Healthcare gets smarter in its fight against chronic diseases

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POSTED ON 10.02.18

As chronic diseases continue to take an ever-increasing toll on the health of citizens around the world, healthcare service providers and patients themselves turn to remote patient monitoring (RPM) devices to facilitate disease management, improve patient care and reduce medical costs.

- Chronic diseases are growing exponentially, causing a strain on healthcare systems around the world
- Secure data collection, transfer and access is essential to the future of remote patient monitoring
- Remote patient monitoring devices provide the answer to one of the world's biggest economic challenges

Growth of chronic diseases

We see it happening all around us – apps and wearables encouraging us to get up and move around, low-fat options scattered throughout the supermarket or the all-organic restaurant that just opened around the corner. People are starting to pay more attention to their health – and for good reason! Today, **lifestyle-related diseases** – brought on by aging population, excess calorie intake, inadequate exercise and smoking, to name a few – now cause three times more deaths around the world than hunger.

Treatments for these conditions, also known as chronic or non-infectious diseases, which include cardiac and respiratory and ischemic diseases, sleep apnea and diabetes, put a considerable strain (to the tune of $8 trillion) on healthcare systems around the globe. When we consider that healthcare spending has already outgrown GDP in many countries, the rise of chronic diseases raises some red flags. Thankfully, **technology can provide a solution** – in the form of remote patient monitoring devices.

Lower cost, higher returns

Whether implanted (a pacemaker, for example) or external (glucose monitor), these technological devices capture and analyze patient data, **connect to local area or wide area networks**, send readings (or alerts in the case of irregularities) to healthcare service providers and generally allow for better patient monitoring and more accurately adapted treatment plans.

The subsequent cost reduction in patient management alone is staggering. Monitoring yields fewer and shorter hospital visits, more at-home disease management, reduced home medical visits and allows care delivery to more patients. But on top of lower cost, RPM creates considerably higher quality patient treatment and care as well.

More frequent **data collection, faster analysis** and the possibility to collect data leads to a better patient experience and even better prevention. Given all these benefits, the number of **connected medical devices** is estimated to jump from 60 million in 2017 to up to 200 million by 2021. Additionally, with our on-the-go lifestyles, patients no longer want to be restricted to a fixed location when using their devices. For this reason, the number of devices **with cellular or LPWAN connectivity** will increase from less than 40 percent of the installed base in 2017 to more than 60 percent by 2021.

Securing every link in the data chain

For all of this to run smoothly, trustworthy and reliable data throughout the entire process is absolutely essential. When data is recorded by authenticated devices and encrypted to ensure the reliability of the numbers, patients will **trust the data collected** and medical professionals will trust the data they receive. **Device access rights** (the ability to change settings or dosage, for example) must also be secured; and of course, access to this data by healthcare professionals, family members or the patients themselves, must be controlled as well.

The massively growing population of chronic disease patients creates another security concern when using these devices: **successfully authenticating a patient's identity**. Today, a single household could have several patients using the same RPM device. The data for each patient, while collected on the same device, must be attributed correctly to each individual. Similarly, a single patient could suffer from multiple chronic diseases, meaning the need to securely map the vital signs captured via several devices to the given patient, to enable a trustworthy analysis of patient data.

If these security concerns are not properly addressed, the consequences can be quite serious. This is why a major manufacturer recalled 500,000 remote patient monitoring devices last year to prevent potential incidents.

Security and privacy are fundamental when it comes to managing collection of RPM data and its analysis. If technology is going to provide a way forward in the fight against chronic diseases, **device and data security needs to be ironclad**.

Figure sources: Berg Insights, Machina Research, Word Health Organization and IDEMIA analysis.
