

COMPLIANCE
TECH TONICS

Q+A: TOMMY THOMPSON

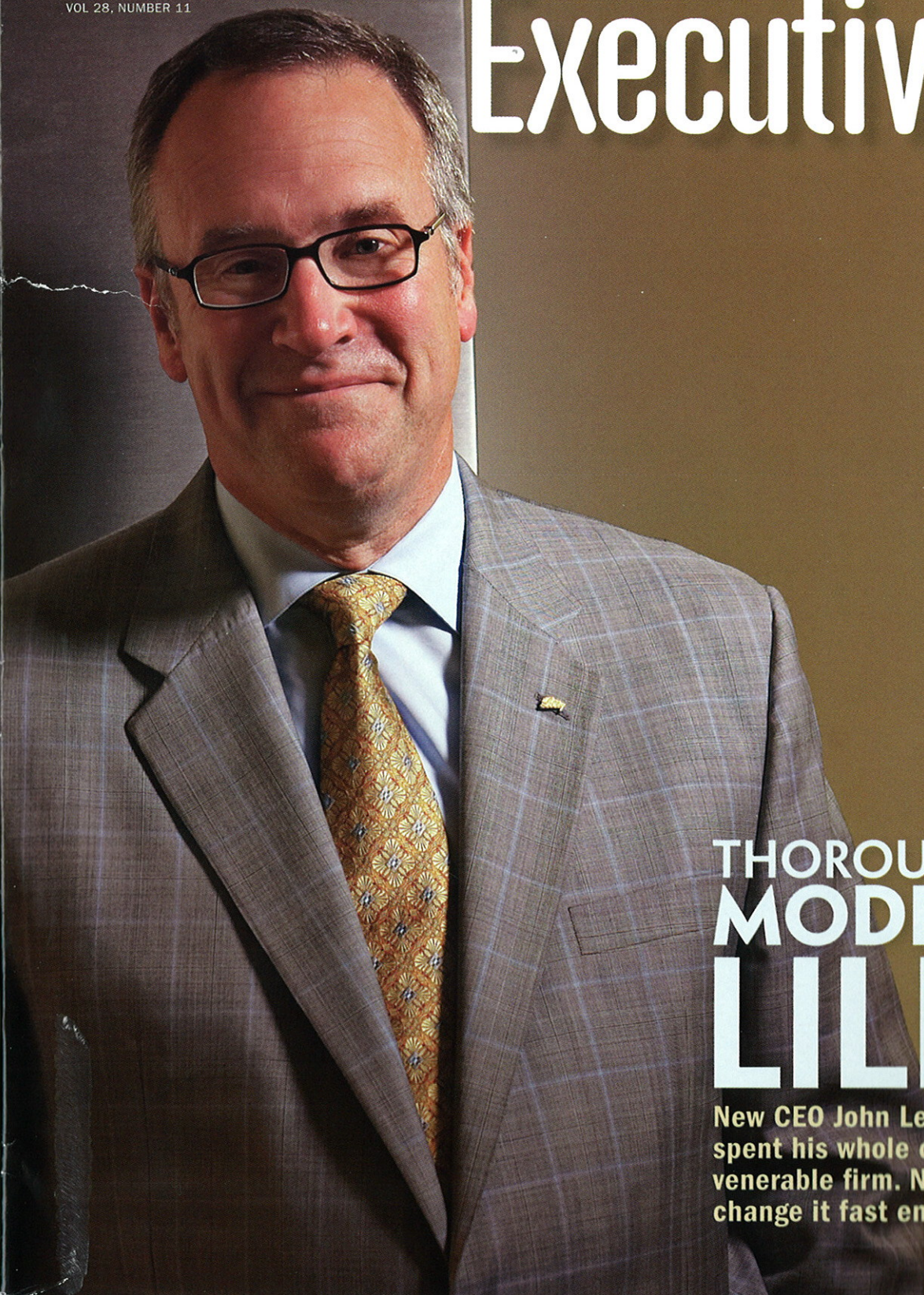
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RX CLUB AWARDS

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**THOROUGHLY
MODERN
LILLY**

New CEO John Lechleiter has spent his whole career at the venerable firm. Now he can't change it fast enough

TECH TOYS

**HERE'S THE LATEST
GADGETS AND TECH
TOOLS—JUST THE RIGHT
PRESCRIPTION TO THE
COMPLIANCE PROBLEM**

BY GEORGE KORONEOS,
NEWS & ONLINE EDITOR

As patient compliance rates continue to decline, pharmaceutical companies must look beyond their internal adherence programs and consider some of the nifty new gadgets technology vendors are providing the healthcare industry. Sure, some of these contraptions aren't targeted primarily at pharma, but most of them can be adapted to suit various needs. *Pharm Exec* looks at some of the most interesting new tech toys now available or in the near future.

VITAL JACKET **BioDevices**

www.vitaljacket.com

The Vital Jacket has been a five-year project to monitor patients' EKG rates, blood pressure, oxygen saturation of the blood and many other stats using hi-fi apparel that looks like something from the movie *Tron*. "Currently, we are monitoring heart statistics," says Luis Maireles of BioDevices. "We can perform an EKG online using only a simple t-shirt."

Simple might be an understatement. The Vital Jacket uses disposable cardiologic electrodes, like the ones used in a hospital to send signals to a small box that is hidden in the pocket. A memory card stores the information, and holds about 72 hours of data. The technology is also Bluetooth-compatible, so the data can be wirelessly updated to a computer for real-time monitoring.

Several versions will be released to market, but pharma should keep an eye out for the healthcare model, currently in clinical trials, which can be used in clinical situations to not only monitor EKG and blood pressure, but also to track movement, relaying to trial coordinators whether the patient has opened their medication bottle.





GLUCOPHONE

HealthPia America

www.healthpia.us

The Glucophone isn't technically a phone. It's a meter that attaches to a standard Motorola RAZR cellular phone through a mini-USB jack. A software program on the phone automatically activates when a test strip is run through the meter. After the blood strip passes through the dongle, a chart shows the user their blood glucose result right on the screen of the cell phone and automatically sends that information to a central repository at database operator Infopia. The data is available to be shared with approved organizations. A text message can also be sent out to a family member in the case of juvenile diabetes or to a clinician monitoring clinical trials.

Doctors also receive a text if a certain amount of time has elapsed since they last received a result and the device can send a reminder to the patient to check their glucose.

"I always see our products as a dovetail for clinical trials," says Bryan Sowards, CEO of Infopia USA. "Doctors are trying to gather information and we are providing pharma companies with daily results of testing, which is the overall goal."



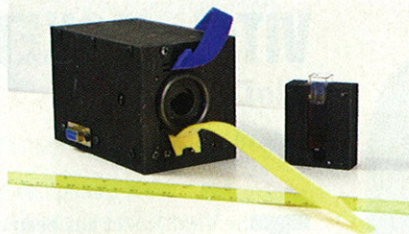
WITH GLUCOPHONE, DOCTORS RECEIVE A TEXT MESSAGE IF A CERTAIN AMOUNT OF TIME HAS ELAPSED SINCE THE PATIENT'S LAST BLOOD TEST

DRUG COMPLIANCE MONITOR

Sequella

www.sequella.com

Biotech drug firm Sequella was sick of watching trials fail because patients were not adhering to the six-to-12-month treatment period for trials. So it developed a drug detection device that can check the patient's skin to find out whether a drug has been taken.



According to Alan Klein, executive VP of corporate development, the watch touches the skin directly above the blood stream. Once the drug is ingested and processed through the GI track, it is picked up by the device.

The data can be accessed remotely, allowing healthcare providers to monitor patient compliance on a daily basis. An alarm won't go off because there are just too many different regimens involved, but healthcare providers can monitor when and if a drug has been taken.

HEALTH GUIDE

Intel

www.intel.com

One-on-one treatment just got easier with the Intel Health Guide. These laptop-size kiosks feature a plethora of tools that allow patients to take control of their healthcare, including blood pressure and glucose level monitoring. A big plus is a built-in video camera that allows clinicians to have personalized appointments with patients at any time.

Rather than wait for the patient to come into the office to explain any side effects and problems, patients can now conference the doctor and actually send him or her their vital statistics over the Internet. Doctors also can alter treatment regimens remotely.





PEOPLE JUST AREN'T TAKING THEIR MEDICATION AS PRESCRIBED—RESEARCH SHOWS ADHERENCE RATES AS LOW AS 50 PERCENT

—David Rose, CEO, Vitality

GLOWCAPS

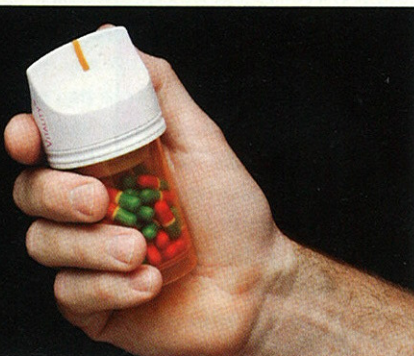
Vitality

www.rxvitality.com

“People just aren't taking their medication as prescribed—especially for asymptomatic and chronic diseases; the research shows adherence rates as low as 50 percent,” says David Rose, CEO of Vitality. “The research that we have seen is that the problem isn't just a reminder problem. There are a lot of devices on the market that are essentially glorified alarm clocks.”

Vitality designed a system that has a simple sensor that doesn't require patients to change the way they do things. It's basically a smart medication vial cap that fits the standard bottle. Inside is an LED and a sound chip, as well as a two-way wireless radio that connects to a set of Web-based services that include reminder calls, weekly e-mails, monthly reports to a doctor, and refill service at the pharmacy.

All for just \$29.99 a cap.



HELPING HAND

Medicom

www.medicom.bang-olufsen.com

The Helping Hand is an electronic tablet reminder device aimed at reminding patients to take their medication as prescribed, and encouraging them to stay compliant. The device is used with medication in blister



packs, and it reminds patients to take the tablets at the right intervals by visual and acoustic signals. A visual indication reminds the patient about everyday compliance and gives easy-to-understand feedback on patients' compliance level via a visual traffic light signal (green signifies excellent compliance, yellow is fair, and red is poor). The device thereby encourages the patient to stay “green” and strive for optimal treatment.

SMART SYSTEM

Xhale

www.xhale.com

“Pharmaceutical companies are going to be more interested in where we are going than where we. We take a generally recognized assay—an additive to an excipient that doesn't need FDA clearance,” says Richard Melker of Xhale. The company has taken a secondary alcohol, in this case butinol, and incorporated it into the matrix of the capsule. As the gelatin dissolves in the capsule, the butinol is metabolized by alcohol dehydrogenates and is turned into a chemical that comes out in the breath almost instantaneously after the capsule is dissolved. Using a device that was originally designed to detect

chemical warfare agents, doctors can test patients' breath to make sure they took their medicine. According to the company, there's no way to fake the test, because the chemical reaction won't happen until the drug hits the intestinal wall. Good luck explaining that one.



PILL DISPENSER

SIMpill

www.simpill.com

Sick of having your mom reminding you to take your medicine? Things are about to get worse. The SIMpill Smart Pill Dispenser not only can tell when you haven't ingested your drug, it will send a text message reminder to your phone or an e-mail informing you of your lapse. Unlike a traditional reminder system, the SIMpill doesn't nudge people to take their drug regimen in advance. "We don't want to send a reminder every time because they get reminder fatigue," says Ann-Mari Albertson, managing director at SIMpill. "In this case, the patient receives the reminder only after they forget to take it."



Keep ignoring the system and you're going to get in trouble. The SIMpill features an escalation program that senses how long it's been since the box was opened and sends a text to a family member if the patient continues to ignore reminders. Albertson says that this feature is particularly useful in case of an emergency, though it works just as well for forgetful children and adults.

As an added bonus, pharma companies can get statistical information in real time via the Web. For example, researchers at trial locations can check how many patients are taking their medicine on time. The stats can be broken down into demographics such as age, sex, and race.



PATIENTS GET REMINDER FATIGUE. THEY SHOULD GET REMINDERS ONLY AFTER THEY FORGET TO TAKE THE DRUG."

—Ann-Mari Albertson, Managing Director, SIMpill



MED-EMONITOR

InforMedix

www.informedix.com

The Med-eMonitor by InforMedix is a data and pill repository that stores medication and care plans for patients, and delivers them via an easy-to-read LCD screen. Think of it as a cross between a Sidekick phone and a pill dispenser. Not only does it deliver instructions on how to take medication, it also captures adherence information and the reasons why a patient has stopped taking his or her medication (failure to resupply, side effects, etc).

Patients can theoretically receive a whole-care plan through the system, with messages appearing on the actual pill dispenser. The solution can be custom-tailored based on disease state, and information is delivered via a phone connection to the Internet. When it's time to take a pill, the box sounds a chime. While it can only hold five types of medication, the unit can store information and reminders for other treatments.

SENSOR NECKLACE

MagneTrace

www.gatech.edu

Most adherence devices track compliance passively, only detecting when the user opens a pill box to access the medication. However, such devices can't tell whether the drug is ingested and by whom. Not anymore. The MagneTrace system can tell when the drug has been taken using a tiny magnetic tracer that is included in solid medication. Using a necklace with a magnetic sensor, the system can detect when the drug has passed through the esophagus based on the magnetic signature in the tracer. The



necklace sends a wireless signal to a smart phone, which time- and date-stamps the data and uploads it to a data repository. If a drug isn't taken on time, the phone will sound an alarm to tell you to take it. Keep ignoring the treatment and an e-mail will signal a family member or doctor. **PE**