



March 20, 2008

'Smart' pillbox remembers so patients will not forget

Drug-trackers also can reduce bad mix of meds

By Mary Brophy Marcus
Special for USA TODAY

A days-of-the-week pillbox just doesn't cut it anymore, say many who juggle multiple medications.

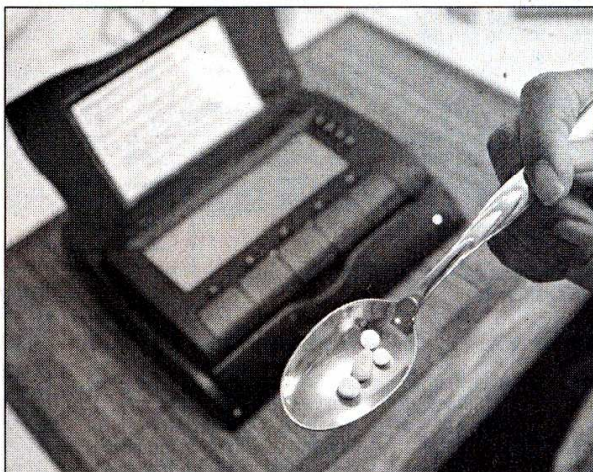
"I take five medications, six if you count my baby aspirin. I don't have time to worry about my pills," says Ray Robinson, 72, a retired wildlife biologist from Poolesville, Md., and the father of two teenagers. He takes prescription drugs for diabetes, high blood pressure and high cholesterol.

And he now uses Med-eMonitor. About the size of a purse, the year-old device is connected to a drug database through Robinson's phone line and is programmed remotely via the Internet. It beeps pleasantly in his home, and a large-print message pops up on the display screen as a voice announces when a pill is to be taken, reminds him when doses are missed, and alerts him to potentially dangerous medication interactions.

Compartments for the five most crucial drugs a patient takes have sensors with time/date stamps that track when a pill is removed.

Doctors and pharmacists say patients and caretakers are increasingly turning to such tech-based, drug-tracking tools, including a throng of interactive, consumer-friendly websites, to help keep medication regimens running smoothly and reduce errors.

"These tools are empowering patients to self-manage their med-



Easier to swallow: Robinson's Med-eMonitor plays Beethoven's *Für Elise* when it's time for him to take his dosage of five pills.

ications," says pharmacist Anne Burns, vice president of professional affairs for the American Pharmacists Association.

According to Forrester Research, the market for home health monitoring technologies is expected to reach \$5 billion by 2010 — and \$34 billion by 2015.

More prescriptions, more risk

The National Council on Patient Information and Education says that 32 million Americans take three or more medications a day. As more new drugs are approved each year by the Food and Drug Administration, the number of serious side effects and fatalities from accidental double-dosing and dangerous drug mixes have more than doubled over an eight-year period, according to a recent report published in the *Archives of Internal Medicine*.

According to the FDA:

► More than 2 million serious adverse drug reactions occur each year.

► Adverse drug reactions are the fourth-leading cause of death, responsible for about 100,000 deaths each year.

"Often we see patients who are taking too many similar medicines because they've gone to different doctors," says Jack Fincham, professor of pharmacy practice at the University of Missouri and author of *Everyday Guide to Managing Your Medications*.

90% compliance rate

Many of the new drug-tracking systems help improve compliance, says Burns of the pharmacists association.

Med-eMonitor inventor Bruce Kehr, a physician and chairman of the board at the Institute on Aging

"I take five medications, six if you count my baby aspirin. I don't have time to worry about my pills."

— Ray Robinson, 72, a retired wildlife biologist from Poolesville, Md.

at the University of Pennsylvania, says that in clinical trials, "smart pillbox" users had a 90% compliance rate.

The website iGuard.org allows members to download medical histories, then sends clients personalized risk ratings about the medications they take, including interaction risks between prescription, over-the-counter drugs and herbal supplements they take. Users also are notified when FDA warnings are issued.

Some sites, including iGuard.org and Epocrates.com, let users download information onto Palm handhelds and cellphones.

Epocrates.com CEO Kirk Loevner says that over the past few years, growing numbers of non-medical users have accessed the site, even though it's targeted to physicians and pharmacists.

The tech-based tools may even help older patients continue to live independently, experts say, but Fincham warns that cognitively impaired patients are not prime candidates. The devices also can be costly — some products are in the hundreds — and insurance does not always cover the bill.

"They do not replace a good conversation with your doctor or pharmacist," says Catherine Tom-Revzon, pediatric clinical pharmacist at Children's Hospital at Montefiore in the Bronx, N.Y. But she applauds their educational value.