

Money & Careers

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INNOVATION ECONOMY

New gadgets prod people to remember their meds

About 35 years ago, Boston University psychology professor Andrew Dibner had the sort of flash of inspiration that can propel an entrepreneur for years: When an elderly or disabled person falls and needs help, what if there was technology in their home that could summon an ambulance for them — even if they couldn't get to a phone?

No one was sure the world needed Dibner's technology — including the senior citizens he wanted to help — and no one wanted to finance his idea, either.



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Despite the obstacles, Dibner's company, Lifeline Systems Inc., created an entire business category — personal emergency response systems, often worn by seniors as a pendant around the neck — and dominated that category for decades before being acquired in 2006 for \$750 million. (It was one of Lifeline's rivals, no longer around, that gave us the unforgettable phrase, "I've fallen and I can't get up!")

Dibner, now retired and living amid the golf courses of Sun City, Ariz., is helping to launch another technology start-up targeting seniors. He is an investor and adviser. MedMinder Systems Inc., a Newton start-up, is one of several local companies developing technologies to remind people to take medicine.

But is the world ready for the wirelessly connected pill organizer that flashes, beeps, e-mails, and calls you on the phone?

Amazingly, while the cost of prescription drugs represents a significant chunk of our health care spending, both as individuals and as a country, the cost of *not taking* the drugs that have been prescribed to us has major economic repercussions.

A study released this month by the New England Healthcare Institute, a Cambridge think tank, found that anywhere from a third to a half of all Americans don't take their meds, or don't

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MEDICINE MAN

MedMinder Systems founder Eran Shavelsky demos the Maya, his company's intelligent pill organizer. Watch the video at www.boston.com/kirsner.

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take them at the right time or at the right dosage. The institute estimated that the result — which can include extra doctors visits and even hospitalization — costs \$290 billion annually.

MedMinder has designed an intelligent pill organizer called Maya that's about the size and shape of a large textbook.

Maya holds 28 little plastic cups, each of which can hold several pills and is designated for a particular time and day of the week. The user — or, more likely, a family member or nurse — can either go online or fax information about when exactly each cup should be taken. At the appointed time, a bright white light beneath the cup starts flashing. A half-hour later, if the cup hasn't been removed, the Maya starts beeping. The beeping gets more insistent over time.

Depending on the settings, the Maya can call its owner on the phone to nudge him when he misses a dose, or send out an e-mail alert. Family members or nurses can get a weekly or monthly report indicating how many doses have been missed.

"This isn't just about flashing lights," says MedMinder chief executive Eran Shavelsky, "but a critical part is the involvement of the family and caregivers. This lets them ask the patient why they're not taking a medication."

While the company hasn't yet conducted any clinical studies, Shavelsky says they're seeing patients go from 50 or 60 percent adherence to more than 90 percent.

less connection. (MedMinder will confront one of the same challenges Lifeline had: Unfortunately, older customers tend to die on you after a few years.)

The company has been funded so far by individual investors. Shavelsky is trying to raise more money to support the company's sales and marketing efforts.

Several other companies have designed intelligent pill containers, including Wellesley-based e-pill LLC and Cambridge-based Vitality Inc.

Vitality sells a \$99 cap that fits on a standard-size pill bottle, available through Amazon.com. It flashes and beeps reminders, and can send adherence information over the Internet. That company is working with drug makers and pharmaceutical benefits managers to deploy the caps widely.

For some, there will be a "Big Brother" vibe to technologies like these: While we want our doctors to be responsible for keeping us in good health, we don't necessarily want to be responsible for doing what they tell us. But Shavelsky argues that many of MedMinder's earliest users like the feeling of being monitored — they tell him that the Maya becomes a kind of companion.

Smart pillboxes "are going to be most helpful for the segment of the population that suffers from forgetfulness," says Valerie Fleishman, executive director of the Cambridge think tank that conducted the study about the costs of not taking medications. "But there are other issues that affect people, like price sensitivity or cultural beliefs about medications or a patient who doesn't feel her symptoms today, so she doesn't take her pills."

MedMinder's primary strategy is to work with insurance companies, who see the benefit of having certain customers follow a strict medication regimen — for instance, patients suffering from congestive heart failure who might wind up in the hospital if they go off their meds.

Harvard Pilgrim Health Care in Wellesley is studying whether MedMinder can help a small test group of customers who have chronic kidney disease, and in New York, Metropolitan Jewish Health System is using it with some customers who have had kidney transplants and must take medicine so their bodies don't reject the new organ.

Rachel Meyers, the health system's director of community initiatives, says they will be tracking how many patients using MedMinder need to be re-hospitalized and how many reject their new kidneys, to see whether the technology delivers on its promise.

MedMinder is also starting to sell the Maya to individual consumers. The device is priced at \$77.50, and users will pay \$30 a month for support and the wire-

But Shavelsky believes that his Maya device could be helpful to plenty of people — after all, not every senior citizen wears a Lifeline emergency response pendant, but that's still a pretty sizable business. (Lifeline generated \$150 million in revenue in 2005, its last year as an independent company.)

Dibner, now 83, told me that "the 20 years I spent building Lifeline was the biggest, most exciting period of my life, because it was just such a successful thing, and I was able to help millions of people." (He uses the MedMinder and Lifeline himself.)

Dibner hasn't been involved with other start-up companies since he launched Lifeline in the 1970s. But he says that offering his advice to Shavelsky and investing in MedMinder "was an opportunity to help people again, and I didn't have to do all the hard work this time. It was like living my life over again."

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Medication Reminders

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