

Accredited Home Study Program Available

The Efficient Pharmacy Institute is pleased to offer pharmacists an accredited distance learning program (home study) that will provide pharmacists with an understanding of the methods and tools available to improve productivity in their dispensary operations. Specifically, pharmacists will learn to:

- detect inefficiencies in dispensing operations
- identify the types of improvements (physical, layout and technology) that can be made to improve cost-effectiveness and efficiency;
- recognize some of the causes of prescription errors due to operating inefficiencies, improper layout, or workflow;
- distinguish ways to improve patient access and communications.

The home study program will be offered as a series and will cover a breadth of topics relating to improving efficiency. Topics will include an overview of new and emerging technology (automation for prescription filling, information systems – POS, IVR, etc.) and design and layout (workflow patterns such as, layout, job analysis/description, ergonomic factors, etc.)

While there are many barriers to the successful shift to pharmaceutical care improving dispensary operations through automation, re-design and more efficient use of pharmacy staff can help to free valuable pharmacist's time and enhance patient-pharmacist interaction.

For more information on the availability of the program please contact:

Saxe Healthcare Communications
by fax 802.872.7558 or
e-mail: info@saxecomcommunications.com

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Improving efficiencies and reducing medication errors

by Wayne M. Caverly

According to Statistics Canada, more than seven million Canadians will be 55 years or older by the year 2001. This aging population currently accounts for 40 percent of all prescriptions dispensed. It also highlights an industry-wide problem: the shortage of pharmacists. As prescription volumes grow, pharmacists will be forced to fill more prescriptions in less time. How can we improve output, productivity, and efficiency without the increased workload leading to increases in dispensing errors?

In this and the next two issues of *The Efficient Pharmacy*, we'll discuss the problems facing our industry and propose solutions to make the practice of pharmacy more efficient without sacrificing dispensing accuracy

Part 1: Staffing and automation issues

I have to agree with Mr. R. Abood, who wrote that when there's a dispensing error, "the traditional approach is to blame the pharmacist who made the error. However, the pharmacist is often a victim of the system in which he or she must practise." Several elements make up that system.

Staffing

Work overload significantly elevates prescription errors. Studies have found that nearly 30 percent of the pharmacist's time can be freed with automation, and another 30 percent is spent on tasks that can be delegated to technicians, yet some pharma-

cists still insist on spending their time retrieving and counting product.

These pharmacists, besides wasting valuable time on tasks that can be performed by technicians, could be increasing the chance for error. A Massachusetts study showed that pharmacists were significantly more involved with the dispensing process on the day of a dispensing error than on a typical day.

The solution? —empower your technicians. Give them training and tools so that they

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can do more for you. Properly-trained well-supervised technicians enhance safety by providing two sets of eyes on every prescription while freeing the pharmacist to focus on counseling customers.

Phone calls

Pharmacists involved in medication errors cited ringing phones as a major contributor to the mistake. In one study, 37 percent of the errors detected were made on phoned-in prescriptions.

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Technology Watch

Use lighting to set the mood for productivity and profits

Imagine yourself sitting in a comfortable chair, with the lights low and Mozart or Bach (or your favorite soft music) playing in the background. Your heartbeat is slow, and your breathing is light and regular. You feel good; you feel calm.

Suddenly, the lights are turned up, glaringly bright, with a red tinge. The music changes to rap and the temperature increases five degrees.

What do you suppose will happen to your mood? Not only will your mood change but your heart will beat faster. You will become tense and edgy and will undoubtedly want to leave the room.

Such is the power of our environment on the body and the psyche. Casino owners know this better than most: They make sure that the lighting in casinos is tinted red, because they know that under red lights the average person will take more chances. They also pump extra oxygen into the gaming areas to keep gamblers awake.

Light as a design element

Your environment affects you immensely. The color of the walls, the music being played and other noises you hear, the temperature and humidity levels—all these things affect not only your state of mind but your performance as well.

These factors are important not simply because they'll make your staff and patients happier (although with the current pharmacist shortage, making your staff happy is more important than ever); their importance goes beyond happiness and affects both your bottom line and your liabilities.

Let's look at lighting. Research has shown that changes in lighting can substantially affect performance and dispensary error rates.

How much lighting is enough? Can you have too much light? In the 1950s, one company increased the lighting on their assembly line and witnessed a 32% decrease in their accident rate. Another factory doubled light levels and found that production rose 5%, and the number of rejections fell significantly. The result: total costs fell by 25%. Management didn't stop there; they doubled the lighting levels again, and this time production rose 10.5% (above original levels) while costs were down almost 40%.

Can we apply this to pharmacy? In 1991, the *American Journal of Hospital Pharmacy* released the results of a study in which three different levels of illumination were tested for their impact on dispensing errors. By quadrupling the illumination levels, the investigators reported a 32% improvement in error rates (from 3.8% to 2.6%).

Lighten your labor costs

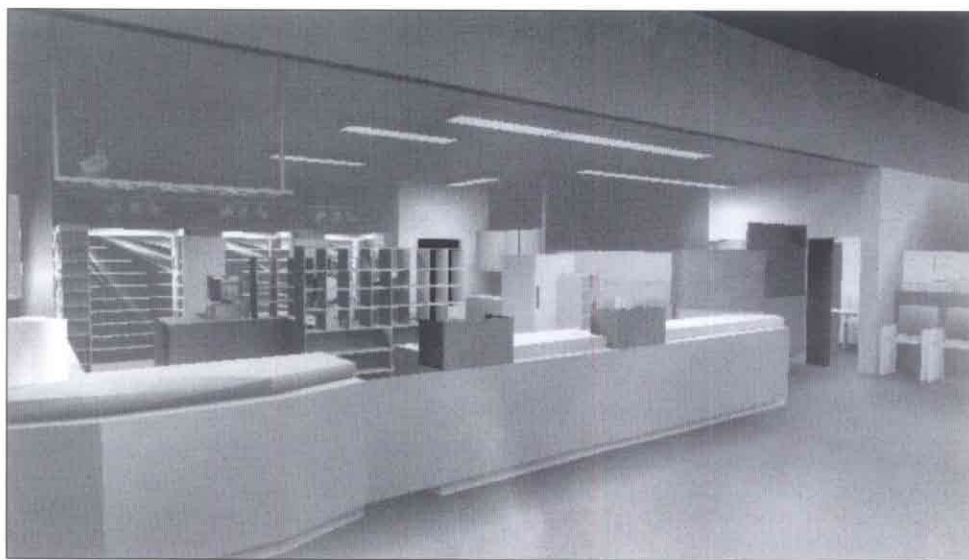
Is this significant? Let's do the math. If you fill 100 prescriptions a day (36,500 per year), a 1.2% reduction represents 438 fewer errors in the course of a year. And even if all your errors are caught and corrected (Most are: One study reported that 89% of all

errors committed in the pharmacy are discovered during patient counseling), the 438 fewer errors represent significant cost savings. It's generally agreed that the average labour cost to fill a prescription in North American community pharmacy is \$4. This means that even if the incorrect prescriptions were discovered and re-filled, the 438 errors represent between \$1,700 and \$3,000 a year in additional labour costs.

How do you find out what your lighting levels are, and what they should be? There is no single easy answer. Not only does it take different lighting levels to perform different tasks (data entry, product locating, counting, verification) but too much lighting can be as bad as too little. Excessive lighting levels produce glare, troublesome reflections, deep shadows, and excessive contrasts. The result: headaches and fatigue in your employees, with lower productivity and increased errors.

A competent pharmacy design firm has the tools necessary to measure lighting levels throughout your dispensary as well as the knowledge of what levels you should be striving for. Make use of them. Some informed decisions about the use of lighting could make a big difference in the productivity, profitability—and yes, the mood—in your pharmacy.

Previously published in *Pharmacy Post* and *L'actualité pharmaceutique*.



Profile

CarePharma,
Kemptville, Ontario

Technology levels the playing field between the large chain operations and the independent pharmacy," says Nghia Truong, owner of CarePharma. In a small rural community, not far from the nation's capital, Truong is proving that you can compete and succeed as an independent in today's highly competitive retail market.

"Most independent pharmacists are buried under the day-to-day operations of their store, so they rarely have a chance to step back and see how they could improve their operations." Right from the start, Truong did things differently. In the early '80s, after a career with large corporations as a chemical engineer and an industrial pharmacist, Truong decided to become an independent community pharmacist.

While his store was relatively small, only 5,000 square feet, his ideas were not. An early proponent of automated dispensing equipment, Truong installed Baker Cells. "This made my pharmacy more productive, freed my staff from the tedium of manual counting, and enabled me to do what I liked to do — provide knowledge." Truong believes that many independents shy away from automation because of a misunderstanding of the costs. He sees it as an investment in his store, his staff, and most important, his future as an independent.

"At the outset it seemed that automation wouldn't be necessary in a pharmacy that only does 110+ scripts per day. That would be so if the dispensing was evenly distributed throughout the day, but that's not the case. People come in "clumps" and want to have the prompt service that

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time-waster.

they've come to expect. Being small is no excuse for slow service. That's how automation lets me compete with the big chains."

After a seven-year stint combining his work as a community pharmacist and as a member/president of the Ontario College of Pharmacists, Truong returned to his store full time. In the mid '90s, he decided to update his pharmacy. Renovations, however, would be too numerous. It was more cost-effective to move to larger premises and design the pharmacy from scratch.

"Our new location was originally a furniture store — long and narrow with very high ceilings. The first thing we did was to lower



the ceiling. Then, instead of forcing customers to walk a long distance to the end of the store to reach the dispensary, we placed the dispensary right in the middle of the store. This approach runs counter to conventional retail practices that encourage front-end shopping, but I felt it would too much of a strain on my customers, many of whom are elderly and have difficulty walking."

The dispensary is a free-standing unit, with no walls and low-rise shelving. Customers have an open view of activities in the dispensary, which according to Truong helps to make his staff more aware of and courteous to customers.

While the dispensary is open, Truong provides counseling in a semi-private area.

"As an engineer, I dislike waste, and the telephone can be a real time-waster. Improving our telephone system has been an evolutionary process for me. First I started with a simple answering machine and an internal telephone protocol. This year I installed a Dial Rx pharmacy telephone management system. Early indications are that we can provide a greater level of service using less time."

Truong is hardly afraid of the future. He thinks pharmacy practice is at the edge of a very exciting time, and technology will play a very important part. "Right now I'm planning a CarePharma website that will enable my customers to refill their prescriptions on the Internet. I'm also considering installing a Pharmacy 1000 computer system that combines dispensing automation and computer software to expedite filling and checking. (See *The Efficient Pharmacy* Vol 1, No 2.) With technology you don't have to be big, you can just act big."

You can decrease the interruptions and distractions caused by the phone with an interactive voice response system (IVR). The IVR answers incoming calls and automatically handles routine questions such as when the store is open. It provides voice mail for non-urgent messages. Also available are pharmacy-specific IVR systems called "pharmacy telephone management systems" (PTMS). These add the feature of allowing customers to leave refill requests at any hour of the day or night without disturbing the staff.

Data entry

Data entry is one of the most time-consuming tasks in the dispensing process, and it's one of the most frequent causes of errors.

One way to avoid these errors is to make use of bar codes, PTMS systems, and other automation. Prescription vials can be bar coded and then scanned when presented

for a refill. Pharmacy telephone management systems can allow patients to enter refills over the phone with real-time verification on the pharmacy's computer system. Not only do these alternate data entry methods reduce errors, they save

time by eliminating manual data entry at the store level. A U.S. Department of Defense study showed that the error rate in recording data through bar coding is one in three million; compare this with one in three hundred using manual data entry. Another way to reduce errors is to ensure that no one does the same job for more than a few hours at a time. Repetition or frequency can activate an incorrect "auto-pilot" or automatic processing leading to errors. (See *The Efficient Pharmacy* Vol 3, No. 1).

Filling

Turnover of personnel and on-the-job stress can be reduced when pharmacists are freed from "count and pour" dispensing for more rewarding, customer-centered tasks. Productivity, accuracy, and patient care all improve.

Technicians can handle many basic functions, but you will also benefit from dispensing software that organizes and automates the filling process and adjusts to constantly changing workloads. Automated dispensing systems are invaluable, outperforming humans in tasks that require repetition, concentration, and record-keeping; indeed, automated counting has been estimated to be twenty times more accurate than hand counting.

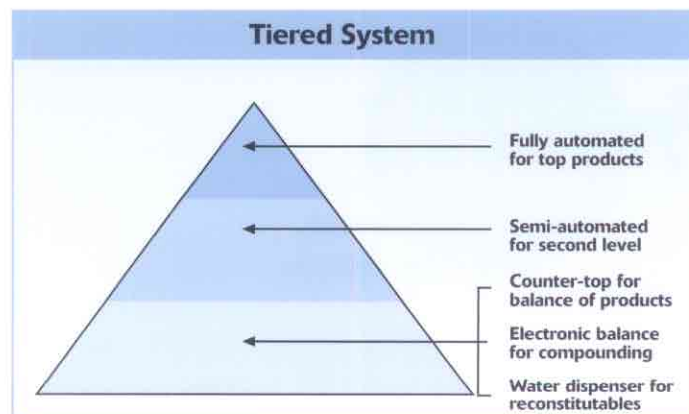
Automated dispensing systems can be separated into four types:

1. universal or counter-top counters

These count everything in the dispensary, saving some time on each prescription and helping to reduce errors due to distractions.

2. semi-automated or cassette systems

These save more time per prescription but are limited (by the number of cassettes) in



the number of products they handle. The additional timesaving with semi-automated systems is derived from eliminating the stock-bottle from the fill process.

3. fully-automated systems

These systems store and count a selection of the pharmacy's highest-volume products through a direct link to your pharmacy-management software.

4. robotic systems

These use advanced robotic technology to choose vials from storage bins, label vials, select and count product, place counted product into patient vials, and deliver these vials to checking pharmacists.

In most cases, a combination of these systems is used to automate as much of the filling process as possible—for example, a fully automated system might cover the top 23 products; a semi-automated system would cover 60 second-level products; a universal counter would take care of the balance of the countable oral solids. Add to this mix an electronic balance (or a universal counter that is an electronic balance) and an automated water dispenser, and you truly have an automated, efficient, accurate pharmacy.

In our following installments, we'll cover how changes in product placement, checking prescriptions, and some design and environmental issues can reduce dispensing errors.

The Efficient Pharmacy

Transcribed in Dictionary Information: B. ABERNETHY

The Efficient Pharmacy is a quarterly newsletter that addresses the informational needs of community pharmacists as they adjust to a changing pharmaceutical environment. The publication will provide pharmacists with timely practical information on how to reprofessionalize their pharmacy by improving work flow, adopting new technology and developing the ergonomic design of the dispensary and its components. *The Efficient Pharmacy* is distributed free of charge to pharmacists in Canada and is funded by an educational grant from AutoPharm.

The opinions expressed in *The Efficient Pharmacy* are those of the contributors and do not necessarily reflect the views of AutoPharm.

The editorial staff and AutoPharm welcome opinions as well as subscription requests from our readers. Please direct your correspondence to:

Saxe Communications
(802) 872-7559 Tel.
(802) 872-7558 Fax

Internet: info@saxecommunications.com

Editorial Board

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