Using Smartphone Apps to Power Clinical Research: Interview with Dr. Anthony Sterns, CEO of iRxReminder

In this interview with Dr. Anthony Sterns, we learn about the solution that iRxReminder has developed for this problem. iRxReminder is a complete smartphone-based clinical trial data management system for clinical research centers. The application supports customizable surveys, medication reminding, podcast-style education modules, and study activity tracking in real-time.

- How big of an issue is patient compliance in clinical trials?
- Is it difficult to get older patients to use smartphones?
- Two major keys in effectively training older patients to use smartphones.
- The future of patient involvement in clinical trials.

Scott Nelson: Hello, everyone. It's Scott Nelson, and welcome to Medsider, home of the free medical device MBA, and on today's call, we have Dr. Anthony Sterns, who is the CEO of iRxReminder. He is also the vice-president of research at Creative Action, LLC, and is also a visiting professor at Kent State University. So, without further ado, welcome to the call.

Dr. Anthony Sterns: Yeah, hello. Thanks for calling.

Scott Nelson: Absolutely. Looking forward to our conversation. Dr. Sterns, let's start out with iRxReminder because that's where we're going to spend most of our time in this interview, and that's obviously where you're spending most of your time as the CEO, but can you give us a brief overview of iRxReminder, what it is and the problems that you help solve?

Dr. Anthony Sterns: Sure. Well, we're a complete smartphone-based clinical trial system for researchers and research centers, and as the product matures, we anticipate that it will become a vehicle for delivering healthcare and connecting patient and physician or patient and maybe the whole healthcare team. The system consists of a web-based management control center and our smartphone applications, and we also bring to the table a patented pillbox case that is a case for your cellphone that includes compartments for pills.

Scott Nelson: Okay.

Dr. Anthony Sterns: The system itself really does a whole slew of things. First of all, we handle state-of-the-art medication reminding and can do all sorts of medications. We allow surveying, so we can influence behavior through questioning and also capture behavior through that survey approach, and we also can handle various kinds of study tasks like capturing weight and blood pressure, and we can have triggered events like given a certain set of conditions, something can be asked of the patient. So, if your stress is high based on your surveys, for example, we can ask you to take a salivette sample or something like that. A salivette is a little cotton ball in a plastic vial that you chew on to measure, and then they send it off to the lab and it measures your cortisol levels.

Scott Nelson: Okay.

Dr. Anthony Sterns: Then, finally, we can put patient education so that we can activate the participant. The example I like to use is, say you're part of a study with a new surgical technique for a knee replacement. So, we can present you with the physical therapy you should be doing each week, as it becomes more intensive for example, and then we can ask you about your response to the therapy and the new procedure. In a clinical trial, we would compare the results of people who had the standard surgery versus the new surgery, and we can make the comparison.

And the difference is that we really have longitudinal information that's taken every day and that we know the intensity of the physical therapy that the person did, for example. Whereas in the normal setting, they just come into the clinic, say, every six weeks, every three months, in a standard drug trial, and you'd have no idea what that person was doing in between.

Scott Nelson: Okay. Okay. So, I want to stop here, and if I'm in the audience listening to this, I'm understanding that, okay, this is an app and web-based system, I mean this is a very general overview, but it's basically an app and web-based system that tracks a whole slew of different data sets, in essence. That's what we're doing, and almost connecting data sets for patients with either the researchers or the physicians, etc. Is that safe…?

Dr. Anthony Sterns: Exactly. We are a comprehensive self-management system.

Scott Nelson: Got you. Okay. So, is the foundation of this tool built off the need in the clinical trial setting and then, you're seeing it used elsewhere, like with patient follow-up outside of clinical trials? Help me understand that a little bit more.

Dr. Anthony Sterns: Sure. Well, to be in the healthcare space, as we call it as opposed to the researcher market, the app is doing some diagnosis and monitoring that would trigger alerts. So, if you're a heart failure patient and your weight changes by 4 pounds, that can trigger an alert to the healthcare team. Those kinds of diagnostic decisions that are done by an app or by our control center require FDA approval.

Scott Nelson: Okay.

Dr. Anthony Sterns: So, moving through that process, we don't need that FDA approval when we're overseen by an institutional review board in a study.

Scott Nelson: Okay. Okay, I see.

Dr. Anthony Sterns: So, we focus I think, more generally, just as an interventionist. We don't understand behavior related to taking care of ourselves all that well, and I don't think we really have a great handle on the subtleties of helping ourselves to maintain our health or to restore our health after something more serious happens. So, I built a platform so I could do that research myself, and it just seems like everybody else would find it very useful, and that led to us really trying to commercialize.

Scott Nelson: Okay. So, I want to ask you about that point you just made. You initially developed this system for yourself, as an individual patient or like in your own health, or are you talking about for yourself as it relates to clinical trials?

Dr. Anthony Sterns: Yeah, I wanted to build a tool that would allow me to conduct mobile data collection…

Scott Nelson: Okay.

Dr. Anthony Sterns: …for my own research. I do research with older adults, both healthy older adults and adults at work, for example, as well as looking at chronic illnesses. Most recently, we have been studying stroke and heart failure.

Scott Nelson: Okay. Okay. The reason I'm asking all those questions is because it seems like such a cool tool as more technology is developed to almost put or try to put health back in the control of the individual or the patient, or the consumer if you like to call it. This is just another really interesting tool that kind of fits into that paradigm, and that's why I'm asking those questions.

But I could see the extreme value in the clinical trial setting, and I remember actually recently listening to an interview with, I think he was a Ph.D., but it was more in regards to nutritional products or diet and weight loss, I think. diet, weight loss, and exercise, and anyway, the point he made was that compliance is incredibly hard to not only track but actually enforce in your patient population. So, I'm looking at iRxReminder and thinking, "Is that really the huge need that you're solving right there, the huge problem you're solving?"

Dr. Anthony Sterns: Yeah, exactly. People have trouble taking their medications, about 70% of it according to research, due to forgetfulness.

Scott Nelson: Okay.

Dr. Anthony Sterns: There are other tools, but particularly in diseases like heart failure and dementia and stroke, where there's a cognitive impairment component, people don't have the same power to remember to follow their regimen. So, we try to find a way that would, or I guess we have found a way, that really allows you to have what I call a cognitive prosthetic, TM, that will help you to take care of all these things related to what's called prospective memory, memory for things to do in the future, things like taking your medicines or remembering to exercise.

So, you need a set of behavioral reinforcements and it needs to come with you, and it needs to feel like you reminded yourself, as opposed to an alarm, something nagging you, a service that calls you from somewhere else. Because that is what I call nagging technologies, and ultimately that fails because every time you ignore that or are away from it or miss it, it reinforces that it's okay to do that. Whereas if it's with you, I mean we all use smartphones, so when you look at your smartphone or when you get reminded, oh, it's my father's birthday, as mine was yesterday, it tells you to call and say hello. It's like, you don't think of it as, oh, my smartphone told me to

call my dad. You go, oh, thank goodness I set that alarm and remembered to do this thing I wanted to do.

Scott Nelson: Sure.

Dr. Anthony Sterns: I think most people want to take their pills. They want to get healthier. It's just a matter of getting a handle on it.

Scott Nelson: I'm going back to that term you coined earlier, cognitive prosthetic. That's a great way to look at it. I especially understand it now after you just explained it there, but that's a great point. So, you mentioned a statistic earlier in regards to patient noncompliance and how big of an issue that is in clinical trials. What was that percentage, was it 70%?

Dr. Anthony Sterns: Yes, so about 70% of not taking your medications, at least according to some studies done by Denise Park, is due to forgetfulness essentially.

Scott Nelson: Okay.

Dr. Anthony Sterns: About 20 to 50% of appointments are missed, for example, which is why there's an electronic medical record system. There's often a module to help you remember. Someone will call to remind you of the appointment the day before, which helps, but people still miss appointments. So, the way I like to think of it is, and then I think about a third of patients don't follow their regimen correctly. So, in a clinical trial, a third of people do it wrong, 70% of people forget to do it right or wrong, and then 20 to 50% of people don't show up for the clinical appointment. So, to find out, to give you the information that you need, which was maybe based on doing it incorrectly.

Scott Nelson: Okay.

Dr. Anthony Sterns: So that's the vagaries. Now, certainly, you know, we have checks and validation and we can ask questions. There are other devices out there such as MEMS caps, and devices that are proposed but not on the market yet like GlowCaps, that do know that you've opened a bottle and things like that. But I think, much more importantly, they're not sending information in real-time or they're really nagging technologies that are not necessarily mobile. I don't know if you've seen a MEMS cap. They're like the size of a bottle.

Scott Nelson: Okay.

Dr. Anthony Sterns: So, you know, that doesn't fit in your pocket.

Scott Nelson: Right.

Dr. Anthony Sterns: GlowCaps I think are cool. They know when you've opened it. They send it to a cellphone chip, and that tells the Internet that the bottle's been opened, and that's fantastic, but it has a little music box in it, like a greeting card, a little boop-boop-boop.

Scott Nelson: Yup.

Dr. Anthony Sterns: That kind of thing. If you have 10 of those, like most older adults take 8 to 10 medications, who have a chronic illness, you can't have that cacophony going off in your bathroom every morning.

Scott Nelson: Yeah.

Dr. Anthony Sterns: So, that's not a solution that works.

Scott Nelson: Okay. Yeah. Listening to you describe the various situations where this plays out, it seems like you're filling a huge void in this niche. My next question is, you've got typically, I would think the patients that are involved in clinical trials are maybe, I'm not sure exactly of the data, but I would guess over 50, maybe even over 60. I'm not sure what the averages are, but how hard is it to get patients that are over a certain age to actually use a smartphone? Are you finding challenges with that? If you are, how are you overcoming that issue?

Dr. Anthony Sterns: Sure, that's a really good question, and I try to answer it beginning with our research in around 2002 when I started training older adults to use combination cellphone PDAs. So, at that time, our research device was the Samsung i300. It took about nine hours to train older adults to really use the entire device, and I think that's the secret. They need to know how to use the entire device, so they want to take it with them. So, in my most recent research on stroke recovery, we used the Apple iPhone, and that training took 20 to 25 minutes to teach them to use the entire device.

Scott Nelson: Okay.

Dr. Anthony Sterns: We proved that with a little mastery test. They show they can use the device in the hospital. We train them when they go home. So, if you know how to spin the dials and understand how to get back to the main screen, that it's important to keep the phone powered, those sorts of things. We do a cognitive task analysis and really have spent almost a decade making sure that training is exactly what it needs to be to ensure that the person will be successful. In our last study, we had no one unable to use the phone, but we had 50% of our booklet, our diary subjects, lose their diary in two months.

Scott Nelson: Okay. That's interesting. So, you almost think the opposite, that this would be a bigger obstacle to overcome, and in fact, it's already happening with people losing their diaries and various paperwork. That's interesting.

Dr. Anthony Sterns: Yeah. Well, the secret for us is that there is training and that it's training that's built on the 30 to 40 years of, I guess 50 years now, of what we've learned about the best ways, best practices in training older adults.

Scott Nelson: Okay.

Dr. Anthony Sterns: So, our background in gerontology and older workers has, I think, highly influenced our success, and that's maybe less repeatable by others.

Scott Nelson: Sure, okay.

Dr. Anthony Sterns: By which I mean that if you use our training, you will be successful.

Scott Nelson: Okay, and I presume you probably, in terms of the user interface, you probably, based on your experience in working with that patient demographic, you were able to design the user interface a certain way that would allow for ease of use, usability, etc., etc.

Dr. Anthony Sterns: Yeah, absolutely. I think if you read my 2005 paper, you'll see that nine of the 10 recommendations are basically embodied in the Apple iPhone.

Scott Nelson: Okay.

Dr. Anthony Sterns: I know that they didn't read my papers. It's not because of me. But, using things like that central screen to return to. The home button takes you to the front screen, we have a central place we call the Today screen, and it really contains all the things that you need to do for that day, and if there's nothing for you to do that day the screen won't have any.

Scott Nelson: Okay.

Dr. Anthony Sterns: So, you'll always have your pills to take if you have a chronic illness almost certainly.

Scott Nelson: Right.

Dr. Anthony Sterns: So, there's always that. But you're right. That interface has a decade of also research behind it.

Scott Nelson: Okay, and that study, for those of you that are listening that, are interested in checking it out that says it's kind of interesting, it was published in The Gerontologist, correct? It's called "The Curriculum Design and Program to Train Older Adults to Use Personal Digital Assistants or PDAs." is that right?

Dr. Anthony Sterns: Yeah. It focuses on the training program, that nine hours of training, looking at some things like a class size that we did, but it also includes some reporting on the three-month field trial that followed it.

Scott Nelson: Okay. And you said I want to go back to this because it stood out to me and I jotted it down as a note, but you said that based on your initial research, it only takes about 25 minutes to initially train someone to use iRxReminder?

Dr. Anthony Sterns: To use all of the iPhone.

Scott Nelson: All of the iPhone, okay. Okay. That's interesting.

Dr. Anthony Sterns: Yeah. So, we don't spend any time on iRxReminder.

Scott Nelson: Okay.

Dr. Anthony Sterns: We just go, "Here. Here's how you take our pills."

Scott Nelson: Okay.

Dr. Anthony Sterns: It takes less than a minute of that 20 because we've taught them how to do everything else. We've shown them it's a calculator, it shows you the weather, it takes pictures, it's a transistor radio in the parlance of an older adult.

Scott Nelson: Okay. Yup. Very good. To your point, kind of the second big key in getting patients to become familiar with the iPhone, the interface, etc., would be that they actually use it. So, if I'm the patient involved in the clinical trial, am I having to buy the iPhone in this example or how does that work out? Because I would imagine that you would want the patient to actually use the iPhone as a phone, right? So, basically, they're taking it with them everywhere, therefore, to use your phrase again, cognitive prosthetic, that it becomes such. So, how does that work? What are the logistics of that?

Dr. Anthony Sterns: Well, we've done it both ways. We've given people phones, and we have some trials starting now where we just recruit people who already have them. In the context of clinical research when your typical patient cost can be $15,000 to $30,000, so the annualized cost for an iPhone, if you're buying a bunch of them, is maybe $750 to $800.

Scott Nelson: Okay.

Dr. Anthony Sterns: So, relative to that 15,000, if I can get twice as much data and eliminate, say, 60% of the dropout, it's a clear win in terms of data and in terms of cost.

Scott Nelson: Very good. Okay. That makes sense. Back to the iPhone, because if I don't ask this question, I'm going to forget to and we're going to run out of time, but are you developing iRxReminder on other platforms like the Android platform, for example, or are you trying to really focus it on the iPhone?

Dr. Anthony Sterns: Yes, we're developing it on other platforms. We think of our development effort as about 90% cloud-based. So, that really, unlike technologies that say we're highly dependent on the Centro Palm or something like that, or have a proprietary interface like [22:38 inaudible] or something like that, it's a photo display that does medication reminding…

Scott Nelson: Okay.

Dr. Anthony Sterns: Yeah, we'll have to check on that name. There's a lot of competition in this space.

Scott Nelson: Right.

Dr. Anthony Sterns: But we basically can take our lessons learned and apply that onto new hardware pretty quickly.

Scott Nelson: Okay.

Dr. Anthony Sterns: So, we're working with the iPhone because like I said, the iPhone for older adults is a really good interface. It has little subtleties just like when you open things, you swoop to the left, right? So, the screens feel like they're off the screen over off to the right.

Scott Nelson: Sure.

Dr. Anthony Sterns: If you know what I'm saying.

Scott Nelson: Yup.

Dr. Anthony Sterns: Then you come back that way. So that's the natural thing that the iPhone does. Doing that on the Android, you have to do that on purpose.

Scott Nelson: Okay.

Dr. Anthony Sterns: That's not built in so it's much harder, and those kinds of subtleties really make a difference for older adults in terms of their ease of use.

Scott Nelson: Okay.

Dr. Anthony Sterns: So, for me, there's only one—the Apple iPhone is a much... the iOS, I guess, is a much better environment and that includes the iPad as well. But we certainly want to make our product as useful to researchers as possible, and as soon as one really, really wants the Android, we'll make it available.

Scott Nelson: Okay, and it seems like that's where most developers are going in terms of mobile apps, is starting, and building around, their foundation has dealt basically in the iOS and then based on popularity, utilization, etc., then they'll expand to other apps. That seems to be the case, and I wonder if it's little subtleties that make a difference in their world, just like you mentioned because I would have never thought that the iOS or the iPhone's ability to basically, naturally kind of create that left to right sort of scrolling would be a difference-maker, but I guess that goes back to your experience in dealing with this sort of patient population and knowing what works and what doesn't. So, again, very interesting.

So, any other features that you want to discuss in regards to iRxReminder that we haven't? We spent most of our time talking about kind of its use in the clinical trial setting, but I even noticed in kind of browsing through your website at irxreminder.com that there's a podcast feature? I guess I didn't quite understand. It seemed like that fell under kind of a training umbrella. Can you explain that a little bit more?

Dr. Anthony Sterns: Sure. Well, for stroke education for example, essentially when you come out of the hospital, right, you're still quite ill nowadays. They kick you out of there pretty quickly and they hand you a big pile of paper, particularly for stroke, it's literally probably 30, 40 pages of things that they give you. Well, if you're off to the nursing home for a few weeks to recover there or if you go home, you're really pretty out of it for a few days. You sleep a great deal, for example, following a transient ischemic attack, a mini-stroke, that's what we studied, or a false stroke, certainly, your recovery can be months.

So, you're not ready for education, so my thinking was that with the podcast, you can put that there when you're ready, you get the reinforcement of text and talking. So, we used three- to five-minute podcasts that are basically talking PowerPoints that paralleled materials that were developed for the hospital, and they essentially taught the person to recognize stroke symptoms so that if they had another one, they would know to call 911, which is what you should do.

Scott Nelson: Okay.

Dr. Anthony Sterns: And do that as early as possible, and then also to talk about their risk factors and those they could control and those they couldn't so that they could begin to influence their lifestyle. And one of the things we tested in our research was whether people retained that information, and people who have the booklet, for example, had a decline in information and people with the iPhone had an increase in information over the two months of our study.

So that seems like a really good way to let people have that information available, give it to them in small doses as part of the weekly recovery plan. If you're doing a study, that can be used to also explain the protocols, what you should be doing, how you should do it, so it's kind of a nice feature in terms of always being able to explain the study, particularly for people who may have a disease where there is some cognitive impairment, for example.

Scott Nelson: Okay. Okay.

Dr. Anthony Sterns: The system's capable of being used by a caregiver, for example, to help with someone. We're talking about things like autism at the moment where there's a heavy challenge on a parent who may have other children as well, to take care of a lot of behavior training, for example, and modeling that behavior training and recording that it's being done seem like, really, all capabilities that we already have, and we're looking for opportunities to do that research now.

Scott Nelson: Okay, and back to your point about when that patient is discharged from the hospital after a stroke, for example, that seems like it makes so much sense because I'm thinking if I've like had even a basic surgery at a hospital, you get a ton of paperwork and this sort of take-home packet, and I don't think I'm abnormal in that most of that stuff probably gets tossed at some point, but if it was actually digital and on my iPhone, I would probably be more apt to at least read it or look at it and remember it.

So, again, that's another point that I wouldn't have normally thought about, but now after you explained it I'm seeing the usefulness in adding that or having that as a component in your

system. So, very cool. So, I know we're running a little bit short on time here, so I wanted to just ask a few questions about your background. I know that you're also the vice-president research at Creative Action, and also a visiting professor at Kent State University. I mentioned that earlier in the call. Can you briefly kind of describe what you're doing at Creative Action or what Creative Action is?

Dr. Anthony Sterns: Well, I spent 20 years working for Creative Action directly, and now iRxReminder is a spinoff of Creative Action.

Scott Nelson: Okay.

Dr. Anthony Sterns: We're a partnership of Creative Action and Cogneato Incorporated, our technical partner.

Scott Nelson: Okay.

Dr. Anthony Sterns: Creative Action develops products and services for older adults, and we have a portfolio of 13 patents, and probably our best-selling product is another sort of cognitive prosthetic. It's a group activity for people with dementia, and it's in about 1300 facilities now in seven countries.

Scott Nelson: Okay. Wow.

Dr. Anthony Sterns: That's the Memory Magic Program, and you can see that at memorymagic.com.

Scott Nelson: Okay, memorymagic.com? No hyphens, just all one word?

Dr. Anthony Sterns: One word.

Scott Nelson: Okay. memorymagic.com, that's interesting. You obviously have it in a lot of different places, that's for sure. Okay, so Creative Action, most of your work there is focused on really the whole patient subset and experience that you have that we had mentioned earlier, and then you also do a little bit of teaching at Kent State University?

Dr. Anthony Sterns: I'm the statistics consultant for the nursing faculty.

Scott Nelson: Okay.

Dr. Anthony Sterns: I teach, or have taught, business statistics in the doctoral program for the University of Maryland.

Scott Nelson: Okay.

Dr. Anthony Sterns: So, I do that as well.

Scott Nelson: Very good, and I see that you did some undergraduate work at the University of Michigan, but now you're in Northeast Ohio, right, the Akron area?

Dr. Anthony Sterns: That's right. My undergraduate degree was in engineering.

Scott Nelson: Okay, and then your doctorate in is it… go ahead.

Dr. Anthony Sterns: It's in industrial-organizational psychology and I did a graduate certificate in gerontology.

Scott Nelson: Okay, and where is that from? Where is your doctorate from?

Dr. Anthony Sterns: From the University of Akron.

Scott Nelson: University of Akron, okay. Very good. Now, do you find yourself struggling whether you're a Wolverine or a Buckeye, living in the State of Ohio?

Dr. Anthony Sterns: There's no struggle. I'm a Wolverine.

Scott Nelson: You're a Wolverine.

Dr. Anthony Sterns: But I'm a Big 10 supporter, so there's really only one game where I'm for the Big 10 in general.

Scott Nelson: Got you. Got you. Very good. Well, last question. I always like to ask the people that come on the program this because I think it provides kind of some great ending and kind of some concluding insight, but when you look back at your career, is there one or two things that you can pinpoint that stand out that you really wish you knew this 10, 15 years ago, if you could go back? Are there a few things…?

Dr. Anthony Sterns: Not really me. I wish other people had. When we first proposed these studies in 2001 to the National Institute of Health, we really found a lot of ageism about older adults being able to use these devices. I'll be the first to admit there were challenges, but they weren't even willing to try with the idea that these devices would become more available and easier to use over time. Then, around 2005, they were saying doctors wouldn't use mobile devices, which is, there's a whole, you know…

Scott Nelson: Yeah.

Dr. Anthony Sterns: Now, I think you're in the minority if you're not.

Scott Nelson: Oh, yeah.

Dr. Anthony Sterns: So, those are the things. I wish I knew how to convince those powers to see the future as I did.

Scott Nelson: Sure, yeah.

Dr. Anthony Sterns: I wasn't always as persuasive as I think I am now.

Scott Nelson: Okay, yeah. I wouldn't have expected that answer, but that's really interesting because you were well ahead of the curve back in 2001 in trying to get over that hump. But you know what? To your point, I hear so many people reference that when talking about maybe a startup technology that wasn't necessarily a failure per se but didn't grow as they expected or didn't take off as they expected, and that's one of the things they've mentioned, is the fact that they were probably a little bit ahead of their time, that the market just hadn't caught up yet, and so that's a great point.

Dr. Anthony Sterns: Well, only this summer did, I think, Pfizer really begin what's called the first all-digital study where all the data collection is at least input into a web browser. I would not like to think but would believe that it would be 10 or 15 years before this was standard practice in clinical drug trials.

Scott Nelson: Okay, and speaking real quickly on kind of the future of almost that idea of like patient input in clinical trials and whatnot, you know, you see sites like patientslikeme.com and it's growing popularity, and actually I think I've recently read about some companies that are using some of the data from a site like Patients Like Me. How do you see that they're kind of the future of this whole arena changing and evolving?

Dr. Anthony Sterns: In terms of patient care?

Scott Nelson: Well, yeah, patient care and just clinical trials in general. I mean, you mentioned that you see something like this being the gold standard in 10 years. Expand on that a little bit.

Dr. Anthony Sterns: Well, sure. I think that right now, you go into the clinic, you sign up for a trial or you go in, you get all the preliminaries, you come back in whatever, a month or three months, and they try and talk to you on the phone occasionally in the middle to sort of remind you to do your stuff. But there's a 30% dropout rate, and that's really up because of this nagging that goes I think in trials.

Scott Nelson: Sure.

Dr. Anthony Sterns: So, what I think is that we need to find ways to collect data better and in a way that feels like you're reminding yourself. I think we need better data. Then, the same thing with the doctors meeting with you, asking you a few questions for five minutes and really making decisions about your health for three months or a year, and based on that five-minute encounter or that 15-minute encounter, whatever it would be.

But if they could have a graph that looks at medication adherence and the kinds of aches and pains that you were reporting over time, and the grogginess or whatever when taking certain medications in combination, they could really have a chance to change that schedule or look for different medications, change the dosing or the time of day that they're taken in ways that you could keep up with. Now, it's tough to manage 10 medications but there are a lot of people doing

it. The subtleties of that, the information's not available to really work with your doctor very effectively, and so I think this is what will allow that kind of interaction, and I think it'll be more enjoyable for a doctor, and there'll be better healthcare for the patient. We'll catch things earlier and we'll have lower emergency room visits and less need for nursing homes as you're recovering from heart attacks and strokes, and the overall cost of healthcare will be controlled.

Scott Nelson: Yup.

Dr. Anthony Sterns: So, doctors happy, patients happy, insurance companies happy makes government happy.

Scott Nelson: Right.

Dr. Anthony Sterns: That's my vision, everybody happy.

Scott Nelson: Yeah, that's a great way to conclude, and I would add to that if you've listened to this interview and can't see how one example of how iRxReminder kind of plays into that, you may not have been listening very closely. So, that's a great way to conclude the interview. So, I can't thank you enough, Dr. Sterns, for coming on to the program and sharing your insights about the clinical trials, technology within the clinical trial setting, iRxReminder, and how that fits in, and so many insights that you shared with us. So thanks a lot for coming on the show, and for those of you listening that want to learn a little bit more about you or iRxReminder, where would you direct them to?

Dr. Anthony Sterns: Well, I think irxreminder.com is probably the place to learn the most about the product. I think maybe LinkedIn if you actually want to learn about me.

Scott Nelson: Sure. Okay. Very good. So, irxreminder.com, and then I'll link to this on the post there your LinkedIn profile as well. So, thanks again, Dr. Sterns for coming on. I really appreciate it.

Dr. Anthony Sterns: Thanks for having me.

Scott Nelson: Alright. Thanks, everyone for listening. Take care.