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# Nashville companies tackle a costly, deadly problem

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Three days after being discharged from the hospital, a man learns the insulin he is taking to control his diabetes is five times too strong. The physician had written the right dosage on the prescription. But because of a disconnect between the hospital and the pharmacy, he was given the wrong syringe.

For PharmMD CEO **Samuel "Bo" Bartholomew**, it's more than a story. It's a real-life example of the kind of intervention that his Brentwood-based medication therapy management company does every day.

In the search for a cure to the nation's high health care costs, attention is turning to prescription medications and the role that pharmacists play in the delivery of care. Nashville's \$30 billion health care industry isn't just taking notice. It's taking part.

From large corporations like PharmMD and Franklin-based [Healthways Inc.](#) to hometown pharmacies like Reeves-Sain Drug Store in Murfreesboro, businesses see a chance to improve health care's quality while driving down its costs.

## Scope of the problem

The Institutes of Medicine estimates that at least 1.5 million preventable adverse drug events occur every year, costing the U.S. health care system more than \$4 billion annually. According to PharmMD, for every \$1 spent on prescription medications, more than \$2 is spent to resolve a problem from inappropriate use — whether it be the wrong drug, the wrong dosage or the wrong combination of drugs. Medication errors outside hospitals account for 30 percent of all re-admissions and up to 25 percent of all emergency room visits.

Perhaps it should come as no surprise, considering how many pills Americans are popping. According to the Kaiser Family Foundation, spending on prescription drugs in the United States has increased six fold since 1990, totaling \$234.1 billion in 2008. Tennessee is the second most-medicated state in the latest national rankings released by *Forbes* magazine, with 16.9 retail prescriptions filled per person.

## Pharmacists as patient advocates

Yet, more often than not, the health care providers charged with dispensing those medications have been pushed to the edge of the health care spectrum, churning out prescriptions with little or no interaction with the patient they're helping to treat. It's ironic, especially when you consider that pharmacists are the most accessible health care providers in this country, said **Philip Johnston**, dean of Belmont University's School of Pharmacy.

"You don't have to have an appointment. They are on a lot of corners as you go home or go to work or go to the grocery — they're in the grocery," Johnston said.

Several factors have driven pharmacists behind the counter, including the sheer volume of prescriptions and a shortage of pharmacists to fill them.

Perhaps even more important, the reimbursement system — insurance companies, Medicare and Medicaid — pays pharmacists based on volume, not outcomes, said health care venture capitalist **Clayton McWhorter**, who started his career as a pharmacist and helped start PharmMD.

In hospitals, it's a different story. Clinical pharmacists routinely walk the floor along with doctors and nurses,

helping determine the appropriate medication for patients. McWhorter said he'd like to see the same thing happen in retail pharmacies.

"Somehow we're going to find a way to compensate them for drug therapy consults and advice instead of just filling prescriptions," he said.

### **Solutions and payoffs**

For creative pharmacists, the opportunities are there, said **Shane Reeves**, co-owner of Reeves-Sain Drug Store. A few years ago, the business began packaging medication in sealed, individual plastic packets instead of traditional pill bottles for a \$15 monthly fee.

Each MediPACK packet has the patient's name, the name of the medication and the quantity, the scheduled time for ingestion and the expiration date. The idea, Reeves said, is to help customers use their medications correctly, avoiding more expensive treatment down the road.

It's also paying off for the drug store, which is on track to end 2010 with revenue of \$40 million — up from \$35 million in 2009. A big part of the store's growth is MediPACK, Reeves said.

"As pharmacists, we're the tip of the spear. We have a real opportunity to make money and make a real difference in patients' lives," he said.

PharmMD's Bartholomew agrees. Since the company's founding in 2005, PharmMD has grown at an annual rate of between 300 and 400 percent, he said. Today, it works with pharmacists in all 50 states to help manage patients' medications and has access to about 40,000 pharmacies nationwide.

While PharmMD doesn't dispense the medications, it helps connect the patient, the physician and the pharmacist to make sure the patient is taking the right medication at the right dosage at the right time. The company works with both employers and health plans to tailor individuals' medications so they get the most effective treatment at the best price.

The market is certainly there. More than half of all insured Americans take prescription drugs to treat at least one chronic health problem, according to a 2007 study by [Medco Health Solutions](#), a pharmacy benefit management company.

It's not just senior citizens. Nearly 30 percent of children age 19 and under take a chronic medication, the study found, with the most common being asthma and allergy drugs.

"When you think about the fact that we're already dealing with it with our baby boomer population, the enormity of managing and monitoring the medication use in this country is just growing," Bartholomew said.

### **The cost of 'adverse drug events'**

**\$4 billion:** That's the estimated cost to the health care system of 1.5 million preventable adverse drug events each year, as of 2007, the Institutes of Medicine reports.

**One in 25:** That's how often people were found to be at risk of a major drug-drug interaction by Chicago researchers who interviewed about 3,000 people ages 57 to 85 about their use of prescriptions, over-the-counter drugs and dietary supplements, according to the Journal of the American Medical Association.

**1,400:** That's the number of medication errors that are reported monthly to the Food and Drug Administration. The reporting is voluntary, so the FDA says the actual number of errors is far higher.

### **Tips for staying safe**

The [American Society of Health-System Pharmacists](#) offers these tips:

- Have a list of your medications, including over-the-counter medicines and dietary supplements.
- Keep a list of allergies.

- Ask whether you should avoid certain foods, drinks, medicines or activities while taking a drug.
- Be alert to prescription refills that have a different dosage or pills that look different.
- Be honest with your doctor about how you take medication.

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[awortham@bizjournals.com](mailto:awortham@bizjournals.com) or 615-846-4276.