The $20 Could

At India's innovative Aravind hospitals, each doctor performs as many as 2,000 cataract surgeries annually.

Eye Surgery that Save the World

By Dylan Scott

Thirty to 40 surgery patients pass through each of Aravind's five hospitals every day.

Efficiency is the golden goose, the Platonic ideal, the Holy Grail of health-care reform. But while the United States stutters, stumbles and stalls on its path toward a more efficient system—we spend two-and-a-half times more on health services than most developed nations in the world [see "Health Costs," page 58]—an eye hospital in India has already figured out how to provide the highest quality care at the lowest possible cost.

The Aravind Eye Hospital network, founded in 1976 in Madurai by Govindappa Venkataswamy, essentially performs just one kind of procedure: corrective cataract surgery. But it probably does it better than any other facility in the world. In 2011, this one hospital system completed 227,000 sight restoration surgeries, out of an estimated 20 million worldwide. Individual surgeons in the system perform upward of 2,000 surgeries annually, or more than five per day, compared to the national average in India of 250 per doctor per year. Even more striking is that the estimated average cost of those surgeries is less than $20. Compare that to the U.S., where the average cost is between $3,000 and $5,000. And according to a 2004 academic review, Aravind achieves health outcomes equivalent to their peers in developed countries.

So how do they do it? There are three secrets to Aravind's success. First, the hospitals have created an admission-to-release process for the surgeries that's almost industrial in nature. It's similar to the lean manufacturing approach employed by U.S. health systems like Denver Health, but taken to the extreme. The second piece is its culture. Physicians enroll in the network's own training institute, learn the Aravind way and stay for years. That knowledge base and familiarity with the network's system contributes to its production line-like approach to health-care delivery. And finally, Aravind has taken control of manufacturing the lenses that are needed for its cataract operations, establishing Aurolab in 1992 to craft lenses and surgical tools at a fraction of the cost it would take to purchase them from third-party vendors. The plant has reduced the average costs of lenses from $200 to

$10 in the two decades since it opened. Most analysts credit that innovation almost as enthusiastically as the health-care model itself for Aravind's ability to keep its costs low.

The model is so effective that the network has exploded from the 11-bed hospital that Venkataswamy founded more than 30 years ago to five hospitals with a combined 3,500 beds that accommodate nearly 2 million examinations each year. "This drive toward efficiency has resulted in not only effective coordination of care and patient management," said a 2008 *Health Affairs* article highlighting Aravind as a specialty health-care pioneer, "but also an annual financial surplus that has been used to fuel Aravind's growth."

Day after day, 30 to 40 surgery patients stream through each of Aravind's five hospitals. Most come from poor, rural villages, where Aravind-trained nurses identify people who might need cataract surgery. It takes a mere two minutes for clientele to clear a reception desk, where they fill out a short form with basic information, are assigned a patient tag number and placed in line at one of three outpatient departments located within the hospital. Patients are then taken two at a time for vision tests, with nurses ensuring the next patient is ready when the other is finished. In the operating room itself, one patient is constantly being prepped by the nursing staff for surgery while the surgeon operates on another. At the conclusion of one surgery, the physician need only walk a few feet to begin work on the next patient. And so it goes. The whole day's work takes just about five hours to complete.

This methodical approach comes courtesy of its training institute, which indoctrinates its surgeons and supporting staff in its practices as soon as their medical careers begin. In the last year, the network graduated more than 40 doctors. It's a holistic system—from the manufacturing of the lens to the discharge of the patients—and that's what makes it work.

"Given the urgent need to contain health-care costs, management ideas like [Aravind's] might well have applicability in the [United States]," wrote two of the network's doctors in the *Harvard Business Review* in 2010. "The broader point is this: Management ideas from poor countries can transform management practice in the rich world."

Take America. Delivering health care to America's poorer and more rural regions is a widely recognized problem. They often have greater health problems, are more likely to be uninsured and less likely to have easy access to cheaper preventive primary care. Aravind's patient base is also largely poor and rural—yet its model is so efficient and profitable that nearly half its patients pay a reduced price (or nothing at all), the difference being made up by those who can afford to pay the full cost.

Since Venkataswamy (who died in 2006) introduced the Aravind model to the world in 1976, its ideas have spread to many other countries. In 2011 alone, the network's staff provided consultations to hospitals in Bangladesh, Nigeria and elsewhere in India. Aravind also has working relationships with a Chinese eye hospital that has adopted its model wholesale, and its leaders have also been invited to join coalitions hoping to improve health-care delivery in sub-Saharan Africa. Over the past decade, Aravind has been cooperating with Project Impact, a U.S. nonprofit led by social entrepreneur David Green, to translate its lens manufacturing model to hearing aids. Today the project is producing hearing aids at a cost of $60, compared to an average of $1,500.

But for now, any plans to replicate the Aravind model are focused mostly on cataract surgeries. Those procedures are especially suited for the Aravind approach because they're not particularly risky, and patients heal quickly and usually without any complications. But other health-care delivery systems are starting to adopt aspects of the model, according to *Health Affairs*. A primary care network in Kenya and a pediatric clinic in India have seen success using some of the same economies of scales and efficiency principles that Aravind utilizes.

With that established track record, Aravind could be coming stateside. *Forbes* reported in 2010 that Green was in talks to open an eye hospital in San Francisco that would operate under the network's model. Those plans have continued, Green says, and he has found a partner in the Pacific Vision Foundation, a nonprofit composed of ophthalmologists dedicated to preventing blindness. The group last year purchased a building that will serve as the headquarters for its Aravind-based institute, and Green says, with enough funding, it could open by 2015. He's also worked with the Center for Health Care Strategies, a policy think tank, and met with Medicaid directors to discuss how a model similar to Aurolab's medical device production could replace the costly medical equipment that Medicaid currently purchases for its patients.

If health-care costs—particularly for government programs like Medicaid, which is the single largest payer in the country—are to be contained, greater efficiency is key. But efficiency in actual care delivery doesn't always drive policymaking. Accountability continues to be a focus, with the federal health-care reform law including a provision that penalizes hospitals for preventable readmissions. Cooperation has also taken center stage, as Medicaid managed-care initiatives and accountable care organizations encourage collaboration across the health-care provider spectrum. But despite some examples of success, efficiency remains an elusive goal. Aravind has achieved it with an industrial ruthlessness that never loses sight of its duty to its patients. Before his death, Venkataswamy was often quoted as saying his network was dedicated to "the humble demonstration of courtesy and compassion to each patient."

That melding of philanthropic dedication and financial sustainability is why some policymakers and advocates say the United States should look at models like Aravind's. "Increasingly, we're finding that the most amazing breakthroughs are delivered by groups that have found out how to combine self-interest with concern for others into one system that serves people who used to be left out," said William Gates Sr., Bill's father, when the Bill & Melinda Gates Foundation recognized Aravind with its 2008 Gates Award for Global Health. "This is creative capitalism—an approach where governments, businesses and nonprofits work together to stretch the reach of market forces so that more people can make a profit, or at least make a living, doing work that saves and improves lives." **G**

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