

The Boston Globe

No waiting

A simple prescription that could dramatically improve hospitals -- and American health care



(Cincinnati Children's Hospital Medical Center via Getty Images) Cincinnati Children's Hospital estimates efficiency measures will allow the hospital to generate an additional \$137m in revenue this year from treating more children with the same staffing levels.

By [Scott Allen](#)

August 30, 2009

The modern hospital is a storehouse of technology and training unmatched in human society. These lifesaving institutions are often the biggest employer in town, making them - justifiably - the pride of their communities.

But hospitals are also the black holes of the American health care debate. "Death panels" and fear of federal bureaucracy may get more public attention, but poor management at many of the nation's 5,700 hospitals is a vastly more important reason that US health care

costs are the highest in the world, and why the quality of care that we get for our money isn't far better.

Hospitals waste 20 to 30 cents of every dollar they collect, and most lag behind the neighborhood Rite-Aid in adopting basic business practices such as computerized record-keeping. What's more, they make lots of mistakes, hastening nearly 100,000 patient deaths a year, according to one major study. Awash in internal politics and inefficiency, hospitals have overtaken prescription drugs as the main reason insurance bills go up each year - and the major reason that more and more people can't afford insurance at all.

The complexity of hospitals has long frustrated reformers. Hospital executives are adept at PowerPoint presentations that prove their 10 percent a year cost increases are justified, and they resist comparisons to other industries that have cut costs more effectively, saying it's impossible to apply lessons from other industries to something as urgent and morally necessary as medicine.

But in recent years an efficiency expert - originally trained in the Soviet Union, land of legendary inefficiency - has been proving that hospitals don't have to be wasteful and inflexible. Eugene Litvak, now a professor of health care management at Boston University, looks at hospitals and sees systems that aren't even trying to be efficient with people's time or money. If hospital executives concentrated on moving patients smoothly through the hospital the way that the local Applebee's restaurant moves diners, he believes, they could make hospitals better places to work, safer environments for patients, and cheaper to operate.

Now he can point to a dramatic proof of his ideas. Over the past six years, Cincinnati Children's Hospital, one of the country's premier hospitals, has worked with Litvak to streamline the flow of patients from the emergency department waiting room to post-surgical recovery areas. The payoff has been dramatic. Doctors now care for more patients in less time; there are fewer aggravations and logistical conflicts for staff and patients alike. The hospital says the improvements in efficiency have given it a boost in capacity equivalent to a \$100 million, 100-bed expansion and boosted income from treating patients by even more. Doctors and nurses - many of them initially skeptical - generally like the system, too, because their schedules became more predictable. And Children's officials say the changes have also made their hospital safer by reducing the times when nurses and doctors are under extreme stress.

Litvak's work is part of a broader field called operations management, which focuses on the mundane but vital business of making processes more efficient, from manufacturing a can of soup to moving baseball fans in and out of a ballpark. Virtually every other major industry has adopted the principles of operations management, led by successful companies

such as Toyota. But the health care industry, 17 percent of the US economy, has been a big holdout.

Leading thinkers of the health care reform movement agree that the ideas put forward by Litvak and a few others have extraordinary potential. If all hospitals adopted aggressive “flow management” programs, Litvak believes it would free up enough beds and other medical resources to care for all of the nation’s 46 million uninsured people.

Litvak’s ideas are “the best near-term play for changing health care delivery in a way that would meaningfully reduce spending and improve quality,” said Dr. Arnold Milstein, medical director of the Pacific Business Group on Health in California, the nation’s largest health care purchasing coalition. “As a country, we are at this point really starving for improvements in care delivery that not only improve quality, but equally important, make health insurance more affordable.”

Of course, the US health care system is frustrating proof that just because something is a good idea doesn’t mean it will happen. The American approach to health care has always been to focus overwhelmingly on the search for cures while devoting far less energy to practical matters like finding the best way to get cures to patients. Americans spend twice as much on health care as other industrialized nations with little evidence that the care here is better, and with little being done to stop the escalating costs. Litvak, who learned a lot about bureaucratic inertia from his years as an economist in the former Soviet Union, said that persuading hospitals to adopt his efficiency recommendations has been like cutting through sour cream. “You get no resistance,” he says, “but you also get no slice.”

In the world of operations management, Litvak is among the leading experts on flow. In the fast-food industry, maintaining an even flow is what keeps dozens of chicken fingers from stacking up while frustrated customers wait for cheeseburgers; at Toyota, it turns automobile production into a tightly choreographed dance that minimizes wasted time and materials. Thanks to strong central management and years of practice, companies have become expert at ensuring that steel arrives exactly when it needs to be rolled into car hoods, or a container of dishwashers from China shows up almost exactly when stores need to restock them for customers.

Good flow keeps costs down and customers happy.

In hospitals, nobody expects - or even wants - “fast” care, but everyone in the building benefits when the flow of patients from one part of the system to another is smooth. Backups in one part of the hospital can cause backups in others, leaving, for example, patients sitting for hours in the waiting room or highly trained surgical teams cooling their

heels with no patient. A smoothly flowing hospital saves time and money, but it also reduces stress on the staff and the risk of mistakes.

Unfortunately, the typical US hospital is a model of bad flow: The average emergency room wait, for example, is four hours. The problem is actually quite simple, Litvak says. Nearly every department is run separately, making today's hospital a nest of competing kingdoms rather than a smooth-running, cooperative organization. Hospitals often have limited power over doctors, who can schedule patient appointments without regard to the hospital's needs. Effectively, one of the most important industries in America is in the hands of people who, for all their talents, have little expertise at running a business.

As a result, Litvak says, American hospitals only think they're overcrowded because they have a chronic problem managing their flow. Patients simply pile up at certain times. In 2006, for instance, US hospitals were typically only 65 percent full, far less crowded than the 84 percent occupancy in Britain and the 90 percent occupancy of Canadian hospitals. But when US hospitals get much more than 65 percent full, the whole system starts to become stressed. Then, to boost their capacity, hospitals expand, at an average cost of \$1 million per new bed.

James M. Anderson, a former corporate lawyer and president of a company that manufactures valves, was underwhelmed by the level of efficiency he saw when he became chief executive of Cincinnati Children's in 1996. He wasn't worried about money so much: After all, the hospital had a huge endowment and its annual revenues were growing at a healthy pace. But, perhaps more than traditional hospital executives drawn from medicine, Anderson was sensitive to the fact that chronic delays and patient overcrowding can lead to bad morale and a decline in the quality of care.

Dr. Frederick Ryckman, a prominent transplant surgeon at Cincinnati Children's, noticed how inefficiency can adversely affect his patients years ago. For no obvious reason, he found that the nurses who cared for his young transplant patients sometimes had a lot more time to lavish on the children.

"Some days, all the stars were aligned and you would have the perfect care system," recalled Ryckman. "But some nights, if there were a lot of sick kids in the ICU, the care that was delivered was going to be very different."

Cincinnati officials discovered that the busy nights were caused, not by the random distribution of accidents and illnesses in Cincinnati, but by the way the hospital assigned operating room time to surgeons for scheduled surgery. Since a child who has just received a new liver needs near constant attention, this was no small matter, raising the risk that the child's vital signs could plummet while the nurse is off caring for other patients.

For several years, Cincinnati Children's officials, with Anderson's enthusiastic backing, tried to get their patients flowing better through the building. They tried hiring more staff to work in the emergency department at certain times. But Anderson's team realized that, to make dramatic steps forward, they needed to analyze the whole hospital, not just individual departments. That's when two doctors, Ryckman and the vice president for quality and transformation, went to a talk by Litvak as part of an Institute for Healthcare Improvement program in 2004.

"We were just blown away. If what he says is true, oh my God. Isn't it exciting?" recalled Dr. Uma Kotagal, the vice president. Or, as Ryckman put it, "He might be brilliant, and he might be nuts."

Litvak, who cut his academic teeth analyzing the Soviet telecommunications industry, may have seemed an unlikely avatar of efficiency, but he had the advantage of not carrying the baggage of medical traditions that can crush the spirit of innovators.

And so, armed with a branch of mathematics known as queuing theory, Litvak began to rearrange Cincinnati Children's Hospital. He told administrators that a lot of the delays throughout the hospital traced back to the lack of control over operating room time. He recommended that some operating rooms be set aside for emergencies only so that scheduled operations would not be disrupted. He also suggested that administrators take charge of assigning times for nonemergency surgeries to spread them out evenly. And he asked that surgeons notify the intensive care unit if their patients would need ICU care after the operation, giving the nurses time to plan.

Litvak promised that the efficiency measures would increase the number of surgeries that Children's could perform with the same resources. Over the next four years, the data proved him right. Cincinnati Children's estimates that these and other streamlining measures will allow the hospital to generate an additional \$137 million in revenue this year from treating more children with the same levels of staffing in surgery and other departments.

Dr. Milstein, the director of the Pacific Business Group on Health in California, said hospitals have resisted efficiency ideas because they could. "It takes a saint to say, 'Well, even though the market is not very competitive, I am going to quintuple the level of difficulty for my managers' " by pressing for big efficiency improvements, explained Milstein.

There is also a deep cultural reason that "efficiency" hasn't caught on in America's hospitals: Many doctors and nurses just don't care about "efficiency" for its own sake. They got into the business to help people, and tend to cringe when administrators start going on about cost-cutting. But Litvak's work blows up the easy doctors-vs.-bean-counters formulation,

showing that the bigger threat to patient safety and medical staff sanity is the current disorganization of American hospitals. It's the same sort of thinking that helped propel Toyota to world leadership in automobiles: Toyota focused on making the best car at the best price, and the general public didn't hear much about eliminating "muda" - Japanese for waste - even though it was a key element of the Toyota system.

Today, with politicians from Beacon Hill to Capitol Hill clamoring for ways to reduce the cost of health care, some hospitals are taking a harder look at the efficiency lessons from other industries. Last year, Lahey Clinic hired an engineer from Pepsi-Cola to help with an ongoing effort to streamline operations. Earlier, Boston University Medical Center, guided by Litvak, reduced the number of elective surgeries that had to be rescheduled from 700 a year to seven. Litvak is gearing up to train far more hospitals in his methods, setting up a nonprofit that will run independently from Boston University's Program for the Management of Variability in Health Care Delivery. Cincinnati Children's, meanwhile, has become a laboratory for hospital reform, offering a course in flow management for the staff and hosting curious delegations of hospital officials from all over the country.

Dr. Michael Long, a former anesthesiologist at Massachusetts General Hospital and frequent collaborator with Litvak, said it's somehow fitting that a management consultant who learned his trade in a communist country should be leading the American hospital efficiency revolution. "In some respects, Eugene was right at home," said Long, "It reminded him of the way things are done in Russia."

Scott Allen has covered medicine for the Globe since 2000. He can be reached at allen@globe.com. ■