BLOOD RELATIVE: Dartmouth-Hitchcock runs its own blood donor program. About 90% of people will require a blood transfusion at some point during their life, and of the 90% about 40% are eligible to donate blood—but only 5% of them actually do.

THEN & NOW

A reminder of the pace of change, and of timeless truths, from the Fall 1986 issue of this magazine:

Drs. Justin and Maj Stormo Gipson, DMS '82s, wrote about their young family's stay in Nicaragua: "We live and work in Jinotega, an agricultural center. . . . The vast majority of health problems here (as throughout the Third World) stem from public health problems. . . . Diarrhea, with subsequent dehydration, is the number-one cause of death in children. Parasites are rampant, and malnutrition continues to be a problem, especially in bottle-fed infants."

10

Number of years DMS otolaryngologist Dr. James Saunders has been aiding Jinotegans (see page 26 for more on his work there)

Feds put dollars behind the push for quality

In the third year of a federal demonstration project aimed at improving care by attaching financial incentives to quality measures, the Dartmouth-Hitchcock Clinic again earned a bonus from the government.

Care: The Clinic is one of 10 multispecialty group practices participating in the Centers for Medicare and Medicaid Services Physician Group Practice (PGP) Demonstration. The project is designed to reward PGPs for improving the quality and efficiency of care provided to Medicare beneficiaries. Dartmouth-Hitchcock earned $3.6 million for its performance in 2007-08, the project's third year, whose results were just announced.

During each of the demo's five years, a PGP can earn a payment if its rate of spending on Medicare patients rises more slowly than the rates of other providers in their area. If the rate lags enough, the government shares up to 80% of its savings with the PGP, depending on how well the group meets several quality goals. In year two, four of the 10 PGPs—including Dartmouth-Hitchcock—generated enough savings to receive payments. (For more on the second year's results, see dartmed.dartmouth.edu/w08/v03.) In the third year, five of the 10 PGPs got bonuses.

Targets: Various quality goals are being phased in during the five-year demo. In year three, five targets for hypertension and cancer screening were added to the first two years' benchmarks—which were for diabetes, congestive heart failure, and coronary artery disease. All 10 PGPs met at least 28 of the 32 total goals in year three.

Dr. Martin Sedlacek, a nephrologist at DHMC, led the effort to meet the blood pressure goals. He studied how to best apply national guidelines for measuring and treating high blood pressure across the Clinic. One of the most important steps was to reeducate staff on the complexities of measuring blood pressure. Readings can be affected by factors such as cuff size, the position of the patient's arm, and how the patient's sleeve is arranged. Accurate measurements are critical because blood pressure is "a big predictor for future trouble," says Sedlacek.

"Our ambition is to do the right thing every time," says Sedlacek.

Despite these efforts, the Clinic missed two of the three hypertension goals. Most patients had their blood pressure measured, but not enough had their pressure under control (defined as less than 140/90). And not enough patients with elevated blood pressure were given a plan of care.

The pressure was on to meet several hypertension goals as part of a federal demonstration project; at Dartmouth-Hitchcock in 2007-08, 98.5% of patients had their blood pressure checked.

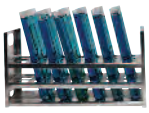
"Our ambition is to do the right thing every time when the patient comes in," says Sedlacek. "This requires a continuous effort." Dartmouth-Hitchcock is not trying to meet the government goals simply to get the bonuses, he adds, but "because it's the right thing to do."

Actually, the jury is still out on whether pay-for-performance initiatives like the PGP demo are the best way to improve the quality and efficiency of care. After three years, four of the 10 PGPs in the demo haven't received any performance payments. In fact, one of the groups that met all of year three's 32 quality goals didn't earn a payment because it hadn't kept costs down sufficiently.

Seminal: But for Dartmouth-Hitchcock, participating in the demo has been "seminal," says Dr. Barbara Walters, senior medical director of the Clinic and the project's coordinator. It has even resulted in a pilot program with CIGNA that applies the demo's framework to commercially insured patients.

Furthermore, the demo has led to dialogue among the PGPs, Walters says. The 10 groups have a monthly virtual meeting to share best practices, and the other participants are now "valued colleagues," she says.

KATHERINE VONDERHAAR



LAB-ORIOUS ENDEAVOR: The Dartmouth-Hitchcock Medical Center clinical pathology laboratory performs 2 million tests every year and employs about 200 pathologists, clinical laboratory scientists, technicians, and clerical staff.

THEN & NOW

A reminder of the pace of change, and of timeless truths, from a 1987 booklet titled *Norris Cotton Cancer Center History: The Early Years*:

"The first cancer center building—a two-story cement structure, located entirely underground, with three-foot-thick walls to shield new multi-million-volt radiation therapy equipment—was completed [in 1972]. . . . Personnel needs were also addressed. The plans called for [recruiting] a third radiation therapist."

5
Sites where Norris Cotton Cancer Center facilities are now located

200,000
Square feet at its main facility in Lebanon, N.H.

7
Number of radiation oncologists now on the staff

A high-tech solution to drug counterfeiting

Imagine picking up some teething syrup at the pharmacy, giving it to your toddler, and then discovering it had been laced with a toxic chemical normally used in antifreeze. The parents of 84 Nigerian children who died last year don't have to imagine that nightmare. But if Dartmouth graduate student Ashifi Gogo has his way, it won't ever happen again.

By 2010, sales of fake drugs could reach $75 billion worldwide.

Horrific: Such problems arise when drug counterfeiters use cheap but often toxic fillers to extend their profits. In the case of the teething syrup, the toxic chemical was diethylene glycol, which looks, tastes, and smells like glycerin, a common component of such syrups. It's just one of thousands of horrific examples of counterfeit drugs sold in Nigeria and Ghana—including fake antibiotics and antiretrovirals. The World Health Organization estimates that more than a million people die of malaria every year and that 200,000 of those deaths could be prevented if all counterfeit antimalarials could be eliminated.

Gogo, a native of Ghana and a Ph.D. student at Dartmouth's Thayer School of Engineering, has developed a way to circumvent the massive fake drug industry and protect people from its harms. It's based on ordinary cell phones, which are very common in Nigeria and Ghana.

As part of Thayer's Ph.D. innovation program, Gogo founded his own company, Sproxil, which uses cell phone technology to verify if a drug is real or fake. The concept is simple: before distributing the drugs, the pharmaceutical company applies to the package a scratch-off label with a unique ID number. The consumer texts the ID to a phone number. The ID is then sent to a central drug data depository in the U.S. A text message comes back automatically, telling the consumer if the drug is real or fake and its correct name, manufacturer, and dosage. The message also includes advertising discounts from the manufacturer, offsetting the cost of the text message. The technology works anyplace that has cell phone coverage.

Gogo tested the concept by distributing a survey about Sproxil, with a sample drug and scratch-off panel, to 1,000 people in Accra, the capital of Ghana. Just 413 of the survey respondents were aware of fake drugs in Ghana, and only 152 suspected they had ever bought a fake drug.

Trial: Next Gogo undertook a major trial in three large cities in Nigeria, by coding "one million units of the nation's most popular diabetic drug," he explains. "This is the largest trial of scratch-off technology that I'm aware of."

Fortunately for Gogo, Nigeria's National Agency for Drug and Food Administration has been cracking down on counterfeit drugs since 2001. And the agency is quite supportive of the Sproxil technology, since it works well alongside the agency's other strategies, which include stricter importation regulations and training courses for pharmacists.

Most counterfeiters, says Gogo, are former narcotic dealers who turn to counterfeiting because the profits are huge and the penalties lenient compared to those for dealing narcotics. The U.S.-based Center for Medicines in the Public Interest estimates that by 2010, sales of fake

JON GILBERT FOX

Dartmouth graduate student Ashifi Gogo has developed a system that allows consumers to detect counterfeit drugs—a huge problem in some parts of the world—using a cell phone.