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Personal Tech

Tech That Could Save Your Life

Rebecca Buckman, 06.26.09, 6:00 PM ET

BURLINGAME, CALIF. - Jim Sweeney is on a mission to make hospitals safer--through technology.

The longtime entrepreneur, who started companies including prescription-benefit management firm Caremark and CardioNet, a maker of devices to diagnose heart arrhythmias, is now at the helm of IntelliDOT Corp. The San Diego start-up makes handheld devices that mainly scan bar codes on drug labels and match them to patient wristbands. That helps nurses give the right patients the right dose of their medicine and avoid harmful interactions. The devices have some other uses, like guarding against patients getting the wrong type of blood in a procedure.

But Sweeney has big plans to widen the company's scope: He wants to create a new technology platform, leveraging wireless technologies such as RFID, to improve patient safety throughout hospitals.

In Pictures: 10 Life-Saving Technologies

In Sweeney's vision, nurses and patients armed with wireless devices or tags could synch up with each other to make sure patients are prepped for the correct surgical procedure and that babies go home with the right parents. The new system would continue to monitor patient drug doses and interactions--drug errors are a major cause of death in hospitals--and even prompt nurses to wash their hands. Sweeney envisions radio-frequency identification devices embedded in hospital-room soap dispensers. They could catch nurses who didn't scrub up before touching patients. (Nurses would have RFID tags on their name badges.)

Hospital errors now kill at least 120,000 Americans every year, Sweeney says. He's trying to raise about \$30 million to build his high-tech hospital platform and re-brand IntelliDOT as Patientsafe Solutions.

"I believe this system will be in every hospital bed in America in five years, if we can get this going," he says. Right now, IntelliDOT's devices are being used by only about 70 hospitals. But new Medicare rules that block reimbursement when hospitals make some medical errors--such as amputating the wrong limb or making a mistake that leads to a post-surgical infection--should spur hospitals to clean up their act, he believes.

Sweeney isn't the only entrepreneur forging ahead with innovative medical devices targeted to aging baby boomers and others.

Venture capital investments in medical gadgets has been surging over the last five years. Funding for such devices hit \$3.44 billion last year, up from \$1.62 billion in 2003, according to Thomson Financial and the National Venture Capital Association. Investors are also responding to the public's desire for less invasive treatments for conditions like obesity and glaucoma, and new therapies that don't have the side effects associated with many popular drugs.

A Palo Alto, Calif., company called Satiety, for example, is hoping to gain FDA approval soon for a stomach-stapling device that doesn't require surgery. The instrument is inserted through patients' mouths and is pulled out once the job is done. The patient is left with a smaller stomach that feels full after a small meal, the company says, but no nasty scars. The procedure is an alternative to gastric-bypass surgery, which can be risky to many patients, says Robert "Robin" Bellas, a partner at Morgenthaler Ventures, which invested in Satiety.

More precise cancer detection is also in vogue. Mauna Kea Technologies, based in Paris but backed by U.S. venture firm Psilos Group, is already selling a device that helps doctors pinpoint cancers inside the body and essentially diagnose them there, without having to do multiple biopsies to find the exact site of the troublesome tissue. Mauna Kea makes a tiny, flexible microscope that fits on the end of a probe and is inserted into a patient's gastrointestinal tract with an endoscope.

The microscope does a good job of catching early cancers and diagnosing them immediately, without having to wait days or

more for a pathology report, says Mauna Kea Chief Executive Sacha Loiseau. It's especially useful in getting into tiny bile ducts, he adds. The only catch: The procedure is approved for use in the U.S. but isn't yet covered by U.S. insurance codes. So Mauna Kea is working to prove the device's effectiveness and its ability to cut hospital costs as cancers are diagnosed and treated earlier.

Other life-saving devices have been around a while, but still aren't very well known. Easy-to-use, portable defibrillators used to shock people's hearts back to life have been around for nearly 15 years. But lots of people don't know where to find them or are afraid to use them.

"In fact, these devices can't hurt anyone," says Richard A. Lazar, a Portland health care technology entrepreneur who previously consulted for the portable defibrillator industry. "They can only help ... you can't hurt the person if they're dead. All you can do is bring them back to life."

Most of the newer "automatic external defibrillators," which can cost as little as \$1,200 or \$1,300 apiece and are found in places like offices, airplanes and gyms, come with step-by-step voice prompts that instruct good Samaritans how to use them. They're made for non-physicians. Earlier this year, such a device was credited with reviving a North Carolina state legislator, Becky Carney, who collapsed at her desk with sudden cardiac arrest.

Cardiac arrest is "the leading cause of death in this country," Lazar says. Disseminating high-tech defibrillators more broadly in public places could help change that.

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