer science is the right field. It definitely wasn't. I was not a good programmer, and which is interesting as I'll talk**

about. But so after a couple more years, I was like, Okay, I'm ready. I finished up my coursework in community college did very, very well, loved it this time, and applied and got in [to medical school]. So first thing I did after my MD - I started to go into hospital medicine because I found it very interesting. I liked the idea of being a generalist and having a wide variety of diagnoses. I liked the idea of being sort of the quarterback of the healthcare team. So I did [a number of] years as a hospitalist

I applied for GI. That didn't work out, and then I ended up after years, becoming a medical director, and I did that for [a number of] years. I was always kind of drawn to projects that involved quality improvement [and] using the EHR. I was involved in trying to improve the informatics that we used, and then eventually I moved to North Carolina, worked at Duke clinically, and the first thing I did was I started a project on medication reconciliation, which was sort of just starting out. And then we had the High Tech Act, which brought in billions of dollars to hospitals to convert to EHRs. And that's what we did. And what James was referring to. **We spent a billion dollars converting from our homegrown electronic health record to Epic, which is the largest EHR for academic medical centers**, **and maybe for all medical centers and so many academic hospitals hired physician informaticists to implement it, and I was fortunate to lead the physician adoption at my hospital to epic, and because of that work I was able to do more.** I think there was a couple of years where I didn't get paid anything extra, which is, which I think is something some people sometimes have to do to demonstrate your worth before they want to, before they're willing to give you either money or time. **And so the next step after the Leadership project was to get % full time equivalent from the IT department to do informatics, and the idea was that I was going to support both the health system, but also the singular hospital that I worked at sort of as a resource for them.** And then, a couple years after that, things were going well, and I got to [less] % clinical, [more] % informatics. And I did not ask to go any beyond that, because I feel like at [my current] %, that's like the perfect, sweet spot for me where I feel like I get enough clinical experience where I feel confident with my clinical skills.

Then, after that I still had the option of doing a leadership project. So I became chair of the Ethics Committee. I joined the Peer Review committee. So then **I got involved the person who was managing our expert witness program** who basically kind of vets cases and gave talks every couple of years to orient people. So I was asked to take over that. So that is what I do.

And so what do I do [as a physician working non-clinically in medical informatics]? So clinically, everybody works [so many] shifts a month. So because I'm [x] %, I do shifts [fewer] a month, which you can imagine is quite nice, especially the hospitalist. So I could basically do one week, plus a day or one week of rounding, plus one, you know, admitting shift. And that's it for the month. So that's kind of nice.

The benefits, [pay] and PTO for me are the same. They're actually managed by my clinical department. I keep track of my non-clinical hours, and I submit them.

What is the work [for a physician in medical informatics]? So the work - it's different things**. A lot of it is a lot of meetings, which as many of you know, some are productive, some are not. A lot of the work is getting emails responding to them. A subset of those would involve setting up meetings to make decisions or making requests to the analysts for enhancements to the electronic health record**. **So the main things that I work on are enhancements of the EHR -** to make it better, or to add a new thing, or to fix problems, we have sort of unintended consequences of changes to the EHR that I'm sure I'm sure you're all aware of. **[Serving as a physician in medical informatics] is nice work, because I get to work with lots of different people -** physicians, nurses, pharmacists. I'm often the sort of go between the doctors and the analysts or the providers and the analysts who are the ones who directly make those [EHR] changes. Most of the time the analysts are doing most of the legwork and a **lot of the work is coming up with designs by consensus.** So a lot of it is meeting with the stakeholders and getting buy-in and getting data. And once you have all that, you can make requests and make changes if they're approved.

Here are some examples of projects [for a physician informaticist]. Building a congestive heart set failure order set. That was a fairly big job we created a sofa tool, sofa is the It's sort of the new version of Sepsis. It hasn't completely penetrated, but it's being used in certain situations. **I was heavily involved with a pilot for critical lab notification** [for] the mobile application for Epic EHR. We built an order set for the Tracheostomy team. We worked on the blood conservation program, which is to help avoid blood transfusions for patients who refuse, who don't allow blood transfusions - typically Jehovah's witnesses. We created best practice advisories for Echocardiograms and cardiac Rehab for patients who had myocardial infarctions. We pre-checked hemoglobin in the insulin order set. If the patient hadn't had one in months there was an orthotics consult, order, a multimodal pain medication order set, and a smartphone app for the health system. And I'll go into a little bit of detail for some of these.

We had different hospitals, and we got cardiologists and hospitalists and nurses together to come up with a consensus [which] wasn't so easy. One of the hospitals had very specific ideas, what they wanted in there, and not everyone agreed. And we actually ended up creating a separate order set just for that hospital - which we didn't do that again.

So what is the typical work [for a physician in medical informatics]? Typical work is for critical lab notification. We created a system of automatic notification for providers via smartphone. I designed the workflow. We validated the build. The hardest part, it turns out, for this was provider adoption. We had a very difficult time getting every provider to use their smartphone. And it's still an issue. But yeah, that's not an easy nut to crack.

We created best practice advisories for myocardial infarction. So basically, it was a rule that if a patient had an MI that admission and they didn't get an echocardiogram ordered or cardiac rehab wasn't ordered, you get an alert to remind, and we found that this improved utilization. So that was great.

We created a smartphone app for the health system. And we worked with analysts, basically to have just one place that had all the important information, particularly phone numbers for departments in the hospital and other things.

What are the pros and cons [of working as a physician in medical informatics]? [Let's] start with the pros.

Doing something non-clinical can really help with burnout. I would say for the first years as a hospitalist I could work as much as I wanted, and it wasn't a big deal. But as I've gotten older I appreciate my nights more and my weekends more. Everything's prorated. So you get half as many nights. You get half as much call. You get half as many weekends. You get half as much direct patient care which could be, you know, that could be a plus or not depending on the person. There's less stress, less burnout. [My time working as a physician in informatics] is flexible time. So when I see patients, you know, I'm working within a block. When I'm not seeing patients, I need to put in the equivalent of that but it's really up to me [in terms of the specific hours and days worked]. **You can work for home** [as a physician working in medical informatics], which can be a plus and or a minus.

So the cons [of working as a physician in medical informatics] - there is less interaction with other people. [Working as a physician in medical informatics] can be very intellectually stimulating. But there are times where it's not as intellectually stimulating or exciting as clinical medicine.

I was always kind of very surprised that you know I could be paid for half of my time to do something that **I didn't necessarily have any training in whatsoever.** That being said, I wanted to have some kind of training just for my own self-confidence to help me with my job to be seen as a peer, because most of the others at my level had some kind of training. So I ended up getting a Master's degree, which I'll talk about in a second and I think that was that was very useful.

Another con is that it can be hard to be disciplined when you're working from home [as a physician informaticist]. There's a lot of distractions, and you really have to kind of tune things out. And if you have kids, it can be a little challenging to balance. You know, being there for the kids if they need something during the day, and then, you know, getting all your hours in.

So those are the cons [of working as a physician in medical informatica]. They're not very big cons in my opinion.

I think it's very important to stay clinical. **Patient care, I think, makes you much more credible.**

Types of informatic positions for physicians. People who express interest can become a super user, and this can be offered through your hospital or health system, or can be done through Epic itself, and that, just, you know, gets you more familiar with the tools that not everyone may be so familiar with. The next step would be a physician champion, and that's when you get some dedicated time to work on informatics projects. The next step after that would be where I am, The Associate Chief Medical Informatics Officer. Some of the names of these positions will be slightly different, but I think there's a lot of similarities. This is a leadership position. Chief Medical Informatics Officer, which is a senior leadership position. Some hospitals have a Chief Health Officer or Health Informatics Officer.

And then, finally, the top position would be a Chief Informatics Officer, and even that position is often held by an MD.

Training [required for non-clinical jobs for physicians in medical informatic]. Please do not feel that you need to be a programmer. I think people should not worry too much if they don't know how to program, or if they don't want to learn how to program, or if they're not good at programming like me. I was not particularly good at it, all right.

I do think it's helpful to get an informatics degree. Duke has a really great one. We also have an informatics fellowship. Some people get MBAs. Some people get Masters of Healthcare Administrations, and there's many other degrees. **I do think it's very helpful to have good people skills working with providers working with analysts**. Many people are members of organizations. I'm a member of the Society of Hospital Medicine. Some people are members of the HIMSS Society. I pretty much just go to the Epic conferences. There's a limited amount of time and limited amount of CME money for these things. So that is pretty much all I have, and I wanted to see if there are any questions.

Q: My understanding is that there's kind of three main areas for physician informaticists. So obviously what you're doing on the provider side. And I'm going to ask you a few questions about that, but also the government and the vendor. If you know, can you describe the types of roles that a doctor might have at a place like Epic, a place like Allscripts, Do you have any insights on those, doctor?

A: A little. In terms of non-clinical careers [in medical informatics], I mean, why not go to the source and work for epic. I'm sure it's a terribly exciting place to work as a provider. They have many doctors – I think a lot of them work full time. **One thing that I have heard is that the providers that work at Epic do not do clinical medicine.** I don't know if it's true, but that's what I've heard. I believe it because a lot of the things that they build for us, you know when it

comes right out of the box, it's pretty good. But there are some things where like, well they didn't think that out carefully so - **that's where my work comes from, because, you know, I would say a good chunk of what I do is adapting, modifying, improving what Epic has already, I mean, gosh, we spent a billion dollars.** But we did a very large amount of customization when we transitioned to epic. And we continue to do a lot of stuff.

And that's Epic's model. They provide lots of things that are called foundation, that are not necessarily meant to be the final word, and hospitals, will and health systems will, you know, modify them, improve them, adapt them to their system.

So the doctors that work at Epic. They're very, very good, at least the ones that I've that I've interacted with are oftentimes the presenters and they're very, very good. **They have very good communication skills, very good people skills.**

Q: And just a little bit of follow up on that Dr. Lovins. **So on the vendor side, obviously going to like a HIMSS meeting or an Epic meeting would be a good way to meet some of these doctors?** Would you also, if you want to do networking [for a job at an HER vendor], would you also agree that maybe reaching out to people in the IT department like yourself at the hospital, you could get an introduction to doctors [who work at EHR vendors like Epic]?

A: Absolutely. I mean, I personally, I don't think I know any of the doctors there well enough to do that. But I think that the higher you go, the more likely that people have personal relationships and could introduce you for sure.

Q: So your job [as a physician working in medical informatics] is to interface with the with the clinicians who are having a problem, [you] want to help them design things and everything else. **So for being in the business that I've been in all these years, one of the number one complaints that I get from doctors is EHR.**

A: [EHR] is a huge source of frustration for people. And I think the reasons are worth thinking about. So I think, there's a few big reasons I can think of. So one is that the technology is still very immature. The interface is still a little bit clunky, and they're trying hard to improve it. It's just, you know, it's not something that doctors really. Nowadays doctors are being trained in the EHR, because they're using it during their medical school and residency. But I would say like for older doctors in particular you know they didn't. They didn't train with this stuff, they might not have even grown up using a lot of technology. And so I think for a lot of people [it is] just not second nature. It's very frustrating to try to navigate. There's bugs. It's not like it used to be where you could just, you know, jot a few things illegibly on the note. Now, this doesn't necessarily mean that things were better before the electronic health record. They were better, for they might have been better for doctors, but they weren't better for patients.

Well, it's a little bit of pain. It'll get better**. But it's making things safer, we believe. And there's some data on that.** It's a little bit clunky, and also that not everyone's adept at it.

I think the EHR brought a lot of work extra work to the physicians. One of the things that automation does is it has the computer take over what were previously human tasks. So like the one piece where we saved money at Duke with our billion dollars investment was that we got rid of our transcriptionists. That was the only money saving that we that we realized at least in the beginning. Even though the computer's doing it, the provider is still the one clicking everything. And so it's extra administrative burden on the provider. And I think I'm hopeful that AI is going to help us out of this mess, and there's going to be a lot of things that AI will do for us, that if it can be done safely, that will allow us to focus more on our interaction with the patients. And I'll just say one thing about that which is that the coolest, most impressive thing, so far from AI has been documentation. So the last times I saw a doctor, they pressed a button on their phone. They didn't type a thing, and the computer just listened to, recorded everything that was said and wrote a note, and then they modified a little bit to make sure it was accurate, but that is a huge satisfier, and that's taking away a lot of the administrative burden. So I'm hopeful that that kind of thing continues to progress, and that you know, we're not going back. We're not going back to paper, but I'm hopeful that the EHR becomes easier and more fun to use.

Q: Now, the masters and the other training programs that you described [for physicians wanting training in medical informatics], and maybe I missed this. Can you take some of those online?

A: Oh, yeah, I think a lot of them are purely online right now. And in fact, the one that I did. There were a couple of people who did it completely online because they were just living too far away. So I think there's yes, if you want to do something completely virtual. I think there's a lot of opportunity.

Q: And what journals or publications? If you want to be positioning yourself to do [be a physician working in medical informatics] and get in the know, see what's going on, and learn the lingo. What journals would you recommend that your colleagues read?

A: So you know, the cool thing about informatics is that it's so pervasive in medicine and other fields, too, is that you're going to see informatics articles in every journal. It's such a hot topic right now, but there are journals that just focus on informatics. It gets a little bit geeky, but certainly, if you're if you're very interested, you can. **You know you can look at the Journal of the American Medical Informatics Association. That is probably the most prominent one in terms of high quality articles, but there are others.**

Moderator: Dr. Lovins. Thank you so much for coming back and doing this very much enjoyed your talk, and I learned a lot.

Dr. Lovins: Oh, it was my pleasure! Thank you for inviting me.