



John Nosta Contributor

I write about how science, technology and medicine impact your life.

Opinions expressed by Forbes Contributors are their own.

TECH 1/02/2014 @ 11:25AM | 12,416 views

Digital Health In 2014: The Imperative Of Connectivity

[Comment Now](#)

Build it and they will come.

I sense that this may be a guiding principle to digital health. Build a sexy device or a cool app and the democratization of healthcare will magically appear. And while it might sometimes be the case, that mindset may also be a defining problem—a problem in two parts. The problem is around the fundamental connection between user and device. It's a simple connection for the athlete or fitness enthusiast. But for the promise of digital HEALTH, or digital MEDICINE, as [Eric Topol, MD](#) likes to say, it's much more problematic. I had the chance to speak with some “agents of change” to get a sense of their take on the future of digital health and particularly how connectivity will play a role.

Problem #1. The initial patient connection. As I look at the various ads and marketing strategies for the wearables, it strikes me clearly that the brand personalities and imagery are antithetical to the typical patient type. While digital health professes to be, in part, about disease management, their brand persona seem to be more along the lines of fashion and the hip perspective of the ripped runner. And there lies the rub—a disconnect from real patients like the prototypical 60 year-old man with diabetes and hypertension. He's still wearing a Timex...

Problem #2. The disconnect between the health care provider and the patient. The long battle to drive patient behavior is difficult enough. Ask any health care professional about the difficulty of motivating and engaging patients and the response is loud and clear—it's a challenge that is often displaced by the more practical aspects of care like an exam and simple disease management. And since the vast majority of HCP's don't understand digital health or actively use devices or digital health technology, the disconnect is broadened. If HCP's don't live in the context of digital health, it becomes more a novelty than an important tool.

#1 + #2 = Poor Compliance. If find it interesting that, in my limited analysis, people (and patients) fall “out of love” with their device rather quickly. A smart watch becomes a smart dust collector in a matter of weeks. And while I can’t make a direct comparison, it’s a similar dynamic in those taking acute or chronic medication. Compliance and adherence seems to be an issue with pills and digital health.

So, is the key concept for digital health in 2014 “connections”. As I speak with the innovators and thinkers in this area, it’s a word that comes up time and time again. From building functional connections in telemedicine to driving emotional connections that build adherence, it’s an important concept. Two voice from Apple seems to echo this clearly. And it’s both John Sculley and Steve Wozniak who speak to the broad and expansive aspects of digital health and how connectivity will transform those “at a distance” and those who may just be “health shy”.

“ Consumer Era [Health](#) Trends in 2014 What’s next? Digital medical devices and wellness apps are rapidly improving, but connected care via health services in the cloud will be the next really important milestone in 2014. At consumer telehealth service MDLIVE their initial focus is low acuity care with certified doctors online – think ear ache, sinusitis, flu, stomach cramps, as examples. Add to these real online doctors various professional coaching services dealing with losing weight, your own personal trainer, substance abuse, alcoholism, smoking cessation, anxiety, and depression. One of the unexpected outcomes from the Affordable Care Act is it has increased insurance premiums for millions of Americans (Special interest lobbyists were able to negotiate in additional covered procedures as mandates in The Afford Care Act health policies which is driving up expense for millions of Americans who find their old health policies no longer compliant with ACA. Add to this much higher deductibles often reaching \$5000 per year and one can understand why consumers are looking around for freedom-of-choice health service alternatives that are actually innovative, better, more convenient and less expensive. MDLIVE is already the telehealth outsourcing partner for many of our nations largest hospital systems and major self-insured employers. MDLIVE will also be expanding its telehealth services to reach out to rural communities and chronic care patients complementing various home care nurses with specialty care expert opinions and second opinion services. Helping reduce the re-admittance of chronic care patients back into the hospital after their initial discharge is one of our health system’s biggest challenges. Just before the launch of the World Wide Web in 1994, people were skeptical about online banking services and whether they had any chance to become mainstream. I predict that within 5 years telehealth services in the cloud will be as normal to most Americans as online banking is today. **John Sculley**

“ Personal computers and mobile technology have changed everything we do things in life. Personal health devices will change how we deal with our health in just as significant of ways. Just as shy people now have ways to interact with others, those who are shy of health care will have new options. We are just at the start of this health device movement. Over time more and more important information regarding our health issues will be instantly communicated as needed to the concerned consumers, to the health care professionals, and will automate important health care in many ways (early detection, medication, etc.). **Steve Wozniak**

Donald Hackett, the CEO of [Patient Conversation Media](#) also add a unique perspective to building connections. His expression of meaningful engagement and the “100 day” rule is important. Further, the role of

pharmacist can be highly significant both as a resource and confidant to patients. Malcolm Gladwell writes about how 10,000 hours of practice are needed to achieve a degree of mastery, perhaps digital health needs to establish a more specific “trial path” to help ensure success.

“ In order to create an enduring habit with a device or application, a person must become engaged for at least 100 continuous days. During this time, the device/application needs to be on or within existing real estate, e.g., a mobile device, watch, or glasses, to ensure daily use. Moreover, to realize meaningful engagement, delivering a personalized experience to each person is key. Everyone is unique. Nobody wants to receive generic information day after day. To deliver longitudinal value, digital solutions must be geared to each individual’s condition, habit, or goal, and be able to change as the individual needs change.

Within the health industry, integrating a trusted pharmacist into this 100-day behavioral change expands the ‘care-team.’ Individuals will become ‘emotionally’ accountable for using a device/application as ‘prescribed’ by their pharmacist. Since most patients visit a pharmacy once every month, this relationship has built in accountability that will keep an individual engaged in living their life to the fullest. **Donald Hackett, CEO Patient Conversation Media**

Bertalan Mesko, MD, PhD has a bold and innovative voice in digital health. His position is interesting as he builds upon the increasing complexity and connectivity among stakeholders. It’s not about the device or data, but connectivity is all about reinventing the entire healthcare experience. Digital health is just a tool to drive this change.

“ Due to the increasing connectivity among patients, medical professionals and even devices, two transitions will determine the year of 2014: from patient to person and from hospital to home. The whole healthcare experience [must be redesigned](#) in order to meet the expectations of today’s e-patients because they have to be in the center of delivering healthcare. The data, the devices and information required to give good care are mostly available but these elements are not always optimally connected. If policy makers realize the potential in connectivity, and innovation in digital health keeps on leading to key changes in healthcare, we are going to face an amazing year. [Bertalan Mesko, MD, PhD, Clinician and Health Futurist](#)

In the final analysis, everything is connected. And all the pieces seem to be “organized” but the direct connections need to be established—both by design and organically. It’s interesting that we talk about “destruction” yet it’s organization and connectivity that will drive the day. Unity Stokes embraces connectivity as a central driver to help digital health “leap frog” ahead.

“ We are in a Creative Destruction moment in healthcare but it's incredibly early. We've seen a lot of incremental movements forward and experimentation with what's possible. Amazing entrepreneurs and money are starting to pour in and a budding digital health ecosystem is emerging. The past year proved that many pieces are in place (investment and incentives, reform, talent, desire, market demand, etc.) to set us up for a much more radical transformation in healthcare as every aspect of our health and wellness is beginning to be reimaged. There's now a rapidly growing global community who understands that change is not only possible, but inevitable, and best of all many are taking action. While the edges of healthcare are being chiseled away at, something significant is occurring at the same time that will profoundly impact us in 2014 and the next few years: a health connectivity layer is emerging that will leapfrog us forward. This is already happening organically as consumers and healthcare professionals are using a wave of new devices and getting access to powerful new personal data and analytics. Whether it's a pill bottle, a thermometer, a scale, or a bandaid, it will be connected in 2014. There's a lot of work to be done, standards and business models to figure out, but everything in and around us will be enabled by this connectivity layer and the potential for us to understand and improve our health and wellness will be exponentially enhanced as a result. [Unity Stokes](#), Co-Founder and President, StartUp Health

Connectivity also has value. Qualcomm is a leader in digital connectivity and has an comprehensive view of data in the context of a “value chain”. From acquisition to interpretation, their vision of connectivity is linked directly to the higher order benefit of outcomes. It's a lofty perspective, but critical to moving away from the “fashion of the device” to the bigger promise of digital medicine.

“ At-home monitoring and diagnostic or test devices that we are familiar with, such as blood pressure cuff, glucose meter, thermometer, are available in a wireless connection version; new-to-market type of portable devices such as EKG monitor, multi-function testers (e.g. scanadu) are introduced to be tethered with smartphone; moreover companion Apps are designed to guide and inform the users and relay selected information to their caretakers and family members. Beyond devices, sensors and Apps that mobilize the data, we are witnessing the innovations in the value chain from data organizing (e.g. Qualcomm 2net), data analyzing, to tools encouraging behavior changes using incentives, gamification or personalized coaching. We can safely envision that solutions based on these technology advancements will lead to better outcomes and lower cost. [Jack Young](#), Manager, Qualcomm Life Fund, Qualcomm Ventures

Health care is in the early stages of major disruption. The disruptor is the health consumer/patient and the means of disruption is the power and pervasiveness of digital technologies, especially the mobile network. There is a massive wave of venture investment and innovation underway in health sensors that will exist on us, around us and even in us. Biometric and other health readings taken from those sensors, sent to the cloud where they can be analyzed and made actionable and presented back to health consumers on computing devices like Smartphones and tablets will empower consumers to better understand their health. Information empowered health consumers will drive changes to the system unlike any we've seen in our lifetimes. They'll take more personal responsibility for their health. They'll keep themselves healthier. They'll make decisions about their health, health insurance, health providers, health procedures, etc. much like they currently make decisions on all other matters of personal and financial wellbeing. This will change the system in ways we can't completely imagine today; in the same way digital technology has revolutionized so many other industries. [Rick Valencia](#), General Manager, Qualcomm Life

The connections around patients, patient groups and even clinical trials are also valuable touch points that have gained a good deal of interest over the past year. The “collective intelligence” of patients and caregivers have created resources and insights that are making bold strides in medicine. In fact, Pablo Graiver makes the bold suggestion that health connections may be best found at places like consumer-driven social media sites like Facebook.

“ We think of TrialReach as the hub for clinical trials. Today we make the vital connections between patients and medical researchers and in 2014 we will be launching new ways for our community and partners to share vital information. We believe that by allowing people to ‘voice’ their knowledge and their experience of clinical trials either directly on our site or through social media, we can make clinical trial information more up-to-date, more relevant and more valuable than ever before.

Vinod Khosla said that in the next 10 years, data science and software will do more for medicine than all of the biological sciences together. We would agree with this, but we think the true value of connectedness in healthcare, lies in the etymology of the word: Con nectare – that which binds us together. It’s not just about more data, it’s about what’s important to all of us. And no-one can tell us more about what is meaningful than patients. So for us, this is the critical connection and the filter through which the value of data should be determined: What do patients care about? What are they experiencing? What can they tell us?

When you think of connectedness in healthcare you probably think of patients accessing their medical records, or remote medicine; you probably don’t think of Facebook. But we think that social media, and Facebook in particular, will transform our ability to know what is happening now with, let’s say, an outbreak of flu but also what will happen in the future, such as the increased incidence of diabetes. Could it be that Facebook can help cure cancer? We think this is a real possibility. [Pablo Graiver](#), CEO Trial Reach

We’ve designed a health care system that’s mostly about the flow of information from researchers to physicians, and from physicians to patients. The challenge and opportunity we have now is that information (a) should flow between all three of these nodes and (b) it should flow in both directions. At Smart Patients, we’re especially interested in the untapped resource represented by the knowledge of many patients and caregivers. New models of connectivity not only enable patients to support each other, but also to help physicians and researchers do their jobs even better. [Roni Zeiger](#), Founder, Smart Patients

Connectivity itself becomes almost a amorphous living entity—streaming health. The notion of a single connection becomes less important and the network of connections emerges as the actual entity of innovation. The device, the connection, the data are all part of the “organism of digital health”. And there you have a profound re-invention of technology that may very well make digital health invisible as a device yet indispensable as a reality for health and wellness.

“ As we move past digital health evidencing the body’s analog physiology as digital data via wearables, connected health devices, smart patches, ingestibles and proximity sensors; we shift over two cognitive paradigms originating from our love affair with information and technology. First, we go from health data being a “system of record” to a “system of engagement”, enabling stakeholders in the health ecosystem to do more with health data than simply “record” it. The data will engage us. Second, we go from measuring, storing and using health information from a “single point of time” (SPOT measure) to a continuous stream of health information. We can think of this as analogous to the shift in financial services from a SPOT measure of a stock price, to streaming stock prices. Way past digital health, and right around the corner from connected health, is the construct of a stream of health information; health indices, and eventually the last generation of mankind capable of successfully using the excuse “I did not know”. [Richie Etwaru](#), **Group Vice President Digital Innovation, Cegedim**

Last year, I wrote about how [2013 would be the year of digital health](#). I believe that it’s still the case and that 2013 put digital health on the radar of physicians, patients, pharma and Wall Street to name a few. The promise of innovation, the dilemma of healthcare, the evolution of the smart phone and the emergence of genomics and medical technology have all created a tsunami of excitement that is just the beginning. All these pieces are fighting for mindshare in an already complex environment. And while the magic may be in the innovation, the reality and practical use will be in a simple word—connectivity.

Keep Critical! Follow me on [Twitter](#) and stay healthy!