

into a technology career up until I got to being a freshman in high school, and I thought so as well. But as a freshman in high school, I narrowly survived 2 potentially fatal illnesses, so I had a sinus infection that became sepsis, I got saved from that, after a number of surgeries, and about a month in the hospital, went home on IV antibiotics and then I got c diff... So, it was the early 90s and they didn't know what that was, but luckily, we were close enough that a physician could drive from the CDC in Atlanta to tell them what I had and how to save my life. So, if you know anything about that disease it's still to this day, depending on the group has a 40% mortality rate, so depending on who you are and how fragile your health is it can be a big deal. Quickly realized that I had a lot to give back. So, I transition to a health care career. I went to medical school, Medical College of Georgia, went to Iowa State University in Columbus, Ohio for residency and became a physical medicine and rehab physician. And throughout residency, I saw a lot of patients that needed my help. If you know anything about rehab medicine, we take care of people after really bad things have happened to the spinal cord injuries, brain re-burns and things like that. But I saw an awful lot of patients that needed my help because of something that happened to them through their health care journey, either the right thing didn't happen or didn't happen timely enough, or the wrong thing happened. And so, I got very, very involved in patient safety and clinical quality and the biggest lever that we have, I think to this day, to move that needle very quickly. Is technology enablement. Fast forward, I went to work at a hospital in Nashville, Tennessee for HCA and had the unpleasant experience of moving from an electronic health record back to paper, so I saw immediately that there was a missing safety net there. Got really involved in lobbying for that headed up our implementation of our electronic health record at that hospital. And he said, "Hey you did a pretty good job with that. Why don't you come do that part-time which lasted for about four months and then they said "Hey we need a lot more of your time. Why don't you come do that full-time? And so, I transitioned into being a Division Chief Medical informatics officer for HCA, which I did for about seven and a half years, and then fast forward to about this time last year and I had the opportunity to come work for a company that's probably familiar to a lot of people in STL in World Wide Technology, so had the opportunity to move from helping one health system, get better at a time to helping a lot of health systems get better at the same time, which is fantastic. And I also have the great privilege of working for a company that does technology and innovation really well across all industries. Probably everybody in this room would agree that healthcare's about a decade behind. Generously so I get to see all the cool innovations that are happening in other sectors and jerk those into healthcare to help solve our problems. So that's how I ended up where I am and why I love my job.

Jerry Fox: Hi, my name is Jerry Fox. I am the Chief Information Officer here at BJC. Thinking about zigzag I guess I'm on zag of my zigzag career. I have only been in healthcare for my time at BJC, I've been in life sciences. I'll tell you little about that, but I've been a BJC for two years and some of the just... I've got technology background and I see where the rest of industry is, and was brought to BJC to help pull some of that

Katie Novak: Hi, I'm Katie Novak and my official title today is Care Management Information Systems and business Support Vice President for Mercy. So how in the world does one get into a position with such a long title, as that? Well, you start as a Physical Therapist, of all things. I am a physical therapist by trade and practice for the first eight years of my career I partly and Chicago and then moving back to the St. Louis region in all the various settings in-patient, out-patient. I did not do home health, but I did the Ltax and the rehab facilities, just everywhere that I could gain that experience of, within physical therapy. When I moved back to the St. Louis Region I was appalled that we were still writing our notes and I would spend hours after seeing 30 patients just documenting notes, documenting notes many times very similar notes one after another. So I had the opportunity to move over to SSM Health's Electronic Health Record team, and that really gave me the launch into this technology career that I have developed, then over the last 13 years. Now, I have to admit that I have been trying to get out of technology. I'm a clinician for heaven sakes. I've been trying to get out of technology. I say that tongue-in-cheek. I thought that I would take this detour of my career for just a couple of years. I'm just going to do this for a fun. I thought it would be fun to implement the electronic health record at SSM. Something different. I had practiced, and saw patients every day for eight years of the first eight years of my career, but it really has opened up many opportunities for me in so many more ways than I could imagine.

Primarily for me it has been an opportunity from a leadership perspective to be quite honest, I do not have any sort of IT background. Again, I'm a physical therapist, I'm a clinician, I did gain an MBA somewhere along the way but absolutely no technology background but I am a leader and I am someone who is willing to kind of step out of their comfort zone and lead in an area that you may not be 100% comfortable in and you learn along the way. Clearly, I have had to be vulnerable because of my lack of knowledge in the space, but as I have practiced in this space and empowered my team, I have learned so much, they have grown so much because I have allowed them to do what they do best, they look to me for that guidance and training and leadership training, not technology training, but really as someone to bounce ideas off of. Because I am, I ask a lot of questions and I'm able to guide my team. So I implemented the electronic health record that launched me into the leadership path of my career. Moved to Mercy again, remember I was trying to get out of IT. So, I'm not physically in the IT department within Mercy. I'm in the Care Management Department, but I do lead a team that manages all of the claims data for our value-based care contracts, so we bring in the claims data, we analyze data and we identify opportunity to reach out to patients in most need of our care and I think we'll get into this a little bit later, is to really understand where we are going to be able to make the greatest impact, while we would hope that our population has a real strong focus on health and community wellness, and that is certainly a focus of ours, we really do also need to focus on the sickest of the sick and identify those patients who are sick and who have the rising risk. And that's really where I have found I have been able to develop my



sweet spot combining that understanding of clinical care and patients and where they need us the most, with our data and analytics side so that we can reach out to those patients and help them.

Nichols: I think it was Joanne talking about being comfortable with the uncomfortable... So being in technology, maybe not comfortable but getting comfortable with that. And then as my good friend Dan Robert says, "Technology is the engine. So you're in a good space.

Dr. Nagda: Like everybody else here. I don't think what you wanna put yourself in a situation in life where you're not driven 'cause the reason why everybody's had a zigzag is because they're driven by something. I don't you find your "why". That's really what they're telling that sort of reaffirmed for me my "why" is actually family and has always been that, but it's also been a I'm giant nerd.

I have a vision on what technology wants to be, and I wanna make it a reality and I actually agree with some of the panelists before about some of our shortcomings. It's a double edge sword, and you can actually make it into a strength. So, I would challenge all of us to do that. My background, I started college at Illinois when I was 15 years old, told you I was a nerd. Unibrow and everything. And after two years studying electrical engineering, I had to leave because my dad had a heart attack and a stroke. And so at 17, I left the US and actually went down to Dubai, which is where my father is from, to run the family business, which I had never really been exposed to because I was a base out Chicago and Dad would keep going back and forth every six months. A lot of people that are living in both countries. And let me tell you, I wasn't very good. 30 million dollars in loss first year. So Dad was kind of pissed really. We lost 16 million on September 11th, my dad had his heart attack and stroke on September 12th, so I did that for three years. I was able to turn around the company. Some of the people up here might actually... I remember there was a tiny company on a Baltimore they got really big that in the textiles world, got to save my father's company which was under armor, so we were the only producer of under armor in the world for three and a half years, and then I ended up exiting that company to Arvin which is largest textile company from the world now. I then went on to work at McKenzie for a couple of years. And that to honestly do nothing because I was literally sitting there telling them. Well, I tried that didn't work, that was 90% of my job, all the mbas were running models, and I was like Ah, I don't know about that. They didn't like me much but I did that for a couple of years. Then there was an earthquake in Kashmir in October 2005, which where my mother's from, and I went to go help out 'cause my grandmother had a spinal cord injury from the earthquake. So people who don't know about Kashmir, between India and Pakistan, there are two parts of Kashmir one is the Indian part call Jammu Kashmir. One is the free or not, so free disputed part which is called Azad Kashmir. My grandmother is from Azad Kashmir. 34, 000 people died in the earthquake, but another 30-000 people die from hypothermia and lack of access to care because nobody wanted to go out there



just think about it. It's terrorism central there. So I went to go help out I wasn't picking up rubble, but there were these four Cuban surgeons that needed a translator, and so I went to go help out after three months there decided I wanted to come a doctor so I did that. I made the awful but great decision of going back to school and during that time came to wash U. Actually wanted to work with Dr. Peck was a very big name, here and kinda changed my life, actually, when I was in undergrad, three of my frat brothers and I were kinda drunk and came up with idea of School G. If you guys have any kids in school, I'm the founder. So we are in 55% of high schools in America now, 20 million users, 130 countries. Got very lucky like super lucky we everybody knows the crash of 2008-09. Two weeks before Lehmann went down, we got disperse cash from our first investor that investor went bankrupt. Their investor is one bankrupt. Nobody came after us so we got free money when nobody else had any. So, I had bankers bringing me coffee in the morning, it was great. So after doing that, I decided that I wanted to go back to med school 'cause I felt like I didn't really achieve my purpose, as I said, it was really important for me to go back to med school and had to do my MBA from Penn and Wharton and then came here for residency work with Dr.?? Was a very big name, here in EMT. Then things changed again. And I know I'm talking forever, so I'll cut it shorter.

So my first year here, my dad had another heart attack, when they were visiting for the weekend this time they had to do an emergency bypass, with one of my favorite surgeons, Dr. Laughtin she was unbelievable when she was here, and now she's the head of cardiac at Hopkins. Unfortunately, it didn't take... And so, he had heart failure that then ended up third year leading to Cardiogenic shock, and I instantly became a caregiver and provide care from... And my mom was also diagnosed with cancer, the breast cancer and so, I instantly became a caregiver for both of my parents and moved them down to STL bought a house in town and country, along with a lot of other people that are probably 20-30 years older than me, but it was totally worth it. I was in residency at the time and something very profound. I said earlier today that really kinda hit me, but probably 'cause it's a nerve. I've been doing research on things like the da Vinci robot and other things and I realized very quickly that the impact I would have had as an academic surgeon, which is what I wanted to do at the time, would have affected people. 20%. 20% is the max you can affect... 'cause that's how much healthcare affects overall care, social determinants of health. There's lot of data. Kaiser talks about all the time. And I wanted to do something about that. It was something so simple. We were building robotic surgery, but why haven't we talked about robotic medicine? When you're talking about tele-medicine? The doctor can't do anything for you from all that way away, but the doctors, I don't know if you know this about doctors, we like control. And so them, sitting passively watching the screen watching somebody else to the physical exam. If I'm an Ear Nose Throat doctor which I am, you have a skill that you have developed over all these years to just sit there and watch is difficult. So, that's what we're building, we're building robotics platform here in St. Louis that allows doctors to be able to treat patients wherever they live, and that's really using literally the beam into a robot, and move around and do the physical exam.



And we're launching in January we already have customers. And so it's kind of a... Our first target market is to go after people that are the most vulnerable so people that live in senior living people assisted living and nursing homes. Again, at home. My parents, I have to figure out something for my dad. So, family is very, very big, and I really appreciate you saying that 'cause I think it's a lot of us have made decisions for that it's just how do you roll with the punches and use it to your advantage?

Nichols: Oh, well I think we answered all the questions. So, we can just all go home down to... But that's a perfect segue onto what we wanna talk about with the digital health and the promise that it has to radically change the landscape as we know it. So, what you're talking about with the robotic avatars and that sort of thing that is precisely what we're talking about, but let's talk about that a little bit more and Katie. I'm thinking you with the virtual care center anybody that wants to weigh in on the digital health and how it's going to radically change the healthcare landscape.

Novak: So I could take a stab here first. I think that this is the way of the future as it was mentioned earlier, healthcare is a bit behind in other areas, but we're quickly recognizing that and moving into spaces where we can make a difference. Specifically, with Mercy we have begun to put iPads into the homes of our most vulnerable patients, so that we are then able to have video visits, if you will, with the patient on a regular basis, in their homes, and it's not always with a physician necessarily, it is with the most appropriate care provider, to tie right into that though. We cannot forget about our care management team as well. So, while we have all of this great technology, and high-tech putting an iPad into the patient's home, there are some very basic fundamental pieces of outreach that we cannot forget about from a caregiver perspective, being able to reach a patient via text message is the way to go often times today, and just remind them. Have you taken your blood pressure today? Have you weighed yourself? Have you checked your blood sugar?

Those are the types of interventions we are also doing through mercy we are able to reach so many more patients by integrating these other pieces of technology. Versus having to call them on a telephone when chances are, they're at work, they're at the grocery store, they're caring for another person in their family. People are busy. So, we have to make sure that we are leveraging ways to touch all of our patients differently, and also touch so many more of our patients.

Fox: Alright, in a way that I really think about this coming in pretty agnostic is that this is really all about data, you think about industries that have been transformed and there was this movement of every company is an analytics company, every company is a technology company that's true. Here, this is really all about ensuring that I can take the plethora of data sources and bring them together to personalize the care. That can be prior to me coming in to cry while I'm healthy. Just telling me a story about Chinese pay for their insurance when they're healthy they don't pay for their insurance



when they're sick. But anyway, that's a data source while I'm healthy, there's a data source when I'm being treated. There's a post-treatment data, but being able to bring together data about me. Data about my genomics, data about me personally, data about my clinical care allows my plan to be created more personalized. So when I think about from a technology standpoint, where does technology come here? Technology provides the ability for our providers to really utilize data to make us more intelligent to make us more personalized in our plan.

Justin: Couple of things I would throw out. So one is, I think we have what seems like a paradox, but actually is a synergy and that's the balance between population health and personalized health. We know in population health, the things that need to be done in general for people that have condition X, and managing that well, is vitally important to this move from volume to value, the personalized side of that. Seems like it would be sort of a contradiction. You're taking care of a group of people generically with a checklist. The personalization part of it is for that category of treatment for that category of intervention, which thing is gonna work for you as an individual or for me as an individual or for our kids as individuals? So knowing how to balance that so that the effect is what you're going for. We see that definitely happening with the genomics, proteomics, younameit-nomics. It's massively data-rich and today we're still inside poor, but we're working on that. So as we use AI machine learning, deep learning, the things that are becoming technologically possible with the simultaneous occurrence of many more valuable data streams coming into the mix, I think we're gonna see an explosion of improvement. The other thing that we have to also talk about and you mentioned post-acute care, which is definitely a huge place, but it's also the management of chronic disease knowing that 90% of people who are retirement age, or older have at least one and 77% have two or more. It's managing those chronic conditions that lead to other bad things. I remember earlier I talked about the things that weren't done or weren't done timely enough. So how could we manage that person's blood pressure and cholesterol in Diabetes so that they don't have the heart attack, the stroke? It may not be 100% effective, but if we can keep people healthier for longer and prevent those downstream outcomes in the case of diabetics of amputation of kidney disease of blindness how much better off is that person's life and how much better off is it to the system when you've also saved all of those costs of all of those complications? So I think that is really the direction that Mercy Virtual, is a fore-runner and if you haven't read Eric Tuples most recent book, *Deep Medicine* you really should. And they're highlighted prominently in that for good reason, 'cause they've been skating where the puck is gonna be for quite a while now. It's just now that the rest of healthcare, is waking up to the fact that that's a necessary intervention with American Heart Association coming out and saying "We don't really care about the measurements in the doctor's office anymore, we wanna know what happens in the home, we want those hundreds of measurements over the course of a year. Not the three or four that you got when you went to the doctor when you were either really nervous or maybe on your best behavior, 'cause you wanted to impress the doctor. But either way, it's



various elements that have been prominent in healthcare that market dynamics and consumer demand will definitely drive some changes around so.

Nichols: Well, you guys, this has been so good and I think we could probably sit here for another couple of hours and talk, but we don't have that kind of time. Liz do we have time for one question, maybe or two questions. So we have time, we're not really... Anybody have a burning question that they wanna ask? Yes, over here.

Audience Guest 1: One of the reasons I think why healthcare is behind many other industries in many ways is because our consumer. The patient. Is one of the most uninformed consumers out there? What do you believe is your company more professional role to educate the consumers so we can move health care forward?

Nichols: How do we get the consumer to be more informed about their choices, right? What are the questions you're supposed to ask, what are the metrics that you look for? So what is the role of all of us on the panel to educate the consumer, the patient, more on those things? So does anybody have a comment on that?

Dr. Nagda: What I was gonna say it was a lot of the people that I talk to our caregivers. If you are caregiver, I would really suggest that it's a silent epidemic in this country, 1 out of 6 people that have jobs, please, if you need help, go get it. That they have saved my life, really. And the mood of residency, they say my life. So going back to what you're saying is the only way that we can educate is if that is part of the way I always think about these things is if it's not part of your approach to even making a sale, you're not gonna educate. There's something called the challenger sale. The whole idea is to give them insight, the whole idea is to make them educated. And again, we call me a free market person but it has to be part of the method. When you think about cars, it's an industry that has evolved probably way faster than other industries, but it wasn't like that maybe 10 years ago, but actually on the backend it was not the front end but... Well we're doing at Resilient and the name the company which is great 'cause people need resilience a lot today made me feel good. What we're doing is, at every step of the way if there's something we can do to make the caregiver or the family member's life easier, we just do it, it's because we're doing things like our doctors don't have to do medical records. We're working with the peer directly. Video medicine directly, we're convincing them to allow the video to actually be counted as part of the record. Because we are actually doing the physical exam. So I can tell you which part of the exam you are. So my point is that gives us more money to be able to spend on things like education, so we can make sales. And so that's sort of the thought process.

Fox: Data is the foundation of technology and healthcare, the data is there to alluded a little bit to the development of AI so AI algorithms and engines are being driven today, such that... And I love having Danish here, you claim yourself a millennial, right? So these generations are pushing a different way and the expectation will



become, if you think about it, today, when you pick up your phone to get in your car, you're almost expecting it to tell you how long it's gonna take to get where you're gonna go, which you never told it. It does right? That's artificial intelligence at work, but you're expecting that. So these are all feeding each other and these AI algorithms that are coming together, the generations and consumers will drive that the technology will feed it and it will all evolve.

Nichols: The next time we do something like this. I think we need to have the next generation in the room. We need to get them excited, the kids that are coming up, because I just think about St. Louis, we are a power house really when it comes to healthcare and we should be winning in that space. So let's go out and recruit more young people. Gen Z. Well, thank you so much. I wish we could get going but we're already over time.