

The Automation Rx

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When Tim Limer, the manager of technical sales at Innovation, describes how their customers feel about his company's automated pharmacy workflow system, called PharmAssist Symphony, he jokingly describes the feedback this way: "One of my favorite quotes that I hear from pharmacists is after they put Symphony in, they can sleep at night—and we hear that more than you'd believe."

Similarly, the founder of Script-Pro, Mike Coughlin, has heard that his company's products have been a lifesaver for customers. "A lot of pharmacists will say, 'I got my life back. I was just getting burned out because it was so chaotic and I was just kind of frazzled.'"

Although these descriptions of the benefits of automated pharmacies may sound like mere hyperbolic advertising puffery, the fact is that these products have indeed exponentially improved the way that pharmacies, and pharmacists, work.

Since the 1980s, there has been a boom in the amount of pharmaceuticals that are used to treat illnesses—while the amount of invasive procedures to remedy these illnesses has decreased. This has resulted in a very rapid spike in the amount of prescriptions that patients receive from their doctors, which has swelled over the years to about 4 billion prescriptions that need to be filled annually. This volume has been a tall order for pharmacies and a source of much frustration for many pharmacists—who spend several years in college to gain expertise about the complexities of these drugs, only to find themselves relegated to

counting pills into bottles most of the day. This created many weary pharmacists who yearned to spend more time sharing their knowledge with patients, but couldn't get away from the pill bottles long enough to do so.

While this is daunting for many pharmacists, this can be particularly cumbersome for pharmacists who work in the military, where the volume of prescriptions is much higher.

"Where you might see 250 prescriptions a day in a civilian pharmacy, you can see literally upwards of 1,000 to 1,5000 prescriptions a day in a military installation—and that can be exacerbated by troop movement in or out of a base, putting even further pressure on these pharmacies," said Tom Rhoads, the CEO of Parata Systems.

But thanks to automated pharmacy technology, pharmacists are breathing a sigh of relief. Over the years, this technology has evolved from just counting the pills that fill prescriptions to systems that help pharmacies manage the workflow of their businesses.

"Automation has certainly come a long way in the last few years. It started out, both in military settings and in the community at large, with some automated counting support machines and things that helped with a specific counting function or a specific inventory control function," said Colonel George Jones, the deputy chief of the military's Pharmaceutical Operations Directorate/TRICARE Management Activity. "It has really evolved in the last several years into more of a full integration into the workflow process—from scanning and imaging the actual prescriptions and electronic prescribing capabilities to support electronic prescribing within the pharmacy."

How Automated Pharmacies Work

There are several kinds of automated dispensers that are available to use in pharmacies—such as cabinets, robots and other counting devices. When military pharmacies use these products, they start by entering the prescription information into the Composite Health Care System, or CHCS, which is the pharmacy management system used by DoD. This system is used to adjudicate the prescriptions as they are entered in order to ensure that the medication is safe and will not cause adverse reactions with other medications that the patient is taking. Once CHCS verifies that the prescription is indeed safe, it is sent to the automated pharmacy system—which will then generate the label that will be placed on the prescription bottle. The counting device in the system will then count the pills in the prescription, place the pills into the bottle and proceed to send the prescription to a pharmacy employee for verification.

In order to ensure that pharmacy employees can easily verify a prescription, the automated pharmacy device has an electronic image that the pharmacist or pharmacy technician can check against the medication. Once the verification is done, the prescription is then placed in a pick-up area where it can be easily found when the patient comes to the pharmacy.

Automated pharmacy technology can also assist pharmacists when they manually fill prescriptions. In these cases, the technology prepares the label for the prescription and the pharmacist goes on to fill the prescription and verify it against the automated system. If there has been a mistake made and the pharmacist has chosen the wrong drugs, the automated system alerts the pharmacist of the error and will not allow the prescription to continue to be filled until the mistake has been corrected.

In addition to the hardware associated with automated pharmacy technology, there is a software component that assists pharmacists with the management end of their work. These systems can help track the inventory of all the products in a pharmacy and manage the workflow of prescriptions. As a result of this automation, many of the tasks that consumed a pharmacist's time are more manageable—giving pharmacists enough time to attend to the needs of patients, while ensuring that patients are not left waiting.

"They've certainly streamlined some of the labor intensive functions and enabled us to realign our workflows to more interaction with the patients and with the provider's staff. Also, it lets us refocus workflows and be more efficient and more timely in our delivery of pharmaceutical care to the patient—so we've been able to improve our turnaround from the time the medication is prescribed to the time the patient presents a paper prescription to be filled," said Jones.

What the Military Needs

Although commercial drug stores and civilian medical centers benefit from automated pharmacy technology, the unique needs of the military necessitates that these technologies meet the specific criteria of the military, which can differ depending on the military facility using the technology.

"In some cases, there's a unique requirement—let's say at a medical center, they're going to have different requirements than an ambulatory care clinic has—so there's a balance of centralized assessment and individual assessment of what they may need to accomplish their mission or what new technologies are available that will enhance their mission capability," Jones said. "And each of the services has a slightly different, but very similar, way that individual local needs are identified, opportunities from the commercial sector are identified, and then those are requirements are matched either in a central review process or by the individual treatment facility for a particular need they may have."

Some of the needs that the military considers when evaluating automated pharmacy technology include:

Scalability. When choosing an automated pharmacy system, size does indeed matter and the military must take into account how much space a product will take in a pharmacy. "We have a variety of military treatment facility sizes, so if a system is scalable to meet our needs, that's very valuable and it can help us use similar technology for the small outpatient clinic and the large medical center outpatient volumes," Jones said. "Space was a challenge at some point because to get this kind of technology, it took so much space and it was difficult and it limited some of our facilities. Nowadays, the footprint has gotten so small

that even our smallest facilities can really leverage the potential of automation.”

Interoperability. It is imperative that an automated pharmacy system has a built-in flexibility to it, which will allow a system to easily be used in concert with whatever system that the military is using at the time, as well as any systems that the military may incorporate into future operations.

Other Automated Pharmacy Benefits

Safety. One of the most important benefits of automated pharmacies— for both military and civilian customers alike—is the ability to reduce the human error involved with filling prescriptions.

“If you look at the fundamental reason for this technology, it is to prevent dispensing errors, which can be tragic at times, or in less extreme cases, you don’t get the right outcome if you don’t get the right drug with the right instructions,” Coughlin said.

Safety controls that are built into automated pharmacy systems can also help with the administrative decisions of a pharmacy. Thanks to this technology, which records the mistakes that have been made in the pharmacy and who made them, decisions can be made about the placement of drugs on the shelf—or even the placement of personnel in the pharmacy.

“That way, the pharmacy staff can go back and take a look at that data—maybe at the end of the quarter or the end of the month—and they can find out what kinds of mistakes the system is catching,” said Limer. “If everybody is grabbing the wrong drug from the shelf, then that tells them that maybe they need to reorganize the drugs on the shelf. But if it’s always one person making the mistake, then they know that maybe that person should find another place to work.”

Cost. In addition to allowing pharmacists to work fewer hours because they aren’t spending as much time counting medications, automated pharmacy technologies can help pharmacies save money by:

- Easily integrating and keeping track of generic medications. “Because we have this generic substitution capability, the government is free to order whatever drugs they can get the best price on. They can go out and buy that generic and then they can use it in the system without having to reprogram anything within their workflow—and they still get all of the safety checks,” said Limer.
- Streamlining the IT process associated with the software, which reduces the cost of servers, databases and upgrades. “If you think about a pharmacy that may have a packager, a carousel for storage, an inventory management system, and a workflow system, they have those four disparate systems with four servers and four sets of databases that they have to keep within the pharmacy, and that’s a tremendous cost to IT in upgrading those servers and that’s a tremendous time and effort put in by the staff to manage four different databases,” said James Spann, vice president and general manager of the AmerisourceBergen Technology Group. “We’ve taken our products and consolidated them onto a single platform, so if they had all of those technologies with us, they’d

have a single server.”

- Saving paper. In some pharmacies, mountains of paper can be accumulated as pharmacists print paperwork for prescriptions. If the customer doesn't pick up the prescription, this amounts to wasted paper, as well as time and money. Automated pharmacies eliminate this problem by printing paperwork only when needed.

Maintenance. Generally, automated pharmacies require little maintenance and rarely ever have any downtime. Companies regularly provide updates to the software that runs these systems and, if customers do need extra help, industry partners are generally easily accessible—offering customer service 24 hours a day, seven days a week.

“Our systems become so critical to the operation of the pharmacy that, if there is a system down, it's a major issue—so it's all hands on deck to get it brought back up. We really emphasize preventive maintenance so that we don't have those last minute fire drills to worry about,” Coughlin said. ♦

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