

Growing The Healthcare Industry Could Be The Right Medicine For RI Economy

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PROVIDENCE — From downtown, the gateway to the Jewelry District is a shadowy highway underpass. Along its outer edge, abandoned buildings, warehouses and construction debris line the thoroughfare.

But in between, university scientists scramble for lab space, biotechnology companies test breakthrough drugs and hospital researchers plot clinical trials.

The Jewelry District is finally showing signs of life. As it grows, it is reviving the long-delayed promise that a graveyard of shuttered jewelry factories can become the birthplace of a biomedical paradise. “The Jewelry District looks like Cambridge looked 15 years ago,” said Barrett Bready, whose start-up, NABSys Inc., is developing an affordable method for mapping DNA.

For decades, state leaders have dreamed of health-care businesses replacing old-line manufacturers — the cures to malaria and tuberculosis also curing the state’s ailing economy.

Today, that economy is on life support, and there is growing pressure to speed the promised transition. In March, Rhode Island’s unemployment hit 10.5 percent, the worst in 30 years and the fifth-highest in the country.

The solution of creating a strong life-sciences industry, advocates say, is based on the quality of research at the state’s universities and hospitals and the spectacular increase in federal grants flowing into their labs.

The talent and resources provide a platform for building an industry cluster. But it will not happen unless researchers are encouraged to start companies and are provided the space and incentives to bring products to market.

If Rhode Island produces more medical businesses, experts say, its investments will be rewarded, despite competition from the biomedical hub in Boston. In the country’s growing medical field, there is plenty of business to go around.

While the recession is infecting practically all industries nationwide, it has left the medical business relatively healthy. Despite flatlined consumer spending, the country’s aging population has held up demand for new drugs, medical devices and services.

In Rhode Island, the health-care sector has actually expanded over the past year, even as the economy bled 29,000 jobs. Four of the state’s 10 biggest companies are hospitals. In all, the medical industry accounts for 77,000 jobs, about 19 percent of total employment, compared with 14 percent nationally.

continued next page

Growing RI's Healthcare

But if bolstering the biomedical business is the diagnosis for what troubles Rhode Island, it won't be a quick recovery.

Given the struggles of Rhode Island's schools, it is not clear there will be enough high-skilled workers to fill new high-paying health-care jobs. There are workers to feed and transport patients, for example. But hospitals must recruit nurses overseas. The average wage for health-care workers in the state is \$38,247, compared with \$47,093 in Massachusetts.

There are other barriers. For the state's tiny cadre of biomedical entrepreneurs, there is a severe lack of lab space outfitted with the basic scientific equipment that many start-ups need but cannot afford. The main source of seed capital is the Slater Technology Fund, publicly run and cash-strapped, with just \$3 million to spread around. There is only one major angel fund in Rhode Island, the Cherrystone Angel Group, which supports early-stage companies, and one venture capital firm, Point Judith Capital. In Boston, there are more than a dozen companies investing in start-ups as well as individual, wealthy investors trolling for the next big thing.

Though Rhode Island is geographically small, policymakers have struggled to persuade universities, hospitals and businesses to coordinate investments. Even industry boosters say efforts have been inconsistent.

"We haven't been clear as a city and a state on how we want to work on this," said Thomas E. Deller, director of planning and development for Providence, who has studied the ways Cambridge, Buffalo and Philadelphia built biomedical clusters.

At Brown University, professors have not always been encouraged to start companies, and those with business dreams have found little institutional support, according to Clyde L. Briant, the university's vice president for research. "It was a little bit of catch as catch can," he said. "If they had good contacts, they could do it. If not, they could just wither away."

Medical businesses have emerged. But they are scattered across the state, largely disconnected from one another and academic researchers.

Raymond A. Byrnes, president of Contech Medical Inc., said his company has no links to the state's researchers. The company supplies Johnson & Johnson and Boston Scientific with a plastic case for transporting a surgical tool. Its 112 employees work in Olneyville, far from Brown and the hospitals. Still, the success of even a handful of biomedical companies in Rhode Island — especially during the economic downturn — speaks to the promise of the industry.

Businesses such as Concordia Manufacturing in Coventry, EpiVax and medical device makers MEDport and Ximedita in Providence have managed to find financing and scientists, designers and technicians. Drugmakers Amgen and Alexion Pharmaceuticals have national reputations.

At Dominion Diagnostics in the Quonset Business Park, urine samples pour in from across the country for drug testing. The administrative and lab staff has swollen from 8 to 160 since 2000.

"We're going through a growth spurt," James D'Ambra, the director of sales support, said. "Things have not slowed down."

In East Providence, ProThera Biologics is developing tools for diagnosing and treating sepsis and anthrax exposure. The research is promising enough that last year, cofounder Yow-Pin Lim left

Growing RI's Healthcare

Rhode Island Hospital to work full-time at ProThera.

"I don't think Cambridge is special," said Lim, a Brown University professor who published an article on April 2 about his research in *The Journal of Pediatrics*. "Ideas can come from anywhere." ProThera is planning a human clinical study, and if the results are positive, Lim said, the company will open a drug manufacturing plant in Rhode Island.

Economic desperation and the promise of huge payoffs from medical discoveries is finally pushing public and private institutions to collaborate.

Officials from Brown University and the hospital group Lifespan are discussing plans for a joint technology transfer office, where researchers could get help applying for patents. Eventually, Care New England, the state's other hospital group, as well as the University of Rhode Island and the Rhode Island School of Design, may join the effort.

Later this month, Brown and the state Economic Development Corporation are opening the Center for Innovation and Entrepreneurship in the Jewelry District, where academic researchers will be trained in market research and business planning.

The Slater Technology Fund hopes to open an expanded lab complex in the Jewelry District. Its current home, on the East Side of Providence, has incubator space for only five start-ups.

Bigger developments are also planned for the Jewelry District. The neighborhood is the future home of Brown's medical school, where Brown researchers will be closer to the state's largest hospitals — a prized source of patients for clinical trials.

On property freed up by the relocation of Route 195, meanwhile, Providence officials envision a massive medical research complex, to be shared by the universities and hospitals. Mayor David N. Cicilline said he has discussed the idea with the state's congressional delegation. "If we go the traditional route," he said in an interview, "we're never going to come out of this."

Supporters say the project, which would likely rely on federal stimulus funds, would crowd the Jewelry District with high-tech start-ups, as researchers in the new labs scoop up affordable real estate where they can convert their discoveries into commercial products. Already, scientists at Brown, Rhode Island Hospital and start-ups in the neighborhood have begun sharing equipment and mingling at seminars, much as Cambridge researchers do at local pubs and restaurants.

"I'm really bullish on the health-care industry," said Laurie White, president of the Greater Providence Chamber of Commerce.

A recent study by the chamber identified health care as a key element in the longed-for "knowledge economy." "Targets of opportunity," the study says, include medical device and rehabilitation services and behavioral and preventive health care — areas in which Rhode Island should lead the nation.

"We need something to catapult Rhode Island from out of the pack to the front of the pack," said Timothy J. Babineau, who was hired as president of Rhode Island Hospital last October. "We're swept up in this business-as-usual mentality."

Growing RI's Healthcare

Constance A. Howes, president of Women & Infants Hospital, is helping the chamber implement the study's findings. In an interview, she said the state's stable population makes long-term studies possible. The high number of births at Women & Infants — about 9,000 per year — also presents opportunities. "There's more potential there than we've been able to tap," she said.

Last July, Rhode Island Hospital hired Peter Snyder, a former Pfizer executive, to better exploit the hospital's 450 researchers and \$70 million in annual research spending. He found quality research, he said, but few organized efforts to vet projects and pitch them to Boston-based investors.

"There's a plethora of talent in this city. It's just striking," Snyder said. "But the successes we have had so far have almost grown organically in a system that as of yet has not been finely tuned." Even in Cambridge, an epicenter of biomedical innovation, start-up companies regularly fail. In Rhode Island, however, the low success rate has been painful, given the scarcity of start-ups.

Afferent, founded in Providence in 1999, was one of the hot prospects for the state's medical industry. It raised seed capital, received \$2.5 million in federal grants and \$4 million in venture capital and completed a clinical study at the Spaulding Rehabilitation Hospital in Boston of a therapy designed to stimulate brain function in stroke patients.

The study failed. Last year, Afferent closed.

But the company's founder, Brown Prof. Jason D. Harry, is already eyeing new projects. "It's a rough-and-tumble world," Harry said. "The state would be foolhardy to put all its chips into bets like that. But it would be similarly foolhardy to shrink from the opportunities that lie there."