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MARYLAND
FINAL

35¢

Prices may vary in areas outside the Washington, D.C. metropolitan area.

Weather

Today: Rainy, cool.
High 63, Low 58.
Saturday: Thunderstorm.
High 72, Low 63.

Details: B10

125TH YEAR No. 180 M2 MD

FRIDAY, JUNE 3, 2005

Toyota Assembly Line Inspires Improvements at Hospital

By CECI CONNOLLY
Washington Post Staff Writer

SEATTLE — Up until five months ago, Ted Gachowski's weekly chemotherapy appointment was one long, tedious slog through the Virginia Mason Medical Center.

The retired engineer, battling lymphoma since 1999, typically began his jour-

ney at 8 a.m. in the first-floor lobby. There he would be directed to the sixth-floor laboratory for blood testing. Next, Gachowski, 63, would board one of the hospital's notoriously slow elevators to meet his oncologist on the second floor. If the lab results weren't ready, he would wait some more.

Then back to the elevators for the trek up to 12 and even more waiting. Around

lunchtime — if things went smoothly — Gachowski would be seated in a noisy "bullpen" with half a dozen other patients, finally getting the intravenous chemotherapy he came for. By 10 p.m., exhausted from the 17-hour odyssey, Gachowski would arrive home.

Today, chemotherapy at Virginia Mason is a much shorter trip: The distance from lab to exam room to treatment is

less than 12 feet. Once Gachowski is hooked up to his IV, he never has to leave the cheery private room — flat-screen television, computer, nursing supplies and bathroom are all right there. And his physician, Henry O. Otero, is so close, "I can almost shout to get him," said Gachowski, seated in a reclining chair as the

See HOSPITAL, A6, Col. 1

A6 FRIDAY, JUNE 3, 2005

SCIENCE AND HEALTH

Toyota Model Helps Hospital Improve Care and Cut Costs

HOSPITAL, From A1

drug dripped into his arm.

The inspiration for Virginia Mason's newfound approach to cancer care came from a most unlikely source: the assembly line at Toyota Motor Corp. Like the Japanese automaker's plants, the glistening new cancer center here was designed around themes of high quality, super-efficiency and putting the customer first. Errors are embraced as learning opportunities, and every one of Virginia Mason's 5,000 employees is encouraged to offer ideas. According to hospital executives and some industry analysts, the management principles that made Toyota the world's most successful car company could have similar results at Virginia Mason.

Manufacturing giants such as General Motors Corp. and Dell Computer Corp. began stealing Toyota's model decades ago, but hospitals took much longer. Today, about a dozen are experimenting with elements of the approach, but "nobody has been bolder in what they are trying to do than Virginia Mason," said Prerema Blue Cross president and chief executive H.R. Brereton "Gubby" Barlow, who is watching the effort as both an insurance executive and a patient.

In an era of aging patients, costly new therapies and stingy reimbursement rates, the medical profession is searching for ways to gain a financial and performance edge. Many are turning to information technology; others are shifting more costs to patients. Here in downtown Seattle, a community accustomed to innovation, one hospital is experimenting with a total overhaul of its business philosophy, embracing a set of concepts designed in the 1950s by Taiichi Ohno.

Whether making a car or a healthier patient, the approach fundamentally is about eliminating waste — from paperwork and inventory to waiting-room delays and extraneous surgical tools. Four years after he made his first trip to study under Japanese "sensei," or teacher, Chihiro Nakao, Virginia Mason chief executive Gary S. Kaplan points to measures of success few American hospitals can boast.

In adopting the Toyota mind-set, Kaplan said, the 350-bed hospital has saved \$6 million in planned capital investment, freed 13,000 square feet of space, cut inventory costs by \$360,000, reduced staff walking by 34 miles a day, shortened bill-collection times, slashed infection rates, spun off a new business and, perhaps most im-

portant, improved patient satisfaction.

Such a radical new management style did not come without strains. A few top executives have left, and many physicians have balked at what they consider threats to their autonomy. Sending teams to Japan and hiring consultants cost about \$1.5 million. And as in car production, there are safety risks in too much streamlining.

"You need to know how many clinical encounters you can safely produce," said James R. Simmons, who has been practicing internal medicine here for 31 years.

Nowhere is the transformation more visible than the cancer center. Its director, Andrew D. Jacobs, and oncologist Otero, whose father brought Toyota manufacturing tips to GM, negotiated with the architects over every design feature. Throughout, Jacobs was motivated by the words of sensei Nakao: "The patient is God."

For cancer patients, "one of the most common side effects of treatment is fatigue, and time is the most valuable thing they have," Jacobs said. "We created a cancer institution where everything flows to the patient."

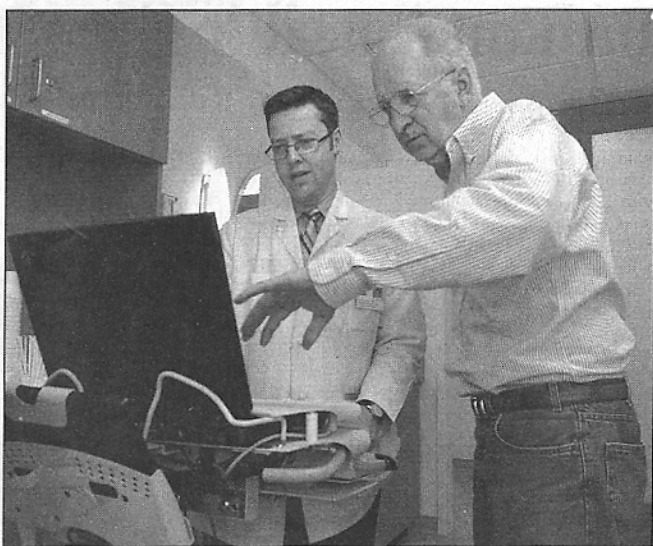
To spare patients long hikes through the hospital, doctors' offices, schedulers and the lab are located adjacent to examination and treatment rooms. A separate pharmacy was built in the center, eliminating delays of up to two hours. Blond hardwood floors, a waterfall, a meditation room and an Internet cafe are all aimed at easing patient stress.

"And we gave the best real estate — rooms with windows — to the patients," said Jacobs, who may add alternative therapies such as herbal medicines or amenities such as massage.

In its first five months, the center has slashed preparation time for chemotherapy from three hours to less than one, which means it treats an additional 50 patients a week. With the revenue, Jacobs intends to recruit another doctor and expand the research program.

For Gachowski, the new system cut four hours off his treatment day, with fewer needle pricks and less wear and tear on his weakened body.

"I have less stress, and when you go through chemo you feel pretty crappy, so being in one place is good," he said. But he does miss comparing notes with other cancer patients and worries that the isolation of the private rooms will curtail the informal support network the bullpen provided.



BY LAURIE MATIANICH FOR THE WASHINGTON POST

Cancer patient Ted Gachowski, right, goes over test results with his physician, Henry O. Otero. Gachowski's chemotherapy goes much faster under the new regimen.

Reengineering health care delivery need not be complex or high-tech, the Japanese gurus and their American disciples say. Seemingly mundane changes have led to dramatic results.

By devising one standard instrument tray for the 12 doctors performing laparoscopic gallbladder surgery, the hospital reduced the cost of the procedure by \$950. Construction of a new hyperbaric chamber inside the main hospital immediately eliminated the \$55,000 Virginia Mason spent each year in ambulance charges to transport patients across the street.

In the hospital's sleep disorders unit, three physicians now share one office, conducting 90 percent of their work in the exam room, Medical Director William J. DePaso said. The space saved enabled Virginia Mason to create a business delivering sleep assistance devices, generating about \$200,000 in profit this year, he said.

Though many of the changes appear to be largely administrative, DePaso said efficiencies invisible to the patient can improve care. Where insomniacs once waited six months to get an appointment, most are now seen within two weeks, and analyses of the night-long tests are delivered in 48 hours, rather than one month, he said.

"Patients love it because you're with them more," he said. And the doctors are happy because they walk out the door at 5:15 p.m. instead of 7:30.

In an industry in which an estimated 98,000 deaths a year are caused by errors, Virginia Mason officials say they are also reducing errors by standardizing procedures and engaging patients and their families.

Robert S. Mecklenburg, chief of the

department of medicine, is designing a bracelet for heart attack patients that uses symbols to track whether they have received the full, universally accepted treatment regimen, which includes beta blockers within one hour of arrival at the emergency department, monitoring cholesterol levels, and counseling on diet and smoking. Patients are not discharged until each item on the "wristband medical record" is checked off.

"The patient and their family see what's supposed to happen," said Mecklenburg. "The idea is visual control."

The impact is also felt in the intensive care unit, which cares for the sickest patients. Ventilator-associated pneumonia is one of the most common complications for patients on a breathing tube and a leading cause of death in the ICU. In 2002, Virginia Mason doctors had to deal with 30 cases, at a cost of \$5,000 to \$40,000 each, said Michael Westley, medical director of critical care and respiratory therapy.

By "reliably doing boring things," such as frequent hand-washing by doctors and nurses and keeping the patient's head elevated, the hospital cut the number to five cases last year. That probably saved the lives of three or four patients and hundreds of thousands of dollars, he said.

"It saves pain and suffering for the poor patients, and then it saves an enormous amount of money by reducing the amount of time a patient stays in the hospital," said Paul H. O'Neill, former U.S. Treasury secretary and a thought leader on health care management. "From society's point of view, it's a no-brainer."