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Chesterfield firm studying ways to help doctors treat addiction, high cholesterol

Venebio to use two \$1.5 million NIH grants to aid in developing opioid, statin advisors

BY KATIE DEMERIA
Richmond Times-Dispatch

The number of fatal opioid overdoses has skyrocketed in recent years, becoming what most public health and law enforcement officials agree is an epidemic.

Chesterfield County-based Venebio Group LLC thinks it can help with that epidemic by getting to the root of the problem: predicting who is most likely to die by an opioid prescription.

The scientific consulting firm has developed a tool — the Venebio Opioid Advisor — that allows physicians to better understand the likelihood that their patient may overdose on an opioid prescription before they write it.

That means that if patients are in need of a powerful, painkilling opioid, the physician could ensure they also have access to the overdose-reversing drug naloxone, for example.

Earlier this month, Venebio received a \$1.5 million grant from the National Institutes of Health to aid in its development of the Opioid Advisor.

“We’re very excited about this because we really think it has the potential to save significant lives,” said Barb Zedler, Venebio’s co-founder and chief medical officer. “This is a major public health problem, and there’s nothing available yet to do this.”

When CEO Lenn Murrelle, Chief Scientific Officer Andrew Joyce and Zedler founded Venebio in 2008, it was not their sole intention to develop such formulas as the Opioid Advisor, Murrelle said. In fact, its primary business is to solve problems for clients.

The firm contracts with more than 200 scientists and researchers worldwide to answer

scientific problems for its clients, which include pharmaceutical companies, medical device developers and, at times, lawyers.

While the company has only 10 full-time employees, its worldwide network of contractors — some in Europe, Asia and South America — allows it to place experts on teams that solve the client’s problem.

“We’re like a general contractor who, when he’s building a house, has a plumber, electrician, bricklayer — all these people he can call on to put together a team,” said Duff Young, chief operating officer. “We’re a scientific version of that.”

Venebio is deciding what it wants its future to look like — stay independent or merge with other firms.

Two multimillion-dollar investors are in discussions with Venebio to potentially merge it with other similar businesses to create a larger firm. One is in the U.S., while the other is in Berlin and is looking to expand its footprint to the U.S.

Venebio could either work with one of those investors or start a rolup to create its own large firm.

More and more scientific consulting firms are considering forming rollups, Murrelle said. A rollup is a business technique in which multiple small companies merge together to form a larger company.

“CEOs and other leaders of those organizations are starting to realize that this idea is here to stay and that there’s sometimes strength in numbers,” Murrelle said. “Other companies are doing it, and they’re starting to notice us; we’re starting to notice them.”

Companies have approached Venebio multiple times in the past about creating a rollup, Murrelle said, but never before now have the executives thought the timing could be right to seriously consider the opportunity.

Murrelle said he is not sure if Venebio will make the move to merge with other scientific consulting companies. It likely could survive on its own as a boutique firm, but there are some benefits to being part of a larger business.

Either way, the attention it is receiving proves that the on-demand economy that Venebio uses is catching on even in the scientific world.

“People are having to think differently,”

Murrelle said. “The world is changing.”

Merging would allow Venebio to leverage costs and save money in some ways, as well as cater to a greater range of clients. But it’s unclear if merging would cause the company to leave Richmond or even retain the Venebio name.

“We don’t know until we get there,” Young said.

Revenue is growing at Venebio, but Young declined to share the figures.

From one client in its first full year of business in 2009, Venebio now has 24 clients, including five of the top 25 pharmaceutical companies in the world, and four Fortune 500 non-pharmaceutical companies, Young said.

The size of the projects has grown as well, he added — while for its first project Venebio charged the client \$35,000, clients now usually pay Venebio well over \$100,000 per project, and it has even done multiple projects that brought in \$1 million.

“We’re becoming a bit of a recognizable brand in the life sciences nationally and internationally,” Murrelle said.

The company’s consulting work is a “flypaper for intellectual property opportunities,” Young said. Venebio so far has pursued two such intellectual property ideas — the Venebio Opioid Advisor and the AlgorithmRx Statin Advisor, which it is currently in the process of bringing to market. AlgorithmRx is a Venebio subsidiary.

DANIEL SANGJIB MIN/TIMES-DISPATCH
From one client in its first full year of business in 2009, Venebio Group LLC now has 24 clients.



Venebio has 10 full-time employees, including (standing from left) Janice Sargent, Andrew Joyce, Mark Tripoli, Duff Young and Lenn Murrelle and (seated) Molly Sherwood, Barb Zedler and Farrah Hermes.

Like the Opioid Advisor, the Statin Advisor works by using data from patients’ electronic health records to help physicians prescribe the most appropriate medication for a patient to treat high LDL cholesterol, or what is often called “bad cholesterol.”

There are seven statins — medications that reduce cholesterol — available on the market, and each comes in various dosages.

“So there are 30 to 35 choices a doctor has, and it’s unfortunately a trial-and-error process for the doctor to find the right statin and dose for patients,” Young said.

The Statin Advisor uses an algorithm that pulls information from the patient’s electronic medical record — such things as their current cholesterol level and whether they are diabetic — to find the statins and dosages that have the highest chance of reducing cholesterol.

Murrelle said he envisions the algorithm becoming useful because it can be integrated seamlessly into

medical practices and because it would help reduce wasteful spending within the health care system at large by reducing patient visits to the physicians’ offices to find the right statin.

Just like the Opioid Advisor’s recent grant from the National Institutes of Health, the Statin Advisor also received a \$1.5 million grant from the NIH — which is a significant feat, Murrelle pointed out.

Grant proposals submitted to the NIH have a higher chance of failing than they do of getting funding. Only just over 18 percent of the proposals the NIH received in 2014 were funded, according to its website.

The Opioid Advisor grew out of Venebio’s work for locally based Kaleo, a pharmaceutical company that developed a naloxone injector that essentially reverses the symptoms of an opioid drug overdose.

While Young declined to share exactly what the Opioid Advisor’s algorithm formula uses to calculate the patient’s risk of overdosing, he said



Venebio co-founder and CEO Lenn Murrelle (left); Duff Young, chief operating officer; and Barb Zedler, co-founder and chief medical officer, look at a report generated by an algorithm created by their company.

some factors that go into the formula include what diseases the person may have and what drugs they may

be taking. “Based on information from the patient’s electronic medical record,

we’ll calculate a risk index of the likelihood of that patient encountering an accidental overdose from a legitimately received opioid,” Young said.

“More people died from opioid overdoses last year than died in traffic accidents,” he said. “It’s a big deal, and this is something that can save lives.”

In Venebio’s office in Chesterfield, framed images of scientific publications line the walls.

“They’re the currency of our business,” Young said of those publications.

Murrelle explained that publishing the results of their scientific studies “validates” the work Venebio does.

It’s one thing for Venebio to answer its clients’ problems with its research, he said. “It’s another thing for our answers to be vetted by independent, largely academic scientists,” he continued.

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OPIOID ADVISOR RISK REPORT

Current Daily Opioids: Fentanyl transdermal patch, 50 mcg/h, q 72 h
Hydrocodone 5 mg/APAP 325 mg, q 6 hr PRN

Total Daily MED: CURRENT - 140 mg/day (02/19/2016 10:41 AM)
PREVIOUS - 140 mg/day (11/18/2015 07:24 PM)

Opioid Advisor Score: CURRENT: 38 (02/19/2016 10:41 AM)
PREVIOUS: 47(11/18/2015 07:24 PM)

Estimated Risk CURRENT - 55% probability (02/19/2016 10:41 AM)
of Serious OIRD: PREVIOUS - 83% probability (11/18/2015 07:24 PM)

JAMES H. WALLACE/TIMES-DISPATCH

A report created by Venebio shows the estimated risk of serious OIRD, or opioid-induced respiratory depression.

Venebio

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“When our work gets out into the literature, it not only validates us as scientists and as a business, but it validates the position of our clients. And sometimes it’s not the news they want to hear, but science is science.”

He said Venebio almost always reserve the right to publish the results of its work whether or not it gives the client the answer they are hoping for.

At any given time, Venebio may be working on 10 projects for clients. Some projects take two weeks to finish; some take two years.

It has an office in Chesterfield, but most of its employees work from home. Since most of its researchers and scientists with which it contracts are located around the world, telecommunication is essential for Venebio’s business.

In fact, the company does not have to exist in the Richmond area at all, Murrelle pointed out.

“We choose to be in Richmond

when we could be in Boston; we could be in the Washington, D.C., corridor; we could be in Silicon Valley,” he said. “Most of us thought we’d be here for a short stint.”

Young has lived in seven states and said he is in the Richmond area “by choice.”

Murrelle came to Richmond in 1995 to do a post-doctoral fellowship at the Medical College of Virginia.

“And I’m still here,” he said.

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