An Epic Viewpoint: An Interview with Judy Faulkner, CEO of Epic Systems

Stephen K. Klasko^{1}*

“I didn’t know it was hard.” As a computer science graduate student in the 1970s, **Judy Faulkner** was working with physicians who wanted an easier way to share clinical information about patients, and track financial and administrative data as well.

Sticking with that idea, she developed a software program named “Chronicles” that put the patient at the center and tracked his or her clinical information over time. By 1975, those physicians were telling her to start a company.

Today, she is unique as a woman pioneer of one of America’s most successful information technology companies, and unique among major electronic medical record (EMR) company CEOs in having built the company from code—herself. The result of that equation: EPIC is the nation’s dominant provider of electronic medical records. Just as important to **Faulkner**, EPIC is integral to the next generation of actionable, data-driven population health.

When we got a chance to talk with **Judy Faulkner**, we didn’t ask about today’s EMR, we asked her for perspectives on that story and how she sees the future.

This interview reflects the conversation with **Stephen Klasko**, the Editor-in-Chief of *Healthcare Transformation*, and a visit with **David Nash**, the dean of THOMAS JEFFERSON UNIVERSITY’S COLLEGE OF POPULATION HEALTH and Editor-in-Chief of MARY ANN LIEBERT PUBLISHERS’ *Journal of Population Health Management*.

Dr. Klasko: I really appreciate you doing this. Here is the really good news: I will not ask you anything about the EMR as a product today. We want to talk about the future. When you started building the company that became EPIC, what problem were you trying to solve? You obviously were not thinking you’d create the world’s largest EMR company. Why was it clear to you that it was an important problem?

Ms. Faulkner: I spent a couple years working side-by-side with physicians and learned how important this was to them. They would go around the country and give talks, they would write papers, and they’d come back and say, “Judy, our peers out there want the system. Start a company.” And I would just laugh. And for two

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years, they harassed me, and then finally one day, I said, “Okay.” I had no idea how you start a company.

But I got excellent advice: get permission from the university, get a good accountant, and get a good lawyer. Great advice. We did that. We had two rooms in the basement of an apartment house in Madison. We opened in 1979. We never had venture capital. We never went public.

Dr. Klasko: What did your customers, including the physicians, want you to solve?

Ms. Faulkner: The problem they were trying to solve was twofold. One, they wanted to keep information about patients, but they wanted to define for themselves what that information was going to be. They wanted to create their own screens. They wanted to define their own data elements. And two, they wanted clinical information.

“The doctors wanted to define their own data elements and they wanted clinical information.”

Back then, database management systems were not widely available, so people did not define their own screens. And the systems available were billing, like IDX, and labs, like CERNER, but they were not clinical information systems.

So those were the twin problems I was trying to solve: the ability to define your own data elements for clinical information.

But there is a third part to it too. It was not meant to be one-time static information. It was meant to be information that would keep going over time so you could look back at the history of that patient or look forward to the plans and future schedules of that patient, rather than just, here is a frozen-moment-in-time snapshot.

Dr. Klasko: Are you amazed by the progress we have made? Do you think it is slower than you might have thought? How have we done in 40 years?

Ms. Faulkner: I think there are two answers to that. First, I kept thinking that other people would copy what we did much more quickly than they did. So, for example, when we came out with a graphic user interface EMR in the early 1990s, we thought within two years other vendors will do the same thing. But it took around 10 years, not two. So that was pretty amazing to me about the industry.

Second, I think I am surprised that there are not more major vendors that are like us in that the system is built from the start with the patient at the center. More often, we see that these companies are public. They are often run by MBAs, and they usually acquire their software. So that has been a surprise to me.

If you are publicly traded, then your legal fiduciary duty is to increase shareholder value. We think our duty is to keep patients healthy, keep healthcare organizations strong, and keep clinicians happy.

Dr. Klasko: Since we are starting to skirt into politics, if the next president put you on his or her cabinet, what would be a few things that you would want to see change? Let us just say it is an unnamed cabinet position. You are the senior advisor. What are a few things you would do in this country as far as healthcare and technology?

Ms. Faulkner: Sure. With healthcare and technology, the first thing I would do is say, “Let us look at our software and take out everything that has been put in there by regulation, by fear of litigation, by meaningful use, etc., everything that when we have our same system overseas, the doctors look at that and say, ‘You do not need that stuff’ and we take it out.” And let us look at that to make the doctors’ lives easier and allow them to be more productive. That would be my first thing.

Dr. Klasko: What is second?

Ms. Faulkner: The second, I think, is not IT related. The second probably would be to make sure that the information about the whole patient is shared with everybody taking care of that patient so that you do not sever the head from the body, so to speak, and, for instance, not allow the fact that this patient is on certain mental health drugs get to the ED doctor and the ED doctor makes a tragic mistake.

Trust the clinicians and let the information be shared for everyone who needs it to take care of that patient properly. That would be my second thing.

Dr. Klasko: And if you had one more? It could be something non-health or technology related.

Ms. Faulkner: If it is health but not technology, I would say early childhood care—making sure that we give good care to the young kids, and in particular that we really combat childhood obesity, because otherwise we will be dealing with chronic disease forever.

Dr. Klasko: One of my great passions, as you know, is changing the DNA of how we train physicians—I am under the assumption that 80% of what we do

What is so epic about Epic?

- Founded in 1979
- All software built in-house
- 190 million patients have a current electronic record in Epic
- Half of all operating expenses invested into R&D
- Company is employee-owned and developer-led

Source: www.epic.com

as far as memorization stuff will be done by some augmented intelligence—so the whole concept of choosing doctors based on science, GPA, MCAT score, and organic chemistry grades, and then being amazed that doctors are not more empathetic, communicative, and creative.

Ms. Faulkner: Right.

Dr. Klasko: Now there is 100% chance there will be augmented intelligence manufactured by IBM, WATSON, or an offshoot of EPIC or whatever that is going to be able to do a much better job than I can of measuring every genomic sequence, etc. So I guess what I am asking you in preparation for that—I know your husband is a doc.

Ms. Faulkner: My husband, my sister, my daughter, my nieces, my nephews.

Dr. Klasko: So what does the doctor of the future look like to you?

Ms. Faulkner: Well, first of all, I think we have too many doctors who no longer like their professions.

Dr. Klasko: That is an excellent, and sad, point.

Ms. Faulkner: So down one path, the doctor of the future looks sad. If the government continues as the government has been doing and thinks that they need to save healthcare by making more and more rules for what the doctors have to do, then the strong people will not go into that profession.

So that is one path of the doctor of the future, which is the downside. The upside is that, indeed, the government can do things differently. We can begin to change that and free the doctors up in many different ways.

Dr. Klasko: How will he or she work differently?

Ms. Faulkner: I think there is going to be more community care, more information about the whole patient, not just the hospital inpatient and ambulatory information, but it will be a bigger picture of the patient.

Ideally, we will spend a lot more time in our medical schools and residencies teaching physicians how to communicate with patients about problems, about caring for themselves, about end of life, etc.

“ In the future, there is going to be more community care, more information about the whole patient.”

That will be a great help because both the physicians will feel better about that and will do a better job and the patients will get better care.

On the technology side, there will be many helpful new inventions that most of us cannot even predict yet—little technologies, nanotechnologies, and other capabilities that we do not even know what they are, but they are going to be interesting. We cannot overload the doctors, so the IT systems are going to have to take a lot of that information and be able to digest it so we do not overwhelm the physician with too much data coming in.

The saying “the physician who could be replaced by technology should be” is a good thing because, in the end, physicians are human beings who offer a whole lot more than technology. They offer empathy and compassion to the patient, the guidance and help to the patient to make the right decisions, the explanation of what is happening to the patient so that the patient understands better. Communication is important, as the physician understands the technology side, understands the medical side, and helps the patient.

“ In the end, physicians are human beings who offer a lot more than technology. ”

Dr. Klasko: That is beautiful. So let us try to take that just one more step. Suppose I am starting a new medical school. It is called the Klasko College of Medicine, and I want to create those doctors—the same empathetic docs that are looking at the community and are communicative, creative, tech-savvy. I have asked you to be on my admissions committee.

If you are on my admissions committee, what are a few of the questions you would ask an applicant, which probably is not going to be “Can you memorize the Krebs cycle?”

Ms. Faulkner: I might just ask the person about his or her family, about why he or she went into medicine, and I might ask him or her to write something as well, although I do not know that writing skills and speaking skills align perfectly.

What I am trying to get to is that I think the most important thing is actually not the questions that I am going to ask, but the candidates’ reactions to those questions. If I ask something complex, will the applicants come back and ask for more explanation? If I ask them about themselves, will they ask me about myself? What will the applicants do? One of the most important things will be how they interact.

Steve, when you interview people—and I know this is the case when I interview people—you get a sense of whether they answer curtly or just talk forever. Are they interacting with you? Do you find a sense of curiosity? That would be one of the things I would look for: a sense of curiosity.

Dr. Klasko: It is interesting you say “do they ask you about you?” If all you are doing is talking about yourself, the chances of you being empathetic toward patients are probably pretty small.

Ms. Faulkner: Yes. That is why there are a whole variety of questions you could ask that leaves it open for the other person to ask you back. Part of it is empathy, but the other part, I think, is just plain old curiosity. Why should it just be one way?

Dr. Klasko: I think that is a great word. I think curiosity and creativity are really two things that are probably undervalued aspects of people in the healthcare industry. So I love that comment.

You know, if you remember, last year you were kind enough to ask your employees to look at our new INSTITUTE FOR EMERGING HEALTH PROFESSIONS, and the questions throughout EPIC got back some great feedback, and we have actually taken it to heart. By the way, the Institute is doing great.

Ms. Faulkner: Oh. Good! I’m glad to hear that.

Dr. Klasko: Your team sent back things that we actually work on—much greater skills in data analysis and translating data into action.

Ms. Faulkner: Yes, right.

Dr. Klasko: Communicating data analysis, bringing genomics and computer skills together, so we are looking at that. But from Judy Faulkner’s perspective, what are some of the things that you think people will be doing that will be actual jobs 10 years from now that might not exist today?

David Nash (left) and Stephen Klasko with Judy Faulkner.

Ms. Faulkner: Well, one that exists today, but I think is going to be needed a lot more, is the data scientist. We are finding that they are already in demand, and I think they will be in demand for a while.

There are going to be more jobs that extend the healthcare organization into the community, that keep the patient at home, that keep the patient from having to go to the emergency department. In fact, the better way to take care of the volume-to-value challenge is to have people take jobs that are not necessarily there now to keep the patients healthy without them having to come into the hospital or to the healthcare organization.

Dr. Klasko: So more of the healthcare navigator/ambassador-type role?

Ms. Faulkner: Yes, it is the navigator, but it is the people to whom the navigator also refers you to that are going to be around helping the patients stay well.

And there are going to be people who will deal with loneliness too, in that loneliness has a high correlation with morbidity. If, in fact, you have people whose job it is to pay attention and help patients not feel lonely, you will see healthcare needs decrease as the needs are met in other ways than “I have to go to the doctor’s office.”

Dr. Klasko: In Ocala, Florida, we worked with THE VILLAGES to do one of the largest public health studies of successful aging. It is in six counties, and they have basically built a town of 100,000 people, seniors.

Ms. Faulkner: Wow, interesting!

Dr. Klasko: The reason I am bringing that up is the number one differential for this group that made them healthier was their lack of loneliness.

Ms. Faulkner: Interesting. What a significant finding that is.

Dr. Klasko: But what was fascinating—I think the question we asked on a public health survey was “If you needed to talk to somebody or do something to not feel lonely, is that immediately available?” When you go to seniors around the country, it is something like 10%.

Ms. Faulkner: Yes, that is right.

Dr. Klasko: If you are living in a condo in Chicago, you might have one or two friends, whereas in the Florida example, 97% said they could talk with someone.

Ms. Faulkner: And that is the value of assisted living too. Both my parents and my in-laws went to assisted living, moved to really good places, and said that it was a move they should have made years earlier because of exactly what you just said. It’s the community.

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Dr. Klasko: So let us talk about the future for a minute. What are some of the things that you could imagine in 25 years?

Ms. Faulkner: Let us say this is 10 years from now—25 years is really hard because I do not know what new technology capabilities will come out—but 10 years from now, there is going to be a lot more in the way of what MyChart or patient portals do with the patient, so that the patient with diabetes is going to have help all the time on the portal, not only for communicating things back to her doctor, but also for giving her advice, for giving her reminders. As you know, there has been the whole concept of the patient contract where little nanomachines within your body tell you, “No, do not eat that” or “It is time for you to take your insulin.”

Dr. Klasko: My wife—she is my nano.

Ms. Faulkner: I think that the oversight of the body, it is almost a concierge for the body, is going to be there in technology, helping people make the right decisions for what they need to do to take care of themselves. That is a big part of what is missing in healthcare: that concierge service where indeed you get guidance all the time, rather than “What am I supposed to do next?”

“The happiest doctors were the concierge doctors.”

The technology will tell you that of the 20 pills you are taking, you really can drop 10 of them, rather than that you take them for years and years.

There was a recent study done asking about physician happiness that I thought was interesting. The happiest doctors were the concierge doctors. That is really interesting because being a concierge doctor allows them to spend more time with their patients and feel that they can make sure each patient is doing well.

Dr. Klasko: Right. I think that really is. I think it is almost like what happens with the cars where even while the car is parked, it is constantly assessing what is going on.

Ms. Faulkner: I think you are absolutely right on that. The home itself is going to be more able to take care of you, not just whatever you wear or get injected into your body or carry around.

The way to make this clinically important is to work out the algorithms. And one of the algorithms we need to figure out is rising risk. It's not just when the patient is out of control, it's when the patient is still in control, but the information is showing that if that trend continues the risk is moving up.

We're going to see more and more machines figuring out what you do next so your care manager doesn't have to keep looking up and tracking a person's data. The machine will be saying, “This is someone you need to call now.”

Dr. Klasko: That is fair. Last question. We have this game at JEFFERSON that we play called “Tell Me Something I Do Not Know.” Tell me something I do not know about EPIC, and tell me something I do not know about Judy Faulkner?

Ms. Faulkner: Okay, something you do not know about me: the reason that I ended up developing this software. I was teaching computer science at the UNIVERSITY OF WISCONSIN in West Bend, and they called to tell me that there were enough people signed up for the class, they wanted me to teach in the fall. However, it was my child’s birthday. And there were all these young kids running around screaming joyfully. I misheard and thought the UW said there were not enough students signed up.

So I called the physicians at UW HEALTH, who had asked me if I could do more work but I did not think I could because I was teaching this class, and I said, “I can work a whole lot more. I do not have a class.” Then when college began, UW West Bend asked me where I was.

Dr. Klasko: Oh, that is funny.

Ms. Faulkner: So that sent me down the road of working on this software.

Dr. Klasko: That is pretty cool. So anything about EPIC that people might not know?

Ms. Faulkner: That is harder. Let me see. What about EPIC that people do not know. I will tell you another funny story.

When EPIC had 300 people and we knew we had outgrown our buildings, we went to Red West, which is where my son worked at MICROSOFT. We wanted to buy land so that we did not have to keep renting buildings and outgrowing them, but could instead build a new building on the land whenever we needed it.

We figured that the biggest we would grow would be 3,000 people, and Red West held about 3,000 people. We got there and we walked around and eyeballed it. It looked pretty good. We came back here and we bought 350 acres, which looked to us to be about the same size.

Then we asked one of our architects, who had designed Red West, how many acres Red West took up, and he said 29. So the reason we bought 350 acres, which was really a very good thing, was because we had no ability whatsoever to judge land size.

Dr. Klasko: So sometimes it is better to be lucky than good.

Ms. Faulkner: Yes. Both of those stories are really that.

Dr. Klasko: That is great. ■■■