



The Coming Revolution: The Healthcare Challenge

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The United States spends nearly 17% of its gross domestic product on healthcare,¹ almost double that of any other industrialized country,² and achieves worse outcomes by many measures.³ The U.S. may have the most healthcare in the world, but we do not have the best healthcare. Today, Healthcare in the U.S. is a poor value. If we are going to remain competitive in the world economy, we must deliver the right care in the right setting at the right time at the right cost.

MY TELECARE EXPERIENCE

Telecare offers us an opportunity to keep patients healthy in their homes instead of funding expensive hospitalizations once patients become sick. I'll describe several examples of successful telecare below.

For the past decade, I've personally treated hundreds of patients from my smart phone. I'm fully credentialed and malpractice insured to do so. My practice is very specialized—I'm the national resource for mushroom toxicology. If anyone eats a mushroom and has an adverse reaction, I get a call from regional poison control centers nationwide. I review the patient history, a photograph of the mushroom, and region/season specific clues in order to determine the mushroom species and treatment plan. My goal is to keep young children out of emergency departments. The care I deliver is low cost, rapidly responsive, and maximally

convenient. No one needs to travel to Boston or wait in line to be seen.

The telecare I deliver is just one kind of care at distance. Here are three more personal experiences

Five years ago, my father-in-law began speaking in “word salad”—the sentences coming from his mouth were out of synch with the thoughts coming from his brain. My wife immediately called me and asked what to do. I suggested she take him to the nearest community hospital with a CT scanner and telestroke capability—about 15 minutes away. Instead of traveling to an urban setting with nationally known stroke experts, my father-in-law received the necessary diagnostic studies in a rural environment, and then connected with a neurology expert virtually from the bedside. The neurologist reviewed the CT images, patient history, and treatment options. With medication, the stroke cleared rapidly, and my father-in-law was discharged the following day, completely back to baseline.

A year ago, my wife noticed her heart rate was elevated, and she had unplanned weight loss. Her hair was brittle, and her eyebrow hair was thinning—hallmarks of thyroid disease. Instead of driving into Boston, paying \$40 for parking, and waiting for an overburdened primary care physician, my wife did a telecare visit, arranged for labs to be drawn at a nearby rural testing center, and received a referral to an

endocrinologist. She did have an in person visit with the thyroid specialist and received medication (e-prescribed via an app), which resolved her symptoms. Primary care, specialty care, pharmacy, and laboratory services were all coordinated with smart phones, cloud services, and apps.

Finally, six months ago I was diagnosed with primary hypertension. My clinician asked me to use Internet of Things devices in my home (all consumer devices from Withings [a consumer electronics company] that cost less than \$100) to monitor my blood pressure during activities of daily living. That data were sent to my phone and from my phone to the clinician's electronic health record with my consent. Based on lab tests done at a rural testing center and data from my home, he was able to develop a treatment plan and electronically prescribe medication. We continued telecare interactions to rapidly titer my dose of medication in order to personalize it to my needs.

FACTORS FACILITATING TELECARE

Each of these examples happened because reimbursement in New England is changing from fee-for-service to risk-based contracting in which a fixed dollar amount is made available to keep every patient healthy. Incentives are being re-aligned to encourage adoption of emerging technologies that reduce cost and improve quality.

There is more good news on the reimbursement front for telecare.

The CHRONIC Care Act⁴ was passed and signed into law in February 2018 as part of the Bipartisan Budget Act of 2018. It relaxes geographic and facility-type restrictions under Medicare fee for service for telestroke services and adds the patient's home and independent renal dialysis facilities as originating sites for

telehealth dialysis services. The CHRONIC Care Act also gives Medicare Advantage plans the ability to offer telehealth services as part of their basic benefit package. For certain accountable care organizations (ACOs), the Act eliminates rural geographic area requirements, and enables homes to qualify as originating sites.

MOVING FORWARD

To accelerate telecare adoption, we need to think boldly. What are some of the actions we can take to fundamentally change the way we deliver care?

1. As mentioned in the CHRONIC Care Act, we must eliminate geographic thinking about licensure, reimbursement, and credentialing. Industry stakeholders are aligning to begin this work, including an alliance of payers working to implement a blockchain-based national resource of provider data.⁵
2. Diagnostic tests must be ordered based on patient and family location and convenience (not doctor or hospital location) at the site of the patient not the doctor or hospital. Startups are working on this.
3. Medications must be delivered more conveniently instead of requiring travel to a specific location. Amazon's acquisition of PillPack⁶ is just the beginning of a trend to bring medications to the patient instead of sending the patient to the pharmacy.
4. Electronic health records must be optimized for telecare workflow. Today, they are designed for in person visits, with no simple way to document telecare encounters and bill for them.
5. New apps and cloud services, such as the work Apple is doing in IOS 11.4 with HealthKit⁷ are needed so that patients are equal participants in their care, making them stewards of their own

data and giving them more options to coordinate care than is available on today's portals.

We have the perfect storm for innovation. Technology, policy, and changing reimbursement models means that telecare is going to accelerate rapidly in the next year or two. This *Journal* is the perfect place for the industry to document their early experiences on that journey.

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