

Engaging patients and improving care through digital transformation

All health organizations want to engage their patients and provide the best care for them possible. Simon Kos, MBBS, Microsoft's chief medical officer, discusses how the digital transformation enables organizations to meet and exceed their patient care goals and provide them with the best care possible.

As a physician, which emerging technologies excite you the most?

I'm interested in how we make healthcare sustainable – care that we can afford – so, anything that delivers health at a lower cost or dramatically improves the quality at the same cost. Some of the technologies that excite me the most are virtual health, which includes telemedicine, personalized medicine and using genomics and biometrics to create individualized care plans; population health management – using analytics and machine learning to shift care outside the hospital and out into the community and manage chronic disease; and finally, patient empowerment – using things like personal health records and patient infotainment and curated health information for the lay person to be able to improve health literacy and give patients the tools to manage their own care.

Along those lines, what have you seen take the most substantiated hold in the market and what's exceeded initial conceptual applications?

I think the last decade has been characterized by a love affair with systems of record, like electronic medical records, and that's where the bulk of investment still goes today. But, increasingly, health customers are asking about how they get value from EMRs. I think there are some clear complementary technologies that unlock value from the electronic medical record and promote transformation. Two in particular stand out: systems of insight and systems of engagement.

We capture all this data, but how can we make use of it to drive improvements in care and quantify our change initiatives and benchmark against our peers? That's where systems of insight come in. Analytics is a continuum from basic reporting, which is retrospective, to dashboarding, which is real time (looking at KPIs and patient flow), to predictive. The next stage will be proscriptive – how we can use machine learning and artificial intelligence to start to make some decisions.

Systems of engagement are technologies that help providers and patients communicate, collaborate and learn, and team. It starts with pretty basic, unified communication that moves us beyond the pager system and enhances clinical teaching and learning. It scales up to allow new models of care like remote care collaboration, telemedicine and virtual health.

How has the infusion of mobile devices and technology transformed the way we give and receive care? What are the advantages of remote patient monitoring?

I'll give you an example from Children's Mercy in Kansas City. They treat children with a severe form of congenital heart disease called hypoplastic left heart syndrome. This condition has been treatable since 1985; however, mortality today is still around 20 percent. Children with this condition undergo three rounds of surgeries – one at six days old, another at six months and the last at 18 months. The current standard of care, which takes place in the home for the most part, is use of a weighing scale and a pulse oximeter and daily notes on paper. In an effort to improve mortality, Children's Mercy created a cloud-based application for parents to use at home to record their daily notes online and take video using a Surface Pro device. This process allows a much quicker interaction with the care team but also a richer set of diagnostics.

In the three years Children's Mercy has been using this program, they haven't lost a single child. They have redefined the mortality of this one condition just by using a simple consumer application together with a modern mobile device. Children's Mercy has rolled out their application to seven other hospitals in the U.S. Because they created this application in the cloud, handing it over to other hospitals was simple. Those other hospitals didn't need to buy and install new servers. It's something that can be consumed from the cloud.

What about patient engagement? How has this changed?

I think the standards of consumer service expectations have risen a lot. The patient experience, especially in the hospital, needs to improve. Recently, we've seen a lot of progress in this area through patient entertainment systems. Conceptually, this takes the existing patient entertainment system where patients in their bed consume TV, video and web services, but it makes it health specific. So, in addition to that entertainment, patients can get information about their condition, they can view their medical record and interact with members of their care team and start to build a profile online that can follow them after their hospital visit and assist with rehabilitation and ongoing care. Increasingly, I think we're going to need to improve the health literacy of our patients through engagement tools like this to empower them to take ownership of their condition, treatment and outcomes.



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