7 predictions for the future of health care technology
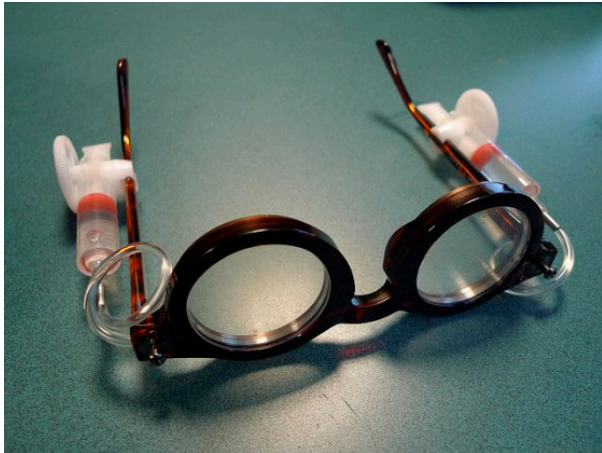
By Sean Mehra
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This is a guest post by health entrepreneur Sean Mehra

I've got an awesome job. Every day, I envision the future of healthcare and strategize how innovative technologies can transform how we give and receive care and, ultimately, make the world a happier and healthier place.

Here are my seven predictions about where healthcare is headed:

We will see a democratization of medical knowledge

For thousands of years, the science and art of medicine has been passed down from generation to generation under an apprenticeship model (it's called "a practice" after all). Today, we have an opportunity to leverage technology to make doctors' wisdom accessible to all. To date, we've published entire encyclopedias of medical knowledge, but they remain largely impenetrable by the mass audience. What's missing is useful, user-friendly information that guides healthy behavior.

The technology already exists for health information to be published, catalogued, and searched by anybody online. As this trend spreads, this democratization of medical knowledge will offer clinicians worldwide a chance to learn from each other and improve the quality of care. What's more, platforms that unlock the crowd-sourced wisdom of the medical community will offer patients immediate access to doctors' guidance.

A transparent meritocracy amongst doctors

Patients typically choose their doctor by either word-of-mouth referral, or online consumer reviews of a doctor's bedside manner, waiting room decor, or office staff's disposition — not by the quality of care they provide. That's because most consumers aren't qualified to assess how a doctor's care affects health outcomes.

But imagine a world where doctors rate each other on the characteristic that matters most: competence. Taken further, imagine if consumers had access to a single score that captured a doctor's professional reputation as determined by other doctors — a score that combines meaningful indicators such as the impact of their clinical research and academic publications, the number of patients referred to them, and the caliber of their medical training.

A system with this kind of transparency will reward doctors who actually deserve esteem from peers and patients, not just those with access to big marketing budgets, large employers, degrees from elite schools, or extensive social networks.

Finally — consolidated patient information!

Despite the increasing prevalence of electronic health records, patient information is stuck in the days of the Wild West. Information is siloed in non-interoperable data repositories, from EMRs to health devices, managed by different parties, and stored in various formats.

While we have more, richer data about each patient today than in past decades, doctors can't effectively use these data until they are consolidated into a standardized, usable data stream. Favorable regulatory forces are pushing for standards (like the "Blue Button") that make health information easily retrievable for patients and with increasingly empowered and savvy healthcare consumers. It's only a matter of time before a platform emerges that can aggregate and safely store patient information in one place.

This kind of platform will, in turn, facilitate the integration of new technologies into healthcare. In addition to prescribing medications, for example, doctors will prescribe apps to capture health data or foster behavior change. Such practice will ultimately become a practical and seamless part of administering care.

Tech will catalyze drastic system-wide cost savings and efficiencies

When 30 to 40 million Americans enter the healthcare system in 2014 under Obamacare, our current system will experience enormous demand shock. Without structured change, the influx of previously uninsured patients will yield a shortage of doctors and will strain doctors' time and resources, particularly among primary care physicians.

To cope, we will need an efficient system to triage health queries and manage patients based on urgency, severity, and available capacity. Furthermore, technology must enable doctors to care for larger patient populations more quickly and without compromising quality of care. Smart dashboards, alerts, reports, automated follow-ups, synchronous and asynchronous communication, and data sharing all will become part of a doctor's "command center" that helps him or her monitor the health of thousands of patients simultaneously.

Innovation can expand the "production possibilities frontier" for any capital- and labor-constrained market. The potential impact of technology is immense. For example, of the $1.8 trillion spent annually on healthcare in the U.S., roughly $500 billion is spent on doctor-patient visits alone. Roughly 25 percent of these visits are purely informational (no procedures are performed, and no prescriptions are written). If technology can efficiently serve patients seeking such visits, annual healthcare costs could immediately and dramatically drop by $125 billion.

Our medical knowledge will advance at record speeds

Medicine will benefit from the wisdom of crowds. With transparent, large-scale knowledge sharing across doctors and patients, medical experts will collaborate to refine treatment regimens, discover new approaches to old problems, and share feedback on unexpected outcomes at a pace previously unimaginable.

By looking at trends in patients' health questions and concerns in real time (both before and after a doctor visit), the CDC and other health organizations will learn about geographic outbreaks before patients make their way to ERs and waiting rooms. Conceivably, predictive analytical frameworks could detect outbreaks *before* they happen. Advanced algorithms will also detect correlations between certain medications and unexpected side effects based on patient reports within a particular demographic — correlations that might never be discovered during traditional clinical trials. The possibilities of "big data" are limitless and exciting.

Doctors will be trained to bring "care" back into "health care"

The average doctor-patient encounter in the U.S. lasts seven minutes (largely a function of reimbursements being tied to the number of patients seen). As a result, doctors are hard-pressed to find time to build meaningful relationships with their patients.

Not surprisingly, patients often complain about their doctors' bedside manner. Technology can actually help foster a stronger culture of care in a fast-paced world – when visits are more efficient, doctors have more time to hold a hand, share a smile, alleviate anxiety, and talk with each patient. We're already seeing medical schools adapt curricula to emphasize making patients feel better not just physically, but also emotionally. Technology will accelerate this trend by providing doctors ongoing access to peer feedback about their medical knowledge and patient feedback about their bedside manner. The result? Making patients healthier *and* happier.

We will see unprecedented market caps

We're living in an era when many promising ventures will create new jobs, markets, and market values that surpass those of today's tech companies. Think about how massive existing health care companies have already grown in terms of brick and mortar facilities, in-person services, and archaic IT systems.

Yet some of the world's leading technology companies like Amazon, Google, and Apple have already transformed traditional markets (think newspapers, books, and music) into lucrative technology-based markets with lower costs for consumers. Health tech companies can similarly disrupt the multi-trillion dollar health care market — except, in healthcare, the lifetime value of customers is exponentially larger than any other tech industry. This presents a monetization potential never before seen in the business model of tech companies.

The opportunities at the intersection of health and technology will enable humanity to create health and wealth on a global scale — seizing huge business opportunities while generating tremendous positive social impact for everyone, everywhere.

Health is ripe for technological disruption and worthy of the world's best resources. This industry beckons the brightest engineers, designers, doctors, legislators, and business mavericks to band together and make these predictions a reality. Join the cause!