ROUNDTABLE

How Informatics Can Reshape Healthcare

As data analytics technology becomes increasingly sophisticated, healthcare informatics—the use of data to improve care delivery and patient health—is essential to meeting the goals of hospitals and health systems today. Big data on patient responses to specific clinical interventions can become the basis for development of evidence-based care practices. Sharing of patient data across the care continuum can improve care coordination. Telehealth to connect patients and providers can bolster care access. But leaders must direct the use—and limit the misuse—of data and analytics packages for informatics to have meaningful impact without breaking the bank.

PANELIST PROFILES

PAMELA DUNLEY, RN
Vice president and chief operating officer/ chief nursing officer
Elmhurst Memorial Healthcare
Edward-Elmhurst Health
Elmhurst, Illinois

MARY KANE, RN
Vice president and regional chief nurse informatics officer
Catholic Health Initiatives
Englewood, Colorado

MARY BETH MITCHELL, RN
Chief nursing informatics officer
Texas Health Resources
Dallas

KEVIN MYERS
Graduate faculty member, Healthcare Administration Program
School of Health Services Administration's Industry Advisory Council member
University of Phoenix
Former senior client director, GE Healthcare
Baton Rouge, Louisiana

JENNIFER THEW, RN (MODERATOR)
Senior nursing editor, HealthLeaders Media,
Danvers, Massachusetts

Roundtable Highlights

HEALTHLEADERS: *What are the prerequisites and considerations that need to be in place before deploying an effective informatics strategy?*

MARY KANE, RN: I would say the most important component is to understand your organization's current state and to understand where the gaps are. The other thing I would say, having developed informatics teams from the ground up, is to find nursing individuals and other clinicians who love informatics work and help them along that path by mentoring them. The people strategy is probably the most important, and once you've developed that, they should really be leading decisions around technology. I'm not an advocate of technology leading those strategies—I'm an advocate of people leading them.

MARY BETH MITCHELL, RN: The organizational culture is key, and we say all the time, "Culture trumps strategy." For us, having a highly innovative culture helped make it easier to implement some type of informatics strategy—being willing to take risk and change. Our organization is very collaborative. As we developed an informatics strategy, we wanted to make sure we pulled in other stakeholders and got input from the end users. It wasn't a top-down effort but rather a bottom-up effort. You need to engage your key stakeholders, seek their input, and run things by them.

KEVIN MYERS: To me, there are two important things to think about on the strategic journey. It all starts with the EMR because from a technology standpoint, that's where you can really get a big-picture view of what's going on in your health system. Of course, that's assuming everyone is on the same platform, which we know is not always the case. But the biggest point is having the right people in place and the right strategy because otherwise, as I've heard Dr. Gary Kaplan, who's the chairman and CEO of Virginia Mason Medical Center, say, "You don't want to automate bad process; otherwise, you're going to move garbage at the speed of light."

PAMELA DUNLEY, RN: I agree with what everyone said, except I see it a little differently. I see the informatics strategy as a tool to support the organizational strategies that are trying to move your organization to a new state. You have to make a decision and be able to articulate what that strategy is and why the informatics strategy would support the organizational strategy. Then I think it's a partnership with operations—always. It's not informatics saying, "This is how it's going to be." It's about developing the plan together, making sure the key stakeholders are involved in the development, and deciding how it's going to be implemented and then sustained. Plus, the stakeholders need to understand the rationale of the strategy and buy into its purpose.

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HEALTHLEADERS: *What are you seeing as the goals or the desired outcomes of the strategies at your various facilities?*

KANE: I always look at it the same way, regardless of the technology, the devices, or the tools. We want to improve patient safety and the patient experience. We want to improve clinical efficiencies wherever we can for our providers, nursing, and all of the ancillary clinical services and nonclinical services, right down to housekeeping. Then we want to improve our financial outcomes.

MITCHELL: One of our strategic initiatives is making data useful. We've been collecting all this data. We've got these

Pamela Dunley, RN
VP, COO, CNO
Elmhurst Memorial Healthcare

data warehouses and data marts, but we're still not getting the information out to the people who need it to make decisions. So one of our objectives is to figure out how we get value from the data: How do we make that data useful so we can turn it into action and really drive our business? Normalization of data.

MYERS: So you bring up an interesting point. These enterprise warehouse data systems, you've got the EMR, and does that allow or help you aggregate and pull that data together when you've got these disparate systems? Is it working?

KANE: We've struggled, frankly, with the disparate data sources. We did have a grand vision at one point that we would have a singular repository where all data would flow. We found that normalizing that data was very difficult, so

we've pulled back on the reins a little bit. In some cases, we're now doing data analytics from source systems as opposed to making the attempt to get it into a single repository.

I think the biggest issue is the normalization of data. If you look at smart pump technology, as an example, I have 100 different hospitals, and we have 100 different ways to say D5W. It is all the same thing, but if it looks even slightly different, all of the data will display differently. It's very difficult to compare that data as apples to apples and look at safety issues when it's not normalized.

MITCHELL: We've done that work as well. We have data from the smart pumps that goes through a knowledge portal that we get reports from, and then we have the reports in our EHR. We can't bring that data together to give us what we need to tell how we're doing. I find it really interesting that neither one of our vendors can give us the information we are asking for in regard to how well we're doing with that. They each have their own little piece of it. So that's still a challenge.

HEALTHLEADERS: *From the operations standpoint, are you able to use the data that you're getting?*

DUNLEY: Well, there's different kinds of data that comes to you in different ways.

Mary Kane, RN
VP, regional chief nurse informatics officer
Catholic Health Initiatives

We use data for everything, and we're very metrics-driven, but it's not all coming out of a central repository. We have some central repository data, and we do have a warehouse. Our organization is a newly formed merger between three hospitals. Because of the merger, we're on different electronic medical record and financial systems for now. It took a while to get the data into the warehouse and to validate that it matched. When we get on the same system, it will be easier to know that we are looking at data that is consistent across the system. But of course, everything has to be written exactly the same, which is at least a guiding principle as you move forward. There is good information that comes to us daily and helps us drive how we think and how we plan our operations. We use data from the minute a patient walks into the building. How long does it take for a patient to be seen? How long does it take to get to an appointment? How can we plan our staffing needs? Who's going to be discharged? When are they going to be discharged? The data helps us drive efficiencies and drive operations as well as outcomes.

> **"When you provide data,** it can be a great resource to make the case for the need to improve."

Then you may get to the point of everybody arguing the data and the validity of the data. We have to help people move away from discussing validity of data and talk about the way data is being used to measure quality of organizations and physicians for both public transparency and payment. Right now, we have begun to give physicians individual scorecards with quality data. The risk is that it puts the physician in a place to say, "Well, maybe I won't accept all of these high-acuity patients from the emergency department or as a referral because the outcomes may affect my scorecard." As an industry, we do not want physicians refusing to care for specific patients because of data. We don't want to put them in a place where they're uncomfortable to accept patients. I think data can be used for great efficiencies and great outcomes, and I think it can become problematic and burdensome. You have to be careful, and you have to have some clear guiding principles of how you use data.

MITCHELL: And the reporting of data is not consistent. For example, a CPOE report that we may report to an agency doesn't translate to the same results as a telephone verbal order report. So you're not even measuring the same thing in the same way necessarily. I think that confuses our leaders and staff as we try to put that information out.

HEALTHLEADERS: *Back to people arguing about the data. Has that been an issue? For example, if you want physicians to use standard order sets when caring for patients with myocardial infarctions, are they saying, "Well, those standards aren't based on good data so I want to do it this way instead."? Or when you tell them, "The data says this," do they come back with, "Well, this isn't good data"?*

DUNLEY: I think a lot of people don't want to believe the data because maybe they think they're better than what the data shows or it's a personal affront. So you have to get through that before you can get to people accepting their data and saying, "Okay, let's move forward. What can we do to improve it? Because this is for your benefit and your patients' benefit." It's not that they want to argue. It's just that they don't believe in their heart that they have those kind of outcomes.

KANE: I agree with that. When you look at clinicians—let's just take the general clinicians, and many of us at the table are clinicians—we absolutely believe

the care we deliver is safe, good care for our patients. So when you get objective criteria that might suggest there is huge room for improvement, as you said, it's a personal affront. I believe that physicians, nurses, others—they believe anecdotally that they're delivering excellent care. When you provide data, it can be a great resource to make the case for the need to improve. As professionals, everyone is working toward an understanding of how to make care better and how to use the data generated by these systems for good. It's a process.

MYERS: Can it be argued that it's not objective? That's part of it, too.

KANE: You absolutely could.

DUNLEY: It doesn't always take into account the acuity. It doesn't always take into account comorbidities because it's really hard sometimes to even measure all of that.

KANE: But having said that, you do find baselines and consistent messages that come across from the data.

HEALTHLEADERS: *Where are we right now in terms of healthcare informatics—you know, as a country within healthcare? How do you see it evolving in the short term and long term?*

KANE: I think we're still in the early phases of health informatics, and as a profession it's developing. There's certainly a need to have an understanding that health informatics should also have nursing leadership. It's not just a chief medical informatics officer. Just an interesting statistic: At Catholic Health Initiatives we have 100,000-plus employees, and of all of the end users, 82% are not physicians. So 18% of those using the EHR are physicians. Yet at an organizational level, typically it's a CMIO that is leading that effort, which I think is very interesting. Physicians bring in the revenue, absolutely, but the back-end workflow that's required by nursing and other ancillary clinical services can't and should not be overlooked when you're looking at optimizing any piece of technology. So it's important to have that nursing leadership, in my view.

It's important to have that dyad partnership—a partnership between nursing and provider. Nearly every health system now has an EHR installed for the most part. It is no longer an issue of the project of getting the EHR. It is now an ongoing care and feeding, the optimizing of the EHR and all the associated interfaces to ensure the greatest level of usability and flexibility for clinicians and nonclinicians and, again, to improve patient safety, to promote population health, all of that. It is not project based. It doesn't have a beginning or an end. It will be ongoing.

MITCHELL: Healthcare is very complex regarding systems, and I think we're still kind of at a basic level. When you look at how you reserve an airplane ticket, how you get on a plane, how you get your luggage, that's what people want. That's what our consumers want. That's what our caregivers want. They want the equivalent of Google in healthcare.

Mary Beth Mitchell, RN
Chief nursing informatics officer
Texas Health Resources

> **"Healthcare is very complex** regarding systems, and I think we're still kind of at a basic level."

MYERS: Or Amazon.

MITCHELL: They want American Airlines, they want Amazon, and I think we're starting to realize that. We're starting to try and figure out, and our vendor partners are trying to figure out, how to deliver that. But right now it's very clunky. I have nurses in our hospitals who are incensed that they have to push around a workstation on wheels. You know, how crazy is that? You don't see anybody at a bank pushing around a WOW. So we've still got a ways to go. But the good news is, now that we have implemented these systems at a basic level, I think we're going to see a rapid growth in the advancement of technology to make it more streamlined, to make it easier, and to make it safer. We still have safety issues with our technology itself. Not in the care the nurses and clinicians are delivering, but somewhat within our systems themselves. I think we're going to see a rapid change with that.

MYERS: One of the best things that's happened to the healthcare industry is now you've got traditionally non-healthcare players jumping in. Google, Apple, IBM, Lowe's, AT&T—they all want a piece. For example, AT&T is looking at it from the standpoint of, "We do all these things in the home. Why can't we do home monitoring to improve patient care?" Ultimately, that's going to be a great thing. GE entered a partnership with Intel to develop a home monitoring system, and we've done a pilot program in Mississippi for diabetics in a very rural area. They struggle with getting connectivity, and Mississippi ranks in the

Kevin Myers
Graduate faculty member
University of Phoenix

bottom in almost every health category you can think of. Per capita, it has the fewest physicians per citizen in the entire country—all the odds are stacked against that state. Yet some of the results and outcomes we're seeing from proactively engaging these patients by giving them a monitor, giving them connectivity, monitoring their glucose levels, putting a team of physicians and specialists that connect with them on a regular basis—they've gone from having all of these health issues and hospitalizations and readmissions to having no ER visits or hospitalizations in the first six months of the program. Additionally, these patients have experienced a 2% reduction in A1C levels during this time.

MITCHELL: It's that engagement.

MYERS: It's the outreach. It's population health and identifying the high-risk patients. Now we have a way to get to them, and they have a way to connect with us. We're holding them accountable, and they're holding us accountable. I think that's exciting.

DUNLEY: I think it's all exciting. The problem is, it costs a lot of money. Think about how much technology keeps changing, and we've got to try to keep up with the current technology and get it out across the healthcare system to everybody. We still have physicians' offices that are independent and don't have the technology. And anytime you do a project, your IT costs are huge because there's always that question of how you need to be connected across systems and providers, in addition to maintenance and upgrades.

We're trying to decrease the cost of healthcare, and we're getting paid less for everything we do, but the IT component just keeps adding more cost, on top of the latest equipment. So I worry about how we can sustain that kind of rapid change in technology with the costs and payments that we currently have.

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MITCHELL: IT has traditionally been a reactive or retrospective kind of environment. We need to become predictive and prescriptive. When we can do early identification of patients at risk, I think that's where we're going to start seeing cost savings. Hopefully at some point in the future, we won't be retrospectively reviewing charts of patients with sepsis—we'll be presenting the information that a patient is at risk for sepsis within the first hour or two of admission. Then we can intervene and treat, and then we're going to save on the healthcare cost of that patient. That's where we need to be going, using our systems to predict and to identify patients at risk. Who are the patients at risk of coming back in 30 days? How do we intervene before they go home from that first hospital visit?

KANE: To Pam's point, when you look at cost and you try to marry that with the ever-changing technology, budget cycles almost have to look different.

MITCHELL: Yes, they do.

KANE: Because when you come up with a budget cycle and do budget planning, you don't even know what could be coming out in six months from a technology standpoint. Budgets are tight, as you indicated. And there's also, in some sectors, a mentality, "You've implemented the EHR. What do you mean you still need X number of dollars to optimize?" It's because the technology is changing all the time. But how do you marry that with budget cycles that are very traditional?

MITCHELL: And the training cost. I'm sure you're faced with, "What do you mean I have to put every nurse through another eight hours of training on this technology?"

MYERS: I think here is where innovation comes in. This is where we've got to start thinking outside the box, and that you as a health system can't carry the entire burden. I think traditionally that's what's happened as it relates to a person's healthcare. But now you say, okay, there are a number of stakeholders that are involved. I mean, look at this project in Mississippi. The broadband provider is involved, the state of Mississippi is involved, the governor, University of Mississippi Medical Center, GE, Intel. They all have put a little skin in the game. It can't just be the health system that carries the entire burden of improving outcomes.

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