

# DIGITAL DOSES



*Telepharmacies save people in small towns and rural areas from having to drive hundreds of miles to fill a prescription*

By **Luann Dart**

**W**hen Perry Glover gets a prescription filled in rural Maddock, North Dakota, he is assured of a face-to-face consultation on the proper use of the medicine— by a pharmacist nearly 200 miles away.

Glover is one of thousands of people helped by the North Dakota Telepharmacy Project, which uses telecommunications and Internet technology to keep pharmacy services available in small towns and rural areas— places served by electric co-ops.

Three years ago, the North Dakota State Board of Pharmacy, which licenses pharmacies and pharmacists, released a list of 26 small towns that had recently lost their pharmacy and a dozen more that might soon join them. These were one-pharmacist drugstores, and many of the pharmacists had served the

same population for decades, according to Charles Peterson, dean of the College of Pharmacy at North Dakota State University (NDSU) in Fargo and director of the state's telepharmacy initiative.

"There's a shortage of pharmacists across the nation," says Gary Boehler, executive vice president of pharmacy and health care services for Thrifty White Pharmacy, which operates 64 pharmacies in six states—North Dakota, South Dakota, Minnesota, Montana, Iowa and Wisconsin. Across the nation, chain pharmacies have 4,300 openings, according to Boehler.

The shortage is driving up salaries. NDSU's College of Pharmacy graduates earn \$85,000 on average. Nationally, salaries range from \$70,000 to \$100,000.

"We're losing small-town, rural pharmacies due to an aging group of pharmacists

that want to step aside and allow someone to take over. The problem is there's no one to take over because they're not able to compete with the large salaries of corporate America. That is the current crisis that we're dealing with," Peterson says.

Until 2001, a pharmacy in North Dakota could not fill a prescription without a licensed pharmacist on-site. Pharmacy technicians had to be directly supervised in the same store. That year, the state board adopted rules and procedures that allow a pharmacist in one town to supervise a technician in another through a real-time, secure video and audio link over the Internet. Thus, the North Dakota Telepharmacy Project was launched, the first of its kind in the country.

"It was designed to restore and retain pharmacy services in communities that don't have services or are about to lose their ser-



PHOTOGRAPHS BY LAVYN MUDDER

**Pharmacy technician Thelma Olson greets a customer at the pharmacy in Mad-dock, N.D., one of 17 in the state where technicians fill prescriptions.**

vices,” Peterson says.

Pharmacy technicians must complete a one-year (certificate) or two-year (associate degree) training program, available through the North Dakota State College of Science in Wahpeton. To work in a telepharmacy, a technician is required to have at least one year of practical experience filling prescriptions.

“Having that high a standard presents another challenge,” says Peterson. Now, in addition to the difficult, ongoing search for pharmacists willing to work in small towns, the state must recruit pharmacy technicians. “But so far we are being successful in finding technicians,” Peterson adds.

**Financing rural sites**

The first telepharmacy was established in September 2002, with a pharmacist at the hub site in Killdeer and the technician in Beach. Now, 28 cities and towns participate in the program, with 11 hub sites and 17 remote sites, including three hospitals. This year, the project will reach 20,000 people in 23 counties, 22 in North Dakota and one in Minnesota.

The Minnesota State Board of Pharmacy

issued a variance from its rules to allow telepharmacy service at the Thrifty White Pharmacy in Karlstad, Minn. The store is linked to a hub in Fargo, N.D.

Thrifty White Pharmacy requested the variance after searching unsuccessfully for a pharmacist for six months. The company had purchased the store from a retiring pharmacist-owner who was unable to find an independent pharmacist to take over the business.

“Rural Minnesota has some of the same issues as North Dakota,” Boehler says. “I was modeling my request to them based on the North Dakota plan. It’s worked in our three locations in North Dakota.”

According to the Minnesota Department of Health, many vacancies last longer than six months. Forty-five percent of vacancies in rural areas stay that way more than 10 months, compared with only 25 percent in urban areas. The state lost 15 percent of its independent small town pharmacies in 2002.

North Dakota doesn’t keep track of vacancies, but Boehler says it is not unusual for a pharmacist-owner to search for a buyer for five years.

Texas is another state that is struggling to hold onto its pharmacists— and experimenting with telepharmacy (page 30). Nineteen counties surrounding Amarillo, where Texas Tech University has its School of Pharmacy, have no pharmacist. These Panhandle counties are included in a group of 26 that have one or no physician, no nurse and no physician’s assistant.

“Health care in rural areas has been challenged by the fact that there’s a shortage of health professionals,” Peterson says. “Often, the pharmacist is one of the only health care professionals in a community.”

To approve a new telepharmacy site, the North Dakota State Board of Pharmacy must receive an application from a licensed pharmacist. But early on, many pharmacists said they couldn’t afford the \$200,000 cost of launching a site. So NDSU got involved in financing

Sen. Byron Dorgan (D-N.D.) put NDSU in

touch with the Office for the Advancement of Telehealth, a branch of the U.S. Department of Health and Human Services, whose grants pay for about half the start-up costs. The Rural Utilities Service (RUS) also offers funding assistance for telepharmacy projects through its distance learning and telemedicine loan and grant program.

“What a great opportunity for the university to get involved in helping the profession discover new and better ways of serving the public’s health care needs,” Peterson says. “It was a perfect way for us to get engaged with the professional community to help solve a real problem.”

Besides keeping drugstores open in rural North Dakota, the telepharmacy project helps stabilize fragile local economies. The estimated total economic impact is \$7.5 million. “In a small town of 500 to 1,000 people, we’re adding a \$500,000-per-year business to the community,” Peterson notes.

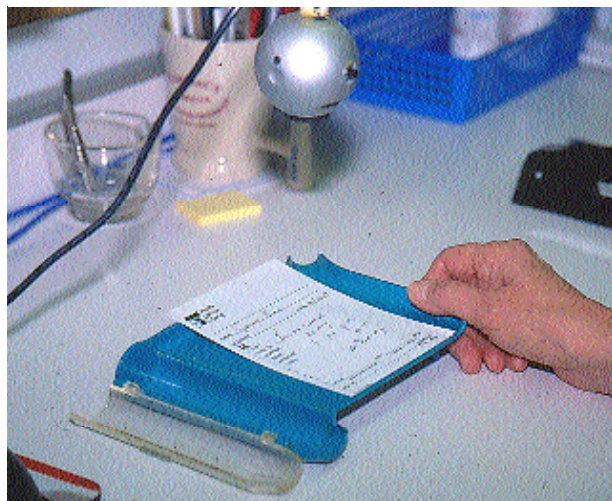
**Fail-safe prescriptions**

When Perry Glover hands his prescription to Thelma Olson, the pharmacy technician in Mad-dock, she places it under a miniature digital camera, then transmits the photo to pharmacist Teri Lutz in Fargo.

While most of North Dakota’s telepharmacy remote sites connect to a hub at a retail pharmacy, Lutz, a Thrifty White Pharmacy employee, works full-time overseeing four remote sites like Olson’s.

Lutz will receive three images from Olson for each customer: the doctor’s prescription, the pharmaceutical company’s container

**A customer’s prescription is presented for the telepharmacy camera (globe, below).**



with sample pills beside it to verify that the technician is filling the prescription with the correct drug, and the patient's prescription bottle with the label of instructions facing the camera.

During store hours, Lutz and Olson, who fills 45 to 55 prescriptions a day, have a continuous video and audio connection. To speak to each other, they activate a small microphone. They see each other on a computer monitor, possible through small cameras mounted in each pharmacy. The computer is always on.

Once the prescription is validated by the pharmacist over the Internet link, the patient enters a private consulting room in the telepharmacy. There, the patient sits in front of a small black camera mounted on top of a television screen. In Fargo, Lutz sits in her consulting room in front of a similar monitor. The patient and pharmacist can then discuss the proper use of the medicine. This is a step often skipped at conventional pharmacies.

"Think how much extra value there would be if 100 percent of patients received education counseling by the pharmacist so that patients fully understand the directions, fully understand how to use them, fully understand how to keep themselves healthy and free of side effects," Peterson says. "Wouldn't that be great?"

"The majority of people are becoming

more comfortable with it," says Olson, a licensed practical nurse drawn to pharmacy work mainly because of the telepharmacy project.

"[Senior citizens] are a little bit reluctant at first of this high-tech approach, but once you walk them through the system, they actually have fun with it," Peterson says.

"It's kind of weird, but I'm comfortable with it," says Glover, 55. "It's still better than driving . . . Everybody who fills here saves 80 miles of driving."

"It's an exciting opportunity," says Lutz, who supervises the filling of 250 prescriptions each day at the four remote sites. "The last access to rural health care is often that corner drugstore."

### Telepharmacy with a twist

Texas has adopted the telepharmacy model, but with a twist. Dr. Sidney Ontai, who practices in Plainview, a town of 22,000 in the heart of the Panhandle, received a grant from RUS to reorganize a medical clinic in a rural community 50 miles east for telemedicine services. The success of the project led to further funding for six additional telemedicine sites.

The new setup meant that Dr. Ontai no longer had to travel to see his rural patients and write prescriptions, but he soon learned that many of these patients had to travel up to 100 miles to fill their prescriptions. "It defeated the purpose of having a telemedicine clinic out there," says Charles Seifert, professor of pharmacy practice and regional dean

for the Health Sciences Center School of Pharmacy at Texas Tech University.

So now, the local emergency medical technician who operates the clinic in Turkey, Tex., under Dr. Ontai's supervision also acts as a pharmacy technician, dispensing prescriptions under a pharmacist's supervision through telepharmacy. "The joint effort between telemedicine and telepharmacy is really out of necessity because a lot of these smaller communities don't have a physician either," Seifert says.

Texas Tech requires pharmacy students to complete a rural clerkship. (NDSU is the only other university offering rural clerkships.) One week of the six-week program is spent in a telepharmacy. Since 2002, 31 pharmacy students at the university's Lubbock, Tex., campus have completed the program.

"If this is the future of rural pharmacy, then we need to gain experience with it," Seifert says.

### In the national spotlight

North Dakota tells its telepharmacy success story for the benefit of other states in a primer written at the request of the federal government.

North Dakota was selected by the Office for the Advancement of Telehealth to write the chapter in the *Telemedicine Journal* on telepharmacy. The journal, expected to be published this year, is a compilation of telemedicine advancements across the country, and offers step-by-step guidelines for establishing telepharmacy sites.

"We're sharing this with other states because we feel a responsibility and obligation to help others," Peterson says. "In the future it's going to have a huge impact on restoring health care and providing economic development for rural communities all across the country. It's nice to see North Dakota taking a national leadership role . . . The rest of the country is watching us." □

*Freelance writer and editor Luann Dart, a former editor of the electric co-op statewide magazine in South Dakota, is a regular contributor to North Dakota LIVING (published by the North Dakota Association of Rural Electric Cooperatives), where another version of this article was published in November 2003. Luann lives in Elgin, N.D., population 659, where a pharmacist who had served the rural community for many years recently found a younger man to buy his drugstore.*

**Pharmacist Kyle DeMontigny at the telepharmacy hub site in Rugby, N.D., from which technicians in Maddock and Rolette are supervised.**



*"We feel very fortunate," Luann says.*