


# What Does the Future Hold for Medtech? (Physicians Will Be More Like Engineers)

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When I was asked to think about how physicians will be affected by the changes in the medtech industry over the next 5–10 years, I initially thought “not much.”

The field of medicine is a slow-moving beast with substantial inertia. Physicians tend to be quite conservative when treating patients for a number of reasons. Many physicians practice the way they were trained, which may have been a number of years ago, despite the continuing medical education requirements to maintain state licenses. Moreover, physicians may be liable if a bad outcome results from treatment that deviates too far from the current standard of care, so they may be reluctant jump on the latest trends in treatment, no matter how promising they seem. And the very first oath a future physician takes when entering medical school is Hippocrates’s, promising to “do no harm,” which often means “watchful waiting.”



**Kreml**

However, several developments in recent years are pushing physicians to become more accepting of change. We are on a reimbursement cycle returning to capitation and bundled payments. Compensating physicians with a lump sum for the entire care of a particular patient, instead of being reimbursed for individual office visits or procedures, is nothing new. The intended incentive for the physician is to make sure patients stay healthy. Theoretically, this would minimize the number of tests or procedures ordered, and therefore the expense of each would not draw from the capitated payment for that patient, which could decrease the physician’s bottom line. This reimbursement scenario has been tried before with little success for many reasons. But this time around, it might actually work. The tools to enable this are being developed by the medtech industry right now.

## **Consumer Access to Robust Technology**

The consumer electronics industry has accelerated the miniaturization of the sensors and logic needed to implement widespread remote patient monitoring. With high-volume manufacturing, economies of scale are driving down cost and power consumption for these components. Parallel to this, the broadband infrastructure needed to support connectivity of these devices has evolved into reliable and stable networks. These advances allow average consumers to carry extraordinary functionality on the smartphones in their pockets and with massive computational power easily accessible in the cloud.

These consumer devices are already being used for health-related purposes, and major players like Apple, Google, and Samsung, are providing frameworks for developers to create more robust applications that can meet the needs of the healthcare industry.

### **Policy Change Meets Technology**

Along with these technical advances, policy changes are forcing more transparency in healthcare and providing financial motivation to emphasize practice behaviors that should result in better delivery of care. The 30-day readmission penalty provision of the Affordable Care Act is aimed at shifting hospital attention toward ensuring patients do well post discharge instead of allowing them to be readmitted should they decompensate.

In the past, these readmissions would have brought in more revenue for the hospital, so there was little incentive to prevent patients from returning to the hospital. But now many hospitals are looking toward remote monitoring as a means for ensuring patients remain stable immediately after discharge. And many payers are catching on, seeing the potential for remote monitoring of patients with chronic conditions as a way to decrease overall costs. Preventing one hospital admission can be enough to justify the cost of many systems currently being developed.

From the physician's perspective, we are at the advent of a new era. The elements I mentioned are laying the foundation for physicians to better understand how to take care of patients with chronic conditions between visits. While the technical issues are quickly being worked out, more effort is needed to present the data collected to clinicians effectively and to avoid information overload and alert fatigue. As these issues are addressed and evidence proves the use of remote technologies does indeed improve outcomes and lower costs, adoption will increase. In a recent whitepaper from Honeywell HomMed, data from the Franciscan Alliance ACO in Indiana shows some promise, with the use of a simple telehealth system significantly decreasing their hospitals' 30-day readmission rates.

My semiconductor background biases me, but in the near future, I see the physician functioning more like a process engineer in a fab when managing patients with chronic conditions. Using the devices developed today, they may watch trend lines for relevant parameters monitored with wearable devices and remote sensors. Between regularly scheduled office visits, the physician will have the opportunity to take action as a parameter approaches a critical threshold—before the patient even begins to feel symptoms—and prevent those initial, unscheduled hospital admissions from ever occurring.

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