

Top Five Ways Sensor Technology Will Change the Face of Healthcare

By: Lee D. Rice

As most are aware, the big tech companies, from Apple and Google to Qualcomm, have embarked on a monumental effort to push for new concepts and product development in the field of digital health. One digital health technology at the center of the radar, the smart sensor, is certain to shape the healthcare landscape this century. In fact, according to Deloitte, the smart sensor market is growing rapidly and the market for wireless health monitoring devices will be \$22 billion by next yearⁱ. A significant portion of that market is driven by increasing segments of people facing health problems, such as the elderly, those with chronic conditions or even individuals in remote locations who need access to affordable care.

What do smart sensors offer that is so powerful for healthcare? Here's a list of the top five reasons sensors are game changers:

- 1) **Better monitoring** –The convergence of newly mature technologies – power, networks, cloud, miniaturization, and nano-technology – create a perfect palette from which developers can create useful, easy to operate devices at an affordable cost. Studies show that users are more likely to adopt technologies that offer them a sense of independence and are inexpensive.ⁱⁱ Sensors can send data from anywhere at regular intervals with

little effort from the user. They can feed into software and even a patient's Electronic Health Record (EHR) to monitor and track trends. A physician can enter preset parameters based on a patients' profile or allow systems to utilize adaptive algorithms that learn what is normal for the individual and create alerts in the event of an anomaly. The patient could then be directed to take a certain medication or go to a hospital if necessary.

- 2) **Telemedicine applications** – Today three percent of pediatric critical care specialists live in rural areas that serve 21 percent of the population of US childrenⁱⁱⁱ. To address this discrepancy noted academic hospitals such as the UC Davis Children's Hospital have employed telemedicine and remote monitoring solutions to improve outcomes for rural pediatric emergency department patients. With sensor technology these benefits can extend to even more places such as villages in underdeveloped countries or even Antarctic outposts. For example the DynoSensor™, or Dyno™ for short, from the company DynoSense™ Corp., can measure heart rate, blood oxygen content, or blood pressure change by having a user hold the device in the mouth for sixty seconds. No clinicians or doctors are required. It then immediately transmits the data via network and cloud to the centralized medical office. Based on the information, a physician can prescribe medication, or

suggest further testing. The simplicity offered by sensor technology holds great promise in supporting communities in undeveloped countries to improve global health overall.

- 3) **Lower costs** – Many factors are impacting the cost of healthcare. Medicare is moving to accountability measures, liability and malpractice insurance continue to loom large, more complex procedures are developed every day and probably most importantly, our population is aging and developing more chronic diseases.^{iv v} Because sensors improve monitoring and disease management overall, they create better quality of care which is the answer to these rising cost factors.
- 4) **Improved care** - A recent study found that those with COPD and congestive heart failure benefit from sensor monitoring technology because it provides a way for healthcare providers to address their issues *before* their condition becomes acute.^{vi} It gives people a better tool to be aware of their bodies, communicate with their doctors and improve the level of care they receive. The sensor can be a convenient proxy that easily transmits important data, avoiding unnecessary doctor and hospital interactions, making life easier. In a way sensors are the “guardian angels” of health, always

there but never in the way, capturing important information and stepping in when appropriate.

- 5) **Personalized medicine** – Sensors empower people to learn more about their own health. Equipped with more knowledge, individuals can better participate in decision making with their doctors. For instance, today many people track their own health, through technology and other measures. One third say they have used this information to make important health decisions, including seeking a second opinion from another doctor.^{vii} This added control and awareness helps to avoid costly procedures and specialist visits while at the same time allowing an individual to know when to reach out and seek help.

Each day more advances are being made in the sensor space. We will begin to hear more real life stories about how this technology is helping people everywhere. There is much to be done at the intersection of technology and the body and the possibilities are open ended.

About Sponsor: DynoSense Corp. is a medical device company and creator of world's first fully integrated multi-scan health scanner.

For additional information, contact info@dynosense.com or visit www.dynosense.com

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