

LABORATORY ECONOMICS

Competitive Market Analysis For Laboratory Management Decision Makers

LE Interviews The Notorious Chris Riedel

For some people Chris Riedel is a hero whose Medicaid lawsuits against Quest Diagnostics and LabCorp have resulted in hundreds of millions of dollars of savings for California Medi-Cal and the state's taxpayers. Others view Riedel as an opportunist and blame his Medicaid lawsuits as the spark that pushed Medi-Cal and then Medicare to the current disastrous private-payer-based system for setting clinical lab fee schedule rates. Either way, Riedel must be considered one of the most important and influential people in the lab business over the past 30 years. For *LE's* interview with the outspoken Riedel, see pages 4-5.

PathGroup Buys Southeastern Pathology Associates

PathGroup (Brentwood, TN) has acquired Southeastern Pathology Associates (SEPA-Brunswick, GA) for an undisclosed amount. SEPA employs 45 pathologists and has contracts to provide laboratory medical directorship at 22 hospitals, primarily in Georgia and Florida. The deal follows PathGroup's acquisition of Pathologists Bio-Medical Labs earlier this year. The combined company now has more than 2,000 employees, including more than 175 pathologists, serving approximately 100 hospital contracts and thousands of physician clients. Annual revenue is now estimated to be more than \$400 million.

Continued on page 10.

Former Quest Pathologists Open New Laboratory

Two dermatopathologists, Paul Chu, MD, and Mark Jacobson, MD, have opened a new full-service dermatopathology lab named Bridge DermPath in Tarrytown, NY (just north of New York City). Chu is former Executive Managing Director of Quest's DermPath Diagnostics lab in nearby Port Chester, NY, and Mark Jacobson, MD, is a former Managing Director. The new 13,000-square-foot lab and office was opened on June 21 and is already processing more than 300 patient samples per day, according to Susie Kapal, Director of Operations at Bridge DermPath.

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Former Quest Dermpaths Open New Lab *(cont'd from page 1)*

Following a salary dispute, Jacobson left Quest/Dermpath Diagnostics in late 2017. And Chu was fired in March 2018 after allegedly conspiring with Jacobson to form a competing dermatopathology lab. Shortly thereafter, Quest filed a lawsuit against the pair aiming to enforce its non-compete contracts. Ultimately, a settlement was reached that delayed the pair from forming their own lab company until after January 31, 2019 (see *LE*, August 2018).



Paul Chu, MD

Kapal had worked at Dermpath Diagnostics for more than 20 years, most recently as Senior Regional Director of Operations in Wisconsin. She did not have a non-compete contract and moved to New York earlier this year to help Chu and Jacobson launch Bridge Dermpath.

Bridge Dermpath currently has 26 employees and expects to add another 5-10 employees by year's end, according to Kapal.

Chu and Jacobson had originally been part owners of Pathology Associates (Port Chester, NY), an independent dermatopathology lab, which was sold to AmeriPath for \$44 million back in 2004. AmeriPath was subsequently purchased by Quest for \$2 billion in 2007.



Mark Jacobson, MD

With the creation of Bridge Dermpath, Chu and Jacobson are once again independent lab operators. Kapal says the benefits include autonomy in decision making for things like staffing, vendor supply choices and computer systems. Challenges include gaining in-network contracts with commercial insurance companies, although Kapal says progress is being made using Bridge Dermpath's fast turnaround and lower-than-average staining rate as a selling point.

Kapal notes that 95% of cases are signed out within 24 hours of receipt at Bridge Dermpath and that less than 2% of its cases require special stains and immunohistochemical studies.

“In an environment where publicly traded corporate laboratories and venture capital-funded groups are monetizing pathology services for profit at the expense of quality, Bridge Dermpath seeks to counter this trend by delivering skilled, accurate and clear reporting without excessive utilization of special testing that is often driven by revenue targets rather than patient care,” according to Dr. Jacobson.

Separately, Quest named Jason Cohen, MD, as the Managing and Medical Director for its Dermpath Diagnostics lab in Port Chester following the departure of Drs. Chu and Jacobson. This lab employs a total of six dermatopathologists and is the largest in Quest's Dermpath division based on Medicare Part B payments (see *table on page 3*). Overall, Quest's Dermpath division has 14 lab locations throughout the country with 75 board-certified dermatopathologists and total estimated annual revenue of more than \$150 million.

The Largest Dermatopathology Labs

Bako Diagnostics (Alpharetta, GA), created in 2008 by two former Quest/Ameripath dermatopathologists, is the largest independent dermatopathology lab in the nation based on its Medicare Part B revenue. In the four years ending December 31, 2017, Bako Diagnostics increased its Part B revenue by 10% per year to reach \$19.8 million, according to Medicare Provider Utilization and Payment Data from CMS (see *table on page 3*).

Top 30 Dermatopathology Labs Ranked by Medicare Part B Payments for 2017

Laboratory Name	Location	Total Medicare Part B Payment Amount, 2017	Total Medicare Part B Payment Amount, 2013	4-Year CAGR % Change
Bako Diagnostics	Alpharetta, GA	\$19,822,927	\$13,721,884	10%
Inform Diagnostics (dba Cohen Dermatopathology)	Needham, MA	8,793,616	10,654,059	-5%
DermPath Diagnostics (Quest Diagnostics)	Port Chester, NY	8,310,404	9,170,172	-2%
DermPath Diagnostics (Quest Diagnostics)	Pompano Beach, FL	7,409,809	8,177,402	-2%
Institute for Dermatopathology (Quest Diagnostics)	Newtown Square, PA	6,490,913	4,924,339	7%
UCSF Dermatopathology Service	San Francisco, CA	4,981,657	4,231,090	4%
Cockerell Dermatopathology	Dallas, TX	4,214,988	2,217,008	17%
Dermatopathology Laboratory of Central States	Dayton, OH	3,987,507	4,248,913	-2%
DermPath Diagnostics (Quest Diagnostics)	Cincinnati, OH	3,755,604	5,183,490	-8%
Boca Raton Outpatient Laser Center Pathology Services	Delray Beach, FL	3,481,483	4,136,827	-4%
Global Pathology (Aurora Diagnostics)	Miami Lakes, FL	3,383,242	4,269,330	-6%
SkinPath Solutions	Smyrna, GA	2,834,541	1,771,065	12%
Bethesda Dermatopathology Lab (Dermatology Partners)	Silver Spring, MD	2,797,614	2,304,293	5%
DermPath Diagnostics (Quest Diagnostics)	Altamonte Springs, FL	2,700,874	3,843,479	-8%
Water's Edge Dermatology	Palm Beach Gardens, FL	2,553,230	1,278,689	19%
Gulf Coast Dermatopathology Laboratory	Tampa, FL	2,474,675	2,192,231	3%
DermPath Diagnostics Ackerman Academy (Quest Diagnostics)	New York, NY	2,451,858	3,411,356	-8%
DermPath Diagnostics (Quest Diagnostics)	Indianapolis, IN	2,316,228	2,567,929	-3%
DermPath New England (Quest Diagnostics)	Brighton, MA	1,997,926	1,701,877	4%
Finan Dermatopathology Laboratory	Atlanta, GA	1,795,804	1,579,724	3%
M. Reichel/Advanced Dermatology	Fresh Meadows, NY	1,483,636	1,342,753	3%
US Path Labs LLC	Boca Raton, FL	1,482,306	753,204	18%
DermPath Diagnostics (Quest Diagnostics)	Oakwood Village, OH	1,428,777	1,197,163	5%
Aurora Diagnostics Laboratory of Dermatopathology	Woodbury, NY	1,380,096	1,539,300	-3%
Twin Cities Dermatopathology (Aurora Diagnostics)	Plymouth, MN	1,352,604	319,809	43%
Biopsy Diagnostics (Aurora Diagnostics)	Ridgeland, SC	1,232,217	2,033,948	-12%
DermPath Diagnostics (Quest Diagnostics)	Tucson, AZ	1,230,823	1,248,679	0%
UTMG Dermatopathology	Memphis, TN	1,126,142	961,388	4%
Mid-Atlantic Pathology Services	Sterling, VA	1,122,680	899,695	6%
University of Miami Dermatology & Cutaneous Surgery	Miami, FL	1,111,432	601,722	17%
Total, Top 30 Dermatopathology Labs		\$109,505,615	\$102,482,818	2%

Note: This list does not include dermatopathology divisions that are part of larger multi-specialty anatomic pathology labs owned by companies such as LabCorp, PathGroup, ProPath, Sonic Healthcare, et al.

Source: Medicare Provider Utilization and Payment Data from CMS for 2013-2017

LE Interviews The Notorious Chris Riedel (*cont'd from page 1*)*Chris Riedel*

Riedel founded the independent clinical lab Meris Laboratories (San Jose, CA) in 1985, which had a successful IPO in 1991, and was ultimately sold to Unilab in 1998. Unilab was subsequently acquired by Quest Diagnostics in 2003.

Riedel started a new lab company, Hunter Laboratories, in northern California in 2003.

In 2005, Riedel and Hunter Labs filed a major whistleblower lawsuit, alleging that Quest Diagnostics and LabCorp overcharged the California Medi-Cal program for lab tests. Riedel alleged that the big labs violated California's "lowest charge" law by billing physicians, managed care, hospital and GPO clients loss-leading deeply discounted lab test rates, while billing Medi-Cal at its maximum allowed fee schedule rates.

The lawsuit was joined by the California State Attorney General and ultimately led to a 2011 settlement that required Quest to pay \$241 million and LabCorp to pay \$49.5 million, although both labs denied all allegations. Hunter Labs received about \$75 million of the settlement amounts and Riedel was named "Whistleblower of the Year" by the Tax Payers Against Fraud Education Fund.

Riedel sold Hunter Labs to BioReference Labs for \$14 million in 2014.

He is now writing a tell-all book about his experience as a lab industry whistleblower. The book is titled *Blood Money* and is scheduled to be released by Acorn Publishing (Irvine, CA) early next year.

Below we provide Riedel's opinion on several key lab industry topics.

In addition to California, you filed similar whistleblower lawsuits against Quest and/or LabCorp in seven other states (FL, GA, MA, MI, NV, NY and VA). What is their status?

All of the lawsuits have now been resolved. Six were concluded with settlements—not anywhere near the settlement amounts in California—but still significant.

What did you hope to achieve from the lawsuits?

To level the playing field so that independent labs like Hunter Labs could compete for physician office clients without breaking California's "lowest charge" law. Ideally, my lawsuits should have stopped the big labs from underpricing their private contracts so they could pull through higher-priced Medicaid, Medicare and insurance business. It should have ended loss-leader pricing.

In California, Quest successfully lobbied to have the "lowest charge" law eliminated and the Medi-Cal program has cut its rates down to average private insurance rates. And there's still a lot of underpricing going on, especially with capitated contracts. While the big labs had to pay hundreds of millions back, some of the abusive practices continue.

Why did you sell Hunter Labs?

I'm convinced that Quest and LabCorp played a role in Blue Shield of California dropping Hunter Labs out of network. We couldn't stay in business without that contract.

What's your outlook for independent clinical labs today?

It was tough pre-2018 and with the PAMA pricing pressure, it's become even tougher. Frankly,

I'm amazed that so many independent labs have been able to hang on. If a lab the size of BioReference can't make a profit, then how are smaller labs making money? I imagine they're working hard and not sleeping well. My advice would be to sell out fast because reimbursement rates and acquisition prices for smaller labs are only going to get lower.

For those that want to continue operating independently, they have got to diversify into cancer testing or some form of proprietary testing that is shielded from PAMA.

What advice would you give labs that seek a sale?

Begin the process before you are in desperate financial need. There are several good consultants who can assist you in the process. I recommend you read Melissa Butterworth's book *The Endgame: The Laboratory Owner's Exit Strategy*.

And don't count on receiving any contingent payments. I sold Hunter Labs for a fixed payment. I believe sellers are wise to take a haircut rather than counting on any contingent payments. Attorneys look at contingent payments as a source of business because they frequently wind up in dispute.

Finally, be careful with non-compete contracts. Always seek legal advice before signing and when threatened with enforcement. Many of these agreements are so broad that they are unenforceable in many states.

How do you view hospital outreach labs?

They have higher overhead costs, but with the backing of their health system, they do have negotiating leverage with insurance companies. I see a big power struggle coming between health systems and insurers over pricing. Well run outreach labs backed by health systems with market power are likely to survive.

What advice do you have for potential whistleblowers?

The odds of success are low unless you have very skilled attorneys. Most whistleblowers' lives get ruined. They lose their jobs and are blackballed by other companies in their industry. These cases can take years to get resolved, with no guarantee of winning. You need to be ready for a marathon.

And don't count on government lawyers from the Department of Justice or State Attorney General Offices. Even if they do join your lawsuit, it's the luck of the draw when it comes to which lawyers get assigned to your case. Some are good, but many are not. Too often they'll seek the easy way out and settle for pennies on the dollar, so they don't have to face off against the best corporate lawyers in the country.

If you feel compelled to become a whistleblower, then get out of your current job and find a new job at a different company as fast as possible before your lawsuit is made public and you become unemployable.

I also suggest you seek litigation financing prior to filing a lawsuit. This is where a third party unrelated to the lawsuit provides capital to the whistleblower in return for a portion, usually 20%, of any financial settlement. You'll need this money to support your family when the defendants learn you are the plaintiff and launch a no-holds-barred attack to destroy you. If your case is strong, you can get an advance of millions of dollars. The bottom line is that without powerful lawyers in your corner, you are doomed.

A Closer Look At The Exact Sciences-Genomic Health Deal

Last month, *Laboratory Economics* took an abbreviated look at Exact Sciences' blockbuster deal to acquire Genomic Health. Below we provide a more in-depth review of some of the interesting aspects of the agreement.

The Bidding Process

In October 2017, Genomic Health commenced, with the assistance of Goldman Sachs, a search for a potential buyer. Goldman contacted a total of 27 entities, including Exact Sciences. Sixteen of the parties contacted, including Exact Sciences, entered into confidentiality agreements and received management presentations by Genomic Health. Two parties offered preliminary bids, with one indicating a price range of \$32 to \$35 per share and the other at a range of \$38.50 to \$39.50 per share. These bids valued Genomic Health at approximately \$1.2 billion.

Exact Sciences was not one of the bidders. *Laboratory Economics* speculates that the unnamed bidders might have included LabCorp, Quest Diagnostics, Myriad Genetics or Roche. In any case, following completion of due diligence, no final offers were made and the process ended without a deal in February 2018.

Meanwhile, a little over a year later, Exact's CEO Kevin Conroy had a change of heart and contacted Kim Popovits, Chairman and CEO of Genomic Health. At a dinner meeting with Popovits on June 13, Conroy proposed to acquire Genomic Health for \$64 per share.

Conroy's initial offer was rejected, but after a few weeks of haggling, Exact agreed to pay \$72 per share, or approximately \$2.78 billion, comprised of \$1.06 billion of cash and \$1.72 billion of Exact Sciences' stock. The agreement was finalized late in the evening on July 28 and publicly announced the next day.

Extraordinary Valuation

The deal is expected to be completed by the end of 2019. The purchase price works out to be \$2.54 billion, after accounting for \$244 million of cash and securities that Genomic Health has on its balance sheet. At \$2.54 billion, Exact Sciences is paying 5.6x for Genomic Health management's forecast revenue of \$452 million in 2019, 34x its forecast EBITDA of \$74 million, and 65x its forecast free cash flow of \$39 million.

Golden Parachutes

Completion of the sale to Exact Sciences will trigger executive severance plan payments (i.e., golden parachutes) for Genomic Health's top executives. For example, Popovits will receive a severance package of cash and vested options and restricted stock worth \$13.4 million. Genomic Health's Frederic Pla, PhD, Chief Operating Officer, will receive a package worth \$5.7 million, and CFO Brad Cole will get \$5.3 million.

Minimal Cost Synergies

Exact's Conroy has described the combination of the two companies as a "1+1=3" situation. But financial projections contained in Exact Sciences SEC filing for the transaction project pretax operating synergies of only \$8 million in 2020, \$17 million in 2021, and \$25 million annually thereafter. These

Exact Sciences & Genomic Health Pro Forma Combined Forecast (\$ millions)

	2019E	2020E	2021E	2022E	2023E
Revenue	\$1,252	\$1,642	\$2,110	\$2,515	\$3,079
EBITDA	(117)	59	281	521	767
Capital Expenditures	(198)	(102)	(65)	(65)	(75)
Free cash flow	(370)	(97)	101	329	501

Source: Genomic Health management's projections from Exact Sciences S-4 Registration Statement

projected cost savings represent only 2% of the operating expenses at the combined companies and are comprised mainly of the elimination of public company costs at Genomic Health, including job cuts at the C-suite executive level.

The combined company is projected to become free cash flow positive in 2021.

Longer Term R&D Benefits

The addition of Genomic Health and its flagship OncoTypeDx test will help Exact Sciences diversify its business, now entirely dependent on its Cologuard colorectal cancer screening test.

Longer term, Katherine Tynan, PhD, President of Tynan Consulting LLC (San Francisco, CA), believes that Genomic Health's very sophisticated R&D team and access to specialty oncologist channels may accelerate Exact Sciences' development and commercial launch of new cancer tests. For example, over the past 20 years, Genomic Health has completed 125 clinical studies, covering multiple indications and been published in 156 peer-reviewed journal articles.

At the recent Baird Global Healthcare Conference, Exact's CFO Jeffrey Elliot noted that Genomic Health employs 100 sales reps that market directly to oncologists in the United States. "They'll enhance our ability to collect patient samples more rapidly....Patient samples are the biggest rate limiter to developing new diagnostic tests. You need samples to design your test and verify that it works," explained Elliot.

New tests under development at Exact Sciences include a blood-based test panel of six DNA biomarkers designed to detect liver cancer for those at highest risk—people with hepatitis B or cirrhosis. Exact hopes to launch an LDT version of the test next year.

The Potential for a Liquid Biopsy for Colorectal Cancer

There are at least 13 companies that have developed or are developing liquid biopsy tests based on the detection of biomarkers in the blood (e.g., CellMax Life, Epigenomics AG, Freenome Inc., GRAIL Inc., et al.).

For example, Epigenomics AG received FDA approval for its liquid biopsy screening test for colorectal cancer, Epi proColon (Septin 9), in April 2016, and began offering the test commercially in May 2016. However, Tynan notes that the company has had a number of challenges, including PAMA, on the way to payment and market access (CPT 81327: Medicare rate of \$192). "They haven't established intimacy with physicians and payers as the test is a distributed IVD, and the big commercial labs are difficult channels to raise awareness for new tests entering the market," notes Tynan.

The real question is whether blood-based DNA analysis is a viable tool to enhance detection of advanced adenomas (precancerous lesions), according to Tynan. "Currently the literature suggests that benign colon lesions display extensive genetic heterogeneity, that they are not prone to release DNA into the circulation and are unlikely to be reliably detected with liquid biopsies, at least with the current technologies," she adds.

Given these performance and evidentiary challenges, Tynan believes that FIT, colonoscopy, Cologuard and to a much lesser extent Epi proColon are likely to remain the only options for colorectal cancer screening for the foreseeable future.

PAMA Rate Adjustments Looming In 2021

As a final note, *Laboratory Economics* wonders if the second PAMA Medicare rate adjustment cycle motivated either Genomic Health or Exact Sciences to jump into each other's arms. The private-payer data collection period (January 1 through June 30, 2019) is over, so both companies have a very good idea of where Medicare rates for their proprietary tests will be set for 2021-2023. CMS is scheduled to announce the new rates next summer.

Study: Cologuard Less Effective And More Costly Than Alternatives

Exact Sciences' Cologuard test is less effective at saving lives and more costly than other CMS-reimbursed colorectal cancer screening tests, according to a study published September 4 in *PLOS One*, a peer-reviewed scientific journal published by the Public Library of Science.

The study was requested by CMS and conducted by investigators at the Cancer Intervention and Surveillance Modeling Network. Lead authors were Steffie Naber, PhD, from the Department of Health Care Innovation & Evaluation at University Medical Center Utrecht in the Netherlands, and Amy Knudsen, PhD, from the Institute for Technology Assessment at Massachusetts General Hospital. No conflicts of interest were reported.

The researchers used three different models to simulate a cohort of previously unscreened 65-year-old Americans who are screened with Cologuard every three years, or one of six other CMS-reimbursed screening strategies.

Life Years Gained

Compared to no screening, triennial Cologuard testing resulted in an average of 82 life years gained (LYG) per every 1,000 simulated individuals. This was more than for sigmoidoscopy (80 LYG) at a five-year interval, but less than every other simulated strategy. The most effective strategy by far was a 10-yearly colonoscopy (104 LYG).

The reduction in lifetime risk of death from colorectal cancer was lowest for Cologuard (66% reduced risk) and highest for 10-yearly colonoscopy (84%).

Cost Effectiveness

The study found that at its 2017 reimbursement rate of \$512, Cologuard was the most expensive strategy. Two of the models showed that reimbursement for triennial Cologuard testing would need to be drastically lower, in the range of \$6–18 per test, for it to be cost-effective. In the third simulation model, there was no level of reimbursement at which Cologuard would be cost effective (unless priced below zero).

The most cost-effective strategies were 10-yearly colonoscopy and an annual fecal occult blood test (either guaiac-based or FIT).

What can CMS do?

The Medicare Part B program spent \$170 million on Cologuard testing in 2018 and analysts' projections suggest Part B spending on the test will rise by 78% to about \$300 million this year. But there isn't a clear-cut way for CMS to change its reimbursement rate for Cologuard under PAMA regulations. However, private insurance companies are likely to jump on the study's findings as rationale to cut their rates. Over the long term, this should lead to significantly lower Medicare rates for Cologuard.

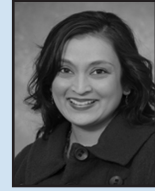
Medicare Part B Rates & Spending On Various Colorectal Cancer Screening Tests

CPT	Description	Medicare Rate, 2019	Medicare Allowed Volume, 2018	Medicare Allowed Charges, 2018
81327	Epi proColon SEPT 9	\$192.00	214	\$29,959
82270	Guaiac-based FOBT	\$4.38	333,857	\$1,460,185
G0328	Fecal immunoassay test (FIT)	\$18.05	662,283	\$12,935,983
81528	Cologuard	\$508.87	335,508	\$170,711,347

Source: CMS

Spotlight Interview with MercyOne's Mona Dinnauer

MercyOne Des Moines Medical Center was founded in 1893 by the Sisters of Mercy and is the longest continually operating hospital in Des Moines, Iowa. It is a member of the MercyOne network, a collaboration of CommonSpirit Health and Trinity Health. MercyOne Des Moines Medical Center operates a hospital-based laboratory outreach program that serves a large part of the state. *Laboratory Economics* recently spoke with Mona Dinnauer, Laboratory Director, Outreach Services, at MercyOne Des Moines Laboratory.



Mona Dinnauer

Tell me about MercyOne Central Iowa's lab outreach.

Our lab outreach business started about 30 years ago. We have 230 employees, as well as eight local, contracted pathologists. We primarily serve central Iowa in a radius of about 115 miles of Des Moines. We have a hospital national provider identifier (NPI) for inpatients and outpatients and a separate NPI for our outreach program. We serve about 15 hospitals with local reference laboratory services as well as system support specific to laboratory needs. Our primary reference lab is Mayo Clinical Laboratories.

How many clients do you have?

We have 350 clients, including hospitals, nursing homes, physician practices, our own physician groups, as well as special groups like the state medical examiner's office and the state public health department.

Do you specialize in any particular areas of testing?

We're a full-service reference laboratory. We do clinical and anatomic pathology testing. We have basic molecular and are looking to expand that test menu.

What are your test volumes?

As a whole, we perform 3 million tests per year, and about 1 million of that is outreach. We have grown our volumes by about 8% total in the past 10 years.

You recently turned to XIFIN to improve your billing operations. Why?

We had always used the hospital billing processes. They had transitioned from in-house to contracted service. We didn't have visibility into our outreach business because payments were posted as bulk. It was hard for us to tell which clients were profitable and which were not, so it was difficult to make good decisions because of the lack of good information.

We signed the contract with XIFIN in spring 2018, and we went live with them in November 2018. Taking into account decreased payments as a result of PAMA, we have estimated an increase of about 15% in collections from our prior system. We'll also be utilizing XIFIN to report our private-payer data to CMS under PAMA requirements.

Do you employ dedicated sales reps for your outreach lab?

Right now, we're working on developing a sales team, which historically is not something we've done. We have hired some additional staff and are adding on sales and marketing functions. We're trying to secure additional clients and grow revenues.

Did MercyOne ever consider selling its outreach laboratory?

No, the health system has not considered selling the outreach program. Our administration views us as a profit center and we have a good relationship with our leaders and our network.

Do you have excess capacity? Are there any plans to expand the outreach laboratory?

We have some excess capacity. The ebbs and flows in hospital work and outreach work are very different. The hospital peak testing volume is early in the morning; for outreach, it's in the afternoon and evening. This has served our laboratory well and has allowed us to grow the outreach business. Currently, it's difficult for us to validate and install new equipment because of the lack of extra room for side-by-side comparisons required to bring on new instrumentation. We continue to look at opportunities for expansion of our laboratory footprint.

Do you have any cost-cutting initiative underway?

We're increasing automation at the pre-analytics stage at our core laboratory.

What do you see as the biggest challenges for your hospital outreach laboratory?

We have a local like-size hospital system that is our biggest competitor, as well as competition from the national labs. And recruitment and retention of staff are always challenges.

What are your biggest opportunities?

Expanding services outside our immediate current service area. Also, bringing in additional testing to our lab so we can perform the testing at a lower cost. We also see some opportunities in molecular testing.

PathGroup Buys Southeastern Pathology Associates (cont'd from page 1)

SEPA was started as an outpatient pathology laboratory in 1992 by its Medical Director Patrick Godbey, MD and Chief Medical Officer Mark Hanly, MD, who met while in training at the Medical College of Georgia. Over the next 20 years, their practice grew and they started to take on hospital contracts in central and southeast Georgia and northern Florida, and started a clinical laboratory.

SEPA sold its clinical laboratory business to LabCorp in 2013. Since then, SEPA has focused on its hospital contract business and to a lesser extent providing outreach anatomic pathology services to physician office clients. Its larger contracts include laboratory medical directorships at five hospitals affiliated with Baptist Medical Center (Jacksonville, FL), and two hospitals affiliated with Southeast Georgia Health System (Brunswick, GA). SEPA's main anatomic pathology lab is located in Brunswick and it has five smaller freestanding AP labs in Georgia, Florida and South Carolina.

Drs. Godbey and Hanly will continue in their current roles at SEPA and will also join a newly-formed Medical Executive Committee at PathGroup.

Pritzker Private Capital (Chicago, IL) took a majority stake in PathGroup in the summer of 2016. The size and pace of PathGroup's acquisitions now seems to be accelerating, observes *Laboratory Economics*.

PathGroup's Acquisition History

Date	Acquisition Target & Location	Description
Sep-19	Southeastern Pathology Associates (Brunswick, GA)	Added 45 pathologists and 22 hospital contracts
May-19	Pathologists Bio-Medical Labs (Dallas, TX)	Added 45 pathologists and key contract with BUMC
Jun-14	Southern Pathology Associates (Chattanooga, TN)	Hospital-based group with 4 pathologists
Mar-12	Atlanta Dermatopathology (Atlanta, GA)	Fast-growing dermpath group
Dec-11	Pathology & Forensic Consultants (Fort Wayne, IN)	Added 4 pathologists
Aug-11	Associates in Laboratory Medicine (Dalton, GA)	Added 2 pathologists
Mar-99	Marin Medical Labs (San Rafael, CA)	Added 5 pathologists
Mar-99	Bradley Pathology Services (Cleveland, TN)	Added 2 pathologists
Sep-97	Associated Pathologists (Nashville, TN)	First deal adds 30 pathologists

Source: *Laboratory Economics*

Publicly-Traded Labs Grow 3.1% In First-Half 2019

On a combined basis, 17 publicly-traded labs saw their revenue increase by 3.1% to \$9.9 billion during the first six months of 2019 (after adjusting for acquisitions), according to financial reports collected by *Laboratory Economics*.

Excluding Quest Diagnostics and LabCorp, 15 publicly-traded labs grew by 14.7% in first-half 2019 (after adjusting for acquisitions).

Pro forma revenue growth was fastest at Castle Biosciences, up 155%, Guardant Health, up 151%, and Exact Sciences, up 87%. Other fast-growing lab companies included CareDx, up 77%; Invitae, up 45%, and Veracyte, up 39%.

Acquisition-adjusted revenue for Quest Diagnostics declined by 0.6% in first-half 2019, while LabCorp's revenue was up 0.1%. The third largest U.S. lab company, Sonic Healthcare USA, grew by an estimated 5%.

Revenue Growth at 17 Publicly-Traded Lab Companies (\$000)

Company	First-Half 2019	First-Half 2018	Reported Change	Pro Forma Change*
Quest Diagnostics (lab testing only)	\$3,684,000	\$3,638,000	1.3%	-0.6%
LabCorp (lab testing only)	3,482,900	3,584,200	-2.8%	0.1%
Sonic Healthcare USA ¹	618,000	443,000	39.5%	5.0%
Myriad Genetics	432,000	377,000	14.6%	13.0%
Exact Sciences	361,913	193,190	87.3%	87.3%
Opko/BioReference Labs	357,349	427,369	-16.4%	-16.4%
Genomic Health	222,909	188,244	18.4%	18.4%
NeoGenomics	197,290	131,169	50.4%	20.0%
Natera	141,179	125,409	12.6%	12.6%
Invitae Corp.	94,028	64,977	44.7%	44.7%
Guardant Health	90,630	36,074	151.2%	151.2%
Veracyte	59,665	42,792	39.4%	39.4%
CareDx	57,436	31,876	80.2%	77.0%
Enzo Clinical Labs (lab testing only) ²	23,751	36,467	-34.9%	-34.9%
Castle Biosciences	19,456	7,638	154.7%	154.7%
Psychemedics	19,111	21,722	-12.0%	-12.0%
Interpace Diagnostics	12,280	10,310	19.1%	19.1%
Total, 17 companies	\$9,873,897	\$9,359,437	5.5%	3.1%
Total, 15 companies (excluding Quest and LabCorp)	\$2,706,997	\$2,137,237	26.7%	14.7%

*Pro forma change is estimated by Laboratory Economics after adjustments for acquisitions.

¹Sonic Healthcare USA revenue for the six months ended June 30, 2019 at constant exchange rate of 1 Australian Dollar equal to 0.75 U.S. Dollar.

²Enzo's revenue is for lab services only for six months ended April 30, 2019.

Source: *Laboratory Economics* from company reports

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Lab Stocks Up 32% Year To Date

Nineteen lab stocks have risen by an unweighted average of 32% year to date through September 13. In comparison, the S&P 500 Index is up 22% so far this year. The top-performing lab stock thus far in 2019 is Natera, which has jumped 135%, followed by Guardant Health, up 106%, and Veracyte, up 105%. Shares of LabCorp are up 36%, while Quest Diagnostics is up 25%.

Company (ticker)	Stock Price 9/13/19	Stock Price 12/31/18	2019 Price Change	Enterprise Value (\$ millions)	Enterp Value/EBITDA	Enterp Value/Annual Revenue
LabCorp (LH)	\$172.32	\$126.36	36%	\$24,070	12.7	2.1
Quest Diagnostics (DGX)	104.40	83.27	25%	18,480	12.5	2.4
Sonic Healthcare (SHL.AX)	28.00	22.11	27%	15,580	15.1	2.5
Exact Sciences (EXAS)	106.71	63.10	69%	13,400	NA	21.5
Guardant Health (GH)	77.50	37.59	106%	6,610	NA	45.6
Genomic Health (GHDX)	71.72	64.41	11%	2,540	44.6	5.9
NeoGenomics (NEO)	21.36	12.61	69%	2,280	48.2	6.6
Natera (NTRA)	32.76	13.96	135%	2,220	NA	8.1
Myriad Genetics (MYGN)	27.42	29.07	-6%	2,120	20.7	2.5
Invitae (NVTA)	21.68	11.06	96%	1,940	NA	11.0
Opko Health (OPK)	2.17	3.01	-28%	1,550	NA	1.7
Veracyte (VCYT)	25.74	12.58	105%	1,040	NA	9.5
CareDx (CDNA)	22.30	25.14	-11%	891	NA	8.7
Castle Biosciences (CSTL)	22.03	16.00	38%	431	170.4	12.5
Enzo Biochem (ENZ)	3.67	2.78	32%	115	NA	1.3
Psychedics (PMD)	8.74	15.87	-45%	41	4.9	1.0
Interpace Diagnostics (IDXG)	0.81	0.80	1%	28	NA	1.2
Biocept (BIOC)	0.92	0.86	7%	12	NA	3.1
Cancer Genetics Inc. (CGIX)	0.10	0.24	-59%	10	NA	0.4
Unweighted Averages			32%	\$93,358	41.1	7.8

Source: *Laboratory Economics* and Capital IQ

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