

DRUG TOPICS

Will ATMs replace you?

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Vending machines for medications may be an idea whose time has come, but they are creating a firestorm of controversy among pharmacists

The beauty of any new technology is in the eye of the beholder. Advocates of the medication delivery kiosks that are sprouting up across the country believe the ATM-like machines free pharmacists to spend more time with customers, and free customers to pick up refills anytime day or night. Opponents say the contraptions are dangerous, replacing invaluable human contact with impersonal mechanization.

"They are really no different than the pickup windows at drugstores," said Bradley Dayton, R.Ph., director of pharmacy operations for Ahold USA, the parent company of supermarkets Giant Food, Stop & Shop, and Tops Markets. His company is placing an automated drug kiosk in a pilot project in a Reston, Va., Giant store

How the automated kiosks work

The two manufacturers of automated refill delivery kiosks have implemented a very similar process for the use of their machines:

- Once customers have filled an initial prescription with the pharmacist, they register to retrieve and pay for their refills at a machine inside the store at a kiosk, even when the pharmacy is closed.
- Consumers can order refills in the usual manner, by telephone, or on-line.
- A pharmacist fills the prescription and places the packaged medicines in the machine.
- Consumers log on to the machines with a user name and password or personal identification number and swipe a credit or debit card.
- A prewrapped package drops from the machine.

by the end of the year. It may also place a machine in Maryland soon, pending approval by the Maryland Board of Pharmacy. "These machines are only delivery machines, only for refills. They are not dispensing machines," he said.

Ahold has contracted with Asteres Inc. in Del Mar, Calif., one of two companies manufacturing the kiosks. According to Asteres founder and chief business officer Linda Pinney, the machines offer a safe and convenient way for customers to pick up their refills. "That's what it is about, convenience," she said. "A lot of grocery stores are open all day and night, but the pharmacy closes at five or six. People have very different needs when it comes to their work and home life schedules. We address that problem in pharmacy, just as it has been addressed in banking and other services."

Longs Drugs Stores pharmacist Pawny Kelly, R.Ph., in Del Mar, said her customers love the kiosk Asteres placed at her Del Mar pharmacy last December. "Everybody does. It's convenient for them, convenient for us," she said. "No waiting in line, better control over when they can come in. Lots of customers ask for us to put the refill in the machine."

The Asteres machine is called ScriptCenter. The other manufacturer is Distributed Delivery Networks Corp. (ddn) in San Marcos, Calif. It calls its machine the Pharmaceutical Automated Product Machine, or APM. The cost of the ScriptCenters ranges from \$65,000 to \$95,000 each. The ddn APMs range from \$45,000 to \$60,000, and the company is planning to introduce a smaller-capacity version that would run about \$39,000. Both machines hold hundreds of refills.

Proponents say kiosks safe

Pinney said that contrary to the concerns of critics, the machines are designed to encourage consultation. They have a screen that asks consumers whether they have questions about their medications. If so—and if the pharmacy is open, of course—the consumer can speak directly to the pharmacist. "We do not replace pharmacists," said Pinney. "We are pharmacy clerks, definitely not pharmacists."

Justin Hai, ddn's APM project manager, believes the kiosks actually are safer than "the usual manner of having a busy clerk reach for an order on a shelf to hand to a customer. The biggest threat to public safety at the pharmacy level comes from human error, not machine error. Our systems have multiple levels of verification and safeguards, including bar-code scanners and personal customer codes and passwords to make sure the correct medication goes to the correct person."

"Prescriptions going to consumers is like money going to consumers," Pinney said. "The margin for error is zero."

A different kind of kiosk is being marketed and installed in some drugstores. Those units allow customers to talk to pharmacists through video screens. Duane Reade in New York has contracted with New Edge Networks in Vancouver, Wash., to install what New Edge calls "self-help kiosks" that use a private and secure broadband network and a digital subscriber line to carry voice, data, and video without using the Internet. The self-help kiosks are available round-the-clock.

Each kiosk has a flatbed scanner, touch-screen monitor, phone line, and a Web camera allowing people to talk live with a pharmacist. Patients can receive free home delivery or make arrangements for pickup at any Duane Reade pharmacy. There are currently more than 60 self-service kiosks in company locations with 2,000 employees or more, in major medical and hospital facilities, at senior care centers, and at Duane Reade stores in the New York City metropolitan area. Duane Reade plans to double the number of kiosks every 12 months. And DrugMax, a specialty pharmacy and drug distribution company in Farmington, Conn., just signed an agreement with Duane Reade to market its products through the electronic kiosks.

Another company, MedVantx in San Diego, signed a contract with Blue Cross Blue Shield of North Dakota earlier this year to dispense generic drugs in doctors' offices by using devices very similar to the Asteres and ddn machines. Called the Generic Delivery Network, the pilot project has been launched in physician offices in Fargo and Grand Rapids. The Generic Delivery Network relies on machines that dispense samples of generic medications in nine therapeutic categories. The devices are also used by the New Jersey Blues.

Board requires specific standards for kiosks

The California Board of Pharmacy is proposing regulations that will allow pharmacies to install automated medication refill delivery devices. According to the proposed regulations, "a pharmacy may use a device to dispense refilled prescriptions" provided:

- The patient chooses to use the device.
- The device is located adjacent to the licensed pharmacy premises.
- The device has a means to identify the patient and release only that patient's prescriptions.
- The device is secure from access and removal by unauthorized individuals.
- The pharmacy provides a means for the patient to obtain a consultation with a pharmacist if requested by the patient.
- The pharmacy is responsible for the prescriptions stored in the device.
- The pharmacy does not use the device to dispense refilled prescriptions if a pharmacist determines that the patient requires counseling.

ISMP looks at kiosk safety

In a recent issue of the *ISMP Medication Safety Alert*, the Institute for Safe Medication Practices discussed the issue of patient safety and the use of automated refill kiosks. "Proponents of kiosk technology could certainly argue that many community pharmacists currently spend negligible face-to-face time with patients anyway," states the article, titled "Dispensing Kiosks: A Step Backward for Patient Safety?" "However, since it's difficult to predict when a potential drug-related problem could be detected through face-to-face interaction with the patient, it may be unclear when refills could safely be dispensed from the kiosk."

Therefore, for the use of kiosks, ISMP makes three specific recommendations. There should be:

- Proactive criteria that mandate counseling prior to receiving any prescription (new or refill) for selected high-alert medications (e.g., warfarin, hypoglycemic agents, chemotherapeutic agents) and high-risk patients (e.g., pediatric, geriatric, pregnant)
- Prompted questions in kiosks to screen for potential side effects that must be answered before a patient can retrieve a prescription
- After-hours pharmacist-staffed hotlines or e-mail accounts

Each doctor is assigned an identification number. "That number and the patient information [either through the patient registration system or by scanning] are entered. This gives the doctor access to the medications in the machine. Appropriate labels for the medication and for the medical record are printed after the medication's bar code is scanned to confirm that it matches the request," said John Rice, M.D., the plan's medical director.

Technologies may come together

These technologies may all merge at one point, say technology experts. It is all part of what they believe is an inevitable shift in service. The fact that self-service is encroaching into pharmacy should shock no one, these experts say: "It is not surprising that traditional retail point-of-sale has evolved beyond checkout," said Paula Rosenblum, director of retail research at the Aberdeen Group in Boston, in a report titled, "The Empowered Point of Service." "Adding self-service touch points throughout the store can help hold the line on payroll while improving customer convenience," she noted.

Asteres and ddn officials couldn't agree more. "This follows in the tradition of mail order and drive-up windows," said Pinney. In fact, part of the motivation for drugstore chains to install the machines may be a growing need to compete with mail order, which accounted for 14% of prescription drug sales last year, up from 10% in 1999, according to IMS Health Inc.

Officials of the two delivery kiosk companies say they are prepared to serve a potentially large and growing market. Their two machines are actually quite similar in design and capability. So similar, in fact, that Asteres filed a lawsuit last year against ddn, accusing the company of misappropriating trade secrets. The president of ddn, William Holmes, denies the accusation. A trial was scheduled for September.

The lawsuit apparently isn't slowing either company. In addition to California, boards of pharmacy in Connecticut, Delaware, Illinois, Maryland, Minnesota, New York, Virginia, and Wisconsin have either given permission for pilot installations or are expected to do so soon, according to the manufacturers. Boards in many other states are also expected to take up the issue. Several large drugstore chains, supermarkets, and discount stores—including Longs, Duane Reade, Safeway, Kmart, and Walgreens—are putting the machines in some of their locations. Some smaller regional outlets, such as a White Cross Drug Store in San Diego, are also installing the machines.

At this point, most of the installations are being called pilot projects by state boards and vendors. But with new customers announced by one or the other of the manufacturers almost monthly, it appears the technology is increasingly popular among chains and consumers. As of August, Longs officials said that 700 of its customers have signed up at three of its stores, representing about 10% of refills at those stores.

"There's always been a convenience problem of hours and staffing in community pharmacy," said Mary Ann Wagner, senior VP of pharmacy, policy and regulatory affairs for the National Association of Chain Drug Stores. "Our members tend to think these machines can be of value if they are monitored properly and if the right identification is required."

The machines are designed to work like the ubiquitous ATMs at banks: In order to receive their medication, consumers register with their drugstore and receive identifying information, such as a personal identification

number. When they want to pick up their medication, they enter the PIN on a touch screen. Then they swipe a credit card to pay for the refill. As of now, there's no service fee. Labeled and bagged medication comes out a chute.

The kiosks are stocked by pharmacists during regular working hours, but they are designed to make refill pickup available 24 hours a day, seven days a week—an improvement on drive-up windows. They also help eliminate the long waiting lines that can plague drugstore customers. That's the good news, at least for consumers.

Pharmacists concerned over ADEs

The bad news, according to some pharmacists, is that the machines eliminate them from the actual delivery of a refill. "How can they possibly say these machines are safe?" asked Fred Mayer, president of Pharmacists Planning Service Inc. (PPSI), a nonprofit organization in San Rafael, Calif., that promotes consumer public health education and pharmaceutical information. "How can any machine be as safe as picking up your refill from a human being, talking to that person, who can check right there and then that you've received the medication you're supposed to receive, or warn you about anything you need to know?"

Mayer is concerned that the lack of pharmacist involvement in refill delivery could lead to an increase in adverse drug events (ADEs). "We already have 107,000 deaths a year from adverse drug reactions and interactions," he said. "Do we want more?" He also thinks customers, particularly seniors, could be robbed of their medications, depending on where the machines are located. And he's very worried that refills are just the beginning, and that it's simply a matter of time before the machines are used to fill first-time orders. He also believes machines simply aren't meant to store and dispense medications. Some drugs, like insulin, are time-sensitive, and others, such as the acne drug Accutane (isotretinoin, Hoffmann-La Roche) can pose serious health risks to women who are or are about to become pregnant.

There is support among pharmacists for Mayer's position. PharmacyOneSource, which posts industry news on its Web site (www.pharmacyonesource.com), conducted an informal opinion poll between Aug. 28 and Sept. 2 of pharmacists' reactions to the kiosks. The poll asked readers "How do you feel about the self-service prescription medication vending machines being installed in retail pharmacies across the country?"

Of 149 respondents, 101 (67.8%) were "strongly opposed" to the idea. Another 18 (12.1%) of respondents were "opposed." Only 20 (13.4%) either "strongly supported" or "supported" the idea. The rest were indifferent or had "other" opinions. In anonymous remarks attached to the poll, respondents said things like "With no more interaction than patients are getting at this point, wasn't something like this inevitable?" and "First for refills, then ????"

"Our members are worried about this kind of technology," said John Rector, general counsel for the National Community Pharmacists Association. "Medications aren't something like a CD or a book you order from Amazon.com. They are highly regulated products. Highly regulated transactions should always actively involve the physician, pharmacists, and the patient. There should be more patient-pharmacist interaction, not less. These vending machines put more distance between them, without any apparent remedy in place if there's a mistake."

"Pharmacist consultation isn't something that should happen just the first time you get your medication," said Mayer, pointing out that 58% of the prescriptions filled in this country are for refills. "Every time a person picks up a drug, he or she should have the opportunity to talk face-to-face with their pharmacist."

But NACDS' Wagner said that "as we understand it, the machines do not preclude conversation between pharmacist and patient. The machines are not dispensing drugs. They're only for delivery. But no pharmacists would ever want to be replaced by a machine, and we are watching this development closely."

Lawsuit against board

Mayer and his group are putting their money where their worries are. Their legal foundation, the Pharmacy Defense Fund, filed suit in December to stop the California Board of Pharmacy from waiving allowing the installation of the kiosks. The suit was filed soon after the California Board of Pharmacy approved waivers to pharmacies run by Longs Drug Stores and Safeway supermarkets allowing them to install the Asteres' ScriptCenter kiosks in a couple of their stores. It was dismissed in August on a jurisdictional technicality and refiled in a San Francisco court in September.

The Pharmacy Defense Fund makes two claims in its suit. First, the pharmacists assert that the board lacked the authority to approve the machines, primarily because several of the board members "were employed by pharmacy entities that had made, were planning to make, or may make application" for installation of the kiosks. Second, the plaintiffs claim the board failed to properly follow its own regulatory procedures in approving the waivers.

Notwithstanding the pending litigation, in August the board posted notice of a proposed permanent regulatory change that creates criteria for the proper use of the machines. A public meeting on the proposed regulation will be held on Oct. 25. "There is some misunderstanding among some pharmacists about these machines," said Patricia Harris, the board's executive director. "They are delivery machines, not dispensing machines, for refills only. So they are currently in compliance with state regulations. What we are doing is precisely defining how we want them used."

The board proposal contains several specific requirements, including limiting the kiosks' use to refills and requiring them to be placed in close proximity to a pharmacy. The regulation, as it is currently written, satisfies some of the concerns of the California Pharmacists Association, said John Cronin, senior VP and general counsel for the association, adding his initial reaction to the kiosks was pretty negative. "I was at the board meeting when the first waivers were granted," he said, "and my reaction was that this was the beginning of the slippery slope toward breaking the link between pharmacist and patient."

But further examination of the issue, and discussions with the vendors, led Cronin to believe there is a role for the kiosks—as long as an opportunity exists for consultation. The proposed regulation does not satisfy two continuing concerns, however. In an April letter to the California pharmacy board, Cronin asked that pharmacies using the kiosks be required to file a "pharmacy services plan" that would clearly demonstrate how it would provide for patient consultations once the machines were installed. In addition, "compliance with the plan would be monitored by periodic visits by board inspectors. Failure to comply with the proposed pharmacy services plan would be a basis for withdrawal of the waivers, or other action by the board."

"That kind of requirement, a clear outline of how the machines will be used and consultations encouraged, would go a long way toward the board's commitment to its mission of encouraging pharmaceutical care," said Cronin. He added that the board's current slogan is "Be Aware, Take Care—Talk to Your Pharmacist."

"There is a place for these machines," Cronin said. "We don't want to see technology suppressed, but we need to move cautiously." He said he plans to attend the board's October public meeting to see whether the association's concerns will be addressed. "There is some inevitability to all this," he said. "But that's all the more reason to move forward carefully."

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