



## ROUNDTABLE

# mHealth: Improving the Continuity of Care



Healthcare providers can improve outcomes and control costs by exploiting mobile technology, including patients' own phones, to deliver more care beyond the walls of hospitals and clinics. The virtualization of care enabled by mHealth technology can improve care of chronic conditions, redesign or streamline work flows, extend the reach of caregivers and facilities, and improve how information is shared across distance and time. Continuity of care requires mobile technology to boost patient engagement in an era when value-based care is replacing fee-for-service business models.

## PANELIST PROFILES



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# Roundtable Highlights

**HEALTHLEADERS:** *When the topic of mHealth comes up, what comes to mind first for you?*

**KAMAL JETHWANI:** The healthcare system is sort of lagging behind other industries. We all flew here, and we all know that we were able to get our own boarding passes. We were able to book our own tickets. We did not need travel agents. There was almost no human contact if you could help it. But that's not the case with healthcare, and mHealth can give us an opportunity to change that.

**TRICIA NGUYEN:** I think of convenience and being able to deliver but also receive care anytime, anywhere. It's going to enable us to actually cross state lines and continental divides to collaborate and communicate amongst patients and also providers.

**STEVE HEILMAN:** A lot of it is increasing the ability of the physician and making their job a little bit easier by giving them more and better technology to get results and be responsive in a better way, and leveraging technology to get the patients more involved in their care.

**PETER TIPPETT:** We're not going to lose doctors, but at least 75% of their work is consultative in nature. Today that information is coming from social communities, software applications, or a combination of sensors and software and cloud computing mobility. The general applications tend to be quite narrow, such as in a scenario where a person might prefer viewing his or her glucose reading on a website as opposed to looking at the machine.

The full implications, however, are transformational.

**HEALTHLEADERS:** *The news reports say we are losing doctors. Are these mHealth measures going to replace the doctors that we are losing?*

**NGUYEN:** I think we're losing the ones that refuse to change from paper-based to an electronic environment. And change is hard. We're creatures of habit. I think a lot of docs have experienced so much frustration in their daily practice of medicine that this is just the straw that broke the camel's back. So some physicians are deciding to transition to other careers or retire.

**JETHWANI:** We're moving toward an era of collaborative medicine, where patients can collaborate with the physicians and make joint decisions, take care of their own health. We can guide them. Technology can help that revolution. We can use physicians where it's appropriate, instead of using physicians for every single thing possible. It will reduce the demand a little bit. It will make the healthcare system more efficient, and patients will really know what they want and how they want it.

**TIPPETT:** There's a large community that seems to be driving the change. It's made up of mostly tech-savvy people who depend on their smartphones and tablets. If they have a disease, they're likely already using two or three apps to manage that illness. They're less willing, perhaps even impatient, to wait for the kind of integration that already exists in many other places in the online world. My mother, for instance, isn't likely to

use her mobile device to see what to do about her disease. Even though she carries a cell phone, she may only turn it on every couple of months. It certainly isn't the enabler for her generation that it is for the rest of us.



**HEILMAN:** It's a perfect time for culture shift. We're seeing a lot more utilization of mid-level providers, and technology is going to be one of those tools that doesn't necessarily replace the physician, but enables doctors to work with mid-level providers and cover more lives. You mentioned maybe the elderly people will never log in, but what we're seeing in our patient portal is the average age of the typical user is around 67. And it's not so much that the patient is logging in, but their caregiver is doing it. So even if you're saying the older people are not tech-savvy, the people who are helping to take care of those older people are, and they are going to get a lot older as time goes on. They're becoming really tech-savvy.

**NGUYEN:** It allows us to expand beyond the physician being the only care provider in the clinic and being able to delegate and disseminate information to empower others, even lay individuals who are health literate, to be

**“If they have a disease, they’re likely already using two or three apps to manage that illness.”**

part of the care team, whether it's a caregiver or family member to help deliver care and navigate the complex health system.

**JETHWANI:** We have heart failure monitoring programs. Take a weight scale home and just weigh yourself every day. Even with those programs, we see patients that are as old as 75–80 engaging after a point because they start to get it. They get daily feedback, which is really important. Over a month or so, they start seeing that every time their weight goes up 3 pounds, the nurse calls them and finds out what's going on. And it's always because of something they've eaten the night before. They'll start putting it together and be like, "Okay, maybe I should just not eat that if I want to avoid that phone call." We see these patients getting better. Over the country, we've seen telemonitoring programs for heart failure doing really well, and the population is really old. So it's not whether they will engage with technology or not; it's how you're going to engage them. It's how you're going to structure the program, what

differently, has a different tendency, and responds in his or her own way to different kinds of intervention. In essence, different people work differently, and those differences are enabled by cloud and mobile technology.

**HEALTHLEADERS:** *I've heard some providers say that they're not looking forward to this flood of data from the mobile health devices. They're having enough trouble dealing with the data they already have, and now suddenly there's all this new data. They're*

*expected to be able to analyze that data and spot trends and possibly prevent something more serious from happening. This is not a happy prospect for some of them.*

**TIPPETT:** To be honest, if you don't know what you're going to do with your data, you shouldn't collect it in the first place. You should first decide what you want to do and then do it. If you want to build a program around readmission, you should get out weight scales, connect them, sync them to a feedback loop, and see whether or not it reduces readmissions. Otherwise, why would you bother with this extra data? This data may be good for science, perhaps, but that might be an example of how we sometimes confuse the practice of medicine with the value to science.

**JETHWANI:** In our heart failure program, we collect five data points every day for four months per patient. Instead of telling clinicians each day, "Your patient weighed 180 pounds today and had a blood pressure of 140/90 and oxygen saturation of 91%," I analyze it and tell them, "Your patient gained 3 pounds in one day. It's probably something you want to look into right away" or "Your patient has been within

parameter for the last week, nothing to worry about." The idea is to avoid information overload, but not by collecting less data, just by understanding how data should be analyzed and presented. When our analytic systems reach there, physicians will be okay with more and more information because it will all make sense.

**NGUYEN:** One of the reasons why physicians are averse to more data is the concern of increased exposure to medi-

“From my ER experience, one of the most frustrating factors to me is the lack of data, because **70%–80% of the diagnoses can be made by historical information.**”

cal malpractice. This commonly comes up when I talk about the 360-degree view and understanding of individual patient information. From my ER experience, one of the most frustrating factors to me is the lack of data, because 70%–80% of the diagnoses can be made by historical information. It's nice to have all the information so I'm not spending a lot of time in the room trying to pull that information from the patient if it's already in existence somewhere. Additionally, patients become very frustrated when you ask them for the same information the third time.

**HEILMAN:** It's also a source of enlightenment for the patient. So, whether it's an asthma study and you're looking at how often a patient is using their inhaler—and maybe every day they say that they're hitting it at 3 o'clock. Somebody can finally see the trend and ask, "What's going on at 3 o'clock every day that requires you to use your asthma inhaler?" or "I noticed that all your blood sugar spikes occur every day at 1 o'clock—what do you do right before 1 o'clock every day?" I don't think patients recognize all of the cause and effect.

you're going to do for the work flow, and what appropriate technology you'll use for that.

**TIPPETT:** Individualization boils down to this: Everybody really does do things



**Tricia Nguyen, MD, MBA**  
Chief Medical Officer  
Banner Health Network

Sometimes if we're able to collect all information into one thing and show them a graph or a trend or look at the data in a different way as opposed to the glucometer readings in their book, but actually show them a graph trend and say, "Every day at 2 o'clock your sugar is 300. What do you do?" They would likely admit, "Yes, I have cake every day. I'm sorry." So collecting data just to help get the patients engaged and get them enlightened as to what's going on in the disease process may be helpful in developing those algorithms for treatment.

**HEALTHLEADERS:** *Today people are carrying mobile apps like iTriage. You've got symptoms, so you can just start to look for your symptom. It'll even take you all the way through to find medical help. That's being provided now by a payer because Aetna bought iTriage. That's information that's flowing in on patients today everywhere. Are providers able to make use of that?*

**JETHWANI:** It's again hard to generalize every single physician. I've seen younger, newer physicians engaging better. When

**“Text works really well because everyone has it—most people have some sort of phone feature that can take texts, and most people know how to use it.”**

we got trained, I got trained on the EMR. I don't know the paper-based system. So I get excited that my EMR is in my iPhone now. But I can see where people who have done the older system think differently. We're using text for a variety of things; some of them are under research. We've seen no-show rates go down. We've seen patients feel more supported. We're providing patients a service because of the nature of text messaging, which is so cheap, so scalable, and the physician and the provider group have to do very little. We've moved into appointment reminders, and we've

been able to demonstrate a drop in no-show rates. On the more complex side, we're currently exploring in a clinical trial the use of daily text messaging to be able to provide support and feedback to people who are trying to lose weight, who have diabetes. Compare that to me as a physician saying, "You need to lose weight, come back and see me in six months, but make sure you've lost 10 pounds," and you're back obviously having gained weight. This is a tool now that we can prescribe and say, "Okay, start using this, and this will walk you step-by-step in losing weight." The magic of the technology is in the "how" not in the "what." Text works really well because everyone has it—most people have some sort of phone feature that can take texts, and most people know how to use it. Some people who don't can be very easily taught how to use text—at least read text, if not reply to it.

**HEALTHLEADERS:** *We're going to see applications that watch us, learn from us, teach us. But isn't the trick going to be integrating them into the existing practice of medicine, which in some ways hasn't changed a lot?*

**NGUYEN:** I think data collection from these applications will enable automated intelligence so that we can understand and assist patients and physicians with actionable information, so that we then can be proactively reacting to it.

**HEILMAN:** Proactively reactive?

**NGUYEN:** Proactively reactive, so that we can identify earlier warning signs instead of waiting for the inevitable event to occur—a heart attack. But with more data and actionable information, we can identify trends to implement

new rules in the automated intelligence engine. Artificial intelligence is years, probably decades, away, but automated intelligence is available today with a



robust rules engine. From an accountable care organization perspective, these rules and algorithms will enable us to decrease the variations in care and deliver the information at the right time to our providers and patients.

**JETHWANI:** It's about changing how medicine is practiced, making it more collaborative, involving the actual consumer in their own healthcare. It's about doing it in the way that it's meant to be done and then focusing on efficiency, quality, and cost. mHealth is an enabler. It's a facilitator, and that's all. It could be something else tomorrow, but as long as we keep the focus to the triple aim and to change the culture, we're fine.

**HEALTHLEADERS:** *So, Steve, will we look back in a few years and say, "Oh, mHealth, I remember that"?*

**HEILMAN:** No, and it's basic. The relationship is between the clinician and the patient. mHealth is a powerful tool that, if embraced and the culture changes appropriately, will make that relationship even stronger. But it's going to require the physicians to warm up to and embrace the

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technology. The newer people coming out of medical school are already expecting mHealth to be incorporated into their work flow. That's what the relationship is going to be. It's with a supercomputer on my hip, so I make sure I hit my core measures. I make sure I'm giving the best medicine. I have the most up-to-date information at my fingertips at any given point of time to take care of my patient in the best way that I possibly can.

**NGUYEN:** Yes, but physicians will have to get on board if they want to effectively and efficiently help patients manage their care or modify their health behaviors. These patient engagement applications are additional treatment options, instead of prescribing a drug procedure or surgery, that physicians have as a tool to help patients manage and optimize their health outside of the clinic visit.



**Steve Heilman, MD**  
System Vice President and  
Chief Medical Information Officer  
Norton Healthcare

**HEILMAN:** Everyone—whether it's pushed by government regulations or it's pushed by expectations from the patients—wants to be connected in this way. That's going to help drive people to say, "You're either going to be in the game in this model or you're going to get out of the game and go do something else."

**JETHWANI:** We've always wanted to be more collaborative and change the culture of medicine, but we can do it

now because of this, and we wouldn't have been able to otherwise.

**HEALTHLEADERS:** *Well, I'll pose one final question to you. Let's say I am a physician listening to this, reading this, and I'm just overwhelmed by everything already. How do I take the first step if I haven't been trying to keep up with this and get involved?*

**TIPPETT:** People are going to get engaged if a process is simple and moves their needle. The reason people like Angry Birds is because it's easy and fun. They didn't have to be convinced or coerced to play. They were given something that is simple and fun, so it is very easy to get engaged in the experience. Whether it's the doctor or the patient we're trying to get to embrace technology, ultimately we accomplish it the same way. Again, the ease of use and the fun factor cannot be underestimated. The drivers and the value return for both patients and doctors are probably the other biggest things. People will pick it up and use it if it works, if it's fun, if it's engaging, if it saves time and money. I can't tell you why exactly, but it has to do with the fact that it's making life better for people.

**JETHWANI:** I completely agree.


**NGUYEN:** There's also an element to the gaming, the competitiveness, that "I want the latest and greatest tool." So there are some social components to adoption of mHealth. And the engagement is not just saving me time and money. It's, how do you stimulate me and keep me engaged somehow, whether it's through my competitiveness because I want to accumulate points and status on that particular

game or because I don't want to lose points and be a loser?

**TIPPETT:** Imagine somebody builds an app for a primary care provider. Let's say that they claim that by using this app, a primary care provider will instead of spending 10 or 12 hours a day being a provider only spend four hours. Now, they might not come

**“That's going to help drive people to say, you're either going to be in the game in this model or you're going to get out of the game and go do something else.”**

out and say that right up front, but what if that actually happens? The provider's patient load stays the same, the provider now has more free time, and, yes, quality goes up. Could you imagine that kind of a twofold or threefold improvement in efficiency and time commitment between doctors and patients, and how it would satisfy both?

**NGUYEN:** I want to loop back to your first opening question to all of us. What does mHealth mean to us? Ultimately, after all of this dialogue, I think that it's moving from a single dimension of delivering and receiving care to multidimensional, anytime, anywhere, any place, in different channels and mechanisms so that there is communication and collaboration with the patient and their care team, including their physician, to achieve the triple aim of improving the health of the population, improving the care delivery experience at the individual level, and then keeping healthcare affordable. The challenge is in developing customized and personalized applications and solutions that effectively engage all the stakeholders. That's where mHealth is the tool to help us scale the solutions, spread them very quickly, and sustain them. 

**Reprint HLR1112-6**



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