**Managing the meds from miles away**

By Dawn Kawamoto
http://news.com.com/Managing+the+meds+from+miles+away/2100-11393_3-6188642.html

Story last modified Tue Jun 05 06:42:53 PDT 2007

**Did they take the pills, or didn't they?**

That's often a nagging question long-distance baby boomer caregivers face when assessing the likelihood that their parents took their medication as prescribed.

Technology may have a solution. Efforts are under way to transform the little plastic pillbox into a smart device that in some cases is also a portal of information.

"You have situations where Mom lives in California, and I live in New York, and the question is, 'How do I deal with it?'" said Lisa Gables, executive director for the American Society of Consultant Pharmacists Foundation.

The changes can't come fast enough for many of the 34 million Americans who are providing care to aging family members. According to a 2004 study by MetLife (PDF), 15 percent of the caregivers polled lived at least an hour away from an ailing family member.

Today's high-tech pillboxes try to satisfy a number of tasks--alerting people when it's time to take medication, organizing pills into compartments, dispensing the proper dose and offering overall medication management.

Many pillboxes on the market issue simple alerts. These range from e-Pill's Pager Vibrating Medication Reminder device, which resembles a pager, to its Cadex Medication Reminder Watch with multiple, programmable alarms. These devices, however, do not organize, dispense or monitor pill consumption.

Dispensing features are important, stressed Majd Alwan, director of the Center for Aging Services Technologies. He noted that dispensing features serve as a mechanism for preventing overdosing by withholding medication if a patient skips a session and tries to "catch up."


More sophisticated devices try to tackle multiple tasks. For example, Aardex Group's Medication Events Monitoring Systems organize and monitor whether pills are taken at the prescribed time of day but require a trained medical professional to read the results transmitted from a person's computer.

Another device, e-Pill's Med-Time XL, will remind patients to take their pills, plus organize and automatically dispense them at the prescribed time. But it does not offer a monitoring service, Alwan said.

Pillboxes such as Honeywell's HomMed Health Monitoring System and InforMedix's Med-eMonitor Device, remind, organize and monitor, but do not include pill-dispensing features. Both devices also connect to health care professionals who monitor the data.

InforMedix is working on a Med-eMonitor consumer version, which is expected to come out by summer's end, said Dr. Bruce Kehr, founder and chief executive of the company.

As part of a $59 monthly service, the consumer device will send e-mails or text messages to someone if there's a problem with a family member's adherence to a medication regimen. If the family uses the device in conjunction with a professional monitoring service called ExcelleRX, the fee averages about $65 per month.

"Most of us have family members who are on lots of medications, who either live alone or with another elderly person," Kehr said. "We've teamed up with ExcelleRX, who will set up the device and program it over the Web. So family members can either get the notifications, or add ExcelleRX if they want a professional to do the monitoring."

The MD.2 pill dispenser by e-Pill is another consumer device that allows adult children to serve as caregivers to their parents by programming the dispenser, refilling its contents and having data about medication taken transmitted to the caregiver's computer.

MD.2, however, does not come cheap. The device costs $799, and family members who wish to have their loved ones' medication management constantly monitored in real time, pay an additional $29 per month for the added service after a free, two-month introduction period. Family members can also forgo the professional monitoring service and set up the device to issue a phone call to up to five designated family members or caregivers if the patient fails to take their pills within 90 minutes of the assigned time.

"Crude versions of (futuristic medication management) technology exist now, but it's difficult to set up unless you have a smart teenager that can wire it up for you," said Eric Dishman, general manager and global director of the Intel Health Research & Innovation Group. Intel and Accenture are two industry titans investing in medication management research.

Alwan, meanwhile, said he expects other devices to eventually emerge on the market.

"There's a lot of development activity in this area," Alwan said. "It's well known that mediation compliance is the important issue for all three groups involved--the older adults, the adult children of these adults and the professional caregivers like aides, nurses and physicians."

Intel's Health Research & Innovation Group completed a six-month pilot of its Context Aware Medication Prompting system in March. The pilot program, conducted in Oregon with two dozen seniors who were taking multiple medications, is designed to remind cognitively impaired patients to take their medication if they appear likely to miss a dose.

Using sensors stationed around seniors' home, the system creates a baseline of their medication regimen and determines the best time to issue medication reminders. It then syncs up several devices, such as a wristwatch, television or phone. A prompt is given if the oerson forgets to take his or her medication.

"Although we're analyzing the data results, we've seen enough of the data to know that seniors love how they can personalize the reminders," Intel's Dishman said.

Some seniors liked the phone to ring with a reminder, while others preferred to watch TV and see a reminder pop up on the tube.

"These are seniors who don't want people reminding them they need prompting to take their medication, or family and friends to know they need a huge pill dispenser with an alarm," Dishman said. "They want something unobtrusive that will blend in with the environment."

Prior to undergoing the pilot, the seniors failed to take their medication as prescribed about 25 percent of the time, but afterward they showed improvement, Dishman said.

"We know there's been an improvement, we just don't know by how much yet," he noted. "People have been happy with (the system). They say it doesn't bug them or remind them to take their medication when they already have, or wake them up to take it if they're asleep."

Once the data from the pilot is analyzed, Dishman said, he hopes to conduct another six-month test by the end of the year. That pilot will aid the group in testing improvements made to the system, such as the TV prompt, which periodically did not work.

"Many of these capabilities that we're testing now will be in the marketplace in the next three years. It's not like rocket science," Dishman said.

Intel, like Accenture, would need to find a manufacturer to take its prototypes and craft them into marketable products.

Accenture, a systems integrator, has developed the Online Medicine Cabinet, a prototype for emerging health care technologies, said Peter Glaser, manager of innovation workshops for Accenture Technology Labs.

The Online Medicine Cabinet acts as an Internet health care portal stationed in the bathroom.

Now on News.com

Palm grasps for something Newsmaker: For F-Secure, it's all about the safety net Crave: It's the gear you've gotta see Extra: Breakthrough brings 'Star Trek' transporter closer

From the portal, medication reminders are issued, as well as warnings should a person select the wrong medication. These warnings rely on RFID tags put on the prescription labels, which track which medicine is being removed from the cabinet.

Although some hospitals use RFID technology to track medication use, it has yet to filter down to local pharmacies and consumers.

Glaser noted what while many improvements are under way in medication management, he has yet to find a device that will confirm that a person has actually swallowed the pill they removed from the bottle.

"There's been improvements in technology from different colored caps for different medications, but there's nothing sophisticated enough to tell if the pill has been swallowed or not," Glaser said. Think of the legal consequences, and maybe that's why it's an area corporations haven't approached" for research and development.

RFID chips, however, may one day be the answer. With RFID tags shrinking down to the size of poppy seeds, the technology may eventually be inserted into pills.

But Glaser notes that challenges exist with such a concept: "You have to convince people to take that kind of pill."