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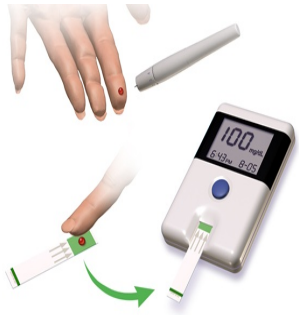
Consumers Hack Their Own Medical Devices



To overcome the limitations of current technology, "citizen hackers" are now finding ways to hack their medical devices and gain access to data that would otherwise not be available to them. NightScout, a system developed by a constellation of software engineers, many of whom have diabetic children, is an open source system that hacks the Dexcom glucose monitor and uploads its data to the Internet. That way, parents, guardians or caregivers are able to see their family member's blood sugar levels on their smart watch or other device no matter where the patient might be. While the software may not be perfect and is also not approved by the Food and Drug Administration, it has been able to fill a gap in available medical device technology.

This is just one example of how technologically savvy consumers are taking control of their own healthcare and are tinkering under the hoods of medical contraptions. Their goal is to have more influence over devices such as blood sugar monitors, insulin pumps, defibrillators and other tools that control or monitor bodily functions. The objective is to gain greater access to data and faster invention rather than waiting for approval from formal regulatory authorities. A team of engineers and students at the Massachusetts Institute of Technology (MIT) have been hosting hackathons to learn how to improve medical products and to work out new and improved solutions to common diseases.

"I have a huge bet on there being many other diseases that can be helped by these new forces in medicine," said Joyce Lee, a diabetes specialist and associate professor of paediatrics at the University of Michigan who researches design as it relates to health care. "It is not the new blockbuster drug. It's not the newest FDA-approved device. But it's the free hack that the patient came up with."

While all this tinkering may be proving beneficial for citizens, the FDA, medical device companies, academics and clinicians are concerned about these modifications, and are wary of suggesting them before they have been fully tested and evaluated for safety. After all, the regulatory process is there for a reason: patients rely on their medical devices to work predictably and to be comprehensible. There is always the possibility of error which could result in negative consequences for patients.

Do-it-yourself developments in diabetes control are of special concern, since errors could prove fatal. In any case, it is important for developers and the FDA to work together proactively and to bring more advanced features and functionality to patients across the globe.

"This grass-roots initiative and drive is very important in accelerating the development of these technologies," said Howard Wolpert, who runs a technology institute at the Harvard-affiliated Joslin Diabetes Center. "It is also important that the processes for approval can be accelerated so that this can be done in a way that there is an element of regulatory oversight."

Source: The Wall Street Journal

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